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Australia and Brazil in the nuclear hierarchical order: divergent strategies regarding the nuclear weapons non-proliferation regime and their nuclear powered submarine program

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Dissertation submitted to Programa de Pós-graduação em Relações Internacionais San Tiago Dantas of Universidade Estadual Paulista “Júlio de Mesquita Filho” (Unesp), Universidade de Campinas (Unicamp), and Pontifícia Universidade Católica de São Paulo (PUC-SP), in fulfillment of the requirements for the degree of Doctor of Philosophy in International Relations, concentration area of “Peace, Defense, and International Security,” within the research line “International Security Studies, Regional Security, new themes, and approaches

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Orientador/Supervisor: Samuel Alves Soares.
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POTENTIAL IMPACT OF THIS RESEARCH

The nuclear policies of Australia and Brazil were analyzed, investigating the impact of their strategies on the Nuclear Weapons Non-Proliferation Regime, either through the acquisition of nuclear-powered submarines or the national development of this technology. This analysis enables an understanding of both countries' behavior, considering their options for action, and provides insights for reflections and policy formulation on the global non-proliferation dynamic and their role in the international arena.

IMPACTO POTENCIAL DESTA PESQUISA

Foram analisadas as políticas nucleares da Austrália e do Brasil, investigando o impacto de suas estratégias frente ao Regime de Não-proliferação de Armas Nucleares, com a aquisição de submarinos com propulsão nuclear ou no desenvolvimento nacional dessa tecnologia. Permite a compreensão do comportamento de ambos os países, considerando suas possibilidades de ação e fornece subsídios para reflexões e formulação de políticas sobre a dinâmica global da não-proliferação e o papel desses países no cenário internacional.

IMPACTO POTENCIAL DE ESTA INVESTIGACIÓN

Se analizaron las políticas nucleares de Australia y Brasil, investigando el impacto de sus estrategias en el Régimen de No Proliferación Nuclear, ya sea mediante la adquisición de submarinos con propulsión nuclear o el desarrollo nacional de esta tecnología. Este análisis permite comprender el comportamiento de ambos países, considerando sus opciones de acción, y proporciona insumos para reflexiones y formulación de políticas sobre la dinámica global de la no proliferación y el papel de estos países en el escenario internacional.

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São Paulo, April 23, 2025.

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ABSTRACT

This research examines the reasons that led Brazil and Australia, both non-nuclear-weapon states (NNWS) pursuing nuclear-powered submarines (SSNs), to follow divergent paths in their SSN programs. The central hypothesis is that Brazil prioritizes nuclear autonomy as a strategic principle, aligning with its broader nuclear policy, while Australia's approach is driven by its pursuit of middle-power status, emphasizing alliance-building and external support. Using a comparative method, this study analyzes the evolution of Brazil's and Australia's nuclear policies from 1945 to 2024, assessing their domestic, regional, and international contexts. The findings reveal that Brazil's SSN development stems from its longstanding emphasis on technological autonomy, reflected in its nuclear cooperation with Argentina and its critical stance on the Nuclear Weapons Non-Proliferation Regime (NWNPR). In contrast, Australia's SSN pursuit is deeply embedded in alliances with nuclear-armed states, notably through the AUKUS partnership, highlighting its reliance on external security commitments. The study concludes that both nations' SSN trajectories reflect broader strategic frameworks—Brazil's pursuit of autonomy and Australia's pursuit of middle power status—shaped by historical, geopolitical, and institutional factors. These findings contribute to understanding how NNWS navigate nuclear technology within the constraints of the NWNPR.

Keywords: Australia; Brazil; nuclear non-proliferation; submarines; nuclear disarmament.

RESUMO

Na presente pesquisa foram examinadas as razões que levaram a Austrália e o Brasil, estados não possuidores de armas nucleares (NNWS) que buscam submarinos de propulsão nuclear (SSNs), a seguirem distintos caminhos em seus programas de SSN. A hipótese central é que o Brasil prioriza a autonomia nuclear como princípio estratégico, alinhando-se com sua política nuclear mais ampla, enquanto a abordagem da Austrália é impulsionada por sua busca pelo status de potência média, enfatizando a construção de alianças e o apoio externo. Utilizando o método comparativo, foi analisada a evolução das políticas nucleares do Brasil e da Austrália de 1945 a 2024, avaliando seus contextos doméstico, regional e internacional. Os resultados revelam que o desenvolvimento do SSN brasileiro decorre de sua ênfase de longa data na busca por autonomia tecnológica na área, refletida em sua cooperação nuclear com a Argentina e sua postura crítica em relação ao Regime de Não-proliferação de Armas Nucleares (NWNPR). Em contraste, a busca da Austrália por um SSN está profundamente enraizada em alianças com estados possuidores de armas nucleares, notadamente por meio da parceria AUKUS, destacando sua dependência de compromissos externos de segurança. A conclusão é que as trajetórias de SSN de ambas as nações refletem estruturas estratégicas mais amplas — a busca do Brasil pela autonomia e a busca da Austrália pelo status de potência média — moldadas por fatores históricos, geopolíticos e institucionais. Esses resultados contribuem para a compreensão de como os NNWS navegam na tecnologia nuclear no quadro das restrições do NWNPR.

Palavras-chave: Austrália; Brasil; não-proliferação nuclear, submarinos, desarmamento nuclear.

RESUMEN

La presente investigación examina las razones que llevaron a Australia y Brasil, estados no poseedores de armas nucleares (NNWS) que buscan submarinos de propulsión nuclear (SSN), a seguir caminos distintos en sus programas de SSN. La hipótesis central es que Brasil prioriza la autonomía nuclear como principio estratégico, de acuerdo con su política nuclear más amplia, mientras que el enfoque de Australia está impulsado por su búsqueda de estatus como potencia media, enfatizando la construcción de alianzas y el apoyo externo. Utilizando el método comparativo, se analizó la evolución de las políticas nucleares de Brasil y Australia desde 1945 hasta 2024, evaluando sus contextos doméstico, regional e internacional. Los resultados revelan que el desarrollo del SSN brasileño se debe a su énfasis en la búsqueda de autonomía tecnológica en el área, reflejado en su cooperación nuclear con Argentina y su postura crítica frente al régimen de no proliferación de armas nucleares (NWNPR). En contraste, la búsqueda de Australia por un SSN está profundamente arraigada en alianzas con estados poseedores de armas nucleares, particularmente a través de la asociación AUKUS, lo que destaca su dependencia de compromisos externos de seguridad. La conclusión es que las trayectorias de SSN de ambas naciones reflejan estructuras estratégicas más amplias: la búsqueda de Brasil por autonomía y la búsqueda de Australia por el estatus de potencia media, moldeadas por factores históricos, geopolíticos e institucionales. Estos resultados contribuyen a la comprensión de cómo los NNWS navegan en la tecnología nuclear dentro de las restricciones del NWNPR.

Palabras clave: Australia; Brasil; no proliferación nuclear; submarinos; desarme nuclear.

ABBREVIATIONS LIST

ABACC	<i>Agência Brasileiro-Argentina de Contabilidade e Controle de Materiais Nucleares/</i> Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials
AgNSNQ	Agência Naval de Segurança Nuclear e Qualidade
AUKUS	Australia, United Kingdom and United States
CEME	<i>Comissão de Exportação de Materiais Estratégicos/</i> Commission for the Export of Strategic Materials
CEFME	<i>Comissão de Estudos e Fiscalização de Materiais Estratégicos/</i> Commission of Studies and Control of Strategic Minerals
CNEN	<i>Comissão Nacional de Energia Nuclear/</i> National Nuclear Energy Commission
CNPq	<i>Conselho Nacional de Desenvolvimento Científico e Tecnológico</i> National/Council for Scientific and Technological Development ¹
CTBT	Comprehensive Test Ban Treaty
ENDC	Eighteen-Nation Disarmament Committee
FRG	Federal Republic of Germany
GIC	Good International Citizen
HEU	High enriched uranium
IADA	International Atomic Energy Development
IAEA	International Atomic Energy Agency
ICAN	International Campaign to Abolish Nuclear Weapons
INB	Indústrias Nucleares Brasileiras/Brazilian Nuclear Industry
LEU	Low enriched uranium
MTCR	Missile Technology Control Regime
NAC	New Agenda Coalition
NNWS	Non-nuclear-weapon state

¹ From 1951 until 1974, *Conselho Nacional de Pesquisa* National Research Council.

NPDI	Non-Proliferation and Disarmament Initiative
NPT	Nuclear Weapons Non-Proliferation Treaty
NPT RevCon	Nuclear Non-Proliferation Treaty Review Conference
NPT PrepCom	Nuclear Non-Proliferation Treaty Review Conference Preparatory Committee
NSG	Nuclear Suppliers Group
Nuclebrás	Empresas Nucleares Brasileiras/Brazilian Nuclear Enterprises
Nuclei	Nuclebrás Enriquecimento Isotópico/Nuclebrás Isotopic Enrichment
Nuclep	Nuclebrás Equipamentos Pesados/Nuclebrás Heavy Equipment
NWFZ	Nuclear-Weapon-Free Zone
NWNPR	Nuclear Weapons Non-Proliferation Regime
NWS	Nuclear-weapon state
OPANAL	Organismo para a Proscrição das Armas Nucleares na América Latina e no Caribe/Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean
PNE	Peaceful nuclear explosion
PRC	People's Republic of China
SCCC	Sistema Comum de Contabilidade e Controle/Common System for Accounting and Control of Nuclear Materials
SecNSNQ	Secretaria Naval de Segurança Nuclear e Qualidade
TPNW	Treaty on the Prohibition of Nuclear Weapons
UNAEC	United Nations Atomic Energy Commission
UNGA	United Nations General Assembly
UNSC	United Nations Security Council
USAEC	United States Atomic Energy Commission

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1 INTRODUCTION

The challenge presented by any acquisition of nuclear-powered submarines (SSNs) by a non-nuclear weapon state (NNWS) received considerable attention on September 15th, 2021, when the governments of Australia, the United States, and the United Kingdom jointly announced the formation of an extended trilateral security partnership in the Indo-Pacific, known by their initials: AUKUS. A key component of this partnership is Australia's planned acquisition of eight conventionally armed, nuclear-powered submarines, meaning these vessels will be equipped with conventional weaponry rather than nuclear warheads. Although Brazil has been developing plans for a conventionally-armed nuclear-powered submarine since the late 1970s, the 2021 Australian announcement renewed and galvanized most international concern about the proliferation risks associated with SSNs, adding attention to Brazil's long-standing wishes.

Brazil and Australia are NNWS committed to the Nuclear Weapons Non-Proliferation Regime while simultaneously pursuing SSN programs. This development is particularly noteworthy, as one of these nations is poised to become the first NNWS to operate a SSN—a milestone with significant implications for the Nuclear Weapons Non-Proliferation Regime. Despite their shared ambition, Brasília and Canberra have taken markedly different paths, shaped by distinct strategic objectives and policy approaches. This research seeks to understand how, despite their unprecedented similarity—two NNWS pursuing SSNs—their programs diverge so significantly. The central hypothesis is that, despite both being NNWS, these differences stem from their contrasting strategic frameworks. Brazil has prioritized nuclear autonomy as a guiding principle of its SSN program, aligning with its broader nuclear policy. In contrast, Australia's approach reflects its pursuit of middle power status, emphasizing alliance-building and external support. Moreover, both countries operate within a hierarchical nuclear order, which directly shapes their SSN programs and the constraints they face.

Stephen Krasner (1982, p. 186) defines a regime as a collection of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations align within a specific area of international relations. Similarly, Laura Rockwood (2013, p.1) describes the non-proliferation regime as a comprehensive framework of measures and mechanisms aimed at mitigating the risk posed to global peace and security by the potential misuse of nuclear material for non-peaceful purposes. This regime encompasses global and regional non-proliferation treaties, export controls, security assurances, physical protection

measures, security initiatives targeting non-state actors, and mechanisms to monitor and prevent illicit trafficking in nuclear and other radioactive materials as well as several other unilateral and multilateral initiatives. While individual measures and mechanisms often address different facets of this risk, they collectively aim to prevent the spread of nuclear weapons, with international verification through International Atomic Energy Agency (IAEA) safeguards serving as the cornerstone of the regime. Meanwhile, Silva (2010, p. 77) highlights an important distinction that the nuclear non-proliferation regime focuses on preventing the spread of nuclear weapons, not limiting the peaceful use of nuclear energy. To reflect this distinction, he recommends using the term Nuclear Weapons Non-Proliferation Regime (NWNPR); this study will adopt Silva's terminology for greater clarity.

The main objective of this research is to analyze how Brazil's pursuit of nuclear autonomy and Australia's pursuit of middle power status have shaped the development of their respective SSN programs. Given the early stage of Australia's SSN program, this study examines the evolution of both nations' domestic nuclear policies and their positions on the NWNPR regime from 1945 to 2024, highlighting the broader challenges and potential shifts that NNWS SSN programs may introduce to this regime. The specific objectives includes: a) a chronological analysis of Brazil's pursuit of nuclear autonomy and its stance on the NWNPR from 1945 to 2024; b) a corresponding analysis of Australia's pursuit of middle power status within the same timeframe; and c) a comparative assessment of Brazil's and Australia's domestic, regional, and international positions to clarify the research's central argument – that differences stem from their contrasting strategic frameworks.

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is a landmark international treaty and the cornerstone of the NWNPR. It has aimed to prevent the spread of nuclear weapons through its three pillars of non-proliferation, disarmament, and the peaceful use of nuclear energy. This treaty, created in 1968, entered into force in 1970 and was extended indefinitely in 1995. The NPT received almost universal membership², being considered the most successful international security treaty. Only one state signatory—North Korea—has withdrawn from the Treaty. Since entry into force, and via its first pillar of non-proliferation, the treaty has been a vital instrument in preventing additional states, beyond the five that existed by 1967, known as the NPT's nuclear weapon states (NWS), from acquiring nuclear weapons. The NPT's second pillar, disarmament, calls for negotiations to

² 191 states have joined the treaty. Only four states never signed it: Israel, Pakistan, India, and South Sudan. South Sudan is expected to join the NPT; its failure to do so owes more to its status as a newly established state rather than to any voiced disagreement with the treaty.

eliminate all nuclear stockpiles. In contrast, its third pillar, the peaceful uses of nuclear energy, has provided states with the confidence to facilitate cooperation on this issue. The third pillar, access to peaceful use of nuclear energy, together with the second pillar, whereby the NWS are obligated to move towards complete nuclear disarmament as noted in Article VI, are the chief elements of the ‘grand bargain’ which persuaded NNWS to sign up to the NPT’s first pillar, that of non-proliferation. In essence, NNWS signed up to promise that they would not acquire nuclear weapons, in exchange for the NWS’s promise to disarm and to assist them with utilizing nuclear energy for peaceful purposes.

Despite its achievements in limiting the spread of nuclear weapons and enabling the peaceful use of nuclear energy, the NPT faces several challenges. It has been most successful in its first and third pillars, but much discontent remains over its failure to achieve full nuclear disarmament (Abe, 2020; Weiss, 2023). This is related to the unequal order the NPT established in 1968 by dividing the countries into those considered as established NWS—countries which manufactured and exploded a nuclear weapon or other nuclear explosive device before January 1st, 1967—and all others, considered NNWS. While accepted at the time by the NNWS because of the promise of eventual disarmament by the NWS and the access to peaceful nuclear energy, this division has caused much friction between the NPT’s state parties. Its creation of two categories of states has been uneasy throughout the NPT’s existence, and this unrest has grown considerably over the past few decades as it becomes evident that the NWS are not fulfilling their side of the bargain (Abe, 2020; Warren; Siracusa, 2022, p. 346). Article VI of the treaty, calling for disarmament, had been included at the insistence of the NNWS, who did not wish to see the unequal nature of the NPT remain indefinite. For them, accepting non-nuclear status was always premised on the understanding that the five NWS would eventually disarm. In 1995, when the NPT was extended indefinitely, the NNWS again expressed their strong wish to see the NWS moving to disarmament.

However, and especially in the last two decades, several different processes and events have taken place or intensified and are presenting profound challenges to the NPT³. These include the development of nuclear weapons in 1998 by India and subsequently Pakistan (these two states had never joined the NPT, but their violation of the non-proliferation norm was nonetheless a shock); the presence of an (undeclared) nuclear weapons arsenal by Israel, which also had never joined the NPT; North Korea’s withdrawal from the treaty in 2003 and

³ Different authors have reflected on the current critical state of the NPT (Hanson, 2005; 2022a; 2022b; Buldus; Müller; Wunderlich, 2021; Müller, 2010; 2017; Walker, 2012; Warren, 2022; Warren; Siracusa, 2022).

its subsequent development and testing of nuclear weapons and missiles; and fears that Iran too might withdraw and develop nuclear weapon capabilities, especially after the US abandons the 2015 JCPOA (Joint Comprehensive Program of Action). But perhaps the most pressing problem is the lack of movement by the NWS toward nuclear disarmament, combined with the ongoing modernization of their nuclear arsenals (Warren, 2022; Warren; Siracusa, 2022, p. 346). This against the context of the abandonment of important bilateral nuclear treaties (and associated multilateral arms agreements), growing tensions within the NWS, especially the US, China, and Russia, and most recently the confrontation between Russia and NATO states resulting from the Russia-Ukraine War. This war has raised the stakes of nuclear weapons being used, with Russia stating its willingness to call on ‘all means and forces necessary’. It has also raised the specter of nuclear power plants being targeted in warfare and intermediate-range ballistic missiles being used.

In addition to these serious challenges is Brazil and Australia's proposal to develop SSNs. The proposals made by these nations present a legal and, arguably also a moral, challenge to the NPT. They involve uncertainties about language and legal requirements, technical problems of oversight and safeguards, and proliferation risks of the expanded access to fissile material. Additionally, these developments challenge the systemic nature of the treaty itself by reinforcing its divisions. One particular problem is that Article III of the treaty does not address the military uses of nuclear technology other than as they relate to nuclear weapons or nuclear explosive devices. The controversy over the acquisition of nuclear-powered military submarines arises from a gray area in the NPT, namely that this use does not constitute the acquisition of military weapons or explosives; these are submarines propelled by nuclear power. Nonetheless, submarines themselves are seen as military instruments; this is why utilizing nuclear material to serve a clearly military-related purpose proves so contentious. Added to this is the problem of safeguarding any nuclear material on a submarine. The NPT has established a safeguards system under the responsibility of the IAEA. Currently, the only states with SSNs are the NPT's NWS, which are exempt from monitoring by the IAEA because they are not required to have IAEA safeguards agreements in place⁴, and India, which is not a member of the NPT. These programs challenge the NPT because this treaty is claimed to have a loophole or gap that would be triggered by Australia's

⁴ This is in the same way that the IAEA has little or no jurisdiction over the nuclear activities – peaceful or otherwise – of the NPT's NWS. Replicating the inherent inequality of the NPT, the NWS operate their military purposes without oversight by the IAEA, whereas all NNWS are required to have completed a safeguards agreement with the IAEA and are subject to compulsory oversight by this body. India, Pakistan and Israel in principle allow IAEA access to their non-weapon nuclear programs. Of these, India is the only state to have developed nuclear-propelled submarines.

and Brazil's actions (Desjardins; Rauf, 1988; Hoffman; Thielmann, 2012; Kelleher-Vergantini; Thielmann, 2013; Kaplow, 2015; 2017; Shea, 2017; Von Hippel, 2019). These NNWSs could set a negative precedent by removing nuclear material from its civil nuclear fuel cycle (in the case of Brazil) and accepting nuclear material from another state, either the UK or the US (in the case of Australia). These actions may well inspire other NNWS to do so also, as a cover to develop nuclear weapons.

If successful, these nations could set a precedent that undermines the NPT. The primary risk lies in acquiring fissile material for nuclear propulsion, which is difficult for the IAEA to monitor on submarines, potentially allowing states to divert it for nuclear weapons purposes (Desjardins; Rauf, 1988; Kaplow, 2015; 2017; Philippe, 2021; Rublee; Kuperman, 2022). While neither Brazil nor Australia has expressed intentions to develop nuclear weapons, their actions may encourage others with such ambitions. Indeed aside from Australia and Brazil, NNWS such as Canada, Iran, South Korea, Japan, Pakistan, Saudi Arabia, Argentina and Venezuela have all, at some point, expressed interest in developing SSNs (Eget *et al*, 2015, p. 240; Kaplow, 2017, p.123; Shea, 2017, p. 9). Canada actually held consultations with the IAEA on possible arrangements regarding the withdrawal of safeguards from nuclear material for use in naval propulsion (Rockwood, 2017, p. 3), and Iran, in January, 2018, informed the IAEA of its decision to construct naval nuclear propulsion in future (IAEA, 2018, § 24)

The key concern is that SSNs grant NNWS access to highly enriched, weapons-grade uranium for naval propulsion—something no NNWS has had until now. If Australia or Brazil gains access, it will mark a pivotal shift in the global nuclear order, with significant repercussions for the NWNPR. However, effective special procedures negotiated between Brazil and the IAEA or Australia and the IAEA could set a positive precedent. Such measures should allow the Agency to verify that no material is diverted while protecting the country's technological secrets. Another major issue is how these cases highlight and deepen existing inequities within the NPT. Brazil's program challenges the long-standing inequalities of the treaty, while Australia's, backed by the US and UK, reinforces them. If these efforts succeed, they will create a new intermediate category—NNWS with SSNs—further complicating an already fragile treaty.

This investigation is warranted as Australia and Brazil are poised to acquire nuclear technology unprecedented among NNWS, albeit through distinct pathways. This development establishes a significant precedent and represents a critical juncture in nuclear history. Brazil has held these plans for decades, but it was not until the Australian announcement was made

in 2021 that serious concerns were raised about such proposals. These cases represent a significant, pressing development that will affect the global security architecture, international organizations and norms about nuclear weapons at a time when the NPT is already fragile. Furthermore, the research can shed light to policymakers or international relations analysts interested in gaining a better understanding of NNWS that pursue SSNs, given that these are two very distinct cases, it can help to comprehend better situations involving countries from both the Global South and North, as well as those under a nuclear umbrella, and those without such a guarantee.

SSNs have an important role in modern naval operations, providing a range of strategic advantages, exceptional endurance, and unparalleled stealth capabilities that shape the tactics and security of naval forces globally thus attracting the interests of several nations. SSNs enable navies to project power across diverse maritime regions, from open oceans to littoral zones, and maintain an extended, influential presence. Their ability to remain on station for prolonged periods enhances their deterrence role and global reach. SSNs' rapid deployment capabilities also allow swift responses to emerging threats and crises, a critical aspect of maintaining maritime security. Contrary to conventional diesel-electric submarines that require constant resurfacing to recharge, SSNs possess virtually unlimited range, allowing them to conduct long-range missions and prolonged deployments without interruption. In terms of endurance and operational flexibility, their advanced propulsion systems enable continuous operations without returning to port for refueling, ensuring persistent presence in key strategic areas. The capability to remain submerged for long durations enhances their stealth and survivability, making them difficult to detect and track. This endurance also reduces vulnerability to surface threats like anti-ship missiles and reconnaissance aircraft, supporting a range of missions, including intelligence gathering, anti-submarine warfare, strike operations, and strategic nuclear deterrence. SSNs also excel in stealth capabilities due to their acoustic, thermal, and electromagnetic advantages. Unlike diesel-electric submarines, they do not rely on noisy engines for battery recharging, making them difficult to detect with passive sonar. Their nuclear reactors minimize exhaust venting, reducing their thermal signature and enhancing their ability to evade thermal imaging systems. Additionally, their minimal electromagnetic emissions reduce susceptibility to enemy electronic detection. Equipped with advanced sensors, quieting technologies, and decoy systems, modern SSNs pose a formidable challenge to enemy anti-submarine forces (Brick; Fonseca JR, 2018, p. 182; Diniz, 2024, Guimarães, 2024, p. 20-22; Moura, 2012, p. 52-65). The technical factors outlined above provide a foundational understanding of why Brazil and Australia may exhibit

interest in SSNs. However, additional considerations — particularly Brazil's aspirations for greater autonomy and Australia's aspiration for middle power status — further illuminate the motivations driving their engagement. These dimensions will be explored in greater depth throughout the research.

The comparative method will be used, for Collier (1993, p. 105), comparison enhances our description capabilities, playing a central role in “concept-formation by bringing into focus suggestive similarities and contrasts among cases”. Moreover, the option to analyze a restricted number of cases is largely influenced by the types of occurrences under study and how they are defined. The decision to explore a small number of cases can also be influenced by the relatively few instances of the phenomenon under exploration that possess the characteristic of interest to the analysts. This case is precisely the situation of the objects of analysis since the Brazilian and Australian cases are the only ones that currently share the inherent attributes of concern: pursuing of a nuclear-powered submarine while being NNWS. From Theda Skocpol and Margaret Somers’ (1980 *apud* Collier, 1993, p. 108) perspective, comparative studies should be comprehended in terms of three distinct yet connected goals. They need to include 1. a systemic examination of communication between cases for the aim of causal analysis; 2. an examination of cases to exhibit a particular model or set of concepts that elucidate these cases; 3. an examination of two or more cases to emphasize how diverse they are, hence establish a framework for interpreting how parallel processes of change happen in diverse ways within each context. Meanwhile Lijphart (1971, p. 691) emphasizes that “certain types of case studies can even be considered implicit parts of the comparative method”. This is the case of this research, in which the Brazilian and Australian case studies are placed in an implicit comparative framework.

The research relies on the use of primary and secondary sources. The primary sources consist of: a) statements from government officials, mainly from Brazil and Australia, and other Brazilian and Australian authorities concerning the subject researched; b) document analysis of sources release issued by the Federative Republic of Brazil, whether by the Executive Power or by the Legislative Power; c) document analysis issued by the Federal Government of Australia, whether by the Executive Power or by the Legislative Power; d) these document analyses are further enriched by approximately twenty anonymous interviews with specialists from Brazil, Australia, and New Zealand, representing academic, military, and political sectors⁵. Additionally, voting records from the UNGA First Committee were examined, with around 500 resolutions compiled. Most of the primary sources are available

⁵ Semi-structured interviews informed the analysis, but anonymity commitments prevent citation.

online on the Brazilian Chamber of Deputies website, the Australian Parliament website, the Department of Foreign Affairs and Trade website, the United Nations website and the Wilson Center digital archive, and the Contemporary Brazilian History Research and Documentation Center (CPDOC). Meanwhile, the secondary sources will consist of books, articles, dissertations, newspapers articles, and think tanks reports.

As mentioned, Australia's approach to implementing its SSN program is best comprehended through the concept of middle power. The notion of middle powers has a historical lineage extending over five centuries, with early references present in the works of prominent intellectual figures such as Thomas Aquinas, Bartolus of Sassoferrato and Giovanni Botero (Holbraad, 1984, p. 10-13). In the mid-20th century, Hans Morgenthau (1961, p. 441) delineated a binary distinction between great and small powers, while Carsten Holbraad (1984, p. 4) later advanced the concept by recognizing middle powers as states stronger than minor powers and small states with which they usually interact but weaker than great powers. Despite its enduring presence, the term "middle power" lacks a universally accepted definition (Ping, 2005, p. 3; Chapnick, 1999, p. 73). The fluid application of the term has also led to assertions such as “everyone is a middle power now” (Poteet, 2012), thus shifting the analytical focus away from semantics towards broader considerations of influence and power (Robertson, 2017, p. 2).

In the aftermath of World War I, the classification of states into hierarchical categories became a central issue during the deliberations of the Paris Peace Conference of 1919. The victorious Allied powers attempted to organize states based on contributions to the war, territorial size, and geopolitical influence. This process was initially inconsistent and lacked a clear tripartite (great, middle and small powers) division focused on establishing a framework for peace negotiations. It was only during subsequent discussions on the establishing of a new international order that the concept of middle powers began to receive more substantive consideration. At the Paris Peace Conference, the dominant Allied powers—UK, France, US, Italy, and Japan—asserted control through the influential Council of Ten, positioning themselves as arbiters of “general interests” relegating smaller states to “special interests”, thereby marginalizing their influence in critical decisions. Dissatisfied with this marginalization Brazil, led by Epi  cio Pessoa, challenged the Treaty of Versailles and the League of Nations’ division of “great” and “minor” powers, advocating for inclusive representation to protect both national and broader international interests (Lafer, 2014, p. 73). Later, by February 1919, the idea of "middle powers" gained traction, Britain’s representative General Jan Smuts proposed an intermediary status that could grant such states

semi-permanent or rotating seats on the future League of Nations Council. Nations like Brazil, Poland, and Spain sought this recognition. These states aspiring to a middle power status frequently grounded their claims on size and economic potential, strategic location, international profile, representative role, and historical legacy. Although Brazil and Spain's bids for permanent seats failed—prompting Brazil's withdrawal—by the mid-1920s, Poland and Spain secured semi-permanent roles, cementing their recognition as middle powers within the evolving League framework and scholarly writings of the late 1920s and the 1930s (Holbraad, 1984, p. 46-55). After World War II, the notion reemerged during the establishment of the United Nations (UN) as countries such as Brazil, Canada and Australia lobbied for middle power recognition within the framework of the UN Security Council (UNSC) framework. Although the UN Charter solidified the dominance of the “Big Five” (US, USSR, UK, France and China), formally recognized as great powers, the states pursuing middle power recognition failed to receive such formal recognition (Holbraad, 1984, p. 45–57; Lafer, 2014, p. 72–73).

Ottawa and Canberra were especially vocal in championing this middle power status. In 1942, Canadian diplomat Humphrey Hume Wrong introduced the “functional principle”⁶, asserting that a state's influence should align with its capacity and contributions, particularly in wartime, a concept championed by Canadian Prime Minister Mackenzie King as part of his vision for “middlepowerhood” (Chapnick, 1999, p. 74-77; 2007, p. 23). Canada, emphasizing its wartime efforts, promoted this principle to the Big Five and at the 1945 San Francisco Conference, arguing that middle powers were more reliable than small states and less self-serving than great powers⁷. Australia, more critical of great-power dominance, particularly in the Pacific, sought balanced regional representation on the UNSC, Foreign Minister Herbert Vere Evatt advocated for smaller powers' roles and Deputy Prime Minister Francis Forde emphasized military and regional significance. Despite Canadian and Australian efforts, resistance from major powers, smaller states, and internal middle-power divisions—exacerbated by Brazil's focus on economic and geographic priorities—limited their success, as geographic considerations and bloc politics overshadowed the functional

⁶ This construct allowed relatively modest states to capitalize on temporary advantages, fostering an image of a “third tier” in the international hierarchy — a notion that, for Chapnick (1999, p. 74-75) was revealed as largely symbolic rather than substantive upon closer scrutiny. By framing middle power influence as dependent on shifting geopolitical and economic conditions rather than consistent dominance, this has the shortcoming of portraying this influence as inherently variable and fluid without providing precise criteria for designation. Consequently, middle powers are often depicted as smaller states whose elevated status is temporary, fading as their capacity to impact international affairs diminishes.

⁷ However, Holbraad (1984, p. 205-213) observes that while middle powers are often seen as stabilizers, their actions are inconsistent, shaped by self-interest, historical legacies, and regional dynamics, achieving greater influence locally but rarely altering global post-war hierarchies.

principle (Robertson, 2017, p. 5-7; Ungerer, 2007, p. 540-541; Holbraad, 1984, p. 57-65). Holbraad (1984, p. 65-66) further highlights the paradox of middle powers often seeking recognition post-conflict when great-power dominance is strongest, securing temporary gains but rarely enduring status.

Despite Australia and Canada not receiving formal recognition as middle powers in the UNSC, the functional principle introduced during the interwar period and early post-World War II became a dominant framework for conceptualizing middle powers. From the 1940s to the early 1960s, scholarly attention focused on the role and importance of middle powers in multilateral institutions, especially in promoting peace and order. This research predominantly highlighted Western liberal states, such as Australia and Canada. During this time, a relationship developed between scholars and policymakers, which resulted in the "functional definition" of middle powers. This definition, driven by efforts to show that these nations could make meaningful contributions to international forums, framed their influence less by objective power rankings and more by their commitment to the post-war order, particularly under US leadership, and through institutions like the UN. Middle powers were identified based on their alignment with this global order, rather than their raw power. Over time, this definition evolved, emphasising the distinct role of middle powers in strengthening multilateral governance (Robertson; Carr, 2023, p. 382).

From the late 1960s to early 1980s, the rise of available data and quantitative methods enabled scholars to redefine "middle powers" through hierarchical, capacity, or positional frameworks, integrating realist and liberal theories while broadening geographic and thematic scopes (Carr, 2014, p. 71-72; Chapnick, 1979, p. 78; Kim, 2020, p. 2; Robertson, 2017, p. 7; Robertson; Carr, 2023, p. 383). States were ranked based on material capabilities like GDP, GNP, military strength, population, natural resources, industrial capability, nuclear capacity, alongside intangible factors such as social cohesion and leadership effectiveness. However, this approach faced limitations, remaining Eurocentric, selective in indicators, and unable to account for the dynamic nature of power. Classic middle powers such as Canada and Australia typically ranked 8th and 15th globally—positions that were far from "middle" among the 143 states in 1960 or the 195 recognized today. In contrast, countries like Russia, Brazil, Iran, Saudi Arabia, Pakistan, and Nigeria, despite demonstrating strong metrics in economic and military capacity, were frequently excluded from middle power classifications, reflecting the selective and often inconsistent application of criteria (Robertson; Carr, 2023, p. 383-384)⁸.

⁸ While Robertson and Carr (2023, p. 383) argue that Brazil was seldom regarded as a middle power in traditional classifications, several policymakers and scholars, including Holbraad (1984), Cavagnari Filho

This heterogeneity highlights the mismatch between hierarchical state systems and middle power theory, shaped largely by Western liberal ideals (Holbraad, 1984, p. 91; Ping, 2005, p. 4). Meanwhile, studies focusing on nuclear capability, such as those by Burton and Schneider, emphasized middle powers' strategic significance, arguing their industrial and technological capacities often enable latent nuclear potential, which underscores their influence in global security and distinguishes them within the international system (Holbraad, 1984, p. 74).

In the late 1980s and early 1990s, the revival of liberalism and rise of constructivism in the post-Cold War period led scholars to define middle powers based on their alignment with Western liberal values. With declining great power competition and rising liberal internationalism, space re-emerged for middle powers focused on multilateralism, conflict resolution, and cooperative diplomacy, as noted by Cooper, Higgott, and Nossal (1993, p. 19-20). This behavioral approach emphasized niche diplomacy, coalition-building, and "good international citizenship" (GIC), quickly becoming dominant. Critics, however, argue this model is limited in empirical scope. Carr (2014, p. 77) contends it functions more as an Australia-centric model than a universal definition, reflecting advocates' biases toward typical middle powers, like Australia and Canada, as ideal examples of "traditional middle power diplomacy". Proponents often see themselves uniquely qualified to identify middle powers, expecting deference from the international community. Indeed, Gabriele Abbondanza (2021, p. 191) while analyzing Australia as a GIC argues that no nation can be considered a "quintessential" middle power without demonstrating GIC. While Cooper, Higgott, and Nossal's alternative "behavioral" approach drew from Evans and Grant's (1995) *Australia's Foreign Relations in the World of the 1990s*, highlighting a policy-scholarly nexus where scholars and practitioners co-advocated for middle powers' international role (Robertson; Carr, 2023, p. 384). Consequently, this approach favors certain states based on the preferences

(1987), Sennes (1998), and Lafer (2014), have recognized its middle-power status. Cavagnari (1987, p. 143) described Brazil as a medium power with strategic influence largely confined to South America, cautioning that geopolitical assessments often overestimated its regional influence by focusing on metrics like GNP and territorial size while neglecting internal underdevelopment and reliance on foreign capital. Despite these limitations, he affirmed that Brazil's foreign policy presented a more balanced analysis emphasizing international cooperation and peaceful conflict resolution over hegemonic ambitions, constrained by US dominance in Latin America. He suggested that Brazil's diplomatic strategy would continue to emphasize stability and collaboration, recognizing that regional power must operate within the boundaries set by superpower interests. Former diplomat Celso Lafer (2014, p. 72-77) later characterized Brazil as a middle power of continental scale, rooted in diplomacy rather than military strength, and noted its emphasis on autonomy in navigating global asymmetries. Lafer highlighted Brazil's multilateral identity, shaped by pivotal moments such as the 1907 Hague Peace Conference, where Ruy Barbosa's advocacy for state equality marked a shift toward a Grotius-inspired diplomatic approach. This strategy, focusing on legal expertise and parliamentary diplomacy, allowed Brazil to assert itself in global institutions like the League of Nations, building trust and coherence as a consensus builder. By balancing the roles of great and small powers, Brazil has advanced its interests while maintaining flexibility and advocating for a more democratic international order.

of its advocates, embedding a Western liberal bias and reinforcing the legitimacy of the postwar liberal international order, thus preserving the global status quo.

By the early 2000s, optimism for middle power contributions had diminished and scholarly dissatisfaction grew. Despite this, policymakers continued to advance the concept, with many states self-identifying as middle powers due to its perceived prestige and historical significance. This shift underscored the role of ideas, values, and norms—though not exclusively liberal—in shaping foreign policy and international relations, broadening the concept's geographic and cultural scope (Kim, 2020, p. 2). In the 2000s and 2010s, academic literature reflected both optimism and concern. While some predicted a "renaissance" for middle powers, others called for theoretical reforms, though these efforts have seen little practical adoption. Recent scholarship has moved away from strictly defining middle powers, focusing on how these states adapt their policies and drawing on insights from related fields like foreign policy role conception. While there remains some optimism about the potential of middle powers, the lack of consensus and the search for new frameworks indicate ongoing concerns about the concept's theoretical relevance (Robertson; Carr, 2023, p. 384-385). Meanwhile, in the mid-2010s Australia which has long been seen as the "archetypal" or "quintessential" example of a middle power, a characterization that has influenced academic discussions for over sixty years has had its GIC credentials challenged due to, among many other reasons, a preference for the US-led global order over a rules-based international system (Ungerer, 2007, p. 551; Abbondanza, 2021, p. 179; Robertson; Carr, 2023, p. 381). As a result, Abbondanza (2021, p. 191) has claimed that Australia in the 21st century is a "neutral international citizen"—a traditional but no longer quintessential middle power.

The concept of "middle power" remains contentious, with its four main definitions—functional, positional, behavioral, and identity—sparking debate about its analytical utility. Critics like Stephan Fröhling (2007, p. 149) and Denis Stairs (1998, p. 275) question whether the term holds sufficient value to warrant its continued use, while scholars such as Adam Chapnick (2005) and John Ravenhill (1998, p. 310) argue that it never possessed significant analytical worth. Chapnick (1999, p. 73-74) contends that the functional and behavioral approaches are politically driven, with the former normalizing temporary status elevation and the latter relying on circular logic by defining middle power behavior through states already classified as such. Similarly, the hierarchical approach reaffirms existing power rankings rather than amplifying influence, though it offers a depoliticized framework that clarifies the term's ambiguity. Robertson and Carr (2023, p. 394) advocate for historicizing the term, acknowledging its descriptive value—useful role in distinguishing or

interpreting the behavior of these states—in the past but asserting that it now obscures more than it clarifies in contemporary analysis. Despite these critiques, the term retains relevance in both academia and political rhetoric, particularly for states seeking to navigate the global hierarchy. It provides a lens to understand how middle powers bridge the gap between great and small states, exercising nuanced influence through diplomacy, coalition-building, and multilateral advocacy (Carr, 2014, p. 71). This framework captures their strategic behaviors and agency, highlighting their role in mediating, balancing, and shaping global and regional stability in ways distinct from great or small powers.

The hegemonic crisis of the 21st century reflects the intensifying contestation of US global dominance, particularly by China, within an evolving multipolar order. This transitional phase, marked by shifts in power dynamics, compels the hegemon to recalibrate alliances. In contrast, revisionist powers like China seek to reshape the international order to reflect their rising influence. As Great Powers establish and adapt international systems to suit their needs (Fiori, 2014; Knutsen, 1999), secondary actors, including Middle Powers, face pressures to align with major power blocs or pursue limited autonomy. Historically, such periods of reordering have been unfavorable to Middle Powers, whose influence is constrained by their position within the system (Holdbraad, 1984). However, ignoring their role risks an incomplete understanding of global transformations. This research examines how Australia, as a Middle Power, has navigated shifting international norms, projected influence, and shaped the nuclear order both regionally and globally. It analyzes Australia's strategies, including securing British and US nuclear commitments, advocating for arms control through multilateral platforms, and adapting to the Indo-Pacific power balance under China's rise. The AUKUS partnership exemplifies Australia's strategic alignment with leading powers to counter hegemonic transitions. While such partnerships enable Middle Powers to exert influence, their agency remains limited, reflecting the broader constraints of multipolarity on states outside the Great Power hierarchy.

The concept of middle power will not be employed to analyze Brazil's role in the nuclear field due to its limited explanatory value in this context. Instead, the notion of autonomy offers a more effective framework. Developed to address the specific needs of Latin America, autonomy provides insight into Brazil's nuclear policy, where it has served as a consistent state strategy. Emerging in the 1960s and 1970s, autonomy became a foundational principle in Latin American policy, advanced by theorists such as Hélio Jaguaribe and Juan Carlos Puig. These scholars critiqued prevailing developmentalist and

dependency theories⁹, as well as dominant International Relations (IR) paradigms, for their inability to capture the structural particularities and challenges of the region. By rejecting the mainstream IR depiction of the international system as anarchic, they proposed a hierarchical global order in which developed nations exercise substantial autonomy while developing countries encounter significant constraints. Moreover, departing from the deterministic assumptions of dependency theory, Jaguaribe and Puig envisioned autonomy as a dynamic, non-linear process shaped by a confluence of domestic capabilities and international pressures. Their focus on economic development, the political agency of national elites, and the importance of regional integration provided a compelling alternative to the traditional emphasis on military power. These innovative perspectives continue to shape policy considerations and academic discourse in Latin America (Lorenzini, 2024, p. 7-8; Pinheiro; Lima, 2018, p. 3; Ruiz; Simonoff, 2017, p. 41).

For Jaguaribe (1979, p. 91-93; Jaguaribe *et al.*, 1969, p. 66), autonomy is defined as a state's capacity to deter aggression by imposing significant material and moral costs. This concept encompasses substantial self-determination in domestic governance and the freedom to conduct independent international relations. Autonomy rests on two foundational orders: the "enabling" order, requiring national viability—adequate resources, sociocultural cohesion, and appropriate educational standards—and international permissibility; and the "exercising" order, which involves neutralizing external threats through economic and military capacity or strategic alliances. States pursuing autonomy may achieve it through internal technical-economic self-sufficiency or favorable alignment with global powers. Viewed as non-permanent, autonomy exists on a spectrum with four levels: general primacy, regional primacy, autonomy (regional or sectoral), and dependency. Brazil was classified as possessing regional autonomy, with influence confined to its immediate region. This hierarchical view of the international system emphasizes the stratification between the developed "Centre" or "North" and the "South" or "periphery", highlighting opportunities for Latin American governments to enhance autonomy through national viability and international permissibility.

⁹ Jaguaribe and Puig's proposals both intersect with, but also diverge from, Latin American development and dependency theories, particularly those of Raúl Prebisch and ECLAC/CEPAL, which address economic dependency, uneven development, and integration into the global market. Jaguaribe partially accepts ECLAC's diagnosis but critiques its growth-focused approach, proposing a multidimensional "Autonomous Model for Development and Integration" (MADIAL). At the same time, Puig deems ECLAC's solutions are outdated, advocating for strategic autonomy through tailored regional strategies. Both critique dependency theories, which frame global dynamics as "centre" dominating "periphery". Jaguaribe challenges structuralist and Marxist views for neglecting elite-driven dependency and overemphasizing revolution, while Puig rejects their pessimism and external focus, calling for pragmatic solutions. Together, they reframe regional autonomy by revising traditional paradigms and promoting integration and empowerment (Lorenzini, 2024, p. 9-12).

By the late 1960s, three strategic options for Latin America—dependency, revolution, or autonomous development—were identified, with autonomy deemed the most viable. National elites were seen as pivotal in formulating policies that balanced national interests with external pressures, with regional integration, led by Argentina and Brazil, forming a cornerstone of autonomy and resulting in initiatives such as Mercosur and Unasur.

Puig (1980, p. 149–155) critiqued traditional IR theories for their failure to address the hierarchical structure of the international system, where dominant powers set the rules and autonomy involves navigating power asymmetries. Autonomy is defined as the maximum degree of choice a state can exercise within systemic constraints, requiring sufficient material resources, coherent internal development models, and elite commitment to implement national projects (Vigevani; Cepaluni, 2011, p. 31). The proposed framework for autonomy outlines five criteria for an international regime: possession of WMDs, intra-bloc impermeability, intra-bloc autonomy, extra-bloc permeability, and the prohibition of force by smaller states. Dependency and autonomy are categorized into four levels: paracolonial dependency, national dependency, heterodox autonomy—allowing limited dissent within hegemonic spheres—and secessionist autonomy, representing a complete and often precarious break from dominant powers. Incremental reforms and regional integration are advocated as practical strategies for achieving autonomy, as demonstrated by the 1985 and 1988 Argentine-Brazilian agreements under Presidents Alfonsín and Sarney. While acknowledging that total autonomy is rare and can lead to new dependencies, as seen in Cuba’s secessionist challenges, strategic solidarity among states with shared objectives is emphasized as essential for advancing autonomy within the global hierarchy.

José Briceño-Ruiz and Alejandro Simonoff (2017, p. 41) observe that the post-Cold War era, marked by the crisis of third-worldism and the dominance of neoliberalism, led to a diminished focus on the contributions of Jaguaribe and Puig due to shifts in the international system. Meanwhile, Letícia Pinheiro and Maria Regina Soares de Lima (2018, p. 6, 12) continue to emphasize the relevance of their hierarchical view of the international order, emphasizing the core-periphery dynamic and defining autonomy as overcoming dependency rather than achieving self-sufficiency or autarky, in contrast to realist theories of anarchy.

Brazilian foreign policy has long been characterized by an autonomist inclination, as highlighted by scholars and diplomats (Fonseca Jr., 1998; Lampreia, 1998; Moura, 1980; Pinheiro, 2004; Saraiva, 2014; Spektor, 2014; Vigevani; Cepaluni, 2011). Nonetheless, critiques from Lessa *et al.* (2010) and Lima and Pinheiro (2018) have given rise to two distinct interpretations of autonomy, classified by Caballero and Crescentino (2020, p. 6-7)

into the Brasília-São Paulo and Rio de Janeiro schools. The Brasília-São Paulo school, building on Cervo and Bueno's structural-process framework, emphasizes Brazil's historical "profound forces" driving nation-building and its international positioning. By framing development as a central element of foreign policy, this approach underscores the state's role as a key international actor, integrating Itamaraty's diplomatic discourse with broader national objectives. This perspective aligns with José Maria da Silva Paranhos Júnior, also known as Barão Rio Branco's vision of an independent Itamaraty, where autonomy is regarded as a consistent and defining feature of Brazilian foreign policy (Santos, 2005, p. 26). In contrast, the Rio de Janeiro school, rooted in Lima and Gerson Moura's work and centered around IUPERJ, PUC-Rio, and UERJ, examines Brazilian foreign policy as public policy, highlighting the plurality of actors and agendas involved. This approach integrates IR and Political Science perspectives, focusing on the agency-structure debate to interpret autonomy in terms of discontinuity and adaptability.

Caballero and Crescentino (2020, p. 7) observe that while Lessa *et al.* (2010) are associated with the Brasília school, they adopt a critical perspective on its traditional framework by interpreting autonomy as a discursive construction shaped by diplomatic rhetoric. Lessa *et al.* critique the reliance on exogenous categories to explain Brazil's international engagement, arguing this approach shifts the analytical focus away from domestic factors and aligns academic literature with the interests of Itamaraty's diplomatic elite post-1985. They contend that framing Brazil's foreign policy through dichotomous categories—distance during the Cold War and participation in the post-Cold War global order—consolidated a narrative of Brazil's transition from a military regime to a global regulatory actor, which, while influential, marginalized alternative interpretations and perpetuated diplomatic rhetoric (Lessa *et al.*, 2010, p. 356–357). Caballero and Crescentino (2020, p. 7–8) view Lessa *et al.*'s critique as the first significant challenge to the notion of autonomy as continuity¹⁰, indirectly addressing Russell and Tokatlian's (2002) concept of relational autonomy¹¹. Lima and Pinheiro (2018) synthesize critiques of relational autonomy, arguing that framing the autonomist strategy as a pursuit of sovereignty undermines the analytical value of autonomy by failing to account for the distinct behaviors of states. This

¹⁰This notion had been persistent in the MFA identity since the studies of Hurrell (1986) and the replications by Fonseca Jr. (1998) and Vigevani and Cepaluni, (2012) (Caballero; Crescentino, 2020, p. 7-8).

¹¹This analysis highlights how shifts in Brazilian diplomatic behavior did not align with the emergence of a new international context following the end of the Cold War. This discrepancy prompted scholars like Saraiva (2014) to question the relevance of 'autonomy' as an analytical framework for evaluating post-Cold War Brazilian governments, particularly under Fernando Henrique Cardoso, Lula da Silva, and Dilma Rousseff (Caballero; Crescentino, 2020, p. 8)

diminishes autonomy's normative significance, particularly for peripheral states in the global power and capitalist systems. These scholars emphasize the role of agency as a critical driver in contexts of systemic dependency and in seizing systemic opportunities and enhancing national viability, identifying two forms of autonomist behavior: situational (contextual) autonomy and behavioral autonomy. Bernal-Meza (2013, p. 212 *apud* Pinheiro; Lima, 2018, p. 18) conceptualizes autonomy as a condition shaped by agential decisions, emphasizing that when structural constraints limit a state's maneuverability, only active agency can counteract the unfavorable conditions of its peripheral position. This view aligns with the traditional understanding of autonomy as a counterpoint to dependency (Giacalone, 2012, p. 337). Lima and Pinheiro (2018), along with Lessa *et al.* (2010) and Mariano (2015), argue that the shift toward relational autonomy has become a diplomatic strategy to sustain the narrative of policy continuity. Yet, by redefining autonomy, scholars have overlooked that its pursuit often signifies rupture, not continuity, in Brazilian foreign policy.

According to Pinheiro and Lima (2018, p. 8), interpretations of autonomy often deviate from the foundational concepts proposed by Jaguaribe and Puig, favoring either a "situational" or "behavioral" approach. Moura's (1980, p. 42–43) concept of "autonomy in dependency," exemplified by Getúlio Vargas's strategic use of Brazil's position in the 1940s to secure US investment for the Volta Redonda steel plant, demonstrates how peripheral states can exercise agency within structural dependency. Building on this, Moura prioritized agency over "national viability" and "international permissibility" as the central drivers of autonomist policy, advancing the earlier framework. Another example occurred in the 1970s, when Brazil, under the Geisel administration, pursued a pragmatic autonomist policy that sought to diversify international partnerships while maintaining strategic independence. This period saw an active multilateral engagement in UN forums, strengthened diplomatic and economic ties with Angola, Mozambique, China, and Eastern European countries, and a nuclear agreement with Germany, alongside the denunciation of the 1952 Brazil-US military pact (Moura; Lima, 1982). The government also adjusted its stance on South African apartheid, aligned itself with Arab countries on the Palestinian issue, and negotiated shared water resources with Argentina amid the construction of the Itaipu hydroelectric plant. These moves exemplified how autonomy could be exercised within dependency by leveraging economic growth and diplomatic maneuvering to expand strategic options. In parallel, in the 1970s, Brazil's economic growth supported "national viability", while Fonseca Jr. (2004) introduced "autonomy through distance", advocating strategic detachment during the Cold War. However, reframing autonomy as a means to undefined ends diluted its specificity, as

Pinheiro and Lima argue. Post-Cold War, Brazil shifted to active global engagement, focusing on shaping international norms to advance developmental goals (Ricupero, 2017). Fonseca Jr. (2004, p. 367) characterized this phase as emphasizing "participation" and "renewal of credentials", where Brazil sought to influence global agendas through its diplomatic traditions. Scholars such as Lampreia (1998, p. 11), Vigevani and Cepaluni (2011), and Spektor (2014, p. 41) expanded on these themes, highlighting variations in Brazil's autonomist strategies. Lampreia emphasized a reinterpretation of autonomy under evolving constraints, while Spektor framed it as integration with the international system. Vigevani and Cepaluni (2011, p. 35–36) described Fernando Henrique Cardoso's foreign policy as balancing adherence to international regimes with efforts to shape global principles. Pinheiro and Lima (2018, p. 10–12) argue that the concept of "autonomy in dependency" adds complexity to the frameworks of Jaguaribe and Puig by demonstrating its feasibility under dependency, while "autonomy through distance" remained consistent with autonomist principles. They note, however, that shifts toward "participation" and "belonging" reflect "diminished autonomy" and increased dependency, undermining the autonomy-dependence dichotomy. Furthermore, they critique foreign policy narratives framing these adaptations as preserving autonomy, asserting that such claims blur analytical and political arguments and risk conflating actions aligned with dominant powers or the global status quo with genuine autonomy, due to insufficiently defined foreign policy objectives.

Belém Lopes and Vellozo Jr. (2004, p. 339) describe Brazil's post-bipolar period foreign policy as "participation by compliance", reflecting adaptation to economic globalization, a view echoed by Pinheiro and Lima (2018, p. 13), who argue that this period reaffirmed Western values through Cardoso's multilateral activism, aligning with Morgenthau's (1971, p. 67-82) concept of a "prestige" foreign policy. This approach utilized multilateral engagement as soft power to offset limited hard power while avoiding challenges to the global order. Under Lula da Silva, Brazil pursued a more autonomous foreign policy, described by Vigevani and Cepaluni (2011) as a "quest for autonomy through diversification", which Pinheiro and Lima (2018, p. 13-17) argue retained fidelity to foundational autonomy frameworks by integrating alliances like IBSA, G-20, and BRICS to enhance bargaining power and incorporating domestic coalitions for internal development, evident in initiatives like IIRSA. However, during Dilma Rousseff's administration, a decline in "international permissibility", domestic political fragmentation, and economic crises weakened Brazil's foreign policy, with Rousseff's impeachment ending the autonomist trajectory of the Lula era. Pinheiro and Lima (2018, p. 16-19) assert that while structural conditions such as "national

viability" and "international permissibility" facilitate autonomy-driven policies, they did not ensure its persistence, thus, agency remains critical, as it enables critical foreign policy decisions that challenge the established international structure. Autonomist policies resulted from a confluence of systemic opportunities and agent-driven efforts to redefine the country's international positioning. They highlight the distinction between prestige-driven approaches of Cardoso's government, which emphasize risk-aversion due to limited power, and autonomist policies, as articulated by Jaguaribe (1979, 1982) and Puig (1980, 1984), that prioritize soft power and strategic risk-taking, rejecting passive roles in favor of active challenges to the status quo (Amorim, 2016, p. 45-59). Autonomist policies, rare in Brazil's history, are exemplified by key moments such as Vargas's dual policy, the independent foreign policy of Jânio-Jango, Geisel-Silveira's "responsible pragmatism," and the "assertive and active" diplomacy of Lula and Amorim, which demonstrated the interplay of systemic opportunities and agent-driven efforts in redefining Brazil's international position. Although Pinheiro and Lima's (2018) claims may hold true in the broader context of Brazilian foreign policy, they appear less consistent when examined within the specific domain of nuclear policy. The chapter on Brazil will aim to demonstrate this distinction.

In contrast to Australia's alignment strategy through AUKUS, Brazil's approach exemplifies an alternative pathway for countries navigating shifts in global power structures. Rather than anchoring its security strategy within formal alliances, Brazil has prioritized autonomy, leveraging multilateralism and regional cooperation—particularly with Argentina and with other countries in the region through the Latin American NWFZ, as well as the development of an indigenous nuclear program. Brazil's foreign policy traditionally engages with a diverse global actors, exercising influence by mediating conflicting interests without deep entanglements. As an advocate for the Global South, particularly through BRICS and similar multilateral platforms, Brazil has positioned itself to advance reform agendas, such as a permanent seat in the UNSC, while maintaining constructive ties with traditional powers like the US. This diplomatic stance allows Brazil to maximize its autonomy through regional influence and coalition-building, avoiding binding commitments to a single alliance. However, as great power competition intensifies, Brasília may face increasing pressure to clarify its positioning within the evolving international order.

The autonomy school provides important lenses for understanding the nuclear order as a hierarchical and historically unequal system where nuclear-armed states dominate. In contrast, non-nuclear states are relegated to subordinate roles, often dependent on security guarantees from more powerful nuclear nations. Rather than viewing nuclear politics as solely

about military deterrence, the autonomy school suggests that, for many developing nations, nuclear technology represents a pathway to sovereignty, status, and modernity within an international structure that has long favored developed countries. This perspective underscores how nuclear aspirations in regions like South America are often less about direct military needs and more about challenging a global hierarchy that restricts developing countries' political and technological agency. Brazil, for instance, pursued nuclear capabilities not to engage in nuclear deterrence, but to assert technological and political autonomy. By framing nuclear technology as a tool for self-determination rather than merely as a weapon, the autonomy school illuminates the nuclear order as a non-neutral structure that reinforces dependency through controls on technological access and expertise, essentially limiting the influence of developing nations. This view highlights nuclear technology as a means to correct historical imbalances, providing a path for states to claim their standing in a global system shaped by economic inequities.

The research is divided into three chapters, with the first chapter analyzing Brazil's nuclear program and its stance in the NWNPR through the autonomy framework, structured into four historical periods. The first period (1945–1974) examines the origins of Brazil's nuclear program and its initial interactions with the nascent NWNPR, highlighting the country's efforts to safeguard its strategic minerals and its advocacy for nuclear disarmament through the Eighteen Nation Committee on Disarmament, critiquing the NPT as discriminatory. The second period (1974–1985) focuses on the Brazil–Germany nuclear cooperation agreement and the establishment of the Autonomous Nuclear Technology Program (PATN), also referred to as the “parallel program”, emphasizing Brazil's pursuit of mastering the uranium enrichment cycle and its early steps toward developing nuclear propulsion while distancing itself from the NWNPR. The third period (1985–2003) coincides with Brazil's redemocratization, during which the country sought to enhance its international credibility, publicly disclosed the PATN program, stalled most nuclear propulsion efforts, and adhered to various treaties and groups associated with the NWNPR, including the NPT. The fourth period (2003–2024) explores Brazil's creation of the PROSUB program, which formalized its SSN project into a program, alongside its continued commitment to nuclear disarmament, as evidenced by its support for the Treaty on the Prohibition of Nuclear Weapons (TPNW). However, it has yet to ratify it. This period also highlights the contentious issue of Brazil's stance on the Additional Protocol and its negotiations with the IAEA regarding special procedures for its naval propulsion program.

The second chapter examines Australia's trajectory in the nuclear field from the post-World War II period to its participation in the AUKUS partnership through the conceptual framework of middle power theory. It is structured into four historical periods. The first period (1945–1970) explores Australia's early pursuit of middle power recognition, beginning with its 1945 bid for prioritized non-permanent seats on the UNSC and the efforts under the Robert Menzies and John Gorton governments to enhance nuclear capabilities, reflecting Australia's strategic ambitions during the early nuclear era. In the second period (1971–1995), following its accession to the NPT, Australia goes through an important shift under Bob Hawke and Paul Keating's leadership, emerging as a strong proponent of the NWNPR, often pushing the disarmament agenda to its limits in the context of its relations with the US and the UK. During this time, Australia positioned itself as a champion of nuclear non-proliferation, intensifying engagement in multilateral forums and embodying the behavioral middle power approach through diplomatic initiatives. The third period (1996–2015) is marked by a brief pivot to a pivotal power approach as Australia deepened ties with the US in the post-9/11 context but soon returned to middle power behavior, reflected in domestic opposition to nuclear power through legislative acts and participation in initiatives like the NPDI. Finally, in the fourth period (2015–2024), Australia distanced itself from major disarmament frameworks such as the TPNW. It announced its participation in AUKUS, signaling a clear pivot toward enhancing nuclear military capabilities through nuclear propulsion and redefining its middle power role in the international security landscape.

The third chapter focuses on a comparative analysis of Brazil and Australia, divided into three sections: domestic, regional, and international. The domestic section examines each country's efforts to master the uranium enrichment cycle and pursue SSNs, highlighting their distinct approaches to achieving these goals. The regional section compares Brazil's role in negotiating and implementing the Tlatelolco Treaty with Australia's role in the Rarotonga Treaty, emphasizing the differing strategies and priorities each country adopted in their respective regions. The international section analyzes their positions on nuclear disarmament, exploring their usual stances, participation in relevant international groups, and voting patterns in the UNGA First Committee. It also analyzes the contrasting safeguards frameworks that impact their submarine programs and reviews the current status of negotiations with the IAEA and the implications these differences have for their nuclear agenda. The chapter intends to put into evidence their contrasting strategic frameworks and the consequential impact in their SSN programs.

2. BRAZIL'S NUCLEAR PROGRAM, THE PURSUIT OF AUTONOMY AND THE NWNPR

Brazil's geopolitical and sociocultural characteristics have influenced its strategic priorities and international posture. As a vast and resource-abundant nation situated in a region characterized by relative peace, the country has historically prioritized stability and cooperative engagement within South America. Brazil's territorial boundaries with its ten neighbors have been defined through negotiation or independent arbitration, reflecting its commitment to diplomatic conflict resolution. Furthermore, its culturally diverse society, which integrates Western European influences with Indigenous, African, and Asian elements, underpins its approach to international relations by emphasizing inclusivity and dialogue (Duarte, 2017, p. 1)¹². These historical and cultural factors underpin Brazil's commitment to rules-based global governance, which is evident in its cooperative international engagement.

Brazil's nuclear policy embodies its broader aspirations for autonomy. Since the inception of its nuclear program, Brazil has prioritized safeguarding strategic resources and diversifying partnerships, as well as developing nuclear energy for peaceful uses. Besides the navy's nuclear program, Brasilia invested in nuclear applications across energy, medicine, agriculture, industry, and environmental protection. Theoretical frameworks by Juan Carlos Puig (1980) and Hélio Jaguaribe (1979) shed light on Brazil's approach to the hierarchical global order, proposing a dynamic conception of autonomy rooted in domestic capabilities, economic growth, and elite agency which takes into consideration international permissibility. These perspectives underscore Brazil's efforts to assert autonomy through economic development, regional integration, and active international engagement.

Regionally, Brazil's collaboration with Argentina has been instrumental in shaping its approach to the nuclear regime. Initial discussions began in 1961 within the Eighteen Nation Committee on Disarmament (ENDC) and resumed in 1967 as part of broader Argentine-Brazilian coordination on the Treaty of Tlatelolco and the NPT. This cooperation gained momentum in February 1967 during President-elect Costa e Silva's visit to Buenos Aires and was reinforced at the Inter-American Presidential Conference in Punta del Este, Uruguay, in April of the same year. There, the Brazilian president emphasized the need for regional integration in the nuclear field and proposed constructing a nuclear power plant in Brazil. This decision was driven by the necessity of maintaining parity with Argentina, which was on track to complete its first natural uranium reactor. Cooperation between the two

¹² This should not be taken to suggest that the author believes Brazil has achieved an effective racial democracy.

neighbors emerged as a viable solution, leading Brazilian nuclear and diplomatic authorities, with backing from the CSN and the intelligence service, to propose bilateral agreements in 1967 and again in 1970 (Patti, 2021, p. 42-50). This collaboration deepened over subsequent decades, culminating in the establishment of the Brazilian-Argentine Agency for Accounting and Control (ABACC). Additionally, Brazil's immediate security interests primarily encompass its geographic vicinity, including South America, the South Atlantic Ocean, the western coast of Africa, the Caribbean, and Antarctica. This broader regional scope is articulated in key defense documents such as the National Defense Strategy (END), the National Defense Policy (PDN), and the 2012 White Paper on National Defense. While Brazil actively engages in multilateral and bilateral organizations to address regional issues and contribute to global agendas, it perceives no immediate threats to its security, territorial integrity, or sovereignty (Duarte, 2017, p. 2).

Since gaining independence in 1822, Brazil has sought a prominent role in international affairs, leveraging its vast territory, population, and economic potential. This aspiration has driven its advocacy for sovereign equality at the 1907 Hague Peace Conference and its founding role in the United Nations and the Organization of American States (OAS). Situated in a region largely insulated from great power rivalries, Brazil has championed international law, contributing to disarmament and peacekeeping operations. Critiquing the discriminatory nature of the nuclear nonproliferation regime, Brazil has emphasized how nuclear arsenals perpetuate inequality and threaten stability. Its efforts to foster dialogue between nuclear and non-nuclear states underscore its view of disarmament as essential not only for security but also for reducing global disparities and promoting sustainable development. This perspective informs its engagement in nuclear disarmament initiatives, including advocacy for the total elimination of nuclear weapons and mediation efforts such as the Cuban Missile Crisis and Iranian nuclear negotiations. Central to Brazil's strategy is the belief that enduring peace depends on strong international institutions, with the UN at its core (Duarte, 2017, p. 2). Through its promotion of universal agreements and pursuit of a permanent UNSC seat, Brazil seeks to align its global influence with its resources and strategic goals.

This chapter explores the interplay between Brazil's pursuit of autonomy, its nuclear policies/programs, and its broader international ambitions. By examining Brazil's historical and theoretical foundations, as well as its regional and global engagements, the chapter seeks to illuminate the factors that have shaped Brazil's unique position in the NWNPR and its

ongoing efforts to reconcile its quest for strategic autonomy with its commitment to a more just and equitable world.

2.1 The pursuit of autonomy through a nuclear program and activism inside and outside of the NWNPR

During the final years of Getúlio Vargas' authoritarian rule, known as the Estado Novo (1937–1945), Brazil maintained strategic relations with the US amid political and social instability, culminating in a discreet atomic agreement with Washington in July 1945. This agreement, initially set for three years with a potential ten-year extension, obligated Brazil to supply monazite sands, a vital source of thorium and plutonium, which were utilized by the Manhattan Project. In 1946, Brazil joined the UN Atomic Energy Commission (UNAEC)¹³, with its delegation led by naval captain Álvaro Alberto Mota e Silva, appointed by Foreign Minister João Neves da Fontoura and tasked with supporting the Baruch Plan. Rooted in the Acheson-Lilienthal Report, the Plan proposed an International Atomic Development Authority (IADA) to manage sensitive nuclear materials and promote peaceful atomic energy use, contingent on US disarmament. Despite initially favoring the Plan, Mota e Silva opposed international oversight over global nuclear minerals, advocating for a system where the IADA would act as the sole purchaser of nuclear raw materials, ensuring supplier states received equitable financial or "specific" compensations¹⁴. Brazil's stance on this issue introduced a complex dynamic to US-Brazil relations, set against the backdrop of polarized East-West negotiations in the UNAEC¹⁵ (Hirst, 2009, p. 36; Lima, 2013, p. 103; Missagia, 2014, p. 30-31).

¹³ This organization was founded in 1946 to deal with the problems raised by the discovery of nuclear energy.

¹⁴ The thesis of specific compensations defended by Mota e Silva advocated a shift in how Brazil managed its raw material exports, particularly its valuable and scarce reserves of radioactive materials like thorium and uranium. Instead of freely exporting these resources in raw form, it proposes that they undergo mandatory beneficiation and that any export agreements require compensatory exchanges. These exchanges would involve importing research materials and equipment to help Brazilian scientists and technicians develop the necessary expertise to effectively utilize the country's natural resources. This approach aimed to ensure that raw materials contributed more significantly to Brazil's wealth and intellectual development, challenging the traditional trade dynamics with industrialized nations like the US. It called for a reversal of the 1945 agreement, which established the purchase, rather than the exchange, of Brazilian raw materials (Wrobel, 1986, p. 40-41).

¹⁵ The case of the UNAEC illustrates Brazil's general approach to voting within the UN in that period. From the outset, the MFA chose to align its votes with those of the US on matters of significant importance. Occasionally, there were instances where Brazilian representatives diverged from the positions held by major powers. Nevertheless, the predominant trend of alignment persisted, despite complaints from some members of the Brazilian delegation, who criticized this approach as effectively replicating the US vote (Missagia, 2014, p. 32; Hirst, 2009, p. 36).

Amid escalating tensions between superpowers, Washington viewed Brazil's position as a destabilizing factor for the proposed international nuclear control framework. This concern was articulated in a communication from Under Secretary of State Robert A. Lovett to Secretary of State George Marshall, warning that Brazil's proposal could weaken international regulatory mechanisms, enabling states to bypass oversight and undermining the consensus needed to counter the Soviet Union. Lovett cautioned that Brazil's reservations risked providing the Soviets an opportunity to question the majority's confidence in the Baruch Plan. This warning gained urgency as President Truman, following the signing of the Rio Treaty, raised the issue directly with President Dutra, leading Brazil to withdraw its reservations and align with the Plan's objectives (Patti, 2021, p. 20-21). Simultaneously, the USSR strongly opposed the Baruch Plan, criticizing it as a strategy to maintain the US nuclear monopoly while subjecting Soviet facilities to intrusive inspections. The Soviets also rejected restrictions on their UNSC veto, which they argued disproportionately favored US interests. In response, the USSR proposed the Gromyko Plan at the second UNAEC meeting in 1946, advocating for the prohibition and destruction of nuclear weapons (United States, 1946). The US, however, rejected this proposal, citing its nuclear capability as a strategic counterbalance to Soviet conventional forces in Europe (Nascimento, 2009, p. 32). The resulting deadlock between the superpowers prevented progress on global nuclear governance, rendering the UNAEC inactive by 1949 and leading to its formal dissolution by the UNGA in 1952.

Under President Dutra's democratic administration, the 1945 Brazil-US atomic agreement generated significant debate between Brazil's National Security Council (NSC) and the Ministry of Foreign Affairs (MFA). The NSC regarded the agreement as detrimental to national interests and advocated its cancellation, while the MFA prioritized the establishment of a National Research Council to advance nuclear energy development. Although the NSC pressured for the agreement's denunciation, Itamaraty resisted. However, the NSC succeeded in establishing the Commission for the Study and Oversight of Strategic Materials (CEFME) in 1947, marking Brazil's first effort to regulate uranium and thorium resources. This began a broader internal conflict over strategic mineral export policies (Missagia, 2014, p. 12). In July 1948, under US pressure, the agreement was renewed, restricting exports to other countries and aligning with US security concerns that atomic minerals remain within the Western Hemisphere. The renewal conflicted with Brazil's 1946 constitution, which prohibited secret agreements, and faced opposition from congressional factions seeking to protect national resources (United States, 1948a,b,c,d; 1950). Despite this,

President Dutra reinforced his pro-US stance by opposing congressional debates on the nationalization of fissionable materials in March 1950 (United States, 1950).

In January 1951, the National Research Council (CNPq) was established, with Counter Admiral Mota e Silva¹⁶ serving as its inaugural chairman. Under his leadership, CNPq assumed comprehensive oversight of Brazil's nuclear sector, rapidly emerging as the nation's primary agency for nuclear development. Central to CNPq's strategy was establishing a policy framework promoting international cooperation, which required compensatory mechanisms in all foreign agreements. This vision was reinforced by Decree No. 30.230, enacted in December 1951, which defined regulations for the research and extraction of atomic energy-related minerals, complementing the provisions of Law No. 1310 that had established the CNPq. These measures reflected Brazil's broader goal of developing an autonomous nuclear policy (Brandão, 2008, p. 11-12; Girotti, 1984, p. 28; Patti, 2021, p. 18-22). However, the Second US-Brazil Atomic Agreement, signed in February 1952, institutionalized a less nationalist framework for exporting Brazil's strategic minerals, highlighting tensions between the MFA, led by Fontoura, and CNPq under Mota e Silva. While both entities supported mineral exports, CNPq emphasized compensatory mechanisms like technology transfer, which conflicted with the MFA's more concessionary approach¹⁷. These negotiations occurred amid internal divisions over military engagement in the Korean War, where nationalist factions prioritized sovereignty, and internationalists supported alignment with US strategic interests. This lack of consensus weakened Brazil's bargaining position, leading to the MFA ratifying the agreement without the protective provisions sought by CNPq for national reserves and nuclear development. Consequently, CNPq's authority diminished in favor of the Commission for the Exportation of Strategic Material (CEME), exposing structural challenges in Brazil's efforts to consolidate an autonomous nuclear policy (Missagia, 2014, p. 43-46).

Parallel to this, after President Vargas approved of Brazil's nuclear program in mid-1951, efforts to develop the sector intensified. Counter Admiral Mota e Silva visited

¹⁶ He was promoted to this rank by President Dutra in 1949 as compensation for the earlier 'defeat' of his "specific compensation" thesis at the UNAEC (Patti, 2021, p. 18-22).

¹⁷ Brazil will sign another two atomic agreements with the US in the period analyzed in this session. In November 1955, the third Brazil-US atomic agreement, known as the "thor-wheat" agreement, was signed to address US agricultural surpluses and secure thorium for breeder reactor reserves, supporting US farm subsidies. It also marked Vargas's final effort to repair strained relations with the US caused by Brazil's nationalist policies on oil, electricity, and foreign profits. The 4th Atomic Agreement followed, with the US purchasing 300 tons of thorium oxide. It was signed under President Juscelino Kubitschek and further committed Brazil to mineral exports without adequate compensations. Together, these agreements reinforced a pattern of strategic material exports while opening Brazil to US nuclear technology transfers, which have been criticized as being outdated (Missagia, 2014, p. 80-81).

leading nuclear research centers in North America and Western Europe to identify a suitable model for Brazil and establish international partnerships. Initially, the US was a primary focus due to its advanced nuclear capabilities and strong diplomatic ties with Brazil. Amendments to the US Atomic Energy Act facilitated the exchange of restricted information, supported by Brazil's role as a major supplier of atomic minerals to the US. However, Brazil pursued collaborations with Canada, Norway, France, Italy, and West Germany to avoid overreliance on Washington. This was part of another thesis advocated by Mota e Silva which argued against exclusivity in atomic material trade, emphasizing that Brazil, seeking technological and industrial advancement, should not remain dependent on a single partner. Despite US efforts to monopolize radioactive material sources, an independent national policy required engaging with other nations capable of meeting Brazil's needs (Wrobel, 1986, p. 41). This decision proved prudent when the US assistance became limited to training scientists and providing uranium research equipment. Brazil subsequently engaged West Germany for reactor technologies and ultracentrifuge methods for uranium enrichment, resulting in collaboration between the CNPq and German research centers, independent of governmental oversight. Simultaneously, Brazil explored partnerships with France for uranium mining and refining and considered Norwegian heavy-water reactors, although logistical and financial constraints ultimately prioritized West German technologies. These initiatives raised concerns within the US State Department, which sought to restrict the export of sensitive technologies such as heavy water, crucial for plutonium production. In 1953, Brazil and West Germany finalized a confidential agreement to exchange Brazilian uranium for German nuclear technology and training, with German institutions in Bonn and Göttingen were tasked with providing centrifuges and personnel training. However, in mid-1954, Brazil's nuclear ambitions were significantly hindered when internal disclosures reached US authorities. By June, a member of CNPq informed the US Embassy that Brazilian scientists were clandestinely working on uranium-235 separation in Germany, prompting US intervention on the grounds of post-war restrictions on weapons-grade material production. Consequently, US authorities, including USAEC, denied Brazil's request to export centrifuges (Patti, 2021, p. 25-33; CPI, 1956).

In November 1953, President Vargas approved plans to acquire all components necessary for nuclear energy production, reflecting ambitions for an autonomous and indigenous program. However, Brazil's nuclear pursuits may not have been limited to economic objectives as records from Mota e Silva's archives reveal experiments on an implosion bomb capable of initiating thermonuclear reactions, as demonstrated with the

Bomba Marambaia in 1953. While the exact motives behind these tests remain unclear, and no rivalry with Argentina is suggested, this experiment suggests potential military intentions. Nonetheless, there is no evidence of presidential authorization for these experiments. Meanwhile, in December 1953, President Dwight D. Eisenhower's "Atoms for Peace" initiative marked a significant shift in nuclear diplomacy by proposing an international atomic energy agency to repurpose fissile materials from US and Soviet arsenals for peaceful purposes. This initiative sought to de-escalate the nuclear arms race, foster international cooperation, and promote the US as a responsible leader in nuclear technology (Krige, 2006, p. 162-163). For developing nations like Brazil, the program offered a path to modernity and prestige, enabling the development of atomic energy industries to support national progress and reduce energy costs (Drogan, 2016, p. 970). In response, the US Congress amended the McMahon Act in 1954 to facilitate peaceful nuclear research collaborations while maintaining strict controls on dual-use technologies. Brazil embraced this opportunity but also maintained its interest in alternative partnerships, particularly with West Germany, whose scientists provided access to dual-use technologies crucial for Brazil's nuclear aspirations (Patti, 2021, p. 30-31).

Following the suicide of Getúlio Vargas in August 1954, Brazil experienced political instability, with João Café Filho appointing General Juarez Távora to oversee nuclear policy. Távora shifted Brazil's nuclear strategy by curbing international negotiations led by the CNPq, particularly with France and West Germany, and prioritizing cooperation with the US despite restrictions on dual-use technology. In May 1955, allegations of mismanagement involving the acquisition of a synchrocyclotron for the Brazilian Center for Research in Physics led to the resignation of Mota e Silva from CNPq, with a Parliamentary Inquiry Commission (CPI) later attributing his removal to US influence aimed at easing nuclear collaboration (Missagia, 2014, p. 68; Pereira, 2013, p. 97-103, 110). Subsequently, Brazil and the US formalized two agreements in August 1955: the Agreement on Cooperation for the Peaceful Uses of Atomic Energy and the Joint Cooperation Program for Uranium Resource Exploration¹⁸. These agreements granted the US control over uranium exploration in Brazil, classified findings, and ensured American oversight of Brazil's nuclear program. While this

¹⁸ In 1956, during the Brazilian Congressional Inquiry on Nuclear Issues, Congressman Renato Archer strongly criticized this agreement. He cited Professor Robert D. Mininger's acknowledgment of Brazil's advanced uranium prospecting technologies, which surpassed those of the US and the UK. João Baptista Pereira, who succeeded Mota e Silva at CNPq, testified that he had suspended the agreement pending further confirmation of uranium deposits in Poços de Caldas. However, a CNPq-commissioned study published two years earlier had already confirmed substantial uranium reserves in Poços de Caldas and other regions in the country (Pereira, 2013, p. 107-108).

led to the construction of Brazil's first nuclear reactor, the IEA-R1—the first research reactor in Latin America—the agreement was viewed, by 1956 CPI's members, as a modest step that constrained Brazil's broader nuclear ambitions. Meanwhile for Spektor (2020, p. 38), this marked a historic moment for Brazil and Latin America, symbolizing a promissory gesture by a government committed to advancing national development through atomic energy, including the potential construction of a nuclear power plant in Rio de Janeiro (Pereira, 2013, p. 105-106).

Juscelino Kubitschek's presidency (1955–1961) commenced during a period of political polarization following his narrow victory over Juarez Távora. Central to his administration was *Programa de Metas*, a development initiative focused on industrialization, which included plans for atomic mineral metallurgy and Brazil's first nuclear plant. Early in his term, Kubitschek faced challenges related to nuclear policy and monazite exports. In February, 1956, Deputy Rafael Corrêa de Oliveira submitted requests to the Chamber of Deputies seeking information on fissile mineral export agreements and the destinations, companies, and volumes involved. This led to the establishment of a CPI to investigate Brazil's nuclear policy from the mid-1940s to 1955. The CPI uncovered US influence in ending Brazil's cooperation with West Germany and the dismissal of Mota e Silva from his role at CNPq, as well as unauthorized thorium and monazite exports under Juarez Távora's administration, facilitated by the MFA bypassing CNPq oversight. Renato Archer's testimony during the CPI highlighted that US opposition to Brazil's technological advancements was economically motivated, aiming to preserve its nuclear monopoly rather than addressing security concerns. Archer criticized Washington's refusal to assist Brazil in acquiring nuclear reactors despite benefiting from its monazite exports, arguing that this policy kept Brazil as a raw material supplier while advancing US industrial and technological development. Archer also underscored Brazil's acquisition of German ultracentrifuges as a direct challenge to US dominance. The CPI's final report criticized developed nations, particularly the US, for attempting to monopolize nuclear technology and recommended revising Brazil's nuclear policy, establishing a national atomic energy commission, renewing partnerships with French and West German research centers, and completing pending equipment purchases, such as West German centrifuges acquired in 1957. In August 1956, Kubitschek introduced a new nuclear policy, centralizing atomic energy management through the creation of the National Commission for Nuclear Energy (CNEN). This policy required congressional approval for international agreements and consultation with the CSN, and it emphasized personnel training, reducing US preferential treatment while demanding compensations for Brazil's

nuclear resources. By fostering foreign competition and domestic expertise, Kubitschek's policy embodied the economic nationalism of the 1950s, consolidating state control over nuclear development and strengthening his political position (Pereira, 2013, p.116-117, 129-141).

The new Brazilian nuclear plan aimed to achieve autonomy in atomic energy production by securing resources, acquiring technology, and constructing research reactors and power plants. However, political and economic instability between 1961 and 1964 impeded progress and limited international partnerships. Initially, Brazil sought to expand cooperation with the US, including negotiations in 1956 for a nuclear reactor. While agreements were reached, including provisions for uranium supply, high costs and US conditions ultimately stalled the project. Despite these setbacks, Kubitschek advanced Brazil's nuclear ambitions by promoting the establishment of an IAEA regional training center to enhance human resources and secure materials for the nuclear sector. Although this initiative faced repeated opposition from the US and other nuclear powers, the IAEA supported Brazil in 1959 by identifying a suitable site and type for a future nuclear power plant. Despite these challenges, Brazil remained committed to advancing its nuclear agenda and pursued active engagement in international nuclear diplomacy, particularly through discussions on nonproliferation and the peaceful use of atomic energy. As a founding member of the IAEA, Brazil prioritized sovereignty over its nuclear resources, access to peaceful applications, and recognition as a leading nuclear supplier in South America, despite Argentina's more advanced program (Spektor, 2020, p. 9). Brazil advocated for equitable representation of underdeveloped countries within the IAEA and promoted geographical diversity on the Board of Governors, continuing its earlier stance from the UNAEC. Leveraging diplomatic efforts, Brazil secured a temporary seat on the board, despite concerns about external oversight of its nuclear activities. To address potential rivalry with Argentina, Brazil proposed a rotating representation agreement that ensured both nations' participation on the board. This arrangement mitigated tensions, fostered bilateral cooperation, and positioned Brazil and Argentina as key representatives of Latin America within the IAEA, setting a precedent for sustained collaboration in the region (Patti, 2021, p. 42-50).

In 1961, President Jânio Quadros (January–August 1961) sought to advance Brazil's nuclear ambitions by proposing plans to construct power plants in the northeast, produce pure uranium, develop thorium reactors, support radioisotope applications, establish a domestic nuclear industry, and regulate the sector (Camargo, 2006, p. 260-261). His initiatives influenced Brazil's nuclear policy until 1964, with several elements later incorporated during

the military regime. Before his election, Quadros highlighted the University of São Paulo's (USP) achievement in producing pure uranium, the result of nuclear fuel cycle studies by the Institute of Atomic Energy (IEA) since 1956. During his brief presidency, Quadros appointed Marcelo Damy as chair of CNEN, revived Project Mambucaba to construct a nuclear power reactor in Rio de Janeiro, and proposed nuclear cooperation with Argentine President Arturo Frondizi. However, Quadros's unexpected resignation in August 1961 triggered a political crisis. From 1946 to 1964, Brazil's system of separate elections for president and vice president resulted in João Goulart becoming vice president in 1960, leading to a constitutional amendment and a temporary parliamentary system until 1963. During his presidency, Goulart inaugurated the Institute of Nuclear Energy in Rio de Janeiro in 1962, which housed the Argonauta research reactor. Concurrently, Belo Horizonte's Institute of Physics Research (IPr) acquired a TRIGA-MARK reactor from the US. That same year, Brazil sought proposals for a nuclear power plant, selecting a French bid that included a secret clause to circumvent international safeguards. CNEN oversaw the nuclear sector while Eletrobrás coordinated energy initiatives. Although Brazil primarily relied on hydropower, it pursued autonomous nuclear development and remained an active participant in international nuclear nonproliferation discussions (Patti, 2021, p. 44-45).

From 1961 to 1964, disarmament emerged as a central focus of Brazil's "Independent Foreign Policy" (PEI), a diplomatic doctrine advanced by Foreign Ministers Afonso Arinos de Melo Franco, Francisco Clementino San Tiago Dantas, and João Augusto de Araújo Castro under Presidents Quadros and Goulart, aiming to assert Brazil's autonomy from Washington by prioritizing disarmament, development, and decolonization on the international stage. Arinos and Dantas actively supported the creation of nuclear-weapon-free zones (NWFZ), advocating for the "Finlandization" (neutralization) of Cuba to prevent the escalation of the Cuban Missile Crisis, with their efforts evident at the Punta del Este Conference, where Brazil opposed Cuba's expulsion from the Inter-American system and sought to implement a neutralist, disarmament-oriented mediation strategy at the height of the Cold War. Meanwhile, Araújo Castro, a realist diplomat, played a pivotal role in articulating the interests of Afro-Asian and Latin American nations in multilateral UN forums such as the Group of 77 and UN Conference on Trade and Development (UNCTAD), with his advocacy for the "Three Ds" (disarmament, development, and decolonization) gaining prominence and ultimately shaping international debates on nuclear non-proliferation. Brazil's commitment to disarmament materialized in its participation in the Eighteen-Nation Disarmament Committee (ENDC) in 1961, representing South America alongside Mexico, which represented Central

America, while also supporting NWFZ initiatives in Africa and Latin America (Franco, 2007, p. 251). However, internal opposition arose from CNEN, led by Marcello Damy, who feared that exposing Brazil's nuclear infrastructure to international inspections would compromise strategic autonomy, national security, and sovereignty—especially as major powers retained regional nuclear capabilities (Patti, 2021, p. 53-55). This reflected a subtle divergence between Brazil's foreign policy and its nuclear policy, as the MFA represented by San Tiago Dantas and Arinos promoted NWFZ while CNEN through Marcello Damy prioritized the autonomous development of nuclear technology.

Following earlier NWFZ proposals by Costa Rica (1958) and Chile (1959) within the OAS, Brazil submitted two similar initiatives to the UN, one before and one after the 1962 Cuban Missile Crisis (Martinez, 2008, p. 82-83). Initially, Brazil proposed a broad denuclearization plan encompassing both Latin America and Africa, though it failed to gain traction. However, after the crisis, which Brazil sought to mediate, momentum for a Latin American NWFZ was renewed. On November 8, 1962, a denuclearization proposal co-sponsored by Bolivia, Chile, and Ecuador was reintroduced, though it ultimately faltered, allowing Mexico to take the lead and successfully secure a UN resolution in 1963 (Avila, 2012, p. 370-389; Wrobel, 1993, p. 28-33). Of the various disarmament proposals offered by Brazil, Araújo Castro's critique of the NPT proved particularly influential, as by highlighting the treaty's tendency to depoliticize and demobilize global disarmament efforts, he sharpened the divide between NNWS and NWS. His stance challenged the prevailing notion that NNWS bore responsibility for nuclear proliferation while also exposing the unrealistic and utopian nature of disarmament negotiations led by NWS. This perspective, as will be demonstrated, later shaped the political dynamics surrounding the NPT and reinforced Brazil's historical skepticism toward the treaty and its asymmetric obligations.

In 1964, a military coup in Brazil overthrew Goulart, who was accused of steering the nation toward socialism. It ushered in the government of Marshal Humberto Alencar de Castelo Branco (1964–1967), which aligned closely with Washington. Guided by Cold War ideology, Brazil's foreign policy, led by Foreign Ministers Vasco Leitão da Cunha and Juracy Magalhães, reinforced ties with the US through participation in hemispheric security initiatives such as the Alliance for Progress, the OAS, and the Rio Treaty, while severing relations with Cuba and contributing to the US-led intervention in the Dominican Republic (Marques, 2005, p. 65-66). However, Brazil's position on nuclear nonproliferation diverged, reflecting a commitment to safeguarding its right to access nuclear technology without restrictive oversight. In 1963, CNEN and the military opposed Brazil's support for a UN

resolution on a NWFZ in Latin America, with CNEN chair Marcelo Damy criticizing the MFA for exceeding its authority. Foreign Minister Araújo Castro assured that Brazil's stance was not binding and suggested potential policy revisions during negotiations. The signing of the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, or Treaty of Tlatelolco, in February 1967 marked a key moment for Brazil, which, alongside Argentina, secured the right to develop delivery systems and conduct peaceful nuclear explosions (PNEs). Negotiations over PNEs were contentious, with Mexico and the US asserting that only NWS could provide nuclear explosive services. At the same time, Brazil and Argentina defended their right to peaceful nuclear development, inspired by US initiatives like Project Gnome for natural resource exploration (Wrobel, 1993, p. 39-40; 2017, p. 2). Supported by Argentina and Colombia, Brazil sought to leverage the US Plowshare program to explore its vast natural resources. Although Brazil signed the Treaty in May 1967, it made full accession contingent on the participation of all Latin American countries and the ratification of additional protocols by NWS to prevent nuclear weapons in the region and secure security assurances. However, Cuba's refusal to join and incomplete commitments from NWS delayed Brazil's full accession to the NWFZ until 1994, as advised by CNEN chairman Damy (Martinez, 2008, p. 183-186).

Between 1964 and 1967, Brazil aligned with nonaligned nations in the ENDC, advocating for equitable nuclear governance. In 1965, Brazil co-signed a memorandum with seven other nonaligned ENDC members, outlining five NPT principles: promoting general disarmament, preventing proliferation, ensuring equal responsibilities for all states, establishing effective safeguards, and supporting regional NWFZ agreements. Adopted as UNGA Resolution 2028, the memorandum pressured the US and USSR to revise their drafts and shaped subsequent ENDC negotiations. In May 1967, Brazilian delegates at the ENDC, led by Antônio Azeredo da Silveira under Marshal Arthur da Costa e Silva's administration (1967-1969), proposed amendments to the NPT draft, including a disarmament fund for developing nations and commitments to dismantle nuclear arsenals. Brazil criticized the NPT's unequal responsibilities and rejected the NWS-NNWS division as "atomic apartheid", insisting on reciprocal commitments from NWS. By March 1968, the US and USSR, as ENDC co-chairs, presented a joint NPT draft, asserting it incorporated member proposals. Still, the Group of Eight members argued it inadequately addressed the balance of rights and obligations between NWS and NNWS and the peaceful use of nuclear energy. Brazil, opposed

the draft, criticizing its renouncement of PNEs as vital to national security and development¹⁹ (Spektor, 2016, p. 638–639). At the 1968 UNGA session, Brazil argued the NPT violated Resolution 2028 and entrenched an inequitable “Super-Directory of Nuclear Powers”. Despite ENDC co-chair amendments, Brazil abstained from the treaty’s approval in June 1968, alongside 21 other states, while advocating alternative agreements and regional frameworks, including at the August 1968 Conference of Non-Nuclear-Weapon States. However, these efforts did not alter the treaty’s trajectory. The NPT was endorsed by UNGA Resolution 2373 and entered into force in 1970 after the ratification of the treaty’s depositories (USSR, UK and US) and 40 additional states. (Duarte, 2023, p. 56, 59). The USSR urged Brazil’s support, fearing West German influence, while the US viewed Brazil’s opposition as a minor nonproliferation challenge due to its technical expertise but limited resources (Patti, 2021, p. 57–68). Scholars interpret Brazil’s resistance as driven by national development (Marchetti, 2011; Cervo, 1998, 2011), strategic autonomy (Lafer, 1998; Vigevani, Oliveira, Cintra, 2003; Fonseca Jr., 2004), critiques of entrenched power structures (Castro, 1971; Silveira; Lampreia, 1998, 2010), military constraints (Sotomayor, 2013), and commitment to peaceful nuclear applications (Wrobel, 2000, 2017).

During the mid-1960s, Brazil’s nuclear policy sought to balance international collaboration with aspirations for autonomy, constrained by limited resources under President Castello Branco. CNEN maintained partnerships with France and the US, facilitated by the IAEA, while resisting international control. France supported Brazilian scientist training and uranium prospecting, and in 1965, CNEN established the Thorium Group to advance indigenous reactor research. By 1967, Brazil prioritized thorium reactors while continuing limited uranium enrichment research. Following a 1966 policy review, Brazil decided to construct its first nuclear power plant, Angra 1, under a 1972 agreement with Westinghouse, which locked Brazil into dependency on US nuclear fuel supplies subject to restrictive contractual clauses. Despite reliance on US technology, Brazil pursued a multidirectional approach to expand nuclear capabilities, negotiating with nations such as India, Argentina, Israel, West Germany, and Japan, though nonproliferation pressures constrained progress. In 1969, Brazil declined West German uranium enrichment technologies due to economic

¹⁹ Some military and diplomatic officials considered nuclear capability essential for national security and a 1967 CNEN report indicated that Brazil could feasibly construct a nuclear device within 15 years. However, there is no substantial evidence that it seriously pursued a nuclear weapons program. This was not due to technical limitations or lack of domestic advocacy but rather a perceived absence of strategic necessity. The Brazilian government assessed the nation's security environment as stable, with no imminent threats or plausible scenarios involving nuclear conflict. Thus, despite international concerns over Brazil's defense of its right to develop PNEs, the country, as Damy publicly affirmed, was not capable of producing a nuclear device (Patti, 2021, p. 63; Spektor, 2016, p. 638; 2020, p. 13-14).

concerns and potential impacts on World Bank financing for hydroelectric projects, yet continued scientific cooperation with West Germany. Under President Nixon, US policy prioritize nuclear exports, offering strategic support to Brazil's nuclear sector. By 1974 Brazil accelerated its nuclear ambitions amid global energy crises, navigating the challenges of nonproliferation pressures and energy security concerns to strengthen autonomy (Patti, 2021, p. 68-80).

This session analyzed the origins of the Brazilian nuclear program, emphasizing its vigorous engagement with the emerging NWNPR and its persistent efforts to champion nuclear disarmament while pursuing an autonomous nuclear policy. Brazil navigated early challenges to assert its strategic goals, including unfavorable atomic agreements with the US and internal disputes between the NSC and MFA. From the Vargas era to the authoritarian regime, Brazil sought to leverage nuclear technology not only for economic growth but also as a tool to advocate for equitable global disarmament. While initially aligning with global powers such as Washington, Brazil's autonomy was shaped by a strategic diversification of partnerships, particularly in response to US reluctance or actions undermining its nuclear ambitions. Initiatives such as the establishment of the CNPq and CNEN, coupled with Kubitschek's focus on resource control, technology acquisition, and infrastructure development, underscored Brazil's determination to achieve nuclear autonomy. Brazil's commitment to nuclear disarmament was evident in its proactive role in regional cooperation—easing tensions with Argentina through shared IAEA representation—and its leadership in global disarmament initiatives, including the Treaty of Tlatelolco. Rejecting the inequities of the NPT, Brazil not only defended its right to PNEs as vital for national development but also emphasized the importance of disarmament measures that addressed the asymmetries between NWS and NNWS. By advancing indigenous reactors, constructing its first nuclear power plant, and engaging with regional and international frameworks, Brazil demonstrated its resolve to combine its disarmament advocacy with its pursuit of economic and technological autonomy.

2.2 A pursuit of autonomy through advances in the nuclear program and distance from the NWNPR

In 1974, General Ernesto Geisel (1974–1979) assumed the presidency with a focus on reducing Brazil's dependence on foreign oil by prioritizing hydropower and nuclear energy, through the acquisition of a second nuclear power plant and the development of nuclear technologies. Diplomatic efforts by Foreign Minister Azeredo da Silveira and chief negotiator

Paulo Nogueira Batista emphasized discreet negotiations with West Germany and France to avoid international proliferation concerns. By 1971, over half of Brazil's nuclear scientists had been trained in France, leading to French light-water reactor technology adoption. While France proposed trilateral cooperation with West Germany on uranium enrichment in 1971, the plan was abandoned (Brasil, 1971b). In 1974, France further proposed collaboration on Brazil's nuclear industry, including naval nuclear propulsion, but internal disagreements emerged within the MFA, with Silveira favoring Paris and Nogueira Batista supporting Bonn. Brazil ultimately prioritized West Germany, culminating in a 1975 agreement, although minor collaborations with France continued until economic constraints curtailed further negotiations. Negotiations with West Germany began in February 1974, with Nogueira Batista as the principal coordinator and Itamaraty leading the process. West Germany, which had previously offered gas centrifuge technology, withheld it due to nonproliferation concerns and commercial interests, proposing the less efficient jet-nozzle enrichment method. As Urenco's centrifuge technology required approval from the UK and the Netherlands, West Germany postponed providing technical details until 1975. Despite Brazil's preference for centrifuges, the 1974 Brasília Protocol established the framework for the June 1975 agreement, leaving the enrichment method unspecified to protect the deal amid competition from France, Japan, and mounting US nonproliferation pressures (Almeida, 2015, p. 73, 98; CN, 1990, p. 55; Patti, 2021, p. 83-86).

The 1974 oil crisis intensified Brazil's pursuit of nuclear energy, but India's nuclear test in May exposed weaknesses in the NWNPR, prompting significant changes in US nuclear fuel policy. Washington, the world's leading nuclear supplier and Brazil's primary nuclear partner, began to adopt stricter policies. In June 1974, the USAEC, citing capacity constraints, canceled future uranium supply contracts, including those with Brazil, reinforcing perceptions in Brasília that the US was an unreliable partner seeking to hinder Brazil's nuclear ambitions. Concurrently, nuclear suppliers, through the Zangger Committee and the London Club, advocated for tighter export controls, further motivating Brazil to seek autonomous enrichment capabilities through partnerships with other nuclear powers (Nedal; Coutto, 2020; Brasil, 1971a). In response, Brazil's Congress approved a nuclear cooperation agreement with West Germany in 1975. Under the agreement, both nations affirmed peaceful intentions and agreed to international safeguards. Brazil committed to constructing eight nuclear power plants, while Germany pledged to transfer technology and expertise for these plants' planning, construction, and operation. Additionally, Germany promised to provide sensitive fuel cycle technologies, including uranium enrichment and advanced reprocessing technologies to

recover reusable materials from spent fuel. Brazil established the state-owned company Nuclebrás to facilitate the agreement, which replaced the CBTN. Led by diplomat Paulo Nogueira Batista, Nuclebrás focused on uranium enrichment, mining, reactor production, and training, overseeing the preparation of over 500 Brazilian technicians (Almeida, 2015, p. 72-73; Patti, 2021, p. 89).

The Brazilian–West German nuclear agreement was negotiated swiftly, excluding significant input from the private sector, scientific community, and civil society. While it received favorable media coverage, domestic criticism emerged over the sidelining of Brazil’s academic community, raising doubts about the country’s capacity to manage such a complex program. Brazilian nuclear scientists largely advocated for continued national research to achieve technological independence, while international observers expressed concerns about potential nuclear proliferation. Criticism also arose from military sectors aligned with the ruling administration, questioning Brazil’s reliance on foreign technology and raising concerns about the safeguards and challenges of uranium enrichment (Braga, 2015, p. 46; Nedal; Coutto, 2020). The lack of consensus among nuclear suppliers hindered efforts to impose stricter rules on the agreement, as the export of a complete nuclear fuel cycle set a precedent that both Germany and France could seek to replicate with countries like Iran, South Korea, and Pakistan—nations with security motives to pursue nuclear weapons. Despite assurances, the international community, particularly the US, remained apprehensive about Brazil diverting nuclear technology for non-peaceful purposes. Although West Germany pressured Brasília to comply with international safeguards, Brazil maintained unsafeguarded laboratories and facilities outside the agreement. While France, the USSR, and some US officials opposed the deal, Washington refrained from retaliating, prioritizing relations with Bonn and Brasília despite concerns over the transfer of sensitive atomic technologies. The IAEA Board of Governors played a critical role, with a vote on the trilateral safeguards agreement scheduled for February 1976. Facing pressure from nuclear suppliers, West Germany and Brazil agreed to report the transfer of sensitive technologies under the agreement, although Brazil’s national facilities and technologies remained outside international safeguards. Despite criticism, including from France for noncompliance with London Club guidelines, the Ford administration supported the deal, favoring strategic ties with both nations. On February 26, 1976, the IAEA approved the agreement, marking a diplomatic victory for Brazil, though it foreshadowed future tensions with the US (Patti, 2021, p. 93-94).

Although the Ford administration approved the Brazilian–West German nuclear deal, US Congressional efforts to strengthen the nonproliferation regime posed challenges to Brazil's nuclear ambitions. In June 1976, Senator Stuart Symington's amendment to the 1961 Foreign Assistance Act prohibited US aid to countries engaged in nuclear enrichment or reprocessing activities without full IAEA safeguards, threatening Brazil's nuclear program and its struggling economy. During the 1976 US presidential campaign, Jimmy Carter criticized Ford's nuclear policies and proposed a moratorium on transferring sensitive nuclear technologies, while Ford promised stricter safeguards if re-elected. Anticipating obstacles to the nuclear agreement, Brazil considered accelerating unsafeguarded projects or developing natural uranium reactors but opted to negotiate discreetly with Washington instead. The US offered economic assistance and nuclear fuel in exchange for Brazil refraining from acquiring sensitive technologies, Geisel agreed to a temporary moratorium on such acquisitions, provided negotiations remained confidential. However, US public statements denying Brazil access to dual-use technologies disrupted the talks, and by 1977, failed negotiations and Geisel's criticism of Carter's nonproliferation policies heightened tensions. During the International Nuclear Fuel Cycle Evaluation (INFCE), Brazil resisted US efforts to restrict spent-fuel reprocessing and refused to suspend its nuclear activities. Despite negotiations, INFCE failed to achieve a consensus on limiting plutonium use, leaving the issue unresolved by 1980. Carter's administration also sought to expand the NSG to strengthen multilateral export controls. After internal debates in March 1977, the US excluded Brazil, South Africa, and Argentina from the NSG, labeling them potential proliferators and nuclear recipients. However, West Germany continued exporting sensitive technologies to Brazil, undermining US efforts to curtail the nuclear agreement. The NSG was expanded in September 1977 to include additional nations with significant nuclear capabilities and adopted stricter export rules requiring full-scope safeguards. From Brazil's perspective, US efforts to use the NSG as a tool to enforce the NPT reflected an attempt to constrain Brazil's nuclear development, but inclusion could have granted Brazil higher status in global nuclear discussions (Almeida, 2015, p. 134-144; Patti, 2021, p. 95-98).

Brazil's nuclear program remained a concern for the US, as the director of the Arms Control and Disarmament Agency warned that Brazil's unsafeguarded nuclear development posed a long-term risk to nonproliferation efforts, despite the absence of immediate security threats. This concern deepened in 1978 when the CIA reported that both Brazil and Argentina could potentially develop nuclear weapons by the early 1980s. In response, the US enacted the Nuclear Non-Proliferation Act in 1979, requiring full-scope safeguards for nuclear

cooperation, which disrupted Brazil's reliance on international support, including agreements for plant refueling. As cooperation with Germany faltered, Brazil shifted toward "nationalizing" its nuclear program to achieve autonomy. General Danilo Venturini, Secretary-General of the CSN, later explained to a CPI that international constraints and challenges with West Germany drove Brazil to adopt an unsafeguarded civilian-military nuclear program (Patti, 2021, p. 98-99, 109; Bandarra, 2016, p. 84). Meanwhile, external pressures from the US, NSG, and Urenco, driven by Dutch opposition to Brazil's military regime and its refusal to sign the NPT, complicated fuel supply negotiation. Despite these obstacles, Brazil viewed the situation as an opportunity to advance its nuclear ambitions, particularly in ultracentrifuge technology, which is considered essential for energy independence and geopolitical standing. President Geisel and Foreign Minister Silveira even contemplated joining the NPT to secure access to sensitive technologies. However, the Brazil–West Germany nuclear partnership faced additional setbacks in 1978, with construction delays at the Angra 1, 2, and 3 nuclear plants due to technical and geological issues, escalating costs, and public controversy (Brasil, 1978). That year, allegations of irregularities in the Brazil–West Germany Nuclear Agreement, reported by *Der Spiegel* and widely covered in Brazil, led to a CPI chaired by Senator Itamar Franco. The CPI investigated the agreement's planning, execution, and site selection, culminating in a 1984 report recommending peaceful nuclear energy, achieving technological autonomy, strengthening safety measures, and improving public communication (Brasil, 1982, p. 003; 262-264).

During the Geisel administration, Brazil and Argentina navigated a nuanced relationship, marked by both rivalry and cautious cooperation in the nuclear sphere. International concerns about a potential arms race heightened after India's nuclear explosion and Brazil's nuclear deal with West Germany. Despite mutual suspicions, both nations explored nuclear collaboration, though Brazil remained wary of Indian-Argentine cooperation, fearing it could destabilize the region. Argentina's more advanced infrastructure raised concerns about a shift in regional power, while Buenos Aires feared losing scientific talent to Brasília. Discussions on military nuclear ambitions were rare, with economic issues and water resource management presenting primary challenges. Argentina's political instability further hindered cooperation, while US non-proliferation policies targeting both military regimes encouraged Brazil and Argentina to collaborate more closely to protect their atomic projects (Patti, 2021, p. 103-108; Spektor, 2016, p. 639).

In 1979, General João Batista Figueiredo (1979–1985) initiated the final administration of Brazil's military regime, maintaining the country's opposition to the NPT

and advocating for fairer global nuclear disarmament under the guidance of Foreign Minister Ramiro Saraiva Guerreiro. During this period, Brazil faced a severe debt crisis exacerbated by rising oil prices following the Iranian Revolution, which created additional energy challenges. US Vice President Walter Mondale attended Figueiredo's inauguration to address trade and nuclear policy issues, signaling efforts to ease bilateral tensions. Discussions between the two countries about nuclear fuel for the Angra 1 reactor, which received fuel in 1983 and began operations in 1984, continued. Under President Ronald Reagan, the US and Brazil established a nuclear working group, though tensions persisted as Washington criticized Brazil's nonproliferation policies. Budgetary constraints in the early 1980s led to the termination of four reactor projects, intensifying internal crises within Nuclebrás and prompting the resignation of its head, Nogueira Batista, in 1983. A significant shortcoming hindered Brazil's pursuit of full autonomy over the nuclear fuel cycle in the 1975 Brazil–West Germany nuclear agreement, which did not include technology transfer for converting yellowcake into uranium hexafluoride (UF₆). Recognizing these limitations and facing evolving international nonproliferation norms, President Geisel had tasked CNEN in late 1978 with coordinating efforts among research centers in São Paulo, Belo Horizonte, and Rio de Janeiro to develop this technology independently. By February 1979, the Nuclear and Energy Research Institute (IPEN), formerly IEA, successfully produced domestic UF₆ samples without international oversight, except for the research reactor, marking a significant step toward nuclear autonomy. A working group was subsequently established to evaluate production strategies, presenting two options to President Figueiredo. The costlier but more autonomous *Project Autônomo* was selected over *Project Integrado* due to its long-term advantages, including enhanced negotiating leverage and the development of national nuclear technology free from external restrictions (Patti, 2021, p. 109-112).

Project Autônomo, initiated to address Brazil's industrial-scale UF₆ needs, laid the groundwork for the Autonomous Program of Nuclear Technology (PATN), or “Parallel Program”²⁰. This initiative involved collaboration among the armed forces, CNEN, and IPEN, aiming to achieve full control over the nuclear fuel cycle for peaceful purposes, including naval propulsion (Brasil, 1985, p. 3). Operating independently of civilian programs tied to

²⁰ In September 1977, under diplomatic pressure from President Carter regarding Brazil's nuclear program, the Geisel administration identified enriched uranium as vital for national security and development. Hervásio de Carvalho emphasized the importance of developing national technology alongside advancements from the agreement with West Germany, framing this approach as essential for establishing Brazil as a peaceful yet sovereign emerging nation. This period marked the first use of “parallel” to describe the autonomous nuclear program, aimed at sectors with restricted access to technology. Carvalho also recommended heightened security for the laser enrichment project, citing CNEN's lack of secure facilities and the exposure of Nuclebrás-controlled institutes to international safeguards and low security (Patti, 2021, p. 115).

international agreements, the PATN focused on developing technologies restricted by the 1977 NSG guidelines. Brazilian authorities initially emphasized adherence to international commitments and proposed sharing program results with Latin American countries. By separating PATN from projects subject to IAEA and West German oversight, the program avoided breaching international obligations while granting Brazil budgetary flexibility and legal autonomy to pursue independent nuclear technology development, aligning with the preferences of the scientific community (CN, 1990, p. 45). The secrecy surrounding PATN aimed to shield it from public criticism and foreign interference. Advocates like former Navy Minister Maximiano da Fonseca and Vice-Admiral Othon Luiz Pinheiro da Silva argued that secrecy was essential to protect Brazil's nuclear ambitions from international restrictions on equipment and technology transfers. However, critics such as José Goldemberg, Secretary of Science and Technology under President Collor de Mello, suggested that secrecy facilitated easy funding and reduced government oversight (CN, 1990, p. 8). Public opposition also played a role, as Brazil's transition to democracy heightened government responsiveness to societal pressures. This secrecy sidelined Nuclebrás, granting administrative autonomy to CNEN and the Armed Forces to manage PATN, thereby strengthening CNEN's influence while diminishing Nuclebrás' role (Bandarra, 2016, p. 84-85; Patti, 2021, p. 113).

In 1974, Brazil began pursuing autonomous uranium enrichment using laser-based methods, approved by the IEAv and the Ministry of the Air Force, leveraging scientific expertise from Unicamp under the leadership of Sérgio Pereira da Silva Porto. Initial successes included uranium isotope separation and a cost-effective heavy water production process. Despite setbacks such as the deaths of Porto, the research persisted but eventually proved unviable for large-scale production. In 1977, IPEN took over enrichment efforts, working with CNEN, the air force, and the navy to develop ultracentrifuges for nuclear submarine fuel. Captain Othon Luiz Pinheiro da Silva proposed mastering the nuclear fuel cycle and independently developing nuclear propulsion, shifting focus to gas centrifuge technology in 1979. Despite funding challenges, research began in 1980 with support from over 150 Brazilian companies, overcoming technical barriers through reverse engineering and selective acquisitions, with authorities maintaining the project was entirely indigenous, with no evidence of external collaboration in mastering the centrifuge technique. By 1982, IPEN assembled Brazil's first ultracentrifuge prototype, achieving uranium isotopic separation and operating the first cascade by 1984, surpassing advancements from the Brazil–West Germany nuclear collaboration (CN, 1990, p. 4-8). Simultaneously, IPEN and CNEN supported the PATN with projects in metallurgy, radiometrics, and environmental control, including Project

Celeste, which focused on spent fuel reprocessing to produce plutonium and was likely tied to Project Solimões and PNEs (Bandarra, 2016, p. 93; Brasil, 1985, p. 4). Complemented by similar work at IEN and a reprocessing plant planned with West Germany, these efforts advanced Brazil's nuclear expertise despite Nuclebrás abandoning reprocessing in 1983. IPEN continued development with German support into the 21st century. However, rumors in the 1980s about Celeste producing plutonium from a breeder reactor planned with Italian cooperation never materialized, as the reactor was not built. Other initiatives persisted into the post-democratization period, with some transferred to the navy's research center (Patti, 2021, p. 110-121).

Throughout the PATN, Brazil's military branches pursued independent projects. The Army's involvement in nuclear development began in the 1950s with establishment of the country's first academic nuclear engineering program at the Military Institute of Engineering. In 1972, the Army advanced heavy-water production techniques through collaboration with CNEN. It launched Project Atlântico, led by the Army Technology Center, to develop nuclear-grade graphite for moderators in natural uranium reactors and to construct a small reactor capable of producing plutonium. The project's potential for plutonium production raised suspicions of nuclear weapons ambitions, though it made little progress and continued without significant results until 1990. The Air Force played a key role in autonomous uranium enrichment, particularly through Project Solimões, which focused on laser isotopic separation and was linked to PNEs. This highly sensitive project, requiring secrecy to avoid domestic and international opposition, included constructing nuclear test shafts in Serra do Cachimbo, northern Brazil, during the early 1980s (Brasil, 1985, p. 3). Additionally, the Air Force's involvement in missile and rocket development, particularly the Sonda I-IV sounding rockets launched from the Barreira do Inferno Launch Center, raised international concerns about the potential for ballistic missile capabilities under the guise of Brazil's Complete Space Mission. Under Vice-Admiral Silva's leadership, the Navy prioritized nuclear propulsion for submarines over nuclear explosives, making it the most successful branch in nuclear development. Key projects included Zarcão, which achieved zirconium and hafnium production; Ciclone, completed in 1986, which developed ultracentrifuges in collaboration with IPEN; and Remo, which aimed to design a small reactor for naval propulsion. Costado focused on constructing submarines to house these reactors. The Navy secured greater funding and consistent presidential support, building on Admiral Mota e Silva's earlier nuclear efforts in the 1950s and solidifying its focus on nuclear submarine propulsion after the approval of Othon's proposal to master the nuclear fuel cycle in 1978. The Navy's emphasis

on possessing SSN was driven by national defense priorities, particularly after the 1982 Falklands War, which highlighted the strategic importance of British nuclear submarines in Argentina's defeat. Projects like *Ciclone* and *Remo* were instrumental in achieving independent uranium enrichment and advancing naval propulsion, with *Ciclone* later integrated into Brazil's official nuclear program²¹ (Bandarra, 2016, p. 90-92; CN, 1990, p. 4-8; Goldemberg; Mafra 2018, p. 391; Kassenova, 2014, p. 34; Patti, 2021, p. 117-122).

During this period, Brazil, like other countries facing international restrictions on developing indigenous nuclear technologies, employed unconventional methods and engaged with nations that either opposed or violated NPT norms to acquire essential components. Brazil established significant nuclear partnerships with the PRC and Iraq, explored potential collaborations with South Africa and Pakistan, and formed an alliance with Argentina. These activities raised concerns among foreign governments, including the US, France, and West Germany. In the later years of Brazil's military regime, cooperation with Beijing, a vocal opponent of nonproliferation norms, became particularly notable. Diplomatic ties initiated in 1974 evolved into a robust partnership, with the PRC providing nuclear materials and technologies. In 1982, Brazil and China agreed on a supply of enriched uranium for peaceful purposes, enabling Brazil to procure nuclear fuel at competitive costs without international safeguards. By 1983, Brazil had shipped UF₆ to Beijing in exchange for low-enriched uranium (LEU), significantly reducing its dependence on external suppliers. In 1984, Presidents Figueiredo and Li Xiannian signed a memorandum to expand cooperation in reactor development and nuclear security. Brazil's growing nuclear sector and ability to produce nuclear materials also attracted interest from Iraq, a key oil supplier. Despite Iraq's accession to the NPT, its secret nuclear weapons program under Saddam Hussein raised international suspicions. In 1978, Iraq sought Brazilian assistance in developing its nuclear program. Under Foreign Minister Saraiva Guerreiro's guidance, it was stipulated that any cooperation must be public, adhere to international safeguards, and exclude sensitive technologies covered by the Brazil–West Germany agreement. Brazil expressed willingness to collaborate on technical matters and supply uranium dioxide under industrial cooperation agreements projected to last 10–15 years, adhering to principles of specific compensation (Patti, 2021, p. 123-129).

²¹ Regarding the nuclear-powered submarine program, Almeida (2024) identifies three structural motivations underpinning its creation and continuity: Brazil's aspiration to master a critical technology deemed vital for the nation's development; its ambition to secure a more prominent role on the global stage; and the Navy's objective to enhance its strategic capabilities, particularly in terms of deterrence and defense. Additionally, the oil crisis is cited as a significant short-term factor influencing the program's development.

In 1979, Brazil, Argentina, and Paraguay resolved their lengthy standing disputes over the Itaipu hydroelectric project, facilitating the resumption of nuclear dialogue between Brasília and Buenos Aires, which had begun in the late 1960s. Shared perspectives on nonproliferation and pursuing independent nuclear technology led to a nuclear cooperation agreement in May 1980. Under this agreement, Argentina committed to supplying Brazil with fuel fabrication services and uranium concentrate, while Brazil's Nuclep agreed to produce heavy components for Argentine nuclear plants. The cooperation emphasized peaceful nuclear use, regulatory collaboration, and non-discriminatory disarmament measures, signaling a potential integration of their nuclear sectors. In November 1983, Argentina disrupted the nuclear balance by announcing its mastery of uranium enrichment through a gaseous diffusion plant in Pilcaniyeu, following its acquisition of nuclear technologies from Switzerland, the USSR, and China. This development, intended to enhance Argentina's international image after the Falklands War, prompted Brazil to accelerate its own enrichment efforts, despite its positive official response after being pre-informed by President Reynaldo Bignone. While tensions arose, Argentina's new president, Raúl Alfonsín, sought to renew cooperation by proposing a joint declaration renouncing nuclear explosions. Although initially supported by Brasília, this proposal faced resistance from Brazil's military hard-liners. By the mid-1980s, Brazil's response to Argentina's nuclear advancements was shaped by internal debates over nuclear weapons development, with the air force overseeing sensitive aspects of autonomous programs. Despite assertions of having the knowledge to construct a bomb, Brazil lacked the technical capacity. A 1984 proposal by Délio Jardim de Mattos to use imported nuclear material to demonstrate Brazil's prestige proved unfeasible due to potential costs, including strained relations with Argentina, damage to international nonproliferation regimes, and severe US sanctions. Ultimately, Brazil's military regime did not culminate in the development of an atomic bomb but left a legacy of significant advancements in uranium enrichment as well as a nuclear power plant that was concluded in 1985 (Patti, 2021, p. 129-136).

This session analyzed Brazil's entry into its landmark nuclear agreement with West Germany, emphasizing its hasty implementation, its significant challenges, and the intense international opposition it faced, particularly from Washington. It also underscored that the mounting external pressure, particularly from the US, was instrumental in catalyzing the establishment of the PATN, enabling advancements in uranium enrichment and in some other key stages of the nuclear fuel cycle during the military regime, thereby reinforcing Brazil's autonomy in the nuclear domain. Brazil also expanded its network of partnerships by forging

significant nuclear collaborations with the PRC and Iraq, as well as exploring potential cooperation with South Africa and Pakistan. Simultaneously, Brazil maintained its opposition to the NPT, advocating for a more equitable framework for global disarmament through what Fonseca Jr. termed “autonomy through distance” (Fonseca Jr., 2004, p. 360-363), a strategy characterized by a qualified distance in its cold war international engagement such as rejecting the nuclear arms race and prioritizing legitimacy by advocating for global disarmament, peaceful conflict resolution, respect for international law, and multilateralism. Vigevani and Cepaluni (2012, p. 7) also emphasize the resistance to international regimes interpreted as freezing world power, in favor of the status quo. Pinheiro and Lima (2018, p. 10–12) argued that this perspective aligned with autonomist principles. In parallel, during the mid-1970s, Brazil and Argentina’s nuclear collaboration was shaped more by economic challenges and water resource management than by military ambitions. Despite regional rivalries and international proliferation concerns, shared resistance to US non-proliferation policies encouraged cooperation, exemplified by the 1979 resolution of disputes over the Itaipu hydroelectric project, which revived nuclear dialogue initiated in the 1960s and resonated with Puig’s vision of autonomy through regional integration. Even Argentina’s announcement of mastering uranium enrichment, which could have disrupted regional nuclear balance, did not destabilize bilateral relations as both nations prioritized collaboration. It also underscored that the mounting external pressure, particularly from the US, was instrumental in catalyzing the establishment of the PATN, enabling advancements in uranium enrichment and in some other key stages of the nuclear fuel cycle during the military regime, thereby reinforcing Brazil’s autonomy in the nuclear domain. Brazil also established significant nuclear partnerships with the PRC and Iraq, as well as explored potential collaborations with South Africa and Pakistan.

2.3 Public disclosure of PATN and a pursuit of autonomy through critical engagement with the NWNPR

In 1985, Brazil transitioned from military rule with the election of Tancredo Neves as the country’s first democratic president in over two decades. However, Neves’ death before his inauguration resulted in Vice President José Sarney assuming the presidency (1985–1990). While civilian governance was formally restored, the military retained significant political influence, and Brazil officially adopted a non-nuclear stance while preserving its nuclear projects (Souza, 2008, p. 402; Kassenova, 2014, p. 29). These projects faced scrutiny through

the 1986 evaluation by the Brazilian Nuclear Program Evaluation Commission — also known as Vargas Commission, led by nuclear scientist José Israel Vargas, and the 1988 Interministerial Working Group, amid public criticism over secrecy in the nuclear sector. A scandal in Sarney's early presidency revealed a covert program potentially aimed at developing an atomic bomb, with alleged test sites at Serra do Cachimbo or Martim Vaz. Concurrently, Brazil's financial crisis and the escalating costs of its nuclear partnership with West Germany highlighted internal challenges. The Vargas Commission recommended strategic maintenance of the nuclear program, continued cooperation with West Germany, and postponed decisions on new plants. It emphasized domestic uranium exploitation, reactivation of mineral prospecting, increase in the number of highly trained nuclear technicians, restructuring Nuclebrás to focus on the fuel cycle, and privatizing or closing subsidiaries, and creating a nuclear subsidiary under Eletrobrás. The commission also proposed separating CNEN's regulatory and research functions under the Ministry of Science and Technology and enhancing cooperation with Argentina through mutual inspections, aiming to balance strategic objectives with transparency and oversight (Brasil, 1986, p. 41-43; Patti, 2021, p. 138-140).

The Vargas Commission's classified report, released in 1990, significantly influenced Sarney's management of Brazil's nuclear program. Amid international concerns about Brazil's nuclear ambitions, several nations imposed restrictions on technology transfers and demanded full-scope safeguards. The US, aware of the country's secret nuclear program since 1982, formed a working group to regulate nuclear cooperation and curb sensitive technology proliferation under NSG and Zangger Committee guidelines. France blocked sales of Nuclei compressors for Brazil's civilian enrichment facility, and the US refused to transfer critical technologies, including supercomputers and a UF6 mass spectrometer. Despite these pressures, Brasília resisted until September 1987, when Sarney announced that Brazilian scientists had independently achieved uranium enrichment using ultracentrifuge technology. At a Vienna meeting, Rex Nazaré Alves publicly acknowledged the nuclear program, denying any intent to develop nuclear weapons and emphasizing Brazil's potential as a supplier of sensitive technologies. US concerns over possible technology diversion to the unsafeguarded program led to further restrictions, at the same time West Germany accepted a re-negotiation of its agreement without severing ties, given the limited success of the partnership and Brazil's independent progress. The USSR focused on preventing technology re-exports rather than demanding full safeguards, while China and France explored deeper collaboration. Simultaneously, the UK and West Germany sought to maintain contracts, including those with Urenco. This complex and contradictory international response highlighted inconsistencies in

the NWNPR. Meanwhile, despite significant nuclear incidents such as Chernobyl, Three Mile Island, and Goiânia²², as well as growing global disarmament movements and intensified calls to abandon nuclear energy, Brazil continued its nuclear projects, including potential PNEs. Civilian and political groups, influenced by disarmament rhetoric from US and Soviet leaders, advocated for banning nuclear programs and introduced strong proposals to prohibit nuclear devices. Still, these efforts ultimately failed to halt Brazil's nuclear ambitions. Brazil's nuclear program underwent significant restructuring: Nuclebrás was dismantled, subsidiaries were dissolved, and Brazilian Nuclear Industries (INB) was established, with CNEN assuming control of remaining assets. Additionally, the 1988 Federal Constitution (CF/88) dissolved the CSN, which had overseen the PATN, transferring oversight to the newly created Secretaria de Assuntos Estratégicos (SAE), marking a shift toward civilian governance of the nuclear sector, as well established that nuclear energy would only be allowed for peaceful purposes with National Congress approval (Art. 21, XXIII, "a") (Patti, 2021, p. 140-147).

In September 1985, President Sarney initiated efforts to establish the South Atlantic as a NWFZ through the creation of the South Atlantic Peace and Cooperation Zone (ZOPACAS), formally recognized in October 1986. This initiative aimed to strengthen regional nuclear nonproliferation by preventing nuclear weapons development in the South Atlantic and by prohibiting the use or threat of nuclear weapons by external powers (Duarte, 2023, p. 101-102). While the proposal faced opposition from Washington, it garnered consistent support from Argentina, reflecting the strengthening of bilateral relations and a shared commitment to advancing Latin American integration and nuclear cooperation. Argentina became a key partner in Brazil's foreign policy, with early discussions between Presidents Tancredo Neves and Raúl Alfonsín establishing the foundation for mutual trust and resistance to global nonproliferation pressures. These efforts laid the groundwork for significant progress under Sarney, culminating in the Foz de Iguaçu Declaration and a series of bilateral initiatives between 1987 and 1988. These included joint declarations, technical exchanges, and mutual inspections of nuclear facilities, which prioritized peaceful nuclear development despite military resistance and international scrutiny. During this period, the issue of SSNs added a new dimension to bilateral discussions. In October 1986, Argentine authorities, represented by Adolfo Saracho, acknowledged their initial conceptual studies on SSNs but emphasized the absence of political decisions or funding. Brazil, represented by Rego Barros, similarly indicated a lack of political commitment but suggested the possibility

²² During the 1987 Goiânia accident involving cesium-137 which contaminated hundreds of individuals, the IAEA collaborated with Brazilian authorities in order to mitigate its consequences (Duarte, 2023, p. 35).

of a joint project. By 1987, however, Brazil shifted its stance, deciding to proceed independently, tying its nuclear submarine ambitions to its broader vision of becoming an international power. Argentina remained open to collaboration but encountered Brazilian reluctance due to sovereignty concerns and the need to protect technological secrets. This divergence sparked political and diplomatic interest, with Argentina seeking clarity on Brazil's plans and proposing mutual inspection mechanisms to build trust (Januário, 2021, p. 106-109). Despite these complexities, mastering gas centrifuge technology significantly enhanced bilateral cooperation, enabling both countries to showcase their nuclear capabilities. These collaborative efforts led to the creation of the Permanent Committee on Nuclear Policy in 1988, which prioritized bilateral inspections over IAEA safeguards. The partnership deepened in the 1990s under Presidents Carlos Menem and Fernando Collor de Mello, who reinforced nuclear safeguards and aligned both countries with global nonproliferation commitments. Ultimately, the bilateral framework underscored the strategic importance of cooperation, even as Brazil and Argentina navigated divergent ambitions within the nuclear domain (Patti, 2021, p. 147–156).

In the early 1990s, Collor de Mello (1990-1992) became Brazil's first directly elected president in nearly three decades, taking office in 1990 on a platform of liberal economic reforms, including structural adjustments and privatization. Collor's administration marked a departure in Brazil's nuclear policy, as he opposed the development of nuclear weapons and criticized the high costs of the nuclear program. Briefed before his inauguration on PATN, Collor aligned his foreign policy with the post-Cold War international order. Upon taking office, he replaced CNEN President Rex Nazaré Alves with José Luiz de Santana Carvalho. He appointed José Goldemberg and José Lutzenberger—outspoken critics of nuclear weapons—as key cabinet members, signaling a shift toward transparency and restraint in nuclear policy. In April 1990, Collor established the Working Group on the National Nuclear Energy Program (GT Pronen) to evaluate and recommend future directions, advocating for the completion of Angra 2 and 3 under SAE supervision while incorporating civil society, academia, and NGOs into the review process. In June 1990, a parliamentary commission revealed a clandestine financial channel for the nuclear program, uncovering plans for a nuclear test. Despite these findings, the commission commended Brazil's technical mastery of key nuclear fuel cycle technologies. It recommended integrating the parallel and official nuclear programs under congressional oversight, eliminating secret financial mechanisms, and decentralizing CNEN's regulatory authority to reduce secrecy (CN, 1990; Patti, 2021, p. 158-160). Notably, Alvim *et al.* (2019, p. 393) observes that while no evidence conclusively

indicated active nuclear weapons programs in Brazil, the country did pursue dual-use technologies with potential future military applications but without violating international agreements in force at the time, asserting their right to PNEs.

The end of the Cold War, increased global disarmament efforts, and declining support for PNEs prompted Brazil to reevaluate its nuclear policy. Facing scrutiny after revelations of atomic cooperation with Iraq, President Collor moved to place the nuclear program under civilian control, symbolized by closing the Serra do Cachimbo test shaft. However, Silva (2019, p. 94) argues this act was overstated as Sarney had already ordered the site sealed in 1987. Collor's reforms marked the end of the military-led nuclear program, as demonstrated by his renunciation of PNEs at the 1990 UNGA, and paved the way for strengthened ties with Argentina and collaboration with the US (Oliveira, 2011, p. 49; Patti, 2014, p. 9; Patti, 2021, p. 161-164). While Collor anticipated access to advanced technologies, Moreira (2013, p. 204-208) notes that US agencies continued to block key transfers even after Brazil joined the NPT. Responding to the parliamentary commission's recommendations, Collor abandoned the jet-nozzle enrichment plant, destroyed German-supplied jet-nozzle equipment in 2001, under international supervision, and redirected efforts entirely to the centrifuge method, which ensured Brazil's mastery of the nuclear fuel cycle. He consolidated UF₆ conversion and UO₂ production at Aramar and terminated the fuel reprocessing Project Celeste. Despite cost reductions, military control over sensitive technologies persisted, and plans for new nuclear plants and SSNs remained, drawing criticism from the press for allowing military uranium enrichment and plutonium production projects to continue. Financial constraints during Collor's presidency delayed Angra 2 and 3 construction and reduced funding for the SSN program, though Admiral Mário César Flores ensured its continuity as Navy Minister. Throughout Brazil's re-democratization, the military retained significant influence, enabling the Navy to sustain uranium enrichment and nuclear submarine initiatives, which persisted under civilian administrations despite fluctuating financial support (Kassenova, 2014, p. 29; Martins Filho, 2011, p. 288; Patti, 2021, p. 161-164).

In July 1990, Presidents Collor and Menem reaffirmed their commitment to fostering peaceful nuclear cooperation while safeguarding technological advancements. However, their efforts to fully accede to the Treaty of Tlatelolco encountered initial obstacles due to the IAEA requirement for full-scope safeguards. Any transition toward a new inspection and safeguards regime in Brazil necessitated the application of national safeguards to all nuclear facilities and materials. Although CNEN had established safeguards regulations as early as 1982, civilian inspectors were limited to monitoring installations already subject to IAEA

safeguards. A combination of public pressure, Brazil's announcement of uranium enrichment capabilities, and the Goiânia accident prompted CNEN to extend its oversight to all nuclear facilities. Nevertheless, the full implementation of the 1982 regulations occurred only in May 1990, culminating in a comprehensive inventory completed by November of that year. This development enabled CNEN inspectors to access military nuclear sites, a crucial step before formalizing bilateral agreements with Argentina. Argentina subsequently proposed a bilateral framework modeled on established safeguards systems such as Euratom, leading to the creation of the Common System for Accounting and Control of Nuclear Materials (SCCC). This system was circulated within the IAEA as INFCIRC/395 in November 1991. By May 1991, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) was established to oversee the SCCC. In July 1991, both nations signed agreements renouncing PNEs and prohibiting nuclear weapons, aligning with NPT arguments about the technical infeasibility of distinguishing peaceful from military nuclear explosives. This collaboration culminated in the December 1991 Quadripartite Agreement (INFCIRC/435), signed by Brazil, Argentina, ABACC, and the IAEA. The agreement replaced earlier trilateral arrangements, establishing a robust bilateral and international safeguards system. The US commended Brazil's shift toward nonproliferation, viewing it as a model for other nations and a potential foundation for sensitive technology transfers. As part of this policy shift, President Collor informed President George H.W. Bush of a legislative proposal to criminalize the misuse of classified information by former government employees to assist foreign nuclear programs (Patti, 2021, p. 161-169).

These advancements occurred against the backdrop of significant global developments, including South Africa's post-apartheid accession to the NPT and disarmament, as well as the 1992 ratifications of the NPT by France and China as NWS. The NSG adoption of full-scope safeguards further influenced Brazil's and Argentina's decisions. However, political instability, including President Collor's impeachment in 1992, delayed Brazil's nonproliferation commitments. Resistance from Congress and the military further postponed ratification of the Quadripartite Agreement until March 1994, under Itamar Franco's presidency (1992-1995). Lampreia (2008, p. 77-78, 154-155) underscores that the decision to comply with INFCIRC/435, the Treaty of Tlatelolco, and bilateral agreements with Argentina faced considerable opposition within the military leadership. He highlights that these debates, while predominantly internal, were marked by significant contention, particularly regarding INFCIRC/435, which mandated inspections of nuclear facilities. Concerns arose within the military over whether such measures served Brazil's national

interests. These apprehensions were reasonable, as INFCIRC/435 imposed significantly stricter safeguards (Philippe, 2014, p. 43; Costa, 2017, p. 6–7; Rockwood, 2017, p. 6–7) than those outlined under INFCIRC/153, applicable to NNWS under the NPT. While INFCIRC/435 was not discriminatory in the manner of the NPT, it nonetheless imposed substantial constraints, particularly on Brazil's SSN program. As Moura (2001, p. 3–4) observes, Brazil's barriers to nuclear technology transfers in the early 1990s began to diminish following the implementation of the Quadripartite Agreement and associated nonproliferation measures. This perspective aligns with the enhanced rigor of the safeguards introduced under the agreement. However, Moreira (2013) argues that these obstacles were not entirely eliminated, even after Brazil acceded to the NPT. Indeed significant international pressure was exerted by nations such as Germany and the US for Brazil to ratify the Quadripartite Agreement. Despite ratifying the Agreement, bringing the Tlatelolco Treaty into force in May 1994, and maintaining constitutional prohibitions on nuclear weapons, Brazil continued to pursue uranium enrichment and advance its SSN program. At the same time, skepticism toward the NPT persisted within the country, reflecting broader concerns about the treaty's perceived limitations and its implications for Brazil's nuclear ambitions (Patti, 2021, p. 158–159, 170–173).

Under Fernando Henrique Cardoso's administration (1995–2003), Brazilian foreign policy adapted to the post-Cold War international system through what Sérgio Danese (2017, p. 33–38) described as “presidential diplomacy”, characterized by the president's direct engagement and prominence in international affairs. Alongside his foreign minister, Luiz Felipe Lampreia, Cardoso sought to position Brazil as a significant global actor by enhancing its credibility through initiatives such as the Plano Real, deepening ties with the US and Latin America, as well as aligning its commitments with the NWNPR. Cardoso expanded presidential travel, controlled diplomatic appointments, and established advisory bodies such as the Foreign Trade Chamber and the Chamber of Foreign Affairs and National Defense (Amorim Neto, 2012, p. 125–130; Guimarães, 2005, p. 143). This represented a departure from prior administrations, especially during the military regime, where the MFA maintained greater autonomy. However, Silva (2019, p. 111) notes that diplomats and military officials were consulted on key decisions, such as Brazil's accession to the NPT. This accession, along with Brazil's commitment to global disarmament and its bilateral nuclear regime with Argentina, aligned with long-standing ambitions of advancing indigenous nuclear technology, seeking technological transfers, and fostering a peaceful regional order (Bandarra, 2016, p. 150; Patti, 2021, p. 175–176). Cardoso's administration also marked Brazil's increased

participation in international organizations, summits, and multilateral regimes, aiming to eliminate doubts about past nuclear ambitions and strengthen its candidacy for a UN Security Council permanent seat.

In 1994, Argentina adhered to the NPT without consulting Brazil, and, in 1995, it ceased funding ABACC, citing economic difficulties (Winand, 2016, p. 161–165). That same year, during the NPT Review and Extension Conference, the Treaty was indefinitely extended through a "package deal" that strengthened the review process, established principles for non-proliferation and disarmament. It promoted a NWFZ in the Middle East (United Nations, 1995a,b,c,d). On July 8, 1996, the International Court of Justice (ICJ) issued an Advisory Opinion affirming states' obligation to "pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament" (ICJ, 1996, p. 94). Guimarães (2005, p. 130) highlights that this ruling emphasized the obligation to negotiate and conclude disarmament, while affirming that neither treaties nor customary international law permit the use or threat of nuclear weapons. These developments, along with Argentina's unilateral accession to the NPT, pressured Brazil to reevaluate its stance. While Cardoso considered following Argentina's lead²³, Lampreia advocated delaying accession until after the 1995 NPT RevCon and CTBT negotiations. Thus, by 1997, Brazil reactivated the Permanent Committee on Nuclear Policy to revive dialogue with Argentina²⁴, signaling renewed nuclear cooperation and a gradual shift in its foreign policy as remaining outside the NPT became untenable. This realignment crystallized in the late 1990s, with Brazil actively engaging in global nuclear governance. Recognizing the NPT's evolution into a platform for disarmament and peaceful nuclear energy promotion (Lampreia, 1997), Brazil sought to enhance its international credibility and advance national interests through active participation (Fonseca Jr., 2004, p.

²³ Argentine Ambassador Julio Carasales (1995, p. 44) highlights Brazil's strong resistance to signing the NPT, noting that opposition to non-proliferation agreements was more intense in Brasilia than in Buenos Aires. Unlike Argentina, Brazil had an active lobby opposing the Quadripartite Agreement and the Treaty of Tlatelolco, significantly delaying their approval. While Brazilian authorities remained committed to non-proliferation policies, Carasales observed that the widespread support such policies enjoyed in Argentina was not as robust in Brazil. He also asserts that, throughout the development of this process, Argentina frequently acted as the leader while Brazil followed, even as both nations shared the same objectives. At the time, Brazil was not considering NPT ratification. Indeed, during that time, Senator Dirceu Carneiro (PSDB/SC) and President Cardoso both argued that Brazil's existing commitments, including the Treaty of Tlatelolco and the Quadripartite Agreement, were sufficient to establish the country's credibility as a reliable non-proliferation partner. They viewed the NPT as a discriminatory treaty that unfairly restricted Brazil's access to nuclear technology while permitting NWS to maintain their arsenals. Thus, Brazil saw no need to adhere to the NPT, instead emphasizing its commitment to a more equitable non-proliferation regime (Carneiro, 1994; Malheiros, 1996, p. 161).

²⁴ Winand (2016, p. 161–165) highlights that there were concerns about maintaining the proper functioning of ABACC and preventing unilateral actions by Washington. This is evidenced by a letter from Pedro Motta Pinto Coelho to Foreign Minister Lampreia, in which he describes a discussion with Argentine Minister Enrique de la Torre regarding a US-requested meeting with the ABACC commission. The meeting aimed to propose a tripartite cooperation mechanism in the nuclear field involving Brazil, the US, and Argentina.

365–367). The country addressed international skepticism, particularly from Russia, by pursuing inclusion in export control regimes such as the MTCR in 1995 and the NSG in 1996. It also prioritized the CTBT as a critical step toward NPT accession. Despite setbacks like nuclear tests by China and France, which undermined the CTBT's spirit, Brazil co-sponsored a UN initiative to advance the treaty, becoming one of its first signatories in 1996 and ratifying it in 1998 (Patti, 2021, p. 345). By supporting the CTBT, Brazil addressed a key reservation regarding the NPT, contributed to banning nuclear testing globally, and reinforced its evolving strategy to integrate into international regimes while promoting non-proliferation and disarmament objectives (Silva, 2019, p. 122-123, 143-164).

In 1997, Brazil's decision to join the NPT marked a significant reversal of its long-standing opposition to the treaty, sparking extensive scholarly debate about the reasons for this shift. Researchers have highlighted several factors, including the expectation of automatic benefits (Alsina Jr., 2003; Cervo, 1998; 2001; 2006; 2008; Saraiva, 2005; Visentini, 2003), enhanced international credibility (Fonseca Jr., 2004; Hirst, 2006; Lessa; Couto; Farias, 2009; Lima; Hirst, 2009; Oliveira, 2011; Souza, 2013; Pecequilo, 2012; Vigevani; Oliveira; Cintra, 2003; Vigevani; Cepaluni, 2011), mitigation of external security threats (Burns; Coyle, 2015; Coutto, 2014; Gardini, 2005; Spektor, 2016), and concerns over international isolation (Silva, 2010; 2012). Other factors included the cessation of the PATN (Oliveira, 2014; Sampaio, 1997), economic vulnerabilities in the Global South amid the decline of the developmentalist model (Batista, 2011), and democratization processes in Brazil and Argentina (Albright, 1989; Bluth et al., 2010; Carasales, 1995; Patti, 2010; Plum; Resende, 2016; Gillard, 2016). Scholars also point to the role of epistemic communities in Brazil and Argentina fostering trust (Kutchesfahani, 2010), the imperative for civilian oversight of military nuclear programs (Sotomayor, 2013), and the erosion of Brazil's bargaining power caused by its gradual acceptance of safeguards equivalent to those of the NPT before signing the Treaty (Batista, 2009; Pinheiro, 2004). Additionally, Celso Lafer (2001), drawing on Renouvain and Duroselle, uses the concept of "deep forces" to explain continuities in Brazilian foreign policy, highlighting how the rapprochement between Brazil and Argentina is tied to their shared historical formation and enduring structural characteristics.

Building on the scholarly debate surrounding Brazil's decision to accede to the NPT, a classified report by the MFA provides an official perspective, offering detailed insights into the strategic considerations and contextual factors that informed this critical policy shift. The report references a meeting held at the Alvorada Palace in March 1997, involving prominent

ambassadors, which followed the presidential decision to sign the treaty. It highlights how President Cardoso engaged key members of the foreign service bureaucracy in the decision-making process to ensure alignment and support. The classified report was prepared by the Ministry to guide decision-makers and examined the costs and benefits of NPT accession. It included a comprehensive review of Brazil's historical position within the NPT framework, the prevailing international context of the nuclear non-proliferation regime, and potential courses of action post-accession. While acknowledging the discriminatory nature of the treaty, the document strongly advocated for accession as a pragmatic decision with relatively low political costs and significant potential benefits, given the international environment at the time. The report identified three central factors underpinning its recommendations: the structure of the NPT regime, which balanced peaceful nuclear cooperation with the renunciation of nuclear weapons under comprehensive safeguards; economic competition among nuclear technology-holding nations during the 1970s; and Brazil's emphasis on developing indigenous nuclear capabilities. These factors explained Brazil's initial decision to remain outside the NPT while benefiting from nuclear cooperation. However, the report also underscored how the shifting international landscape — particularly following India's 1974 nuclear test — had heightened the political and economic costs of staying outside the treaty, ultimately influencing Brazil's decision to pursue accession (Silva, 2019, p. 125-126).

The report outlined Brazil's rationale for joining the NPT, highlighting its pragmatic benefits despite the treaty's discriminatory nature. It acknowledged that shifting global conditions, such as the creation of the NSG and heightened US pressure, made Brazil's critical stance increasingly costly. Aligning with non-proliferation commitments, including renouncing nuclear weapons and accepting safeguards, offered Brazil opportunities to normalize technological exchanges with traditional partners while safeguarding strategic interests. The report underscored Brazil's unique position among non-signatories by contrasting it with nations like India, Israel, and Pakistan, which pursued nuclear weapons, and Cuba, which maintained an oppositional stance toward US policies. Unlike these countries, Brazil neither sought nuclear weapons nor aligned itself with anti-US rhetoric, resulting in increasing isolation. This isolation diminished Brazil's influence in non-proliferation and disarmament debates, particularly within the NPT review processes, which were central to shaping the global nuclear governance framework. It identified strategic and diplomatic advantages of joining, including enhanced credibility, leadership, and the ability to influence global frameworks for non-proliferation and disarmament alongside

nations like Argentina and South Africa. The report presented six key conclusions: Brazil's rejection of the NPT had lost functionality; non-participation caused diplomatic perplexity and limited Brazil's influence; joining posed no technological cost; remaining outside imposed political costs; and accession aligned with Brazil's rising international stature. The decision was framed as contribution to global disarmament, allowing Brazil to advocate for reforms without abandoning its critiques of the treaty's discriminatory nature. The report outlines six key conclusions regarding Brazil's stance on the NPT: 1) the principled rejection of the NPT has become ineffective given shifts in the international landscape and Brazil's evolving profile; 2) non-participation in the NPT generates perplexity and hinders Brazil's role in non-proliferation; 3) self-exclusion limits Brazil's discourse and engagement, as critical discussions on nuclear disarmament occur within NPT review conferences; 4) joining the NPT entails no technological cost, but remaining outside carries significant political costs; 5) non-accession undermines Brazil's image as a credible and influential player in global decision-making; 6) Finally, accession is viewed by key partners as a meaningful step toward global disarmament, with no implications of submission or retreat (Silva, 2019, p. 126-128).

Silva (2019, p. 125, 161–163) underscores the strategic efforts involved in Brazil's pursuit of congressional approval²⁵ for NPT accession. The participation of military ministers and the presidents of the Federal Senate and Chamber of Deputies at the signing ceremony symbolized national consensus. At the same time, extensive behind-the-scenes negotiations addressed resistance from traditionalists diplomats, conservative military leaders, and leftist parliamentarians, by articulating the critical importance and implications of accession. A key development was the inclusion of an “explanatory amendment”²⁶, proposed by Haroldo Lima (PCdoB), endorsed by leaders of the governing parties such as the PSDB, PPB, PTB, and

²⁵ The National Congress does not possess the authority to ratify international acts, as it lacks both the external voice and the capacity to establish diplomatic relations with other states. Instead, the Federal Parliament authorizes the President to ratify a treaty through a legislative decree, constituting a discretionary act exclusive to the Executive Branch. Nevertheless, Congress can exert a definitive influence over a treaty by explicitly rejecting it, in which case the President is precluded from finalizing the agreement through ratification. This dynamic underscores the importance of congressional support, as exemplified by the significant efforts of Cardoso and Lampraia to secure approval for the NPT. Once Congress approves an international agreement, the President of the Republic retains the discretion to decide whether to proceed with ratification. It is essential to differentiate between Congressional approval and presidential ratification, as the former does not compel the latter. However, presidential ratification cannot occur without prior Congressional approval (Mazzuoli, 2014, p. 438–440).

²⁶ This “explanatory amendment” must be understood within the scope of a legislative decree, as Congress's *ad referendum* competence is limited to approving or rejecting the text of a treaty, with no authority to alter its content. Amendments to the treaty text are impermissible, although Congress may propose reservations. When deliberating on treaties, agreements, or international acts, Congress formalizes its decisions through legislative decrees (Article 59, VI, CF/88), a normative act falling under its exclusive competence (Article 49, I, CF/88). Legislative decrees are considered acts of exclusive legislative authority and are not subject to presidential sanction. By approving a treaty through such a decree, Congress authorizes the President to ratify or adhere to the agreement, as appropriate (Mazzuoli, 2014, p. 433–434).

PMDB, which emphasized a critical approach to the treaty and conditioned Brazil's accession on effective disarmament measures under Article VI of the NPT. In the Senate, the voting process was expedited, and the treaty was approved without debate through symbolic voting in July 1998. The urgency requested in the Federal Senate for the treaty's approval can be understood as a strategic political maneuver within the broader context of Brazil's campaign for UNSC reform. This expedited process ensured that the treaty's approval coincided with the visit of UN Secretary-General Kofi Annan to Brazil and the ratification of the CTBT (Cesar; Maia, 2004, p. 383). Brazilian ambassadors' announcement of the decision was met with "highly favorable" reactions, and Cardoso received a call from US President Bill Clinton expressing gratitude. While US Secretary of State Madeleine Albright praised Brazil's decision, she reaffirmed the US position of neutrality on new UNSC permanent members, supporting only Japan and Germany (Batista, 2011, p. 115; Safatle; Rossi, 1997), frustrating Brazil's aspirations.

Brazil's commitment to nuclear disarmament and the advancement of Article VI obligations under the NPT, as referenced in the legislative decree, was exemplified by its co-founding of the New Agenda Coalition (NAC) in 1998 alongside Egypt, Mexico, New Zealand, South Africa, Slovenia, and Sweden²⁷. The NAC sought to enforce NWS disarmament obligations, with its 1998 declaration forming the basis for a UNGA resolution that significantly influenced the 2000 NPT RevCon. At the RevCon, Brazil played a pivotal role in drafting the "Thirteen Steps", which represented an unequivocal commitment by NWS to advance nuclear disarmament. These efforts reflected Brazil's strategy of leveraging international regimes to align global disarmament progress with its national interests. Meanwhile, shortly after Brazil joined the NPT, the global nonproliferation regime faced challenges when India and Pakistan conducted nuclear tests in May 1998, escalating regional tensions. Unlike its stance in the 1970s, Brazil condemned the tests, supported multilateral sanctions, and joined G-8 discussions on nuclear issues. During these talks, Brazil contributed to implementing UNSC Resolution 1172, which condemned the tests, with Lampreia advocating for a comprehensive strategy addressing horizontal and vertical proliferation. He urged India and Pakistan to accede to the CTBT, proposed a fissile material production ban, and emphasized curbing missile program escalations. Lampreia opposed recognizing India and Pakistan as NWS, warning it would undermine the NPT's integrity, and instead promoted integrating them into a global disarmament framework or adopting a Brazil-Argentina-style nuclear cooperation model. Following the tests, relations between Brazil and India

²⁷ These last two countries withdrew from the coalition.

deteriorated, Brasília imposed diplomatic sanctions, downgraded its representation in New Delhi to a chargé d'affaires, and annulled the 1996 nuclear cooperation agreement—cooperation between the two countries would be the center of attentions once again in 2003 when Brasília announced New Delhi as possible strategic partner. Brazil's firm stance, which included advancing a resolution within the UNSC, was praised by the US as evidence of its commitment to nuclear nonproliferation (Patti, 202, p. 187; Motta, 2022, p. 96-98).

It should be underscored that Brazil's accession to the NPT did not represent a retreat from its commitment to nuclear technological development or an unequivocal endorsement of the NWNPR. President Cardoso emphasized Brazil's right to protect its industrial secrets while expressing skepticism toward major nuclear powers' selective enforcement of the non-proliferation regime (Spektor, 2016, p. 646). In 1997, Brazil participated in drafting the Model Additional Protocol (AP) to the Safeguards Agreements (INFCIRC/540) under the IAEA, ensuring its provisions aligned with national interests, yet it maintained that adherence to the AP should remain optional and declined to adopt it²⁸. Internal consultations on the AP, led by the MFA with support from CNEN beginning in 1999, sought to clarify its content and gather input to inform Brazil's position. Brazil's cautious approach considered practical and strategic implications, including financial costs and potential impacts on the national nuclear program. During an Interministerial Coordination Meeting in 2000, Brazil analyzed key differences, particularly the AP's Article 1 provision granting its terms precedence in cases of conflict, which raised concerns over potential contradictions in inspector designation (Art. 11), visa issuance (Art. 12), amendment procedures (Art. 16), and safeguards exemptions for materials intended for nuclear propulsion²⁹. Broader issues, including expanded information

²⁸ Argentina did not adopt the AP either. Guimarães (2011) observes that, Brazil and Argentina cannot independently adopt APs because the AP supplements a CSA that applies jointly to both countries under INFCIRC/435, with ABACC's involvement. An AP would require mutual agreement and ABACC's participation; unilateral adoption would necessitate denouncing INFCIRC/435, establishing individual CSAs with the IAEA, and dismantling the internationally recognized regional safeguards regime. Guimarães argues that negotiations for AP adoption must occur within INFCIRC/435 and include provisions to safeguard sovereignty and industrial property, suggesting the US-IAEA AP (INFCIRC/288/Add.1) as a reference. Moura (2001, p. 184) notes that if Brazil and Argentina were to adopt the AP, ABACC's role would be limited to nuclear material activities, such as providing expanded information (clauses ii, iii, v, vi, vii, and viii of Article 2), excluding more sensitive aspects like site definitions, which remain state prerogatives under Article 18b. However, ABACC's Secretariat has advocated for a broader role in implementing a potential AP.

²⁹ While this does not constitute a fundamental divergence concerning the AP, a CTMSP representative highlighted the importance of preserving the validity of Article 13 of INFCIRC/435. This article allows for the temporary exemption of nuclear material from safeguards when used in the propulsion or operation of vehicles, including submarines and prototypes. While the CSA under the NPT model also provides for this exemption, this right has not been exercised to date, resulting in a lack of practical experience in its application. The AP, in principle, does not contain provisions that challenge the validity of this right. Nevertheless, the requirement for expanded reporting under Article 2 may have implications for developing the SSN program. While these

requirements (Articles 2 and 3) and complementary access provisions (Articles 4 to 6), were also identified as requiring bilateral consultations with the IAEA to resolve interpretative and implementation challenges (Moura, 2001, p. 171-182). In 2001, discussions about adopting the AP were abandoned due to financial and security concerns. Meanwhile, despite economic constraints that slowed progress, Brazil advanced its nuclear capabilities, with key institutions such as the Navy's Technological Center in São Paulo (CTMSP) and IPEN leading both civilian and military projects. The unfinished Angra 2 and 3 reactors became focal points for reform, culminating in the merger of Furnas and Nuclen into Eletronuclear in 1997 and the eventual inauguration of Angra 2 in 2002. Furthermore, the modernization of the INB's Resende facility in 1998 enabled commercial uranium enrichment using ultracentrifuges developed by the navy, preserving industrial secrecy under INFCIRC/435 (Patti, 2021, p. 188-190).

The establishment of Brazil's Ministry of Defense (MD) in 1999 generated significant controversy within the military, exposing strategic disagreements among the armed forces concerning their roles in national defense. Initially opposed, Admiral Mauro Cesar eventually endorsed the MD, recognizing its potential benefits and the anticipated support from military ministers. Critics contended that Cardoso aligned Brazil's defense policies with those of the US, while the Navy expressed concerns about subordination to the Army, which had a broader territorial presence. Although the 1996 National Defense Policy (NDP) identified the South Atlantic as strategically significant, it overlooked "power projection", a concept rooted in Alfred Mahan's naval theories, which the Navy deemed crucial for extending influence to Africa's Atlantic coast. General Zenildo Zoroastro de Lucena opposed this view, prioritizing territorial defense over naval expansion. Brazil strengthened ties with Africa during Cardoso administration, but this effort remained diplomatic, without a military presence. The Navy was the sole proponent of military activity in African jurisdictional waters. While all branches acknowledged the scientific and technological value of the Navy's nuclear project—particularly the deterrent capability of a SSN—debates persisted over its operational feasibility. Despite the NDP emphasis on the South Atlantic, the government prioritized Amazonian defense, focusing on challenges such as drug trafficking and Colombian guerrilla activity. Nuclear projects were largely absent from the defense agenda, but the energy crisis of 2000–2001 underscored the importance of nuclear energy as a complement to hydroelectric power. This crisis elevated the Aramar nuclear research center as a vital scientific and technological

implications do not directly pertain to the suspension of safeguards under Article 13 of the INFCIRC/435, which will be further explored in chapter 4, they could impact the project's progression (Moura, 2001, p. 175).

development hub, redirecting its efforts toward INB. While the Navy's nuclear project regained internal prominence, it was increasingly framed as a means to support INB's objectives. Before the conclusion of Cardoso's second term, the Armed Forces submitted a report addressing the budgetary crisis affecting military institutions. Navy Commander Admiral Sergio Chagastelles highlighted the severe impact of financial constraints on both vessel maintenance and the continuation of critical projects. The report identified the nuclear submarine, deemed the Navy's most important initiative, as being in a state of near stagnation due to these limitations (Correa, 2008, p. 156-165).

In this session, Brazil's transition from military rule to democracy marked a pivotal shift in its nuclear policy, reflected in the announcement of its independent mastery of uranium enrichment alongside a reaffirmation of its commitment to the non-weaponization of nuclear capabilities. This transition coincided with a broader shift in governance, as civilian authorities assumed control of the nuclear program, signaling both domestic reforms and a strategic reorientation in Brazil's international approach. Fonseca Jr. (2004, p. 364–369) frames this reorientation as "autonomy through participation", wherein Brazil engaged with international frameworks to advocate for nuclear disarmament from within rather than as an external critic. As Fonseca explains, this approach embodied Brazil's adaptation to the complexities of the post-Cold War world, characterized by a dynamic interplay of unipolarity and multipolar coalitions addressing globalized challenges. Brazil sought legitimacy and influence by participating in and shaping global institutions, balancing autonomy with collaboration in areas like non-proliferation and collective security. Critiques of this policy shift, however, highlight potential drawbacks. Pinheiro and Lima (2018, p. 10–12) argue that aligning with dominant global powers risked undermining genuine autonomy, as Brazil's foreign policy often lacked clear objectives, creating a dependency that blurred the autonomy-dependence dichotomy. Yet, this alignment must be contextualized within the transformative post-Cold War era, where serious engagement with the NWNPR reshaped international norms. Brazil responded to these pressures by co-founding ABACC and signing the Quadripartite Agreement, establishing safeguards independent of the NPT. Argentina's earlier accession to the NPT further compelled Brazil to recalibrate its stance, culminating in the mastery of critical nuclear technologies, renunciation of PNEs, and the constitutional enshrinement of peaceful nuclear energy use in 1988. Brazil's full adherence to the Treaty of Tlatelolco in 1994 further underscored its commitment to a nuclear-free region, aligning with global trends like the NPT's indefinite extension, the NWS commitment to the CTBT, and the ICJ's Advisory Opinion on nuclear disarmament obligations. Within Puig's framework of

autonomy as incremental reforms and regional integration, this approach appears pragmatic, achieving technological progress while fostering regional cooperation. Similarly, Jaguaribe's concept of international permissibility underscores Brazil's nuanced adaptation to avoid marginalization. In this context, Brazil's alignment with global norms and powers reflected not a loss of autonomy but a strategic recalibration to sustain influence within the evolving NWNPR framework – one that aligns with Puig's view that dominant powers set the rules, and autonomy involves navigating power asymmetries rather than outright resistance.

2.4 A pursuit of autonomy through the renewed investments in the nuclear program and continued engagement with the NWNPR

Under Luiz Inácio Lula da Silva (2003–2011) and Dilma Rousseff's (2012–2016) administrations, Brazil's nuclear policy was framed within a "defense-development nexus" that integrated national security and economic modernization, emphasizing the state's central role in advancing strategic projects. This framework prioritized the revival of major nuclear initiatives, including the SSN project, which aligned with "neodevelopmentalist" policies to achieve national autonomy, technological innovation, and sustainable development. Central to these efforts was the Navy's advocacy for the strategic importance of the "Blue Amazon"³⁰, a vast maritime territory deemed critical for Brazil's sovereignty and resources. The SSN was framed as a vital tool for deterrence, particularly "deterrence by denial", to protect this region against potential threats while simultaneously positioning Brazil as a leader in the South Atlantic, a zone portrayed as both a security concern and an area of cooperative opportunities with African and Latin American nations³¹. To accelerate this focus, investments in nuclear

³⁰ In 1996, Brazil implemented the Brazilian Continental Shelf Survey Plan, an initiative developed by the Interministerial Commission for Marine Resources in partnership with the Navy, which officially concluded in 2004. In May of the same year, Brazil submitted a proposal to the UN Commission on the Limits of the Continental Shelf (CLCS), seeking to extend its continental shelf. In 2007, the UN Convention on the Law of the Sea (UNCLOS) approved Brazil's request. Initially, the CLCS recognized an area of approximately 750,000 square kilometers; however, as the proposed extension did not infringe on neighboring countries' territories, Brazil's full request was ultimately granted. To draw public attention to the jurisdictional significance and the natural resources of the South Atlantic, Admiral Roberto Guimarães Carvalho introduced the term "Blue Amazon". Carvalho intended this concept to underscore the need for Brazil to reengage with its maritime origins and potential, which had been historically overlooked. Admiral Armando Amorim Vidigal further highlighted that, just as the "Green Amazon" had become ingrained in the national consciousness, the "Blue Amazon" was conceptualized to foster public recognition of the valuable resources within Brazil's maritime territory that require protection. In 2005, the NDP further emphasized the importance of the South Atlantic to Brazil, and the discovery of vast oil and natural gas reserves in the so-called pre-salt layer of the Campos Basin reinforcing support for the nuclear submarine project (Corrêa, 2008, p. 173-179).

³¹ This approach aligns with Vigevani and Cepaluni's (2012, p. 7) concept of "autonomy through diversification", which emphasizes international engagement through South–South alliances and partnerships with non-traditional actors like China, Africa, and the Asia-Pacific. This strategy fostered multipolarity while

propulsion were channeled through the Submarine Development Program (Prosub), which included a partnership with France for the construction of the SN-BR's hull. After decades of reduced funding under the Collor, Franco, and Cardoso administrations, the first phase of SN-BR development commenced in 2009 (Martins Filho, 2011, p. 291; 2014, p. 134–135). The broader rationale advanced by political elites connected the SSN program to enhancing Brazil's autonomy in foreign policy and aspirations for global influence, including a permanent seat on the UNSC, while underscoring the association between nuclear technology, national development, and state-driven modernization (Herz, Dawood, and Lage, 2017, p. 344; 2018, p. 1–2, 14). Ambitious goals, such as completing the Angra 3 nuclear plant, achieving commercial-scale uranium enrichment, and constructing SSNs, were pursued despite challenges such as economic constraints, corruption scandals, and resistance on domestic and international fronts. Partnerships with nations like Argentina further bolstered these efforts, alongside plans to build additional nuclear reactors by 2030 and establish Brazil as a NNWS with advanced nuclear capabilities (Patti, 2021, p. 203–207).

During Lula's presidency, in October 2003, the president of CNEN, Odair Dias Gonçalves, announced that Brazil was becoming the seventh country capable of producing enriched uranium on an industrial scale. This achievement allowed Brazil to meet 60% of its nuclear power plants' domestic needs and projected annual exports of \$12.5 million by 2014 (Bandeira, 2014, p. 353). This announcement led to US increased pressure on Brazil to sign the AP, with President Bush arguing in February 2004 that enrichment and reprocessing activities were unnecessary for peaceful nuclear energy and citing North Korea and Iran as examples of misuse, as well as its emphasis that countries should adhere to the AP. The Brazilian Navy warned national authorities of US and IAEA intentions to pressure the country, leading to tensions when Brazil refused full access to its INB centrifuges, raising international concerns (Corrêa, 2008, p. 168–169). Later, at the 2005 NPT RevCon, Brazil, aligned with the Non-Aligned Movement, it opposed linking AP implementation to IAEA safeguards, arguing that its existing mechanisms were sufficient. Lula and Rousseff's administrations reinforced this stance, tying AP adherence to tangible global progress on nuclear disarmament as outlined in the 2008 and 2012 National Defense Strategies³² (NDS) (Brasil, 2008; 2012, p. 50, 95–96). In 2010, the NSG recognized regional nuclear control mechanisms, such as ABACC, as equivalent to the AP. This decision permitted the transfer of

maintaining constructive relations with global powers by reducing asymmetries and enhancing bargaining power with dominant states.

³² This position was not made explicit in 2020 NDS but was expressed in other forums such as the NPT RevCon.

enrichment and reprocessing technologies under a CSA supported by either the AP or IAEA-approved regional arrangements (Duarte, 2023, p. 65–66; Souza, 2017, p. 163). By acknowledging regional safeguards, the NSG affirmed Brazil and Argentina's commitment to nonproliferation. However, to sustain international confidence, both countries may eventually need to adopt the AP or integrate its key provisions, as Kassenova (2017) notes that the NSG's recognition was a temporary measure.

In parallel, Brazil actively engaged in nuclear disarmament and nonproliferation forums and despite criticisms of the NPT, Lula's administration, led by Foreign Minister Celso Amorim, reaffirmed Brazil's commitment to disarmament and the peaceful use of nuclear energy (Brazil, 2017, p. 304; Stuenkel, 2010, p. 529). Brazil positioned itself as a mediator between NWS and NNWS, urging NWS to fulfill their Article VI disarmament obligations. Ambassador Sérgio de Queiroz Duarte exemplified Brazil's leadership, presiding over the 2005 NPT RevCon and later serving as UN High Representative for Disarmament Affairs (2007–2011). However, the 2005 RevCon exposed challenges, as NWS refused to reaffirm the "Thirteen Steps", stalling disarmament efforts. Brazil continued to advocate for disarmament while condemning North Korea's nuclear tests and criticizing the 2008 US-India nuclear agreement. It supported key milestones, such as President Obama's 2009 Prague speech and the 2010 New START treaty. The 2010 RevCon marked progress with the adoption of a 64-item action plan (Jesus, 2010, p. 552; 2012, p. 44).

Simultaneously, Brazil intensified its push for a permanent seat on the UNSC, exemplified by its 2010 Tehran Declaration partnership with Turkey to mediate Iran's uranium enrichment program. This agreement, under which Iran would transfer LEU to Turkey in exchange for reactor fuel, initially garnered support but was undermined by US-led sanctions. This initiative reinforced Brazil's nonproliferation credentials while highlighting its aptitude for diplomatic conflict resolution. As Ramalho (2010) observed, Brazil aimed to position itself as a global player capable of peacefully resolving disputes. Nevertheless, Ricupero (2017, p. 665–667) notes that the episode also underscored the inherent challenges and constraints middle powers face in navigating the complexities of international diplomacy. Brazil's engagement in nuclear disarmament gained further momentum in 2013 when it participated in the first Conference on the Humanitarian Impact of Nuclear Weapons, emphasizing the risks and "legal gap" in prohibiting them. Brazil joined 127 countries in signing a "humanitarian pledge", which set the stage for negotiations on a nuclear weapons ban. The 2015 NPT RevCon, however, failed to reach consensus due to disagreements over a Middle East NWFZ and NWS resistance to implementing Article VI. This deadlock shifted

focus toward negotiating the Treaty on the Prohibition of Nuclear Weapons (TPNW) without NWS participation (Borrie, 2014, p. 625; Müller; Wunderlich, 2020, p. 176-177). During Michel Temer's presidency (2016–2018), Brazil became the first nation to sign the TPNW in 2017, reaffirming its leadership in advocating for global nuclear disarmament³³.

During Jair Bolsonaro's administration (2019–2022), the COVID-19 pandemic disrupted key forums of the nuclear nonproliferation regime, delaying the 2020 NPT RevCon to 2022. In its 2021 report to the NPT RevCon, Brazil reaffirmed its commitment to the TPNW, describing it as a major advancement in nuclear disarmament, though the Treaty's ratification process had stalled since 2019 despite the renewal of Congress and the reassignment of the rapporteurship to a Bolsonaro ally, Deputy Luiz Philippe de Orleans e Bragança (United Nations, 2021a, p. 6-7; Brasil, 2021; Plum, 2021). On naval nuclear propulsion, a matter of increased international scrutiny following the AUKUS announcement, Brazil defended its right under the NPT to pursue such technologies as it is not prohibited and is consistent with its non-proliferation obligations as a NNWS under that instrument, as well as with its undertakings under the Treaty of Tlatelolco and with legal support from Article 13 of INFCIRC/435 (United Nations, 2022a, item 4, 6 - WP.71). The country resisted efforts to make the AP mandatory, arguing this would disrupt the balance between disarmament and nonproliferation commitments and reaffirming the AP's voluntary nature as upheld by the 2010 NPT RevCon and annual IAEA resolutions (United Nations, 2021c, items 114,115; 2023b, p. 3). However, concerns that Brazil's stance on the AP could affect PROSUB led to the academic project "The Conventional Submarine with Nuclear Propulsion Program (SCPN) in the Face of IAEA Additional Safeguards" (CAPES, 2019). Meanwhile, Brazil's nonproliferation credentials were strengthened by the recognition of ABACC in UNGA Resolution 76/52-2021 as a model bilateral mechanism for nuclear safeguards, underscoring the importance of transparency to prevent clandestine nuclear weapons development (United Nations, 2022a, item 4, 6, 26 - WP.71).

In December 2021, Brazil formally notified the IAEA of its decision to initiate negotiations on Special Procedures for using safeguarded nuclear material in naval propulsion

³³ Other significant developments in the nuclear area during this administration included Brazil's nuclear policy, enacted by presidential decree in December, 2018, and the establishment of the Naval Agency for Nuclear Safety and Quality (AgNSNQ) in February, 2018. Initially subordinate to the Navy's Directorate-General for Nuclear and Technological Development, the AgNSNQ oversaw nuclear safety, licensing, and quality assurance for naval and land-based facilities. On December 26, 2022, it was restructured under the direct authority of the Navy Commander and renamed the Naval Secretariat for Nuclear Safety and Quality (SecNSNQ) (Marinha, 2018; Brasil, 2022).

and submarine operations, per Article 13 of INFCIRC/435³⁴. Preliminary discussions began in May 2022³⁵, followed by formal negotiations in June. Meanwhile, Brazil's 2022 Working Paper, submitted in August for the NPT RevCon, on its naval nuclear propulsion programme, asserted that the vessel will be conventionally armed and powered by LEU. The program was justified on strategic grounds, given Brazil's jurisdiction over a maritime area of approximately 4.5 million square kilometers under the UNCLOS. The region is claimed to be vital for Brazil's economy and security, hosting significant oil, gas, and mineral resources, while supporting 85% of its oil, 75% of its gas extraction, and 95% of its foreign trade through sea routes. The SSN is expected to bolster Brazil's ability to monitor and defend its resources and trade routes, particularly in the South Atlantic, while advancing its defense industrial base, technological innovation, and sustainable development goals. It also asserted the country's commitment to nonproliferation, affirming that the SSN program does not pose a proliferation risk and the country's nuclear non-proliferation track record is impeccable with all its nuclear facilities, including military—which are the only ones in the world—subjected to IAEA safeguards under the Quadripartite Agreement. The paper further underscored that since 2021, IAEA inspections have confirmed the absence of nuclear material diversion, with high-ranking officials affirming the program's transparency. Meanwhile, developing special procedures for verifying nuclear material used in naval propulsion remains a collaborative effort between Brazil and the IAEA. Collaboration with the IAEA and ABACC on special verification procedures is ongoing to ensure safeguards compliance while protecting sensitive information (United Nations, 2022a, item 6-10, 13-16, - WP.71). In 2023, Brazil provided preliminary and updated design information for planned facilities, enabling technical discussions on safeguards for the land-based prototype reactor. This included workshops on “safeguards-by-design” and testing of Design Information Verification procedures in

³⁴ The communication included the following points: the use of nuclear material for submarine propulsion and prototypes would not conflict with any prior commitments made to the IAEA regarding safeguards; during the implementation of the special procedures, the nuclear material would not be used for the production of nuclear weapons or other explosive nuclear devices; the Brazilian Navy would develop indigenous technologies for the nuclear fuel cycle; the Navy was designing a conventionally armed, nuclear-powered submarine; the nuclear plant for the unit was being developed domestically; the nuclear fuel for its reactor would be produced in Brazilian facilities; all these steps were being undertaken under the safeguards of the IAEA and ABACC; and according to the program, a partial license for the construction of the unit had been granted by AgNSNQ (Alves; Moura, 2024, p. 195; IAEA, 2023b, items 2-5; United Nations, 202a2, item 7 - WP.71).

³⁵ During this meeting, the general aspects of the submarine's operation, the facilities involved in the program, and what it considers to be "classified and sensitive information and technology" were presented. It also identified the facilities involved in propulsion development, including the prototype and submarine reactors, as well as its understanding of how safeguards could be applied under special procedures (IAEA, 2023b, items 5-6, 8). In October 2022, IAEA experts visited the facilities, during which information about them and additional details regarding the proposal were provided. In a third meeting, held in November 2022, the Agency presented its conceptual proposal for customized safeguards (Alves; Moura, 2024, p. 195; IAEA, 2023b, items 9-10).

September 2024 (IAEA, 2024b, items 10-13). While progress continues, the IAEA estimates the process could take five years to complete (Gielow, 2024)³⁶.

In this context of renewed international attention to SSNs and nuclear naval propulsion it should be noted that the perspectives of NWS on Brazil's SSN program reflect a mix of technological restrictions, selective support, and strategic interests. In 2010, the US denied Brazil's request to procure controllers (CPUs) for its SSN program, citing opposition to Brazil's indigenous naval nuclear initiative (Bezerril, 2011). This aligns with broader US-led restrictions, which frequently blocked technology transfers. Moreira (2013, p. 201, 204-208) highlighted these restrictions in his study of the nuclear sector between 1998 and 2011, identifying a trend that intensified after the launch of Prosub in 2009. Rear Admiral Sérgio Luis de Carvalho Miranda, director of navy nuclear development, observed in 2024 that the US continued to impose significant restrictions on Brazil's nuclear efforts³⁷. These NWS selective support is evident in their endorsement of Australia's use of HEU under AUKUS while opposing similar programs by nations like Brazil or Iran, guided more by strategic interests than consistent nonproliferation principles. Russia's stance on Brazil's SSN program remains ambiguous. After stalled US negotiations, Bolsonaro sought Russian support in 2021, with Admiral Flávio Rocha pursuing further discussions in Moscow but no commitments were made (Araujo, 2022). France³⁸, a key partner since 2009, has supported Brazil's SSN development alongside assistance in constructing conventional submarines, a naval base, and a shipyard. Meanwhile, China has not opposed Brazil's SSN program and has remained silent on Brazil's ability to prevent nuclear material diversion (Silva, 2024, p. 48-54).

Under the third presidency of Lula da Silva (2023-2026), the administration expressed its intention to prioritize the ratification of the TPNW (Brazil, 2025b, p. 2). In 2023, notable developments emerged in the previously stalled process, including a recommendation by Deputy Jonas Donizette in the Committee on Foreign Affairs and National Defense (CREDN) to approve the treaty while rejecting the suggestion for analysis and deliberation under the terms of §3 of Article 5 of CF/88 (Brasil, 2024). However, this was met with dissent from Deputy Luiz Philippe de Orleans e Bragança, who opposed the treaty on grounds of

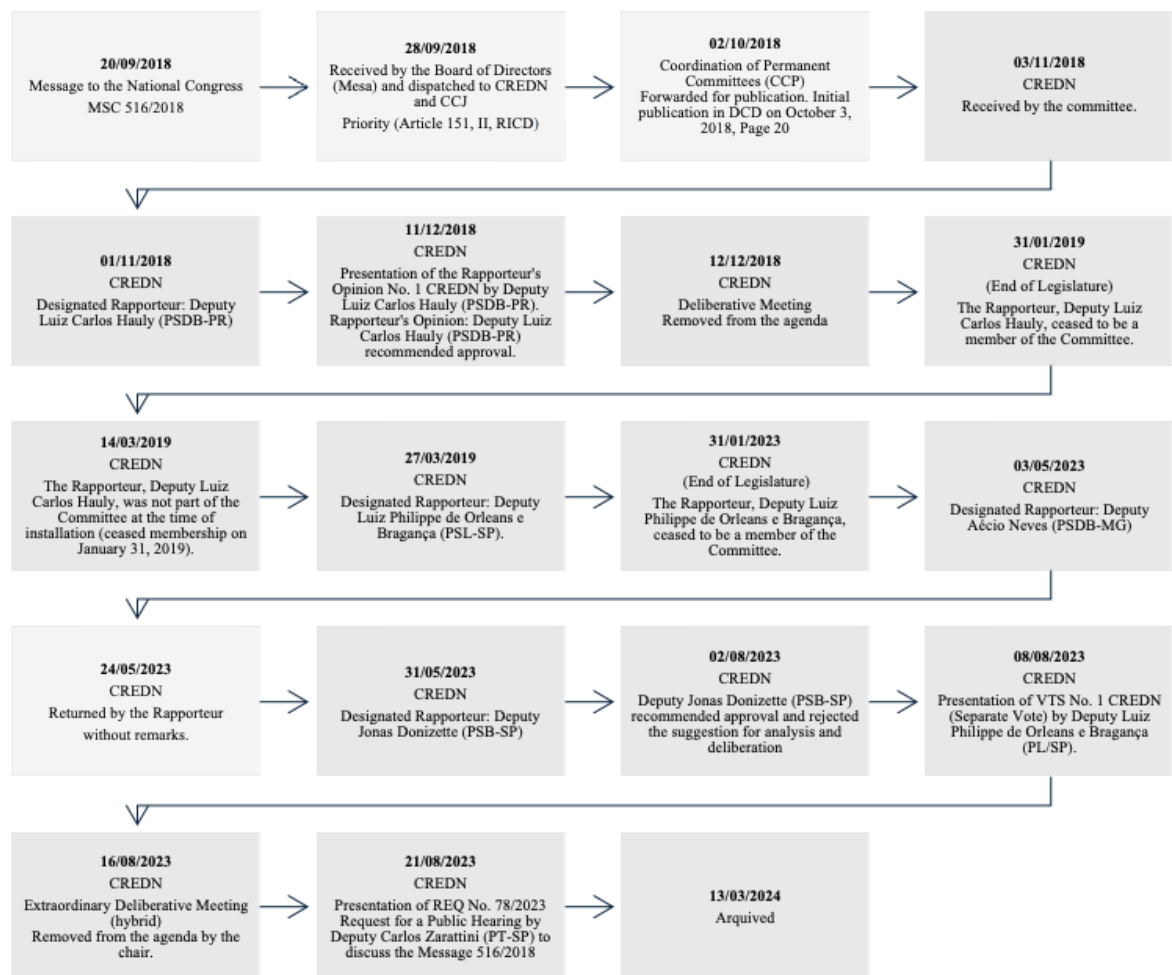
³⁶ Brazil's stance on IAEA nuclear safeguards will be revisited in Chapter 4, with further developments detailed in Appendix C.

³⁷ Oral information obtained during a visit to Aramar facility on August 15th, 2024 (Visita [...], 2024).

³⁸ In March 2024, it was reported that France would continue supporting Brazil's SSN development without specific announcements. In response to an IAEA request in May 2024, France confirmed in October that its cooperation on conventional submarine components began in 2008 and that relevant details would be reported under its AP obligations (IAEA, 2024b, items 14-15).

ineffectiveness, impracticality, citing the Treaty's failure to engage nuclear-armed states, the absence of mechanisms for coordinated disarmament with security guarantees, constraints on national defense, overlap with existing commitments under the NPT, as well as concerns about its implications for the SSN program (Brasil, 2023a, p. 3-5). The process saw further action with Deputy Carlos Zarattini's request for a public hearing to address uncertainties regarding the treaty's scope, especially for the Brazilian Navy, which oversees critical strategic initiatives, such as the SSN and the uranium enrichment program (Brasil, 2023b). Nevertheless, these efforts stalled, and the process was archived in March 2024. Figure 1, presents details on the process so far to ratify the TPNW.

Figure 1 – Current situation of the TPNW ratification process in Brazil

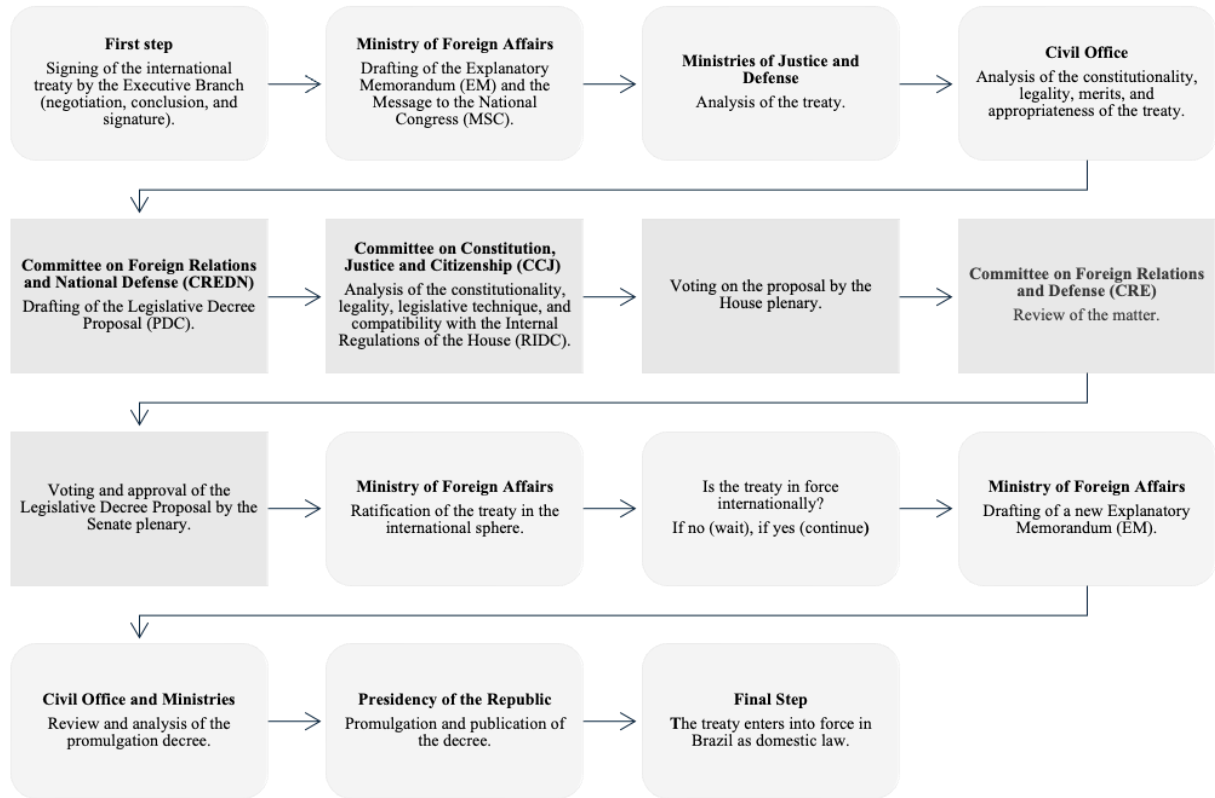


Source: Elaborated by the author based on Câmara dos Deputados (Brasil, 2024; 2025a).

In Brazil, the internalization of international treaties adheres to a structured process involving both the Executive and Legislative branches, ultimately culminating in their

incorporation into domestic law. This process, particularly for treaties related to disarmament, follows a specific procedural framework, as illustrated in Figure 2.

Figure 2 – The Process for Internalization of International Treaties in Brazil



Source: Elaborated by the author based on Instituto Sou da Paz (2014)³⁹.

As illustrated in figure 2, the Executive Branch initiates the process through the negotiation, conclusion, and signing of the treaty, after which the MFA drafts an EM and a MSC for review by the Ministries of Justice and Defense, which assess its technical, legal, and strategic aspects. The Civil Office then conducts a constitutional, legal, and merit-based review before forwarding the treaty to the Legislative Branch. In the Legislative Branch, the Chamber of Deputies examines the treaty through CREDN, which drafts the PDC, followed by the CCJ, which ensures legal and constitutional compliance, before plenary approval. The Senate then conducts a similar review through the CRE and a plenary vote. Approval in both chambers requires a simple majority of members present, provided the absolute majority of

³⁹ The legislative process for the approval of international treaties is governed by a comprehensive normative framework that encompasses the following key provisions: Article 21, item I, of the Federal Constitution (CF); Article 49, item I, of the CF; Article 59, item VI, of the CF; Article 84, item VIII, of the CF; Article 32, item XV, subparagraph “c” of the Internal Rules of the Chamber of Deputies (RICD); Article 151, item I, subparagraph “j” of the RICD; Article 103, items I and VI, of the Internal Rules of the Federal Senate (RISF); Article 172, item II, subparagraph “c” of the RISF; Article 336, item II, of the RISF; Article 337 of the RISF; Article 338, item II, of the RISF; and Article 376 of the RISF (Silva, 2019, p. 144–145).

total members are in attendance, as Article 47 of the Constitution mandates. Legislative rejection at any stage terminates the process. Following congressional approval, the treaty returns to the Executive Branch for ratification and subsequent promulgation by the President of the Republic, formalizing its incorporation into domestic law (Instituto Sou da Paz, 2014; Mazzuoli, 2014, p. 430-459; Rezek, 2025, p. 66). Currently, the TPNW is under review in CREDN, pending a public hearing, and remains within the Legislative Branch awaiting approval before returning to the Executive Branch for ratification. Hence, there is still a long process before the treaty is eventually ratified.

At the 2023 NPT PrepCom meeting, the Brazilian delegation emphasized the imbalance among the treaty's three pillars, particularly highlighting the disparity between nuclear disarmament and non-proliferation regarding obligations and implementation. Brazil argued that the persistent failure to fulfill disarmament commitments under Article VI undermines the treaty's overall objectives and perpetuates insecurity, driving proliferation and weakening the non-proliferation regime. The delegation criticized attempts to impose additional burdens on NNWS, which have contributed the least to the proliferation problem, while NWS continue to disregard their disarmament obligations. Brazil also opposed calls to establish the AP as the "new verification standard" under Article III, reiterating that the AP is a voluntary measure and its adoption a sovereign decision, as affirmed by previous NPT RevCon and IAEA General Conference resolutions. Brazil warned that reinterpreting Article III to mandate the AP would constitute an unwarranted amendment to the treaty, setting a dangerous precedent for similar reinterpretations of other provisions, including Article VI, thus jeopardizing the treaty's integrity and balance (United Nations, 2023 a,b,c).

Between 1998 and 2024, in the context of Brazil's formal adherence to the NPT, the nation's rhetoric at RevCon and PrepCom meetings reflected a stable and coherent approach to international nuclear diplomacy. Brazil persistently advocated for the universality of the NPT, reaffirming its foundational pillars of nonproliferation, disarmament, and the peaceful use of nuclear technology. Key principles, such as irreversibility, transparency, and verifiability, were consistently emphasized, alongside calls for implementation of the 1995 resolution on the Middle East. Furthermore, Brazil urged the reevaluation of the role of nuclear weapons in the military doctrines of NWS, highlighted the risks associated with accidental nuclear detonations, and criticized systemic asymmetries stemming from inadequate progress on disarmament obligations. Throughout this period, Brazil advanced

proposals to enhance the effectiveness of the NPT, particularly by pressing NWS to fulfill their disarmament commitments (Silva; Guimarães, 2022, p. 57–59)⁴⁰.

Meanwhile, concerning the nuclear program, the 2023 Management Report of the MD detailed the allocation of resources for projects from 2008 to 2040: the Navy received R\$60.8 billion (38.3%). The report also highlighted progress in the Brazilian Navy's Nuclear Program and the development of the SN-BR. By 2023, key milestones included the completion of infrastructure at the Navy Technological Center in São Paulo, advancements in isotopic enrichment technology at the Laboratory for Isotopic Enrichment, and substantial progress in the design of critical submarine components. Completion of these initiatives is anticipated by 2034, with investments totaling R\$6.83 billion for the nuclear program and R\$22.61 billion for the SN-BR. As of 2023, physical execution of the Navy Nuclear Program stood at 63% (37% remaining), while the SN-BR project had completed 26.7% (73.3% remaining) (Brasil, 2023d, p. 60-61). With respect to Argentina, in October 2023, Brazil signed a Memorandum of Understanding with Buenos Aires to strengthen cooperation in nuclear technology, with a particular focus on the Brazilian Multipurpose Reactor (RMB) project. This agreement seeks to promote the peaceful use of nuclear energy, including the production of medical radioisotopes (Brasil, 2023c).

Despite significant ideological differences, the Workers' Party and the Bolsonaro administrations demonstrated a similar approach in advancing Brazil's nuclear agenda, particularly through the SSN program under Prosub. The SSN has been consistently framed as fundamental to achieving national autonomy, fostering technological innovation, and contributing to sustainable development. While the SSN is classified as a military initiative, Brazil has emphasized that it constitutes a “non-proscribed nuclear activity” under international norms and is considered a peaceful use of nuclear energy. This military motivation has been leveraged to elevate Brazil's technological capacity, benefiting civilian applications such as fuel production for nuclear power plants, a strategy Filho (2011) described as “technological opportunism”. Alongside these technological and strategic advancements, both administrations engaged actively in the global nuclear disarmament regime, promoting initiatives such as the TPNW. While both administrations committed to

⁴⁰ Silva and Guimarães (2022, p. 57–59) conducted a contextual analysis of Brazil's rhetorical positioning at the NPT RevCon and PrepCom meetings from 1998 to 2019. This analysis involved mapping all rhetorical issues directly or indirectly referenced by Brazil, achieved through a systematic review of available documents from the specified period. Thirteen rhetorical issues were identified, each subsequently analyzed to assess its recurrence across the rhetoric of successive Brazilian administrations. This research expands upon their analysis to include the third Lula administration, extending the temporal scope to 2024. The extended review demonstrates that eight of the thirteen rhetorical issues consistently featured in the discourse of all administrations.

advancing TPNW ratification, neither ultimately ratified the treaty. During the administrations analyzed in this session, Brazil played a significant role in multilateral nuclear diplomacy, contributing working papers to PrepComs and RevCons, with a Brazilian ambassador presiding over the 2005 NPT RevCon and later serving as the UN High Representative for Disarmament Affairs. Additionally, Brazil sought to mediate the nuclear fuel swap negotiations with Iran alongside Turkey, further underscoring its aspiration for greater global influence during Lula's administration. However, this contrasts with the Bolsonaro administration, which maintained a more restrained global posture. Despite these differences, both administrations consistently defended Brazil's right to develop its SSN program, resisted signing the AP, preserved Article 13 of INFCIRC 435, and negotiated special procedures. These actions reflect a consistent pursuit of autonomy in Brazil's nuclear program, advancements in the SSN project, and a sustained commitment to nuclear disarmament. With respect to Argentina, the main source of cooperation in the nuclear domain, despite ABACC and the Quadripartite Agreement, is the RMB.

2.5 Findings

Brazil's nuclear policy has been fundamentally shaped by its pursuit of autonomy, which has directly influenced the development of its SSN program. This autonomous drive is evident in the country's strategic approach to protecting its mineral resources, diversifying partnerships, and reducing dependence on the US. While not always linear, this policy has been central to Brasilia's development of expertise in the nuclear fuel cycle, a critical foundation for its SSN ambitions. The decision to partner with France on the conventional aspects of the SSN while independently developing the nuclear propulsion system further underscores Brazil's commitment to maintaining control over its nuclear capabilities.

The country's engagement with the NWNPR reflects this autonomous stance. By delaying its accession to the NPT, Brazil was able to advance its nuclear capabilities and solidify bilateral ties with Argentina before formally joining the treaty. This approach allowed both countries to shape their own path, culminating in establishing ABACC — a mechanism that reinforced their commitment to transparency while preserving sovereignty over their nuclear programs. The Quadripartite Agreement, more restrictive than the standard CSA, further demonstrated Brazil's dedication to accountability. Meanwhile, its reluctance to sign the AP stems not from opposition to enhanced safeguards but from a broader stance on nuclear disarmament — seeking to hold NWS accountable and ensuring that non-proliferation

efforts do not reinforce global inequalities. Similarly, Brazil's leadership in nuclear disarmament forums, participation in the NAC, and engagement with the TPNW further illustrate its broader strategic objectives — balancing disarmament and non-proliferation commitments with the defense of its technological and economic interests.

In this context, the implications of a potential NSG decision to suspend its provisional recognition of regional safeguards as equivalent to the AP are significant for both Brazil and Argentina. Given the structure of the Quadripartite Agreement, unilateral adherence to the AP by either country would necessitate renegotiating their safeguards framework, potentially undermining ABACC and the regional non-proliferation regime. Brazil's nuclear program, focused primarily on domestic needs rather than exports, may be less vulnerable to such changes than Argentina's. However, a unified stance remains critical for maintaining regional stability and safeguarding their autonomous approach.

By viewing Brazil's nuclear policy through the lens of autonomy, as conceptualized by Jaguaribe and Puig, it becomes clear that its strategy extends beyond military considerations. The development of the SSN is not just a military project but a broader assertion of Brazil's technological and economic autonomy in a hierarchical global order. The country's insistence on independently mastering the nuclear propulsion system directly extends this strategic vision, reflecting a long-standing commitment to autonomy, economic development, and international agency in shaping its nuclear future.

3 AUSTRALIA, THE PURSUIT OF MIDDLE POWER STATUS, THE ACQUISITION OF SSNS AND THE NWNPR

Australia's geographical and sociocultural attributes — its insularity as a continent devoid of contiguous land borders, minimal historical and cultural affinities with proximate nations (with the notable exception of New Zealand), and its origins as a colonial dependency of the powerful and world-spanning British Empire — have profoundly shaped its national security paradigms and strategic alignments. These characteristics are further compounded by Australia's historical self-conception as an extension of the Anglosphere, heavily influenced first by British and later by American values, interests, and geopolitical frameworks. Such an orientation engendered a distinct sense of separation from its Asia-Pacific neighbors, underpinned by perceptions of cultural, racial, and political differences. For much of its history, Australia has positioned itself as a bastion of Western identity in its region.

This perception of separateness—often imbued with racialized undertones—manifested in policies that prioritized *security from* Asia rather than *security within* Asia (Keating, 1995). The theoretical constructs articulated by scholars such as Anthony Burke's (2008) "fear of security" and Allan Gyngell's (2017) "fear of abandonment" encapsulate Australia's historical reliance on distant allies to mitigate perceived regional threats. These anxieties have historical roots: fears of Japanese aggression during the Second World War, which catalyzed the establishment of the ANZUS alliance in 1952; Cold War-era apprehensions regarding communist expansion through China, Vietnam, and other possible 'domino' effects; and persistent concerns over Indonesia as a populous and geographically proximate state. Such enduring patterns underscore the centrality of Australia's strategic alliances with Britain and, after 1945, the United States, as mechanisms for safeguarding its sovereignty against perceived regional vulnerabilities.

The foreign policy shifts initiated by Prime Ministers Gough Whitlam and Paul Keating represented critical junctures in Australia's ongoing efforts to reconcile its Western historical identity with the geopolitical realities of its location in the Asia-Pacific region. Whitlam's reforms, including the formal abolition of the White Australia policy, the withdrawal of Australian troops from Vietnam, and the establishment of diplomatic relations with the People's Republic of China, marked a deliberate move towards regional engagement. Keating expanded upon this trajectory by emphasizing the necessity of recognizing Australia's geographic and strategic position within a rapidly decolonizing and economically dynamic Asia-Pacific. His vision of seeking "security in and not from Asia" underscored the

imperative for deeper integration with regional partners. However, these efforts challenged deeply ingrained national attitudes, creating friction between the aspirations of policymakers and a society accustomed to identifying with the Anglosphere.

Despite the efforts of Whitlam and Keating, Australian foreign policy has frequently wavered between a renewed focus on regional engagement and a persistent reliance on historical allegiances to London and Washington. This oscillation reflects a broader identity crisis, wherein Australia struggles to reconcile its cultural heritage as part of the Anglosphere with the pragmatic demands of its location in the Asia-Pacific. While initiatives such as promoting Asian language education and fostering regional economic and diplomatic ties have occasionally gained momentum, they have rarely achieved lasting impact. For instance, Rudd's advocacy of 'Asia literacy' resulted in little new funding, apart from the establishment of a new China in the World Institute at the Australian National University. Meanwhile, the number of students studying Asian languages continues to decline, public understanding of the region remains limited, and successive governments frequently revert to prioritizing traditional alliances, underscoring Australia's enduring ambivalence about its global role (Cotton; Ravenhill, 2024, p. 8).

This ambivalence is integral to understanding the strategic decisions underpinning Australian foreign policy, including its participation in the AUKUS pact and its historical consideration of a nuclear weapons program. While the Statute of Westminster (1942) formally established Australia's sovereignty, allowing Australia to pursue its foreign policy unencumbered by formal constraints it remained under the influence of London and Washington⁴¹. Indeed since the 1940s Australia's foreign policy has been influenced by three primary approaches: a firm and deep relationship with what Prime Minister Robert Menzies (1962, p. 2) referred to as "our great and powerful friends", namely the UK and the US; a pursuit of better relations with its neighbors to promote a benign environment, which Prime Minister Paul Keating (1995) described as seeking security "in and not from Asia"; and an acknowledgment of its limited influence in world affairs, striving to support and influence the organizations, rules, and norms that collectively comprise the rules-based international order (Gyngell, 2017, p. 17). Additionally, Australia's self-identification as a middle power has

⁴¹ Australia's constitutional monarchy, based on a "personal union" with the UK, entails a shared monarch who performs ceremonial roles in Australian affairs, while governance is conducted independently under local advice. Legislative independence was reinforced by the Australia Act 1986, which ended the UK Parliament's authority to legislate for Australia, abolished appeals to the Privy Council, and established the High Court of Australia as the highest legal authority.

shaped the form and conduct of Australian diplomatic practice from 1945 until 1995 (Ungerer, 2006, p. 540).

These three perspectives have profoundly influenced Australia's position in the NWNPR and its ultimate goal of middle power status. The deep ties with the UK and US have underpinned Australia's security strategies, while the pursuit of regional stability has driven efforts to engage with neighboring countries on disarmament issues. Additionally, Australia's commitment to the rules-based international order has seen it actively participate in and advocate for international arms control agreements, reflecting its broader strategic objectives and the desire to maintain global stability.

3.1 The pursuit of middle power status through material means and skepticism towards the NWNPR

As the Second World War drew close, Canada and Australia sought to assert more significant influence within the emerging post-war international order, positioning themselves as advocates for formal recognition of their roles as middle powers. During the San Francisco Conference of 1945, their representatives contended that states playing a substantive "functional" role in preserving global peace, security, and stability warranted institutional acknowledgment as "moderately powerful" entities (Robertson; Carr, 2023, p. 382). Their argument hinged on three principal pillars: first, the substantial military contributions these nations made during the war; second, the necessity for diplomatic representation that reflects distinct geographic spheres of influence; and third, the conviction that enduring international peace required diverse, specialized contributions extending beyond those of the great powers (Chapnick, 2007, p. 23; Holbraad, 1984, p. 57-65; Ungerer, 2007, p. 541).

At the 1945 San Francisco Conference, Australian Foreign Minister Herbert Vere Evatt emerged as a vocal proponent of a more independent middle-power approach for Australian foreign policy. In pursuing Canberra's interests across multiple domains, including disarmament, Evatt was determined to secure a more prominent voice for Australia in international deliberations. As the principal Allied power in the Southwest Pacific, he argued that Australia's regional responsibilities and strategic significance justified a significant role within the United Nations' security framework. Evatt effectively elevated Australia's diplomatic standing, through assertive diplomatic advocacy, as evidenced by his influential involvement in key sub-committees (Herbert, 1946, p. 10; Ungerer, 2007, p. 541). However, Ottawa and Canberra efforts in securing prioritization for non-permanent seats on the United

Nations Security Council (UNSC) or in gaining formal recognition as middle powers largely failed (Chapnick, 1999, p. 77; Holbraad, 1984, p. 57-65; Robertson, 2017, p. 5).

In this context, Australia redirected its diplomatic efforts towards implementing middle-power strategies. According to Ungerer (2007, p. 542-543) Evatt's tenure as minister established the three defining characteristics of the middle power tradition in Australian foreign policy: nationalism, internationalism, and activism. Nationalism emerged from Evatt's efforts to assert a more independent stance from Great Britain after World War II, though Canberra remained tied to the processes and patronage of the British Empire. Internationalism was driven by Australia's increasing diplomatic independence and its reliance on multilateral diplomacy to influence international affairs. At the same time, activism was grounded in the country's diplomatic skills, resources, and the development of a professional diplomatic service to advance and sustain its foreign policy initiatives globally.

This evolving middle power strategy set the stage for Australia's involvement in broader geopolitical dynamics, particularly as global tensions around nuclear technology escalated. After the conclusion of the Manhattan Project—a collaborative effort between American, British, and Canadian scientists—the US rapidly moved to establish a monopoly on atomic technology. This shift made Washington increasingly reluctant to maintain its nuclear cooperation with Britain in the post-war era. In this context, the Commonwealth of Nations was crucial in sustaining the British Empire (Reynolds, 1996, p. 144). Deprived of American collaboration, as the US sought to consolidate its nuclear monopoly, the British Empire's resources became indispensable. Initially, London turned to Ottawa for support. However, Canada's geographical proximity to the US allowed the latter to exert significant control over the Canadian nuclear program and uranium supply. Faced with these limitations, the UK redirected its efforts towards Australia, which became instrumental in Britain's quest to develop nuclear weapons. The core assumption of empire planning was that, in a future global conflict, Canberra would function as a principal support base (Reynolds, 1998, p. 854).

The strategic alliance between the UK and Australia began in 1946 under Prime Minister Ben Chifley's administration (1945-1949). This period saw unprecedented collaboration in defense planning, notably through the 'joint project' for rocket testing in Woomera, South Australia. The initiative in Canberra's perspective aimed to secure a British commitment to provide nuclear weapons and their delivery systems should Australia's geopolitical situation deteriorate. However, from the British perspective, the ultimate objective was to resumpt of cooperation with the Americans. Canberra's contributions were vital, offering uranium, scientific expertise, and "uninhabited" regions suitable for plutonium

production and nuclear weapons testing, all while the US refused to renew collaboration (Reynolds, 1998, p. 854-856, 870; Gyngell, 2017, p. 78-79)⁴².

Under Prime Minister Robert Menzies' tenure (1949–1966), Australia's foreign policy was deeply conservative, shaped by Cold War dynamics and a firm reliance on London and Washington. Influenced by events such as the Chinese Revolution (1949) and the Korean War (1950–1953), Menzies viewed international politics through a polarized lens, framing the global order as a struggle between communism, led by the Soviet Union and China, and the West. This worldview fueled apprehension toward UN arms control initiatives, with Menzies expressing concerns that the USSR could exploit such efforts to outmaneuver the West (Gyngell, 2017, p. 78). Consequently, Australia remained cautious and aligned itself with its key allies, rejecting calls for a more independent foreign policy. Menzies opposed efforts to build on the internationalist agenda of earlier policymakers like H.V. Evatt, preferring instead to demonstrate unwavering loyalty to Britain during the 1956 Suez Crisis and the US during the Vietnam War (Ungerer, 2007, p. 543).

However, while Menzies prioritized steadfast alliances with both Britain and the US, the signing of the ANZUS Treaty⁴³ in 1951, reflected a parallel ambition to carve out a more defined role in regional security. This agreement exemplified Australia's recognition of shifting global dynamics, particularly the rise of communism in Asia, and a desire to ensure its own security through strengthened partnerships. Emerging from a period of British dominance, Australia, alongside New Zealand⁴⁴, engaged directly with the US to negotiate a

⁴² During the 1950s and early 1960s several British nuclear tests with active involvement of the Australian government were conducted in Australia. These tests resulted in radioactive contamination detected across much of the continent. Minimal efforts were made to protect the test site workers, and even less was done to safeguard nearby Aboriginal communities. For more on the British nuclear tests see Elizabeth Tynan (2018; 2022), Roger Cross (2001; 2005), Jacob Hamblin and Linda M. Richards (2022). Tynan (2018; 2022) examines the nuclear tests that took place in Maralinga and Emu Field, which is often overshadowed by the former test. Roger Cross (2001; 2005) offers an account of the nuclear tests from the perspective of veterans and a CSIRO (Commonwealth Scientific and Industrial Research Organisation) biochemist, Hedley Marston who's research into fallout from the nuclear tests conducted at Maralinga exposed the Australian government with respect to radioactive risks. Meanwhile, Hamblin and Richards (2022) offer an account of the nuclear tests that took place in Australia and in other countries such as Japan, United States, Canada and Ukraine, through the perspectives of scientists and those whose lives were directly affected by the history of radiation exposure.

⁴³ The ANZUS treaty does not explicitly guarantee Australia inclusion under the US nuclear umbrella or any form of assistance, including nuclear deterrence. While Australia unilaterally interpreted Article II as implying such protection—formally documented in the 1994 Defence White Paper—the US has neither endorsed nor contradicted this view. Decades of consistent Australian assertions may suggest tacit US acceptance under international treaty norms (Hood; Cormier, 2021).

⁴⁴ In 1944 Australia and New Zealand's defense relationship was formalized through the Australian-New Zealand Agreement, also known as the ANZAC Pact. The Pact, focused on mutual cooperation rather than a military alliance, sought to promote the two countries' interests in the postwar South Pacific. H.V. Evatt, critical of the 1943 Cairo Declaration for excluding Canberra and Wellington from decisions on Japanese territories, aimed to position Australia as a dominant regional power. Evatt sought to assume influence over British, Portuguese, and Dutch territories in the region, recognizing US support as vital given Britain's waning influence. He is

formal security pact that underscored its commitment to regional defense. While wary of Japan's rearmament due to wartime history, Canberra and Wellington leveraged this concern to solidify their positions as essential actors in Pacific security (Australia, 2024g). Besides ANZUS, in 1954, Australia joined the Southeast Asia Treaty Organization (SEATO), a key element of the US containment policy, aimed at curbing communist expansion in the region viewed as a critical front in the Cold War (United States, 1954).

Concurrently, at the national level, Canberra considered retaining the nuclear option, perceiving the emerging nuclear fuel cycle as potentially transformative for national development (Clarke; Frühling; O'Neil, 2016, p. 47). This vision was institutionalized with establishing the Australian Atomic Energy Commission (AAEC)⁴⁵ in November 1952, tasked with overseeing uranium exploration, mining, trade, and advancing atomic energy research while disseminating nuclear-related information. Over three decades, the AAEC undertook extensive research spanning the nuclear fuel cycle, including reactor design, uranium enrichment, and radioactive waste management. Initial reactor research (1953–1966) focused on high-temperature gas-cooled and liquid-metal-cooled reactors before shifting to heavy water reactors, fuel reprocessing, and nuclear desalination, anchored by the Lucas Heights Research Establishment, which housed Australia's first nuclear reactor, the High Flux Australian Reactor (NAA, 2024). Uranium enrichment (1965–1983) became the AAEC's most extensive program, exploring centrifuge and laser technologies and participating in international studies with partners such as France, Japan, and the United States. The Jervis Bay Nuclear Power Project (1969–1972) further exemplified Australia's ambitions in nuclear energy, reflecting the AAEC's role in positioning the nation within the global nuclear landscape (Australia, 1976a; 1977; 2006).

Meanwhile, between 1956 and 1961, Australian policymakers explored acquiring nuclear weapons from the UK, yet by the late 1950s, Menzies rejected UK proposals to negotiate tactical nuclear weapons transfers in 1958 and again in the 1959 "Strategic Bases" report (Walsh, 1997, p. 6–7; Hymans, 2000, p. 5). From 1964 to 1972, domestic nuclear weapons development was considered. Scholars have scrutinized Australia's nuclear ambitions, highlighting the roles of bureaucracy (Walsh, 1997), leadership identity (Hymans, 2000), ally influence (Auton, 2008), economic aspirations (Clarke; Frühling; O'Neil, 2016),

credited with initiating the discussions that led to this agreement (Hensley, 2009, p. 282–283; Olssen, 1944, p. 10).

⁴⁵ In 1953 the AAEC gained statutory authority with the enactment of the Atomic Energy Act. This legislation formalized the Commission's role, replacing the Industrial Atomic Energy Policy Committee (1949–1952) and the Atomic Energy Policy Committee (April–November 1952) (Australia, 2024f).

and fear of abandonment (Gyngell, 2017). Yet, between September 1961 and the Chinese nuclear test in 1964, Australia halted its nuclear pursuits as policymakers reassessed the Chinese nuclear threat. Recognizing their inability to deter China and the risks of unilateral deterrent development independently, they chose to strengthen alliances instead (Walsh, 1997, p. 1, 9; Hymans, 2000, p. 5-7).

On a global level, the success of British and Soviet nuclear programs in the late 1950s renewed Anglo-American atomic cooperation, marking a shift away from broader imperial collaboration on nuclear weapons. In Australia, this prompted discussions about developing an independent nuclear deterrent. Still, Prime Minister Menzies dismissed such ambitions, assuring parliament that the nation had abandoned plans for a sovereign nuclear arsenal. By 1961, Menzies conditionally supported a global nuclear test ban, contingent on UK nuclear capabilities support for Australia should it ever require them, while the Antarctic Treaty, with Australia as an original signatory, came into force. (Hymans, 2000, p. 5; Reynolds, 1998, p. 865, 872). The following year, the Cuban Missile Crisis intensified global concerns over nuclear proliferation, further steering Australia toward nonproliferation efforts. Australia subsequently supported and ratified the US and USSR's Partial Test Ban Treaty (PTBT) in 1963, with its UN Ambassador advocating for a comprehensive ban to curb China's nuclear development. However, when China became a NWS in 1964, Australia's enthusiasm for NWFZ waned (Gyngell, 2017, p. 78-79; Jordan, 2012).

As previously mentioned, Menzies did not favor an activist or independent foreign policy for Australia and maintained strong control over his foreign ministers to limit deviation from his approach. Despite this, the middle-power concept influenced post-war foreign policy, with Minister for External Affairs Garfield Barwick (1961-1964) later reviving Evatt's idea in shaping Canberra's Asia-focused policies. In a 1964 parliamentary statement, Barwick described Australia as a middle power, bridging advanced and underdeveloped nations, rooted in European heritage yet closely tied to Asia. He highlighted this dual identity as a source of strength, advocating for collective security as essential to Australia's growing influence. In the 1960s, the middle power concept evolved from Evatt's focus on material capabilities and regional importance to a functional role as a mediator in international politics. Barwick emphasized cultural diplomacy with nations like Indonesia and India, reinforcing the link between middle power status, international influence, and the importance of "soft" diplomacy to Australia's security interests. Meanwhile, Paul Hasluck's (1964-1969) tenure as External Affairs Minister, overshadowed by the Vietnam War, had limited foreign policy achievements. Initially focused on "power politics" and the "balance of power", Hasluck later adopted a

middle power approach, reminiscent of Evatt's arguments from the San Francisco conference. He helped establish the Asian and Pacific Council in 1966 and utilized Barwick's "bridge" metaphor to link non-Asian and Asian spheres, aligning with middle power theory. However, the period from 1969 until 1972 was marked by political instability, frequent ministerial changes, and minimal foreign policy innovation. An exception was Foreign Minister Gordon Freeth's 1969 attempt to welcome greater Soviet naval presence in the Indian Ocean, which drew backlash and led to his swift removal (Baker, 1987, p. 63; Ungerer, 2007, p. 543-545).

As discussions of middle-power diplomacy evolved, Australia's defense policy during the same period remained deeply influenced by World War II legacies and the strategic demands of the Cold War. From 1945 to the 1960s, Australia's defense policy was shaped by World War II paradigms, characterized by reliance on allied powers—initially the UK and later the US—and centralized military leadership⁴⁶. Governance was fragmented across six distinct departments (Defence Central, Navy, Army, Air, Supply, and Defence Production), fostering interservice rivalry and undermining strategic cohesion. The Cold War doctrine of "forward defense" prioritized regional coalitions, particularly in Asia, to preempt threats, minimize costs, and ensure sustained US and UK engagement. Following the Korean War's conclusion in 1953, Australia capped defense spending, attracting criticism from London and Washington for insufficient burden-sharing. By the 1950s, the Department of External Affairs advocated for deeper regional engagement with newly independent neighbors, challenging the reliance on alliances such as ANZUS and SEATO. However, Prime Minister Menzies defended Australia's alliance-dependent posture, emphasizing that Australian forces and diplomacy aimed to secure allied commitments rather than serve as proxies in "other people's wars". Tensions over diverging US-Australian policies, particularly concerning Indonesia, underscored the limits of this approach, yet the government resisted calls for greater self-reliance in defense (Edwards, 2016, p. 8-12).

As the 1960s unfolded, Australia's strategic policies encountered further complexity as its allies pursued conflicting priorities. Britain sought support against Indonesia during the Indonesian-Malaysian Confrontation (*Konfrontasi*) but avoided involvement in Vietnam, while the US prioritized Vietnam as a Cold War priority and urged caution toward Indonesia to prevent alignment with Beijing. Under pressure from both allies, Canberra expanded its military, implemented conscription, and committed forces to both conflicts. Australia's

⁴⁶ These leaders, particularly the Senior officers in the Royal Australian Navy (RAN) and Royal Australian Air Force (RAAF), often prioritized developments in London and Washington over domestic issues, with 1950s major defense decisions largely reactive to UK and US requests (Edwards, 2016, p. 6–7).

engagement in *Konfrontasi* balanced military and diplomatic efforts to maintain relations with Jakarta. In contrast, Vietnam involved deeper engagement driven by Prime Minister Menzies, exceeding initial US requests and straining national resources⁴⁷. Public opposition, particularly against conscription, culminated in mass protests, fostering a rejection of forward defense strategies in favor of "continental defense". In the late 1960s, some reforms were implemented to enhance joint planning and coordination across Australia's military services. However, resistance, institutional inertia, and limited political backing hindered progress. Reform prospects improved when Malcolm Fraser became Defence Minister, in 1969, and appointed Arthur Tange as Defence Department Secretary, signaling renewed momentum for structural changes (Edwards, 2016, p. 12).

Amid these evolving global dynamics, the late 1960s and early 1970s also witnessed Australia grappling with significant decisions regarding nuclear energy and arms control. Under Prime Minister John Gorton (1968–1971), during a period of easing US-Soviet tensions that heralded promising prospects for nuclear arms control, Australia opposed the NPT. It proposed constructing the country's first nuclear power plant at Jervis Bay. Initiated in 1969, this project aimed to build an electrical nuclear power station, reflecting widespread expectations that nuclear energy would be introduced to Australia in the 1970s. However, budgetary constraints led to the project's deferral in 1971 and eventual abandonment in 1972 (Australia, 2006). Although this project was publicly framed as an energy initiative, it also carried strategic implications, potentially enabling Australia to pursue a nuclear weapons program. This dual-purpose intent highlighted the government's interest in bolstering Australia's material capabilities to achieve middle-power status. Despite early resistance to the NPT, Australia faced mounting international pressure as major powers ratified the treaty. Consequently, Canberra signed the NPT in 1970, albeit with the condition that it would not take effect domestically until formal ratification (Clarke; Frühling; O'Neil, 2016, p. 59–60). Globally, 1972 marked a pivotal year for nuclear arms control. The US and the USSR concluded landmark agreements: the Anti-Ballistic Missile (ABM) Treaty, which restricted missile defense systems to national capitals, and the Strategic Arms Limitation Talks (SALT

⁴⁷ Despite this Edwards (2016, p. 10) claimed that most Australians failed to understand the extent to which Menzies had been urging the Americans to commit forces to Vietnam, in what he considered to be Australia's interests. There are many political commentators suggesting that Australia's strong involvement in Vietnam was a means of proving the country's usefulness to the alliance, demonstrating Australian loyalty should it need US support in the future. During this time, Australia made four military commitments — to the Korean War and the Malayan Emergency in the 1950s and to the Indonesian Confrontation and the Vietnam War in the 1960s. During the *Konfrontasi*, the Menzies government sought intervention assurances from Washington, but these were dismissed, leaving Australia disappointed by the limited support despite the ANZUS alliance (Dean; Frühling; O'Neil, 2024, p. 26; Australia, 2024g).

I), imposing a five-year cap on the number of nuclear missile silos and submarine-launched missile tubes. Concurrently, Washington strengthened its diplomatic ties with the People's Republic of China amid the ongoing Sino-Soviet split, which strained relations between Moscow and Beijing's communist regime (Council on Foreign Relations, 2024).

Australia's trajectory in the nuclear field from the mid-1940s to the early 1970s reflects its ambition to assert middle-power status through material means. In the immediate post-World War II period, Australia's defense and foreign policy, influenced by figures such as H.V. Evatt, emphasized greater independence from the UK, a commitment to multilateral diplomacy, and an active global presence. Under the Menzies government, however, this vision of middle-power status became more militarized, marked by a heavy reliance on London for a nuclear deterrent and a strategic focus on mastering the nuclear fuel cycle. This achievement could provide the technical foundation for nuclear weapons development. Although the Gorton administration briefly considered pursuing an independent nuclear capability, Australia's approach ultimately pivoted toward nuclear weapons non-proliferation in response to shifting global dynamics and mounting international pressure. As will be examined in the following section, this transition underscores Australia's evolving nuclear strategy in the context of broader geopolitical and diplomatic imperatives.

3.2 The pursuit of middle power status through diplomatic behavior and proactive efforts towards the NWNPR

Prime Minister William McMahon (1971-1972) took significant steps regarding the NPT and shelved the Jervis Bay nuclear project. Following him, Prime Minister Gough Whitlam (1972-1975) ratified the NPT, in 1973, and concluded a CSA with the IAEA, in 1974, establishing, on the same year, the Australian Safeguards Office (ASO)⁴⁸ to implement the IAEA safeguards agreement (Australia, 2024). During this period, the country became more proactive in UN, arms control and disarmament issues. Canberra supported several new initiatives, including the Treaty of Tlatelolco, and ratified the Seabed Treaty, which it had previously opposed over concerns about defensive nuclear weapons in its territorial waters. Australia also criticized nuclear tests conducted by China, India, and France. In 1973,

⁴⁸ The Nuclear Non-Proliferation (Safeguards) Act of 1987 established the legal framework for ASO's nuclear safeguards and security functions, introducing the statutory role of Director of Safeguards. It later expanded to encompass Australia's bilateral safeguards system. ASO was initially under the AAEC but in 1994, it became part of the Department of Foreign Affairs and Trade (DFAT) (Australia, 2024b).

Canberra submitted its objections to the ICJ, which dismissed the claim after Paris switched to underground testing in 1974 (Gyngell, 2017, p. 7, 125).

Australia's active role in promoting the NPT was further evidenced by its efforts to garner broad support for the Treaty, renouncing any ambitions for nuclear weapons and emerging as one of its staunchest advocates. Prime Minister Whitlam emphasized non-proliferation in his 1974 UNGA address, criticizing the superpowers' lack of restraint on disarmament and expressing concern over the continued proliferation of nuclear weapons. He pledged measures to strengthen the NPT and called for its universal support, agreement on a CTBT, and better governance of nuclear experiments for peaceful purposes. The UN adopted a resolution incorporating Whitlam's points later that year (Jordan, 2012).

While Australia's advocacy for nuclear non-proliferation highlighted its commitment to global nuclear governance, evolving geopolitical realities in the late 1960s and early 1970s prompted a reassessment of its strategic posture. The 1969 Nixon Doctrine signaled a reduced US defense role in allied regions, urging allies to take greater responsibility for their own security (United States, 2024). Similarly, Britain's withdrawal from Southeast Asia underscored its waning influence. By the mid-1970s, declining US and UK regional commitments and growing public opposition, particularly to conscription, drove Australia to pivot from forward defense strategies to "continental defense", emphasizing self-reliance and prioritizing the Australian continent. The 1972 Defence Review reflected this shift, emphasizing regional security and the "sea-air gap" strategy, prioritizing naval and air power. Under Defence Secretary Arthur Tange, reforms such as unifying service branches into the Australian Defence Force (ADF) and establishing a "diarchy" leadership model combined civilian and military oversight. Despite resistance, these changes laid the foundation for a more independent, self-reliant, and regionally focused defense policy (Australia, 1972; Edwards, 2016, p. 11–13).

Building on the strategic reassessments of the early 1970s, the Malcolm Fraser government (1975-1983) further advanced Australia's shift toward self-reliance and regional focus through the country's first Defence White Paper (DWP) in 1976. Drafted under Defence Secretary Arthur Tange and strategic policy adviser William Beal Pritchett, the 1976 DWP marked a substantial shift from expeditionary commitments alongside allies to prioritizing the defense of Australia's immediate neighborhood, particularly the northern maritime region, while recognizing the nation's limited ability to project forces further afield. Despite this, it maintained its commitment to UN peacekeeping operations. This strategic evolution occurred against the backdrop of global dynamics, including heightened nuclear tensions between the

US and USSR and the challenges of nuclear proliferation. However, budget constraints and economic pressures limited defense spending. Critics also noted the lack of policies to foster a domestic defense industry necessary for achieving true independence. Ultimately, the DWP catalyzed broader discussions on Australian strategic policy, emphasized the importance of educating future defense leaders, and signaled a significant evolution in defense planning, fostering greater agency and a deliberate balance between leveraging alliances and prioritizing self-reliance (Australia, 1976b, p. 1-6; Edwards, 2016, p. 14-15).

In the 1970s, Prime Ministers Whitlam and Fraser pursued diplomatic approaches that reflected Australia's evolving middle power role. Whitlam sought greater independence from the US alliance, adapting to global shifts such as decolonization and détente. This approach included initiatives like recognizing Communist China in 1973, engaging with the Non-Aligned Movement, and opposing French nuclear testing in the South Pacific. Despite ideological differences, Fraser maintained Whitlam's emphasis on strengthening Asian relations and occasionally advanced policy further, such as taking a strong stance against apartheid. However, his suspicion of Soviet communism and tensions with Foreign Minister Andrew Peacock hindered consistent policy development. Fraser highlighted the country's role in multilateral diplomacy during a 1981 speech following the Commonwealth Heads of Government Meeting. This commitment was echoed by Foreign Minister Tony Street, who reintroduced the middle power label, emphasizing Australia's role in managing global interdependence and engaging through international institutions. While it is unclear if Street's articulation reflected a unified Cabinet stance, it underscored Fraser's support for multilateralism. However, despite using middle power framing, subsequent conservative governments distanced themselves from the concept (Ungerer, 2007, p. 545-546).

The Whitlam's administration supported uranium mining and development, prompted by new uranium deposits discovered at the Ranger site in the Northern Territory. The global increase in nuclear power reactors heightened demand for uranium. In 1975, the Ranger Inquiry was established, led by Justice Russel Fox, to assess the implications of uranium mining and export (Clarke; Frühling; O'neil, 2016, p. 59-60; Gyngell, 2017, p. 125). Under Prime Minister Malcolm Fraser, the Fox Commission's first report highlighted the contribution of uranium mining to the nuclear arms race and the risk of nuclear war. The report recommended exporting uranium exclusively to NPT signatories and argued that the existing safeguards were inadequate, offering merely an illusion of protection. It urged the development of stringent controls to prevent the diversion of Australian uranium to nuclear weapons, highlighting contradictions embodied in the IAEA Statute and the NPT in

promoting nuclear energy while preventing proliferation (Australia, 1976c, p. 147). While critical of some report aspects, the Fraser government implemented rigorous safeguards by 1977.

At the same time, concerns over US reliability during this period led to efforts to develop indigenous capabilities and foster collaborations, particularly with Japan, in uranium enrichment. Between 1966 and 1976, these countries explored a joint uranium enrichment initiative in Australia, funded primarily by Tokyo and leveraging Canberra's uranium resources. Concurrently, both nations pursued independent research programs. Japan advanced centrifuge technology, progressing toward a large pilot plant, while the AAEC focused on both centrifuge and laser isotope separation. The AAEC's primary objectives in centrifuge technology were to establish a technical foundation for constructing a commercial-scale enrichment plant by the 1980s using domestic expertise, should foreign technologies prove inaccessible or offered on unfavorable terms, and to evaluate foreign technology licensing proposals from a position of technical competence. The AAEC deemed a major pilot plant with several thousand centrifuges technically feasible and economically competitive with gaseous diffusion. In parallel, Australia achieved breakthroughs in laser isotope separation, successfully enriching uranium in milligram quantities, and in 1975, the AAEC filed a classified domestic patent to protect its laser enrichment advancements, withholding publication due to proliferation risks (Australia, 1977, p. 135). While Australia aimed for indigenous capabilities, it also considered foreign technologies like Urenco's centrifuge designs. Under Fraser, the government preferred private ownership of enrichment facilities. Still, technical and market uncertainties, along with reliance on coal, hindered progress and in the following administration Australia's involvement in uranium enrichment was discontinued (Reynolds, 2008, p. 562, 577; Blumkin, 1977, p. 21–24).

While Australia pursued technological advancements in uranium enrichment, it simultaneously reinforced its commitment to global disarmament initiatives. Canberra supported UN resolutions for a CTBT and criticized the lack of progress in US-USSR disarmament negotiations. The Soviet invasion of Afghanistan in 1979 and President Jimmy Carter's subsequent request to the Senate to freeze SALT II led to the failure of curbing vertical proliferation. Frustrated by this setback, Australia advocated for a special UNGA session on disarmament. As a member of the Conference on Disarmament (CD), Australia promoted both vertical and horizontal non-proliferation and annually pushed for a CTBT. Nonetheless, by the early 1980s, the deteriorating relations between the major powers hampered disarmament progress, marking the end of the *détente's* period (Jordan, 2012).

Prime Minister Robert Hawke's administration (1983-1991) marked a significant shift in Australia's nuclear policy, explicitly committing to complete nuclear disarmament and bolstering the nation's diplomatic credibility through multilateral efforts. In 1983, for the first time, Canberra abstained from a resolution calling for a freeze on nuclear weapons testing, manufacture, and deployment, a move away from its previous opposition. By the following year, Australia had progressed further, voting in favor of resolutions that included calls to prohibit an arms race in outer space and advocating measures to prevent nuclear war. Hawke also proposed the establishment of a nuclear-free zone in the South Pacific, a proposal that gained approval from the UN and was signed by the USSR in 1986. However, other NWS were less enthusiastic, with the US notably hostile, viewing the proposal as threatening the doctrine of stable nuclear deterrence. The US eventually signed the treaty, but only after nine years of persistent appeals from Australia. In 1985, the South Pacific Nuclear Free Zone Treaty, also known as the Treaty of Rarotonga, was signed. However, it included exceptions for nuclear-armed ships and aircraft visiting or transiting through Australia to maintain the ANZUS alliance. Additionally, Hawke's administration emphasized the urgent need for negotiating a CTBT (Clarke; Frühling; O'Neil, 2016; Gyngell, 2017, p. 150-151).

Bill Hayden's tenure as foreign minister (1983-1988) saw increased diplomatic activity but limited success in pursuing a more independent foreign policy. His 1984 disarmament initiative, where he attempted to bring US and Soviet negotiators together, aligned with a middle power approach, reflecting Australia's activist and internationalist role. Although constrained by US strategic ties, Hayden's efforts mirrored the middle power diplomacy seen under earlier ministers. In 1988, Gareth Evans became foreign minister bringing a lawyer's focus on structure to foreign policy, but initially did not emphasize the middle power concept. However, as the Cold War ended, Evans seized opportunities for middle powers to assert themselves, integrating middle power diplomacy into Australia's post-Cold War foreign policy (Ungerer, 2007, p. 547).

Evans redefined Australia's middle power diplomacy by integrating its core principles into a cohesive framework that shaped post-Cold War foreign policy. In *Australia's Foreign Relations*, co-authored with Bruce Grant, he emphasized coalition-building with like-minded nations and niche diplomacy—strategically focusing resources on areas yielding significant returns. While lacking the capacity to impose their will, Middle powers possess the persuasive influence to shape international agendas. This approach underpinned Australia's responses to post-Cold War challenges, fostering recognition as a competent and proactive global actor. Rooted in the post-war principles defined by Evatt—military contributions sufficient for

inclusion in peace negotiations but subordinate to great powers—middle power diplomacy evolved through the 1960s and 1970s to encompass mediation in inter-bloc tensions, moral leadership bridging North-South and East-West divides, and multilateral coalition-building. Evans revitalized this latter aspect, blending Australia's qualitative and quantitative strengths into a dynamic foreign policy. Over six decades, nationalism, internationalism, and activism remained integral to Australia's diplomatic identity, sustained by bipartisan consensus across successive governments (Ungerer, 2007, p. 547-548).

Building on this middle-power diplomacy and multilateral engagement, Australia's approach to nuclear policy during the Hawke administration reflected a similar balance between global responsibilities and national interests. The AAEC was restructured in 1987 into the Australian Nuclear Science and Technology Organisation (ANSTO), tasked with advising the government on nuclear science and technology and maintaining the capacity to develop nuclear technologies (Australia, 2024f). Despite challenges in curbing uranium exports—given Australia holds nearly a third of global reserves—Hawke sought a balanced approach. In 1983, he requested a report from the Australian Science and Technology Council, which validated Australia's participation in the international nuclear fuel cycle. The report linked Australia's role in the non-proliferation agenda to responsible uranium exports, restricted to states adhering to safeguards (Clarke; Frühling; O'Neil, 2016). Nonetheless, the Hawke Government decided that it was not appropriate for Australia to become further involved in the nuclear fuel cycle⁴⁹ (Australia, 2006).

Australia's nuclear policy evolved within the context of changing global dynamics, marked by the easing of Cold War tensions in the mid-1980s and renewed superpower negotiations. Following the 1985 Geneva meeting, Mikhail Gorbachev and Ronald Reagan nearly agreed to abolish their offensive nuclear weapons within ten years during their 1986

⁴⁹ Although Australia's state-led involvement in the nuclear fuel cycle formally ended in the 1980s, its uranium enrichment legacy endured through private-sector advancements, notably the SILEX (Separation of Isotopes by Laser Excitation) process, which emerged from classified research conducted by the AAEC in the 1970s and was later developed in the 1990s by Dr. Michael Goldsworthy and Dr. Horst Struve. The technology transitioned to private ownership and gained international prominence through a 2000 agreement with the US, becoming the only privately-owned uranium enrichment process classified under US law. To address nuclear proliferation concerns, Washington maintained that granting USEC exclusive commercialization rights aligned with its nonproliferation objectives, ensuring strict regulatory control while preventing unauthorized dissemination (United States, 1999, p. 11). Despite concerns over SILEX's proliferation risks—due to its operational efficiency, compact design, and minimal detectable emissions—commercialization efforts continue through Global Laser Enrichment (GLE), a joint venture between Silex Systems (51%) and Cameco (49%). In November 2024, GLE acquired a site in Kentucky near the former Paducah Gaseous Diffusion Plant for its proposed Paducah Laser Enrichment Facility (PLEF), which will re-enrich depleted uranium hexafluoride (DUF6) under a long-term agreement with the US Department of Energy. GLE plans to submit an environmental report to the US Nuclear Regulatory Commission by December 2024, followed by a licensing application in mid-2025, with commercial deployment targeted for 2030 (Kemp, 2012; Silex Systems, 2024).

meeting in Reykjavík. However, the deal fell apart over disagreements on missile defense testing and the Strategic Defense Initiative (SDI). The Soviets favored a strict interpretation of the ABM treaty, limiting research to laboratories, while the US supported a broader interpretation, allowing for the development and testing of space-based missile defense systems. Despite the failure to reach an agreement, the discussions paved the way for the 1987 Intermediate-Range Nuclear Forces (INF) Treaty and the 1991 START I (Strategic Arms Reduction Treaty), and limitations on nuclear testing. A key breakthrough occurred when Gorbachev agreed to separate the INF talks from broader strategic discussions, including efforts to restrict the SDI (Council on Foreign Relations, 2024).

While global powers negotiated arms control and debated the future of missile defense, Australia grappled with its strategic challenges during the Cold War, balancing alliance commitments with regional security and calls for greater independence. The 1970s and 1980s saw debates over Australia's alignment with the US, the role of joint facilities like Pine Gap, and the tension between global and regional priorities—such as Indonesia's incorporation of East Timor⁵⁰ and unrest in Cambodia. Prime Minister Hawke and Defence Minister Kim Beazley sought to reconcile self-reliance with the Australian-American alliance, emphasizing the strategic value of joint facilities for arms control monitoring. These efforts culminated in the 1987 DWP, which reinforced "self-reliance within an alliance context" and proposed new defense capabilities, including plans to replace the aging Oberon-class submarines with six modern, domestically-built submarines. The development of HMAS Stirling as a major submarine base in Western Australia underscored the focus on operational effectiveness and self-reliance, while fostering national industry growth through partnerships with overseas contractors (Edwards, 2016, p. 16–17; Australia, 1987, p. 1–5; 44–48).

As the Cold War ended, Prime Minister Paul Keating's administration (1991–1996) emphasized that the US extended nuclear deterrence as a safeguard against potential nuclear threats, formalizing this stance in the 1994 DWP. While the danger of global nuclear war had receded—reducing concerns that US-Australian Joint Defence Facilities could become nuclear targets—nuclear proliferation and the possible use of nuclear weapons remained key concerns. The government adopted a 'sole-purpose' approach, relying on the US nuclear umbrella solely to deter nuclear threats to Australia's national territory, while stressing that nuclear deterrence was an interim measure until a total ban on nuclear weapons, with robust

⁵⁰ The 1999 Timor crisis exposed two key challenges for the Howard government: the lack of direct US military support, despite logistical and diplomatic assistance, and the ADF unpreparedness for regional operations, particularly the Army. This highlighted gaps in capability despite previous focus on naval and air power in Australia's strategic environment (Edwards, 2016, p. 19).

verification, could be achieved⁵¹. Australia pledged to actively pursue multilateral efforts to restrict proliferation while supporting the maintenance of US nuclear capabilities to deter threats against allies like itself. At the same time, the 1994 DWP underscored that the six Collins-class submarines would meet current and foreseeable needs, with no plans for additional acquisitions at the time. It noted that the priority for acquiring more submarines would be reassessed after the first five-year defense budget in 1996–97, based on Australia’s evolving strategic circumstances (Australia, 1994, p. 44, 96).

During the Keating administration, significant progress was made toward the CTBT. By the early 1990s, Russia, France, and the US imposed nuclear testing moratoriums, with China pledging to follow suit once a treaty was finalized. Formal CTBT negotiations began in August 1993 under the CD, gaining consensus support, including from all five declared NWS (Jordan, 2012). Concurrently, initiatives like the 1992 Treaty on Open Skies, Lisbon Protocol and the START advanced transparency and arms reduction, as Belarus, Kazakhstan, and Ukraine transferred Soviet-era nuclear arsenals to Russia and joined the NPT as NNWS, aided by US Cooperative Threat Reduction funding. Australia played a significant role in the CTBT, leading efforts to secure international support and co-sponsoring the treaty's scope, model text, and enforcement mechanisms. Though progress stalled at the 1995 NPT Review and Extension Conference due to non-aligned states’ opposition, Australia argued that indefinite NPT extension would encourage continued nuclear arms reduction (Gyngell, 2017, p. 177). When India vetoed the treaty in the CD, Australia bypassed the stalemate by introducing it at a UNGA special session, achieving its adoption on September 10, 1996 (Jordan, 2012). This milestone marked a peak in Australia’s disarmament diplomacy, with Hanson and Ungerer (1999, p. 6) noting it was “the first time that a Western ally of the US, and one aligned with the US nuclear infrastructure, had attempted to develop a serious agenda for nuclear weapons elimination”.

In late 1995, Australia further emphasized its commitment by establishing the Canberra Commission on the Elimination of Nuclear Weapons. The Commission aimed to challenge the notion that the retention of nuclear arsenals by NWS was inevitable, completing

⁵¹ Despite informal discussions with Pentagon officials, Australia received no objections from Washington, leading to the incorporation of this 'sole-purpose' policy into its strategic documents. However, Australia’s reliance on the US nuclear umbrella, despite the absence of explicit US endorsement, has raised questions about its credibility (Ruble 2022). Dean, Frühling, and O’Neil (2024, p. 27-28) contend that such concerns are unwarranted for three key reasons. First, the lack of explicit US confirmation does not undermine the umbrella’s validity, as ambiguity has historically benefited Australia—similar to the undefined defense obligations under ANZUS. Second, unlike Japan, South Korea, or NATO allies, Australia has not faced operational conditions requiring a formal US commitment. Third, the belief that the US would abandon a treaty ally is flawed, as such inaction would severely damage its global credibility, with its strong support for non-allies like Ukraine further demonstrating its likely commitment to allies such as Australia.

its work in August 1996 with a declaration that only total elimination could provide complete defense against nuclear threats. The report argued that maintaining nuclear arsenals encouraged proliferation, offering practical suggestions for disarmament and comprehensive safeguarding of nuclear materials that can be used for military purposes (Australia, 1996, p. 7). The Canberra Commission and Australia's proactive approach to arms control highlighted Keating's vision of the country as a "good international citizen" (GIC). As Hanson (1999, p.1) notes, the commission was a clear reflection of how Evans and Keating defined GIC.

The GIC concept, formulated by Hedley Bull, was advanced by Foreign Minister Evans, who encapsulated a synthesis of enlightened self-interest with humanitarian and cosmopolitan ideals, exemplifying the Keating administration's shift towards a cosmopolitan approach to arms control (Abbondanza, 2020). Australia's bridging role was central to this approach, which sought to reconcile the divergent interests of NWS and NNWS (Hanson; Ungerer, 1999, p. 6; Hanson, 1999, p. 1, 25). Evans' leadership positioned Australia as an activist "middle power", leveraging coalition-building with like-minded nations to advance arms control and disarmament initiatives that elevated Australia's diplomatic standing among secondary powers in the post-Cold War order. While Evans framed Labor's middle power diplomacy as a novel response to the unique diplomatic conditions of the post-bipolar era, Australia's middle power identity and liberal internationalist orientation have constituted a bipartisan foreign policy tradition since World War II (Ungerer, 2007, p. 538–539).

From the early 1970s to the mid-1980s, Australia underwent a significant shift in its pursuit of middle power status in the nuclear area, transitioning from a reliance on material capabilities to adopting a more proactive and diplomatic role within the NWNPR. This transformation fully consolidated between the mid-1980s and mid-1990s, as Australia emphasized diplomatic leadership and engagement in international arms control efforts, positioning itself as a vocal advocate for nuclear disarmament while mediating between the interests of NWS and NNWS. Concurrently, the early 1970s marked a reassessment of Australia's strategic posture, emphasizing self-reliance through the Defence Review of 1972. This pivot prioritized securing Australia's immediate region, favoring naval and air power over ground forces, and was further solidified by Fraser's strategic initiatives and the 1976 DWP. These shifts marked a departure from expeditionary commitments alongside allies, focusing instead on regional defense and reducing dependence on major powers. However, subsequent developments reflected nuanced tensions. The 1987 DWP reinforced the principle of "self-reliance within an alliance context", while the 1994 DWP acknowledged reliance on US extended nuclear deterrence. This juxtaposition has led to critiques of Australia's nuclear

diplomacy for its inherent contradictions, balancing advocacy for disarmament with dependence on alliance-based nuclear guarantees.

3.3 From Pivotal Power to Middle Power once again

The 1996 federal election was notable for the unusually prominent role of foreign policy in the campaign. It marked a significant pivot in Australian foreign policy as John Howard's Liberal/National Coalition distanced itself from middle power diplomacy and multilateral engagement. Foreign Minister Alexander Downer (1996–2007) articulated a rejection of the middle power label, contending that such a designation constrained Australia's international role. Instead, Downer proposed the concept of Australia as a "pivotal power", emphasizing a broader and ostensibly more influential global role. This reorientation reflected a critique of the Keating government's emphasis on regionalism and reliance on the UN system, favoring a bilateral framework aligned closely with US foreign policy over the multilateralism that had underpinned Australia's diplomacy (Ungerer, 2007, p. 548–549).

Under John Howard's administration (1996–2007) this strategic realignment was codified in 1997 on the first White Paper on Foreign and Trade Policy titled *In the National Interest*, which downplayed multilateral diplomacy and espoused a realist approach to international engagement. The recalibration from multilateralism to bilateralism as the preferred mechanism for advancing Australia's foreign policy objectives signaled a deliberate departure from the middle power paradigm championed by figures such as H.V. Evatt and Evans. In line with this shift, the government implemented significant budgetary reductions to the Department of Foreign Affairs and Trade (DFAT), diminishing the financial and human resources allocated to multilateral initiatives. This reorientation was part of a broader effort to delineate Coalition foreign policy from what it perceived as the "middlepowerism" of its predecessors. However, this departure from middle power diplomacy unintentionally undermined the bipartisan consensus on Australia's role on the global stage. Ironically, major post-9/11 challenges, like the Solomon Islands mission, establishing the proliferation security initiative to address the nuclear threat from North Korea, and combating terrorism, required coalition-building — a practice Howard's government distanced itself from while the US embraced it (Ungerer, 2007, p. 548–550).

This strategic pivot in foreign policy coincided with significant developments in Australia's international commitments to non-proliferation and disarmament. In December 1997, Australia became the first country to ratify an AP with the IAEA. Subsequently, in

August 1998, the establishment of the Australian Safeguards and Non-Proliferation Office (ASNO)⁵² within the DFAT was announced. That same year, Australia ratified the CTBT, implementing its obligations through the Comprehensive Nuclear-Test-Ban Treaty Act 1998. This legislation created the Australian Comprehensive Test Ban Office (ACTBO). Earlier, in 1994, Australia ratified the Chemical Weapons Convention (CWC) with its obligations overseen by the *Chemical Weapons (Prohibition) Act 1994* (CWC Act), which established the Chemical Weapons Convention Office (CWCO). The creation of ASNO consolidated the functions of the Australian Safeguards Office, CWCO, and ACTBO into a single entity. (Australia, 2024b).

Building on these commitments to non-proliferation, Australia also reinforced its domestic opposition to nuclear power through the enactment of the *Australian Radiation Protection and Nuclear Safety Act 1998* (ARPANS Act)⁵³ and Section 140A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)⁵⁴, both of which explicitly prohibited the construction and operation of civil nuclear power facilities⁵⁵. These measures reflected a socio-political landscape shaped by decades of anti-nuclear advocacy.

⁵² The ASNO operates under legislative frameworks administered by the Minister for Foreign Affairs and Trade, including the *Nuclear Non-Proliferation (Safeguards) Act 1987*, the CWC Act 1994, and the *Comprehensive Nuclear-Test-Ban Treaty Act 1998*. The creation of ASNO entailed the establishment of the statutory office of the Director-General, encompassing the responsibilities of the previously distinct safeguards, chemical weapons, and nuclear test-ban authorities. As an independent statutory officeholder, the Director-General exercises powers and functions under these Acts and any additional authorities delegated by the Minister. The Director-General reports directly to the Minister and submits an independent annual report to the Australian Parliament. ASNO is distinguished by its dual role as both a regulatory authority — serving as the national authority for nuclear and chemical weapons treaties — and a provider of expert technical advice to the government on non-proliferation treaties and verification mechanisms. It ensures Australia's compliance with IAEA safeguards obligations through a comprehensive national system of accounting for and controlling nuclear materials, associated items, and facilities. This regulatory framework is implemented via a permit system governing the possession, use, and transport of nuclear materials and related activities. Permit holders must routinely report nuclear material inventories and activities to ASNO, which conducts compliance inspections to verify adherence to regulatory requirements. The data collected from permit holders forms the basis of Australia's CSA and AP declarations to the IAEA. ASNO also plays a critical role in facilitating both routine and ad hoc IAEA inspections within Australia, ensuring the accuracy of national declarations and compliance with international treaty obligations. In 2000, Australia became the first state to receive the IAEA's broader conclusion that "all nuclear material remained in peaceful activities" for its entire territory. Australia has received this designation every year since (ANSO, 2024).

⁵³ The ARPANS Act 1998 has section 10 Prohibition on certain nuclear installations: "(1) Nothing in this Act is to be taken to authorize the construction or operation of any of the following nuclear installations: (a) a nuclear fuel fabrication plant; (b) a nuclear power plant; (c) an enrichment plant; (d) a reprocessing facility. (1A) Paragraph (1) (b) does not apply to a naval nuclear propulsion plant related to use in a conventionally - armed, nuclear - powered submarine. (2) The CEO must not issue a licence under section 32 in respect of any of the facilities to which subsection (1) applies".

⁵⁴ No approval for certain nuclear installations: (1) The Minister must not approve an action consisting of or involving the construction or operation of any of the following nuclear installations: (a) a nuclear fuel fabrication plant; (b) a nuclear power plant; (c) an enrichment plant; (d) a reprocessing facility. (2) Paragraph (1)(b) does not apply to a naval nuclear propulsion plant related to use in a conventionally - armed, nuclear - powered submarine.

⁵⁵ New South Wales also has a Uranium Mining and Nuclear Facilities (Prohibition) Act 1986, and Victoria has a Nuclear Activities (Prohibitions) Act 1983.

Beginning in the 1970s, public opposition grew in response to French nuclear testing in the Pacific, uranium mining controversies in the Northern Territory, and proposals for international nuclear waste repositories. The anti-nuclear movement gained momentum in the 1980s and 1990s, fueled by global events highlighting the risks of nuclear technology. The Three Mile Island accident (1979), the Chernobyl disaster (1986), the bombing of the *Rainbow Warrior*⁵⁶, and concerns about nuclear weapons proliferation heightened public anxieties. It deepened skepticism toward nuclear technologies (Australia, 2023b, p. 2–3, 11). This discontent sparked widespread protests, including large demonstrations in 1984, where up to 80,000 Australians protested against nuclear weapons and demanded disarmament (National Archives of Australia, 1984). By the late 2000s, this sentiment was enshrined in the Nuclear Facilities Prohibition Act 2007, which effectively banned the development of nuclear facilities. Notably, this legislation coincided with the commissioning of the OPAL (Open Pool Australian Light-water) reactor⁵⁷, a 20-megawatt facility using LEU, which replaced the original reactor commissioned in 1958 (Australia, 2024a; Queensland, 2007).

Amid domestic anti-nuclear measures, the post-9/11 global landscape shifted Australia's focus from major powers to emerging threats posed by non-state actors and "rogue states" such as Iraq, Iran, and North Korea, collectively termed the "axis of evil". Prime Minister Howard's historic invocation of the ANZUS Treaty for the first time committed Australia to unreserved support for the US, prompting a review of the 2000 DWP, which had prioritized defense of Australia's immediate region. The Defence Updates of 2003, 2005, and 2007 reflected this recalibration, addressing global threats through Australia's longest military engagement in Afghanistan and its controversial participation in the 2003 invasion of Iraq. Despite this strategic shift, Australia maintained its commitment to nuclear non-proliferation, advocating for universal adherence to the CTBT and, in 2005, becoming the first country to mandate AP compliance as a condition for uranium exports — a policy rooted in the 1977 framework of the Fraser government. Concurrently, the 2000 DWP included a program to upgrade all six Collins-class submarines, improving their platforms and combat systems, with ongoing upgrades planned to maintain their effectiveness (Australia, 2000, p. XIV - XV; Jordan, 2012; Edwards, 2016, p. 20).

This evolving focus on non-proliferation and strategic security intersected with broader global dynamics, including pivotal arms control developments and growing tensions

⁵⁶ A Greenpeace vessel that had taken part in protests against French nuclear testing in the Pacific and was bombed by French secret agents in 1985 at Waitematā Harbour, Auckland, killing a crew member.

⁵⁷ OPAL is one of the few reactors capable of producing commercial quantities of radioisotopes, supporting human health, environmental sustainability research, and industrial innovation (Australia, 2024a).

among nuclear and non-nuclear states. In 2002, US President George W. Bush and Russian President Vladimir Putin signed the Strategic Offensive Reductions Treaty (SORT), which mandated a substantial reduction in the number of deployed strategic nuclear warheads over a decade. Subsequently, Washington withdrew from the ABM Treaty, asserting that the treaty constrained its capacity to develop missile defenses against terrorist threats and so-called rogue states. This unilateral withdrawal provoked significant discontent in Russia, which increasingly regarded US foreign policy post-9/11 with apprehension (Council on Foreign Relations, 2024). Meanwhile, at the 2005 NPT RevCon, tensions between NWS and NNWS reached an impasse, primarily due to perceived efforts by major powers to retreat from earlier NPT commitments, such as the "13 Practical Steps" agreed upon at the 2000 RevCon. These steps included commitments by NWS to ratify the CTBT, negotiate a verifiable Fissile Material Cut-off Treaty, and significantly reduce their nuclear arsenals. The US initially resisted acknowledging these prior commitments, stalling the conference for ten days, however, as it became evident that even close allies, including Australia, were unwilling to abandon previous NPT agreements, Washington relented, allowing progress to resume (Jordan, 2012).

While maintaining its commitments to the NWNPR, Australia progressively adopted a more prominent role in the Asia-Pacific security architecture, driven by its strategic alliance with the US. This evolution included enhanced intelligence-sharing with Washington, trilateral security collaborations with the US and Japan, and participation in the Quadrilateral Security Dialogue (Quad) alongside the US, Japan, and India, reflecting a shift from its bilateral-focused "pivotal power" approach. The Quad originated from the "Tsunami Core Group", an ad hoc coalition formed to coordinate relief efforts after the 2004 Indian Ocean tsunami. Its inaugural meeting occurred in May 2007 during the ASEAN Regional Forum in Manila, followed by the expansion of the US-India Malabar naval exercise to include Japan, Australia, and Singapore, with drills held in the Bay of Bengal. These developments underscored the potential for strategic alignment among these democracies and highlighted vulnerabilities within the coalition. Mounting pressure from China, which viewed the Quad as a counterbalance to its influence, coupled with domestic concerns among member states, undermined the initiative. Under Prime Minister Kevin Rudd (2007–2010), Australia withdrew in early 2008, citing tensions between its economic ties with China and its strategic alignment within the Quad (Australia, 2024d; Buchan; Rimland, 2020; Japan, 2024). This decision marked the dissolution of Quad, although it laid the groundwork for future cooperation among the four nations.

Building on this evolving strategic outlook, under the Rudd government, Australia's defense and foreign policy underwent a strategic recalibration to address evolving regional dynamics and domestic constraints. The 2009 DWP marked a significant shift, rejecting the narrow "defense of Australia" and purely "expeditionary" doctrines while maintaining a commitment to Afghanistan. Central to the document was an emphasis on the rise of China, highlighting uncertainties surrounding China's regional influence — a stance that provoked criticism from Beijing. A key element of the DWP was the commitment to construct 12 Future Submarines in South Australia, representing the largest defense procurement in the nation's history. The government explicitly ruled out the possibility of nuclear propulsion, instead opting for conventionally powered submarines. These vessels were expected to perform critical roles in anti-submarine warfare, strategic strikes, and intelligence gathering. Their development was to rely heavily on collaboration with the US in undersea warfare technologies, while interim upgrades to the Collins-class submarines would ensure operational capability during the transition. Workforce training and maintenance reforms were integral to supporting this initiative. The DWP projected a 3% annual increase in defense funding to achieve its 2030 force structure goals, but immediate budgetary constraints undermined these ambitions. Notably, it also reaffirmed Australia's middle-power influence, leveraging defense relations to support peacekeeping, coalition operations, and collective security efforts. Recognizing US strategic primacy as critical for global stability through 2030, it acknowledged the growing influence of China, India, Russia, Japan, and the European Union. In particular, it underscored the importance of the US-China relationship for Asia-Pacific stability, advocating for the peaceful resolution of contentious issues, including Taiwan. To encourage transparency and mitigate tensions, Australia prioritized deepening defense engagement with China, upgrading the Defence Strategic Dialogue in 2008 and expanding educational, professional, and joint operational initiatives. However, the decision to release the DWP at a media event rather than in parliament attracted substantial criticism (Australia, 2009, p. 32–34, 70–71, 100; Edwards, 2016, p. 20).

As Australia adjusted its regional security strategy, the global disarmament movement witnessed a resurgence, driven by significant international developments. An important development was the establishment of the International Campaign for the Abolition of Nuclear Weapons (ICAN) in Melbourne, Australia, which provided renewed impetus to global advocacy for nuclear disarmament. This momentum was further amplified by US President Barack Obama's rearticulation of American approach to nuclear disarmament through a series of landmark speeches in Prague, Cairo, and Moscow, emphasizing the need

for a "reset" in US-Russia relations to address shared challenges like nuclear nonproliferation. His 2009 Prague address marked a turning point, securing commitments from NWS to pursue disarmament and shaping the 2010 RevCon's consensus document, which outlined 64 actionable steps across non-proliferation, disarmament, and peaceful nuclear use. This renewed energy culminated in the signing of the New START treaty in April 2010 by Obama and Russian President Dmitry Medvedev, replacing SORT and mandating significant reductions in strategic arsenals (Jesus, 2012, p. 54; Müller; Wunderlich, 2020, p. 176).

Building on the global momentum for disarmament, the Rudd administration sought to reinvigorate Australia's leadership on international challenges, embedding middle power diplomacy as a cornerstone of its foreign policy strategy. This approach emphasized tackling global issues such as climate change, advancing the Millennium Development Goals in the Pacific and promoting regionalism through initiatives like the Asia-Pacific Community proposal. Rudd framed these efforts as "active middle power diplomacy", reflecting Australia's aspirations to shape the international order. A key component of this strategy was the establishment of the International Commission on Nuclear Non-Proliferation and Disarmament (ICNND) in 2008, in partnership with Japan, to re-energize advocacy for nuclear disarmament. In 2009, the ICNND published a report offering detailed recommendations to strengthen the non-proliferation regime (Evans; Kawaguchi, 2009). However, the ICNND's execution exposed significant challenges, including inadequate stakeholder consultation — evidenced by Japan's lack of prior notification — which weakened its coalition-building efforts. Additionally, Australia's alignment with the US, particularly its support for the Iraq War, compromised its perceived neutrality, limiting its influence over proliferators such as Iran and North Korea (Cotton; Ravenhill, 2024, p. 2).

Extending its commitment to nuclear disarmament and non-proliferation, Australia partnered with Japan in 2010 to establish the Non-Proliferation and Disarmament Initiative (NPDI), a coalition of 12 NNWS⁵⁸. The NPDI sought to advance the objectives of the NPT, particularly through promoting transparency and strengthening its three core pillars. Its primary mandate is to implement the 64-point Action Plan adopted at the 2010 NPT RevCon. The NPDI actively engages in the NPT Review Process, submits working papers, and advocates for increased accountability from NWS (Australia, 2024e). However, the initiative has faced significant criticism, with some questioning the authenticity of its activities and declarations. Critics argue that the composition of the NPDI undermines its credibility, as

⁵⁸ Australia, Canada, Chile, Germany, Japan, Mexico, Nigeria, the Netherlands, the Philippines, Poland, Turkey, and the United Arab Emirates.

several member states rely on US extended nuclear deterrence (Australia, Canada, and Japan) or participate in NATO nuclear-sharing arrangements (Germany, the Netherlands, Poland, and Turkey) (Warren, 2019). These ties to NWS create ambiguity regarding the coalition's stance on arms control norms, raising doubts about its commitment to the bridge-building agenda it purports to advance. Despite these challenges, the NPDI remains an active participant in international disarmament forums.

While Australia pursued multilateral efforts to advance global nuclear non-proliferation, it also faced evolving regional security challenges, prompting a reassessment of its defense strategy in the 2013 DWS. This document, released by Julia Gillard a year ahead of schedule, marked a recalibration of Australia's defense strategy amidst the economic constraints of the Global Financial Crisis. While framed as a continuation of the 2009 DWP, it faced criticism for ambitious goals lacking precise funding commitments, reflecting political pressures for budget austerity over substantive strategic planning. The 2013 DWP emphasized the Indo-Pacific as a central strategic concept, a shift from the Asia-Pacific, highlighting growing interconnectivity between the Indian and Pacific Oceans, driven by economic growth, trade flows, and rising powers such as China and India. It identified the US-China relationship as pivotal to regional stability, reaffirming Australia's alliance with Washington, including enhanced defense initiatives such as the rotational deployment of US Marines in the Northern Territory. Concurrently, Australia supported China's peaceful rise, recognizing its economic and military modernization as legitimate but emphasizing the need to avoid conflict, particularly in the South China Sea. To address challenges like Russia's increasing Indo-Pacific influence and strategic risks associated with rising Asian powers, the DWP underscored strengthening regional partnerships, enhancing security architecture, and maintaining a credible ADF. The government also reaffirmed its commitment to replacing the Collins-class submarines with 12 conventional submarines, ruling out nuclear propulsion. Moving away from off-the-shelf designs, Australia focused on evolving Collins or new designs tailored to its strategic needs, while extending the Collins fleet's service life by seven years through enhanced maintenance and logistical reforms to ensure operational capability until the new fleet is deployed (Australia, 2013, p. 7-11, 82-83; Edwards, 2016, p. 21).

Amid Australia's strategic recalibration, China's economic rise reshaped its traditional alignment with key security guarantors, the UK and the US, historically its largest trading partners. As China emerged as Australia's primary trading partner, debates intensified over whether to deepen reliance on the US alliance or adopt a more independent regional posture.

Australia pursued a pragmatic hedging strategy, balancing strong economic ties with China alongside a robust security partnership with the US. Under Howard, trade with China flourished while US security ties remained central. Successive leaders, including Rudd, Gillard, and Abbott sustained this dual approach. This strategy included fostering economic ties with China while avoiding overt alignment with Washington, exemplified by stepping back from the Quadrilateral Initiative. Even as military cooperation with the US expanded, Australia joined the China-led Asian Infrastructure Investment Bank (AIIB) in 2015 and participated in Belt and Road projects. However, by 2016, tensions over the South China Sea strained relations with China, prompting Australia to strengthen ties with US allies like Japan and South Korea and enhance its military capabilities, signaling continuity in its foreign policy amid increasing US-China rivalry (Cotton; Ravenhill, 2024, p. 9–10; Korolev, 2023, p. 554–555).

While navigating the complexities of its economic and security relationships with China and the US, Australia under the Gillard (2010–2013) and Abbott (2013–2015) administrations confronted significant international pressures concerning nuclear disarmament. Between 2013 and 2014, three major conferences on the humanitarian impact of nuclear weapons were held in Norway, Mexico, and Austria. In 2015, Austria sought Australia's endorsement of the Humanitarian Pledge emerging from the final conference, but Australia declined. The following year, the UNGA adopted a resolution to convene a conference aimed at negotiating a treaty to prohibit nuclear weapons and move toward their total elimination. Australia voted against the resolution and abstained from the treaty negotiations, arguing that such efforts lacked the participation of NWS and did not present a practical pathway to disarmament or enhanced security. Furthermore, Canberra expressed concern that supporting the treaty would strain its alliance with the US and compromise its defense treaties. Earlier in 2016, Australia also sought to obstruct a UN working group on nuclear disarmament by rejecting a draft report recommending new treaty negotiations and forcing a vote. Despite these positions, Australia demonstrated a more constructive approach to nuclear disarmament when aligned with the interests of its NWS allies. Canberra has actively supported a FMCT, participating in the High-Level FMCT Expert Preparatory Group to address technical and legal challenges identified in a 2015 UN report. Additionally, Australia joined the International Partnership for Nuclear Disarmament Verification, a 25-state initiative focused on developing technical mechanisms to verify disarmament across the nuclear weapons lifecycle. These efforts underscore Australia's preference for advancing

disarmament through incremental, pragmatic measures that do not directly conflict with its strategic alliances (ICAN, 2024; Warren, 2019).

As outlined in this subtopic, the late 1990s marked a shift in Australian policy making, with a departure from the traditional middle power framework that had long characterized the nation's diplomatic identity, toward an embrace of the concept of Australia as a "pivotal power". This more rhetorical shift, however, was short-lived, as the middle power paradigm soon reemerged as a cornerstone of Australian foreign policy. Under Kevin Rudd's leadership, the middle power narrative regained prominence, reinforced in the nuclear area by Australia's active participation in multilateral initiatives such as the NPDI. Domestically, this period was marked by Australia becoming the first state to adopt the AP and enacting comprehensive legislation to implement its obligations while simultaneously prohibiting nuclear power. Internationally, Australia deepened its alliance with the US, particularly in the aftermath of 9/11, while continuing to engage within the NWNPR through platforms such as the ICNND and the NPDI, albeit not within initiatives in nuclear disarmament that directly conflicted with its major NWS allies. Meanwhile, the rise of China as a major power generated domestic debates on strategic policy, yet the alliance with the US remained the central pillar of Australia's security strategy.

3.4 Australia finding a new path?

Under Malcolm Turnbull's leadership (2015–2018), Australia opposed the TPNW, framing its stance as a defense of the NPT, deemed central to global nuclear disarmament and non-proliferation. Australia abstained from the 2017 TPNW negotiations and joined the US and allies in protesting the treaty. Canberra's position reflected deference to nuclear-armed states' risk management while prioritizing the preservation of nuclear weapons' legitimacy (Warren, 2019). Meanwhile, Aboriginal representatives, Sue Coleman-Haseldine and Karina Lester, affected by British nuclear testing in Australia testified at the TPNW negotiations, leading to the treaty's recognition of "the disproportionate impact of nuclear-weapon activities on indigenous peoples" (United Nations, 2017; ICAN, 2024).

The Turnbull administration concurrently addressed broader strategic imperatives, prioritizing defense planning and regional security in response to the evolving complexities of the geopolitical landscape. The 2016 DWP, initiated under Abbott, went through a rigorous preparation process, reflecting an effort to restore credibility to the defence planning process. However, Edwards (2016, p. 21) raised an interesting concern regarding the repeated

invocation of the "rules-based global order", cited 48 times. While acknowledging Australia's historical benefits from the post-1945 international systems in trade, military security, and other domains—particularly during the era of uncontested US supremacy—he noted growing challenges to these systems posed by rising powers like China and non-state actors. He argued that frequent, vague references to these rules risked being a pretext for aligning with US-led coalitions globally, potentially undermining Canberra's "defence of Australia" doctrine and greater nuance in decisions about the nation's involvement in foreign military actions under the guise of supporting global norms. This concern later gained relevance when Australia explicitly aligned itself with Washington and London through the AUKUS partnership in 2021, signaling a decisive shift in its strategic posture.

Notwithstanding Edwards's critique, the 2016 DWP reaffirmed Washington as Australia's most critical strategic partner, emphasizing the importance of consolidating the alliance to bolster regional security amidst growing uncertainties. While aligning closely with the US, Canberra also maintained a pragmatic approach toward China, acknowledging the economic opportunities tied to its rise through the Comprehensive Strategic Partnership established in 2014. At the same time, the DWP underscored Australia's pursuit of a strengthened defense relationship with Beijing, signaling an effort to balance strategic concerns with economic engagement, even as it noted China's military modernization as a significant regional development. In this context, the DWP outlined the plan to acquire 12 regionally superior submarines with high interoperability with the US, intended to strengthen Australia's deterrence capabilities and address evolving regional threats. These submarines would be prioritized for their anti-submarine and anti-surface warfare capabilities, intelligence and surveillance functions, and ability to support special operations, reflecting Australia's strategic focus on safeguarding its extensive maritime interests in the Indo-Pacific. The acquisition process was announced to begin in 2016, with delivery expected to span decades, requiring a rolling acquisition program to maintain continuous fleet modernization (Australia, 2016a, p. 19, 41-46, 90-92; 2016b, p. 81-83). By 2017, this strategic framework evolved further with the revival of the Quad, marking a more explicit alignment of Australia's military and diplomatic efforts to counterbalance China's growing regional influence.

As global nuclear dynamics continued to evolve, further challenges to disarmament emerged. In 2018, the nuclear non-proliferation landscape shifted significantly when President Donald Trump announced Washington's withdrawal from the INF Treaty. The US cited Russia's continued violation of the treaty, a claim Moscow denied (Pompeo, 2019). Meanwhile, NATO allies supported the withdrawal amid disputes over Ukraine, Syria, and

interference in US elections. In 2020, Washington also exited the Treaty on Open Skies, citing Russian violations, though this time many NATO members regretted the move. Despite these setbacks, in 2021, just before the treaty's expiration, the US and Russia extended New START for five years, maintaining verifiable limits on long-range nuclear weapons. This extension was one of President Joe Biden's first significant acts in foreign policy (Council on Foreign Relations, 2024).

Simultaneously, domestic defense initiatives reflected a shifting approach to strategic alliances and military modernization, underpinned by evolving regional dynamics and economic challenges. In February 2019, the Morrison administration (2018–2022) formalized a Strategic Partnering Agreement with Naval Group to construct twelve diesel-electric submarines, a project initially launched under Turnbull. Celebrated in French media as a historic milestone (Australie [...], 2016; Vente [...], 2016), the program soon encountered delays, cost overruns, and design challenges. By early 2020, these setbacks, coupled with growing strategic competition in the Indo-Pacific and concerns raised by the Australian National Audit Office (2020a), prompted Morrison to reassess the program's feasibility. Alternatives, including acquiring SSNs, gained traction despite Australia's lack of a domestic civil nuclear industry. Expert input, including from retired US admirals⁵⁹ and defense officials, deemed SSNs viable if supported by the US or UK. The cautious endorsement by the US Navy marked a pivotal moment, signaling a potential realignment of Australia's defense strategy (Hartcher, 2022).

The 2020 Defence Strategic Update highlighted the pandemic's impact on global and regional stability. While the long-term effects of COVID-19 were uncertain, the report emphasized that strategic competition between the US and China would continue to shape the Indo-Pacific. The pandemic accelerated this competition and exposed vulnerabilities, reinforcing the need for secure supply chains, sovereign industrial capabilities, and enhanced defense readiness. The Update also acknowledged the growing assertiveness of major powers, particularly China's efforts to expand influence through economic and military activities, including establishing strategic outposts in the Indo-Pacific. Australia's strategy called for new capabilities, including 12 Attack Class Submarines, to address these evolving threats

⁵⁹ Several retired US military and civilian officials served as high-paid consultants to the Australian government, advising on acquiring nuclear submarine technology. This group included two retired US admirals and three former Navy civilian leaders. Since 2015, six retired US admirals have worked for Australia, including one who served as deputy defense secretary. A former US Navy secretary has also advised multiple Australian prime ministers. Some officials, involved in both US and Australian defense contracts, have raised concerns over potential conflicts of interest. One admiral resigned due to such a conflict with his role at a US company that builds SSNs (Whitlock, 2022).

(Australia, 2020b, p. 5-6, 11, 15, 33, 37, 42). Reflecting this recalibration, Australia rejoined the Malabar naval exercises in October 2020 alongside the US, Japan, and India, signaling stronger alignment with the Quad and a commitment to addressing regional challenges.

As regional security challenges intensified, the Morrison administration deemed the French diesel-electric submarine contract insufficient for Australia's needs, prompting a pivot to SSNs under the AUKUS framework (Sanger, 2021; Hartcher, 2022; Hurst, 2021). Announced on September 15, 2021, AUKUS is a trilateral security partnership among the US, UK, and Australia to strengthen defense, diplomacy, and technology in the Indo-Pacific. The first pillar focuses on enabling Australia to acquire conventionally armed SSNs under non-proliferation standards, while enhancing long-range military capabilities to address regional challenges. The second pillar aims to advance military interoperability, integrate industrial and technological capacities, and bolster supply chain resilience (United States, 2022; Rogers, 2022; Kahn, 2023). AUKUS responds to growing Indo-Pacific security challenges by emphasizing advanced capabilities to safeguard economic interests and ensure stability. The program also seeks to leverage Australia's domestic workforce while addressing vulnerabilities in critical maritime trade routes. For the US, AUKUS demonstrates a strategic commitment to reinforcing alliances and maintaining a rules-based order, while for the UK, it reaffirms its leadership in science and technology and its security focus on the Indo-Pacific (Australia, 2021; United Kingdom, 2021; United States, 2021a, c).

Although the official announcement did not name China, AUKUS is widely seen as a response to Beijing's rise in the region, enabling Australia to project power into contested areas like the South China Sea and Taiwan Strait with advanced SSNs alongside the US Navy (Evans, 2021; White, 2021). Critics argue SSNs exceed Australia's defensive needs and highlight the absence of a domestic nuclear industry, while proponents see AUKUS as a strategic shift from hedging to actively balancing against China (Fortier; Justin, 2023, p. 9; Korolev, 2023, p. 560; 2024, p. 78). This alignment draws Australia closer to US military objectives, embedding it in the Anglo-American geostrategic network and extending its influence in the Indo-Pacific (Gill, 2021; Rogers, 2022; White, 2022; Gallardo; Prince, 2023). US and Australian leaders have framed AUKUS as essential for regional stability, with President Biden emphasizing its role in "integrated deterrence" and Morrison highlighting escalating Indo-Pacific security challenges (United States, 2021b; Korolev, 2023, p. 560). National security advocates have amplified these concerns, warning of a potential conflict with China within three years, possibly over Taiwan, while criticizing Australia's military readiness. Proposals like hosting US long-range nuclear missiles have been floated as

last-resort measures, reflecting heightened anxieties over the region's future (Malcolm [...], 2023; China [...], 2023). This aligns with predictions from former US Indo-Pacific Command chief and Admiral Michael Gilday, who foresee Chinese military action against Taiwan as imminent, and retired Major General Mick Ryan, who anticipates Australia's involvement in such a conflict while cautioning against other flashpoints like the South China Sea or North Korea (Sevastopulo, 2022; Hartcher; Knott, 2023).

Prior to AUKUS, France had deepened its security cooperation with Australia, culminating in the 2016 submarine contract. This agreement reflected France's prioritization of Australia in its Indo-Pacific strategy, which focused on stability, multilateralism, and safeguarding key maritime routes (Holland; Staunton, 2024, p. 721). France's approach aligned with the European Union's recognition of the Indo-Pacific's strategic importance, addressing challenges such as rivalries, piracy, and climate risks (Sicilia; Benson, 2024). France's Indo-Pacific strategy, launched in 2018, emphasized security, multilateralism, and environmental diplomacy, leveraging its overseas territories (France, 2018, p. 3-4). However, cancelling the submarine deal in favor of AUKUS marked a major diplomatic rift. Blindsided by the decision, France recalled ambassadors and criticized Morrison, viewing the move as a betrayal of trust (Sanger, 2021; Levick, 2022).

Australia's decision to abandon the French submarine deal in favor of US-UK SSNs reflected both practical and strategic considerations. While Naval Group's Shortfin Barracuda offered a "nuclear growth path", allowing a future transition to SSNs, its reliance on refueling every 10 years was seen as less favorable compared to US submarines with sealed reactors lasting the vessel's 33-year lifespan (Blenkin, 2016; Shepherd, 2021). Beyond technical superiority, AUKUS was rooted in cultural and historical ties among the US, UK, and Australia, described by leaders as "natural partners" with shared values. France's Indo-Pacific strategy, advocating a "third way" of balanced partnerships rather than alignment with superpowers, contrasted with AUKUS's focus on countering China. This divergence contributed to France's exclusion, reinforcing perceptions of it as a regional rather than global player (Holland; Staunton, 2024, p. 723-726). Nonetheless, 2024 consultations between the US and France signaled efforts to rebuild cooperation on shared challenges (United States, 2024).

The release of the Agreement for the Exchange of Naval Nuclear Propulsion Information (ENNPIA) on November 22, 2021—the first AUKUS agreement—faced significant public opposition. Despite a short four-day submission window, 106 responses were received, with only two expressing support. The majority of submissions highlighted

concerns about the process's short notice and undemocratic nature, lack of transparency, threats to sovereignty, financial costs, and potential regional destabilization. Other objections included concerns over nuclear proliferation, vulnerability to attack, and the prioritization of funds over pressing issues like climate change, health, and housing. This opposition was reflected in a national petition against nuclear submarines, which gathered over 41,442 signatures by March 2025⁶⁰. Meanwhile, the domestic debate centered on questioning AUKUS's strategic significance, the reliability of the US's long-term commitment, and Australia's industrial and workforce capacity to uphold the agreement.

This domestic debate over AUKUS's merits aligns with the broader regional and international responses, highlighting the agreement's multifaceted implications for both national and global security dynamics. The announcement of the AUKUS partnership elicited mixed regional responses, reflecting its complex implications for Indo-Pacific security. The Pacific Islands strongly criticized AUKUS, citing their unresolved nuclear testing legacy, lack of consultation, and opposition to nuclear militarization in the region, emphasizing a preference for a nuclear-free Pacific and prioritizing human security, climate action, and regional dialogue over strategic competition (Fiji, 2021; Mangioni, 2022, p. 18; Republic of the Marshall Islands, 2021; Solomon Islands, 2021; Underwood, 2021). New Zealand reaffirmed its nuclear-free stance by banning nuclear submarines in its territorial waters and distancing itself from AUKUS's nuclear aspects; however, discussions on engagement in cybersecurity and AI through Pillar II surfaced in 2023, with exploratory talks dating back to 2021 (Mangioni, p. 8; Shortis, 2024). While the previous Labor government adopted a cautious approach to Pillar II, the current National-led coalition views this framework as a strategic avenue to bolster partnerships with key allies in the context of escalating international security challenges (Patman, 2024). Southeast Asian nations displayed mixed reactions, with Indonesia⁶¹ and Malaysia expressing strong reservations about SSNs due to fears of militarization and regional destabilization (Sugiono, 2022; Strangio, 2021). In contrast, Vietnam and Cambodia adopted a more restrained stance, while the Philippines and Singapore cautiously welcomed the pact to counterbalance Chinese assertiveness (Choong;

⁶⁰ To access the petition (No Nuclear-Submarines; End U.S. dominance; Healthcare not warfare) see: <https://www.change.org/p/the-australian-government-no-nuclear-submarines-end-u-s-dominance-healthcare-not-warfare>.

⁶¹ At the 2020 NPT Review Conference, held in 2022 due to the COVID-19 pandemic, Indonesia submitted a working paper raising concerns about SSNs in NNWS and their potential implications for the NWNPR. While indirectly referencing AUKUS, the paper emphasized Indonesia's view that any collaboration involving the transfer of nuclear materials and technology for military purposes from NWS to NNWS heightens risks. These include catastrophic humanitarian and environmental consequences, navigation hazards, and the potential proliferation or conversion of nuclear material — especially highly enriched uranium — into nuclear weapons through its use in naval propulsion systems (United Nations, 2022b, items 2, 5, 10 - WP. 67).

Storey, 2021; Dara, 2021; Singapore, 2021a, b). Thailand, meanwhile, maintained a neutral position, reflecting its pragmatic approach to navigating US-China competition (Sanglee, 2021). Japan cautiously supported AUKUS for regional stability but avoided endorsing SSNs (Japan, 2021), while South Korea in a joint press conference with Prime Minister Morrison, affirmed it respected Australia's decision to acquire SSN and declared that the partnership would contribute to regional stability (Tillet, 2021).

Meanwhile, Russian President Vladimir Putin criticized the partnership, claiming it undermines regional stability. In October 2021, Putin acknowledged the value of alliances but warned that forming them at the expense of others harms global stability (Putin [...], 2021). His remarks reflected broader concerns about the partnership's impact on international relations. Other Russian officials echoed these sentiments, with Kremlin spokesman Dmitry Peskov in March 2023 stressing the need for transparency on non-proliferation issues related to AUKUS, though without detailing specific concerns (Kremlin [...], 2023). Similarly, in April 2023, Deputy Foreign Minister Sergei Ryabkov described AUKUS as a serious threat to the global nuclear non-proliferation regime (Yanovsky, 2023).

The PRC strongly opposed the AUKUS partnership on SSNs, articulating its concerns in working papers WP 29 and WP 50 at the 10th NPT RevCon in August 2022. It argued that AUKUS undermines the NPT by enabling the transfer of nuclear propulsion reactors and nuclear materials from the US and UK to Australia, which, China claimed, cannot be adequately safeguarded under the current IAEA system. China proposed forming an IAEA committee to address these political, legal, and technical issues and submit recommendations to the IAEA Board of Governors and General Conference (China, 2022b). Following the RevCon, the Chinese delegation in Vienna reiterated that AUKUS violates Articles I and II of the NPT, emphasizing that the transfer of nuclear weapon-grade material between NWS and NNWS constitutes illegal proliferation (China, 2022a, f). It dismissed assurances regarding sealed nuclear materials, asserting that such transfers set a dangerous precedent for NNWS. Additionally, China criticized the US, UK, and Australia for downplaying the risks, arguing that these actions erode trust in the global non-proliferation regime (China, 2022c). China also characterized AUKUS as violating safeguards obligations, claiming it undermines the integrity of the global non-proliferation framework while threatening regional peace and stability. The legitimacy of transferring weapons-grade nuclear material, which risks setting a dangerous precedent that other NNWS might exploit under the guise of similar agreements. This not only undermines the integrity of the international nuclear non-proliferation regime but also threatens global security and stability (China, 2022d, f). The PRC highlighted that

transferring weapons-grade nuclear material under AUKUS disrupts strategic stability and exacerbates proliferation risks, requiring a decisive response from international and regional security institutions (China, 2022e). During discussions with the IAEA Director General, China stressed that Australia's CSA exclusion clause cannot legitimize actions that contribute to proliferation, asserting that no CSA or AP provision can override the NPT. The PRC argued that AUKUS violates Articles I and II of the NPT and deemed reliance on Article 14 of CSA provisions misleading. From its statements at both the IAEA and the NPT RevCon, China's position frames AUKUS as a significant breach of non-proliferation norms with serious implications for global security (China, 2022b,f).

Regarding non-proliferation concerns, the IAEA was formally notified of AUKUS upon its establishment. In November 2021, the Agency reminded the involved parties of their obligations. For the NWS, these obligations stem from their VOAs and APs, which are crucial for implementing safeguards within the program. For Australia, compliance with the CSA necessitates the provision of advance design information for new facilities. Under the AP, it requires a ten-year plan outlining the development of the fuel cycle. In May 2022, Australia declared that it had no intention of engaging in nuclear material enrichment or nuclear fuel reprocessing to support its naval nuclear propulsion program (IAEA, 2023a, item 7)⁶². Following an 18-month study period, in March 2023, the AUKUS countries announced their intention to implement a phased program to develop the infrastructure, technical and industrial capacities, and human resources necessary for Australia to produce, maintain, operate, and manage a conventional nuclear-powered submarine force (IAEA, 2023a, item 10). It was announced that the submarine class, SSN AUKUS, would be based on a British design and incorporate advanced American technology. Construction was anticipated to begin within this decade in both the UK and Australia, with these submarines eventually being operated by the respective navies of these states (United States, 2023b).

AUKUS not only facilitates the construction of SSNs but also significantly increases US and UK military activity in Australia. As part of the partnership's first phase, initiated in 2023, Australian military and civilian personnel have been integrated into US and UK industrial sectors, accompanied by submarine visits to enhance training. By 2027, this activity will expand with the establishment of Submarine Rotational Force-West (SRF-West) at HMAS Stirling, hosting up to four US and one UK SSNs. While adhering to its bipartisan policy against permanent foreign bases, Australia justifies SRF-West's rotational model as

⁶² Australia's stance on IAEA nuclear safeguards will be revisited in Chapter 4, with further developments detailed in Appendix C.

compliant with this principle (United States, 2023b). However, concerns from a 2023 US Congressional Budget Office report suggest that Australia's bolstered naval capabilities might offset potential reductions in US Navy capacity. Strategically positioned submarines in the Western Pacific would enable Australia to respond swiftly to regional conflicts, including those involving China, Taiwan, or the South China Sea (United States, 2023a, p. 29). Although this partnership deepens Australia's security ties with the US, it also intensifies its entanglement in the growing US-China rivalry.

The second phase, beginning in the early 2030s, will see Australia acquire 3-5 Virginia-class SSNs from the US, subject to Congressional approval. These submarines, equipped with pre-loaded nuclear fuel, will replace Australia's aging fleet and could challenge Brazil's position as the first NNWS to operate an SSN, as Brazil's SSN is expected by 2034. Australia's role in fuel handling will be minimal, as the submarines will be fueled only once during construction with HEU at weapon-grade levels (around 93% U-235) (Carlson, 2022). This aspect raises nonproliferation concerns. In the third phase, SSN AUKUS submarines will be delivered, with the first UK unit expected in the late 2030s, followed by an Australian unit in the early 2040s (United States, 2023b). These submarines will feature a fully welded power unit, likely sourced from the US or UK (Mayhew, 2023).

On March 10, 2023, in accordance with Article 14 of Australia's CSA, Canberra formally notified the IAEA of its intent to initiate negotiations for the proposed arrangement's development. In line with the modified Code 3.1 of the Subsidiary Arrangements (General Part) to the CSA, Australia also submitted preliminary design information for the new program facilities. Additionally, the country expressed its readiness for the IAEA to conduct a Design Information Verification (DIV). It extended an invitation for the Agency to visit the naval base where the SSNs will be maintained (IAEA, 2023a, items 11, 14). In response, on March 14, 2023, the IAEA issued a statement affirming that under the VOAs of the NWS involved, these states need to report international transfers of nuclear material to NNWSs and, under their APs, to report the export of equipment specified in the APs. The IAEA emphasized its commitment to ensure a transparent process, guided exclusively by its statutes, the CSA, and the AP between Australia and the Agency (IAEA, 2023a, items 12, 13).

Since Gillard's administration, Canberra has distanced itself from its strong commitments to nuclear disarmament, developing closer ties with traditional allies, culminating in the AUKUS partnership and the acquisition of SSNs. The election of Prime Minister Anthony Albanese in 2022 seemed to signify a potential shift away from this strategy, as he advocated for the TPNW during his campaign. However, Australia has not yet

signed the TPNW, and the Albanese government has proceeded with the AUKUS partnership, more importantly with its SSN aspect. Furthermore, Albanese (2023) emphasized that the trilateral security partnership is a decision grounded in Australia's national sovereignty, providing the country with a new level of deterrence and the capability to contribute to regional stability and the security of its allies. The Prime Minister's stance underscores the political effort required to project Australia as a key player.

In 2018, the Australian Labor Party adopted a resolution, moved by Albanese, committing to sign and ratify the TPNW once in government. Labor reaffirmed this commitment in 2021 and 2023. In 2022 and 2024, Canberra formally ended its opposition to the treaty by abstaining from voting on an annual UNGA resolution that welcomed the adoption of the Treaty and called upon all states that have not yet done so to sign, ratify, or accede to it. From 2018 to 2021, Australia had voted against this resolution. New Zealand and Indonesia welcomed the shift in vote, while the US warned that joining the TPNW could hamper defense arrangements. Additionally, Australia observed state parties' first and second meetings to the TPNW in 2022 and 2023 (ICAN, 2024). In 2023, Foreign Minister Penny Wong described Australia's participation in these meetings as a sign of constructive engagement towards nuclear disarmament. Domestically, public opinion strongly supported the TPNW, though slightly declining over time. A 2022 poll conducted by Ipsos revealed that 76% of Australians believe the government should sign the TPNW, compared to 79% in a 2018 poll (ICAN, 2022). Despite this support, the TPNW remains unsigned, and Australia has proceeded with its plan to acquire SSNs.

Meanwhile, in 2024, the country took a further step in international nuclear discourse by voting in favor of a new resolution on the effects of nuclear war and related scientific research. This resolution mandates the UN to establish an independent 21-member Scientific Panel on the Effects of Nuclear War, which will produce a comprehensive report by 2027. The study will draw input from a wide range of experts and stakeholders, including civil society and communities affected by nuclear weapons worldwide (United Nations, 2024b). Notably, this will be the first such UN study since the 1980s.

Under the Albanese administration, Koroloev (2023, p. 560-562; 2024, p. 70-78) argues that Australia's strategic balancing behavior against China consolidated despite moderating its rhetoric. Canberra's assessment of the international environment became more certain, with structural uncertainty diminishing. Foreign Minister Penny Wong highlighted the catastrophic risks of an Indo-Pacific conflict, implicitly referencing China-Taiwan tensions (Meacham, 2022). Following US House Speaker Nancy Pelosi's August 2022 visit to Taiwan,

which triggered Chinese military exercises, Wong called for "de-escalation", subtly directed at Beijing (Tillet, 2022). Concurrently, Australia deepened its defense ties with Washington, including hosting nuclear-capable B-52 bombers at Tindal air base, a move criticized by China as destabilizing. The Albanese government also advanced the AUKUS pact, widely viewed by Chinese analysts as a strategic counterbalance akin to an Asia-Pacific NATO. In April 2023, the Defence Strategic Review underscored the centrality of China as a threat and prioritized closer integration with US military strategies, marking a decisive shift in Australia's defense doctrine (Australia, 2023a, p. 23).

In response to the Albanese administration implementation of AUKUS, Former Prime Minister Keating (2023) strongly condemned the trilateral partnership, labeling it the worst international decision by a Labor government since World War I and warned that Canberra may be distancing itself from its Asian ties. He argued that acquiring SSNs would inevitably entangle Australia in a conflict between the US and China, escalating tensions in the Indo-Pacific. Meanwhile, Academic opposition further grew in May 2023, when over 100 scholars from Australian and New Zealand universities issued an open letter questioning AUKUS's strategic rationale, financial burden, erosion of sovereignty, and risks to nuclear non-proliferation efforts. They also warned of escalating regional tensions, potential arms races, and neglect of Pacific Island priorities like climate change (Concerned Academics and Experts, 2023). Conversely, several universities have received government funding to develop a skilled workforce for the AUKUS SSN pathway (Australia, 2023c). Meanwhile, public opinion has remained divided; while 65% supported acquiring SSNs in 2024, down slightly from 70% in 2022, significant opposition persists regarding funding the acquisition, with 59% rejecting tax increases to cover the costs. Additionally, the gap between Australians who lean towards the Liberal–National Coalition (81%) and those who lean towards the Labor Party (69%) and are in favor of acquiring SSNs has narrowed substantially (Neelam, 2024, p. 4, 19; The Australia Institute, 2023, p. 3).

Despite this domestic reaction, on August 12th, 2024, Australia, the UK, and the US signed and tabled in the Australian parliament an agreement to enable Australia to build, operate, and maintain SSNs, under the AUKUS partnership. This agreement allows the transfer of submarine-specific materials, equipment, and information, supporting Australia's acquisition of Virginia-class submarines from the US and SSN-AUKUS submarine components from the UK, while preparing for the Submarine Rotational Force-West at HMAS Stirling by 2027. The agreement includes a provision requiring Australia to indemnify its partners against any liability for nuclear risks arising from transferred materials. Australia

will also bear responsibility for storing and disposing of spent nuclear fuel and radioactive waste from the transferred nuclear power units. This pact superseded the 2022 Exchange of Naval Nuclear Propulsion Information Agreement, further consolidating AUKUS collaboration for Australia's SSN capabilities (Australian, 2024c).

In the early 2020s, the global and the Australian domestic discourse on nuclear energy underwent a significant transformation, marked by a renewed recognition of its potential role in addressing climate change. This re-evaluation was also taking place at the international level. It was epitomized by the establishment of the International Day of Clean Energy on January 26, 2024, which underscored the urgent need for coal phase-out strategies that do not compromise economic stability, and the inaugural Nuclear Energy Summit hosted by the IAEA and Belgium on March 21, 2024, which facilitated high-level discussions on nuclear energy's integration into clean energy frameworks. Concurrently, Australia witnessed a notable shift in public opinion; following the Fukushima disaster in 2011, a Lowy Institute poll indicated that 62% of Australians opposed nuclear power plants for greenhouse gas reduction (Hanson, 2011, p. 1, 9). However, by 2024, a new poll revealed that 61% of Australians supported nuclear energy for electricity generation, reflecting an evolving perception of nuclear power as a viable solution to the dual challenges of climate change mitigation and energy security (Neelam, 2024, p. 5). This dynamic shift highlights a broader global and domestic re-evaluation of nuclear energy's role in the future energy landscape.

It should be noted that Australia's decision to acquire SSNs in 2021 reignited debates about the potential development of a domestic nuclear energy industry, given the synergies between the two sectors – a robust nuclear energy industry would complement the technological and workforce requirements for SSNs as well as establish the infrastructure necessary to support nuclear fuel fabrication and waste management. This renewed focus culminated in introducing the *Environment and Other Legislation Amendment (Removing Nuclear Energy Prohibitions) Bill 2022*, which sought to repeal the legislative bans on nuclear power generation enshrined in the EPBC Act 1999 and the ARPANS Act 1998. The bill represents the latest in a series of inquiries into nuclear energy in Australia⁶³. Despite these discussions, the Senate Environment and Communications Legislation Committee, in August 2023, ultimately recommended against passing the 2022 bill. The committee emphasized the prohibitive costs of nuclear energy, the unproven nature of small modular reactor (SMR)

⁶³ Other inquiries include the 2006 Switkowski Review, which explored the economic viability of uranium mining and nuclear energy; the 2016 South Australian Nuclear Fuel Cycle Royal Commission, which examined the potential for an expanded role in the nuclear fuel cycle; and the 2019 House of Representatives inquiry into the prerequisites for nuclear energy (Australia, 2023b, p. 6)

technology, the long lead times for industry establishment, and the greater suitability of firm renewable energy for Australia's grid. Furthermore, concerns about nuclear waste management, water usage, national security risks, and public opposition underpinned the committee's conclusion that the current prohibition has effectively served the public interest (Australia, 2023b, p. 1-6, 63-66, 74-79).

Despite the committee's decision, opposition leader Peter Dutton proposed seven potential sites for nuclear power plants in June 2024. Positioned as a response to climate change and concerns about the reliability of renewable energy, this proposal has sparked apprehension, particularly in light of the precedent set by the AUKUS agreement. The introduction of SSNs into Australia's strategic framework has raised broader questions about the country's shift toward nuclear capabilities. Public opinion, once firmly opposed to nuclear initiatives, has shifted notably; recent Lowy Institute polling shows 61% support for nuclear power and nearly two-thirds backing SSNs, reflecting growing acceptance of nuclear technologies in response to regional security challenges. While nuclear weapons remain outside the current policy agenda, rising geopolitical tensions and evolving public sentiment—evidenced by a rise in support for nuclear weapons acquisition from 16% in 2010 to 36% in 2022—demonstrate the fluidity of attitudes under shifting global pressures. This trajectory underscores an increasing convergence of strategic imperatives and energy policy, highlighting a broader transformation in national perspectives on nuclear technology amid heightened regional and global uncertainty (Flitton, 2024; Neelam, 2024, 26).

From the mid-2010s until recently, Australia underwent a strategic shift, from its earlier emphasis on middle-power diplomacy within the NWNPR, a hallmark of its approach since the 1970s, to prioritizing material capabilities. This became more evident by the acquisition of SSNs which in the Albanese administration gained bipartisan support. The acquisition of SSNs through a security partnership with the US and UK, signaled a recalibration of Canberra's strategic posture, which consolidated its alliance with the US as a direct response against China's rise. This shift to military capability is also evidenced by Australia's continued efforts to undermine the TPNW, although the Albanese administration shifted in the position by abstaining in the votes it did not sign the Treaty as it had previously pledged to. Furthermore, by being supplied SSNs by NWS plus fueled with nuclear weapons grade enriched uranium, the country has further deepened the asymmetries within the NPT and further complicated its position as a mediator between NWS and NNWS.

3.5 Findings

Australia's foreign policy, particularly regarding the NWNPR, has been shaped by its strategic ties with the UK and US, regional engagement, and commitment to a rules-based international order. At the core of these dynamics is the long-standing ambition of Australian policymakers to secure and, at times, reaffirm the country's status as a middle power. This aspiration has consistently influenced its approach to nuclear policy, arms control, and non-proliferation, often balancing national interests with alliance commitments.

A firm and deep relationship with the UK and US has underpinned Australia's security strategies for decades. From the 1940s to the 1960s, Australia actively supported British nuclear weapons development by providing uranium, scientific expertise, and remote testing sites. As well as having a significant reliance on the UK for a nuclear deterrent. The reliance on London and Washington for nuclear deterrence evolved in the 1970s with Australia's support for the NPT. It was further solidified in the 1990s when it formally declared itself under the US nuclear umbrella. The 2021 AUKUS announcement reaffirmed this enduring alignment, demonstrating the continued strategic importance of its major allies. Additionally, these relationships have often constrained Australia's pursuit of nuclear disarmament and non-proliferation. This is evident in its reluctance to support the TPNW, reflecting the priority placed on maintaining the confidence of its key allies.

In parallel, Australia has sought stronger ties with its regional neighbors to promote a stable and secure environment, particularly through engagement on disarmament initiatives. This commitment was exemplified in establishing the South Pacific NWFZ, where Australia played a key role while carefully considering the interests of the UK and US. More recently, following the AUKUS agreement, Australian policymakers actively engaged with regional partners to ensure the pact was received as a contribution to regional security rather than a destabilizing shift. These efforts highlight Australia's recognition of regional dynamics while maintaining alignment with its major allies.

Australia has actively sought to shape the international rules-based order by supporting arms control and non-proliferation agreements. It has been a strong advocate for the NWNPR, demonstrated by its commitment to the NPT, its restrictions on nuclear exports to states adhering to safeguards, and its distinction as the first state to receive the IAEA's broader conclusion that all nuclear material remains in peaceful activities—an acknowledgment it has received annually since. Australia has also participated in initiatives

such as the NPDI, reinforcing its broader strategic goal of global stability through multilateral frameworks.

Among the three key aspects of Australia's nuclear policy—alliances, regional engagement, and support for the rules-based order—its relationship with the UK and US has been the most influential. Australia's commitments to regional security and international organizations have consistently operated within the strategic boundaries set by its major allies. Whether through arms control initiatives, or diplomatic efforts, its foreign policy remains deeply intertwined with its pursuit of middle-power status and the enduring influence of the UK and US on its strategic decision-making. However, this pursuit has not been static; it has undergone significant transformations, shaped by evolving geopolitical realities and Australia's shifting role within the international system.

Within the framework of middle-power theory, as outlined in the introduction and further substantiated by the analysis presented, Australia has historically sought formal recognition as a distinct category within the post-war order. From the late 1940s to the early 1970s, this was largely characterized by reliance on the UK and US for security guarantees, even as it briefly considered an independent nuclear deterrent. By the mid-1980s and 1990s, Australia's foreign policy reflected a more multilateral approach, positioning itself as a key advocate of the NWNPR while remaining under the US nuclear umbrella. This balance between strategic dependence and diplomatic engagement continued into the 21st century, with Australia maintaining its security alliance with the US while selectively engaging in non-proliferation initiatives aligned with its allies' interests. However, in response to shifting global power dynamics—most notably the rise of China—Australia has increasingly prioritized material capabilities over diplomatic engagement, as demonstrated by its decision to acquire SSNs under AUKUS.

The AUKUS partnership represents a critical inflection point in Australia's evolving middle-power status. It underscores a shift from leveraging multilateral diplomacy within the NWNPR to reinforcing hard power through advanced nuclear military technology. While historically employing strategies to balance alliances with major powers such as the US and UK, AUKUS exemplifies how Australia's middle-power ambitions remain deeply conditioned by its allies. However, this deepening alignment also heightens the risk of entanglement in great-power conflicts, particularly with China. Although Australia has traditionally championed nuclear non-proliferation and adhered to international norms, its AUKUS commitments complicate its role as a mediator between NWS and NNWS. Nonetheless, Australia retains the capacity to reassert its diplomatic middle-power role by reinvigorating

engagement with NWNPR initiatives such as the NPDI and reevaluating its stance on the TPNW, ensuring that its pursuit of strategic security does not come at the expense of its broader non-proliferation commitments.

4 COMPARING BRAZIL AND AUSTRALIA

As demonstrated in the preceding chapters, both Australia and Brazil have played significant roles in the global uranium market and have pursued the development of nuclear industries, including ventures into uranium enrichment. Intermittent explorations of nuclear weapons or peaceful nuclear explosives accompanied these efforts. Notably, since the mid-1980s and 1990s, both countries have established robust credentials within the Nuclear Weapons Non-Proliferation Regime (NWNPR). However, despite these similarities, their nuclear trajectories have diverged markedly. These divergences stem from differences in historical contexts, geopolitical positioning, strategic imperatives, and approaches to international collaboration. Australia's nuclear ambitions were closely intertwined with its alliances with the United States and the United Kingdom, reflecting its Commonwealth heritage and pursuit of middle power status. In contrast, Brazil charted a more autonomous and diversified path, influenced by its distinctive geopolitical and economic conditions.

This chapter undertakes a comparative analysis of the nuclear trajectories of Brazil and Australia. Departing from the structure employed in earlier chapters, the analysis is organized around three levels of focus: domestic, regional, and international. By concentrating on key events within these spheres, this framework enables a nuanced comparison of analogous yet contextually distinct moments in each country's nuclear history. Such an approach underscores the unique historical, political, and strategic factors that have shaped their respective nuclear policies and positions within the international NWNPR. Through this multilevel examination, the chapter aims to elucidate the divergent strategies adopted by Brazil and Australia in their navigation of nuclear development and policy making.

This chapter highlights that Brazil's pursuit of autonomy in the nuclear domain has been a cornerstone of its approach to nuclear technology and its engagement with global non-proliferation frameworks. In contrast, Australia's strategy reflects its aspiration to assert itself as a Middle Power, its deep-seated alliances with the US and the UK, and its commitment to fostering regional stability and advancing disarmament dialogue. These divergent trajectories have resulted in Brazil prioritizing the independent development of nuclear powered submarines (SSNs), while Australia has aligned its nuclear strategy with its alliances, most notably through the AUKUS framework. By adopting this comparative lens, the chapter elucidates how Brazil and Australia have navigated their respective nuclear aspirations within the context of their unique strategic priorities and constraints.

4.1 Domestic level

In Australia, as outlined in Chapter 3, the government of Prime Minister Robert Menzies shaped the nation's nuclear policy within the strategic framework of Cold War dynamics, underpinned by unwavering loyalty to its principal allies, the US and the UK. Concerns about communist expansion in Southeast Asia catalyzed Menzies' efforts to deepen Australia's alignment with Western powers. This alignment was exemplified by Australia's support for nuclear testing and its early initiatives in nuclear capability development between the late 1940s and mid-1960s. The establishment of the AAEC in 1953 marked the formalization of the country's engagement in nuclear research and development. Over the following three decades, the AAEC undertook extensive work across the nuclear fuel cycle, encompassing uranium enrichment, reactor design, and radioactive waste management. During its early phase from 1953 to 1966, the AAEC concentrated on research into high-temperature gas-cooled reactors and liquid-metal-cooled reactors, later shifting its focus to heavy water reactor designs, spent fuel reprocessing, and nuclear desalination. From 1965 to 1983, uranium enrichment emerged as the AAEC's largest program, with significant efforts dedicated to centrifuge and laser enrichment technologies. Additionally, Australia engaged in international enrichment collaborations with countries such as France, Japan, and the US (Australia, 1976a; 1977; 2006; Blumkin, 1977, p. 21-24; 1978, p. 20-25; Australia, 2024f). Meanwhile, under Prime Minister John Gorton's leadership nuclear energy was focused on enhancing Australia's technological and industrial base. The proposed Jervis Bay nuclear power plant symbolized this ambition and potentially reflected covert aspirations for an independent nuclear capability. However, these initiatives were ultimately curtailed, and Australia reaffirmed its commitment to global non-proliferation efforts by acceding to the NPT.

In the 1970s, South Australia proposed establishing an uranium enrichment and processing center, projecting significant economic benefits; however, this initiative, along with later private-sector efforts led by the Uranium Enrichment Group of Australia (EUGA), was ultimately abandoned following policy shifts under the Federal Labor Government in the 1980s (Australia, 2005). Prioritizing non-proliferation and disarmament, Prime Minister Robert Hawke's administration terminated Australia's uranium enrichment research and development program, despite its technical success in achieving results comparable to leading international programs such as Urenco. This marked the end of nearly two decades of enrichment advancements, alongside the laser enrichment initiative closed in the early 1990s.

The cessation of these programs reflected a deliberate policy decision to align with anti-nuclear sentiment and reinforce Australia's commitment to non-proliferation (Australia, 2006). It's interesting that in this context—abandonment of uranium enrichment as a government initiative and promotion of the country's commitment to the NWNPR—Canberra decided to formally include in the 1993 Strategic Review and the 1994 DWP its reliance on the US nuclear umbrella. This decision underscored Australia's strategic reliance on its international alliances, particularly the security guarantees provided by the US nuclear umbrella, rather than pursuing an independent nuclear deterrent or capability. Hawke's view was further solidified during the Howard administration by legislation, including the *Australian Radiation Protection and Nuclear Safety Act 1998* and the *Environment Protection and Biodiversity Conservation Act 1999*, which explicitly prohibited the establishment of uranium enrichment or civil nuclear power facilities.

Brazil's nuclear trajectory, by contrast, was shaped by its desire for technological autonomy and economic development, reflecting a markedly different approach from Australia's reliance on its traditional allies. As discussed in Chapter 2, Brazil's initial nuclear efforts in the mid-20th century centered on agreements with the US, particularly through mineral exports like monazite sands. However, these agreements were frequently structured in a manner that disproportionately favored the interests of the US. Under Getúlio Vargas, Brazil pursued a diversified strategy seeking partnerships with multiple countries to reduce dependence on the US. This quest for autonomy culminated in the establishment of CNPq in 1951 to oversee nuclear policy and foster domestic expertise. Later, the 1950s "Atoms for Peace" program provided Brazil with its first research reactor, yet restrictive agreements with the US underscored, once again, the limitations of reliance on a single partner. This prompted Brazil to expand its collaborations and prioritized centralized management.

During the military regime (1964-1985), Brazil pursued an ambitious nuclear program that balanced Cold War-era ties with the US and significant strides in independent advancements. While the construction of Angra 1 in 1972 under US terms underscored Brazil's reliance on American fuel, the Geisel and Figueiredo administrations sought to counter this dependency through diversification and indigenous development. The 1975 Brazil-Germany nuclear agreement, intended to transfer critical nuclear technology, faced delays, high costs, and limited success, spurring Brazil to prioritize domestic innovation. Under President Figueiredo, efforts to achieve autonomy over the nuclear fuel cycle intensified, driven by economic pressures, including a severe debt crisis and energy challenges following the 1979 oil price spike. IPEN's successful production of UF₆ marked a

critical milestone, enabling the launch of the PATN, which sought to bypass international restrictions. Distinct roles within the armed forces shaped Brazil's nuclear advancements. The Navy prioritized nuclear submarine propulsion, developing ultracentrifuges and small reactors, achieving significant progress by 1984. The Air Force pursued laser-based uranium enrichment, raising international concerns about weaponization, while the Army explored heavy-water production and graphite reactor designs, though with limited success. Budgetary constraints and technological challenges curtailed large-scale projects, including reactor plans and advanced laser enrichment initiatives. Nevertheless, secrecy shrouded these programs to mitigate foreign interference and domestic opposition during Brazil's transition to democracy. Despite setbacks, Brazil sought unconventional partnerships to reduce reliance on traditional nuclear powers, collaborating with China to secure enriched uranium and with Argentina on mutual fuel supply and technological exchange. By 1985, Brazil had made significant progress in uranium enrichment and nuclear propulsion technologies, particularly under the Navy's leadership, laying a foundation for future developments.

Australia and Brazil adopted divergent strategies in the domain of uranium enrichment, reflecting their distinct national priorities and strategic objectives. Following the termination of Australia's uranium enrichment research program by the public sector under the Hawke administration, enrichment activities shifted to the private sector, most notably with the development of the SILEX Laser Isotope Separation process in the 1990s by Silex Systems Limited. This initiative benefited from significant US financial and institutional support, including joint research and commercialization agreements enabled through bilateral treaties. The Australian government facilitated this private-sector effort by providing infrastructure support via the ANSTO and aligning with US regulatory frameworks, which allowed SILEX to attract American investors while adhering to US non-proliferation oversight. In contrast, Brazil pursued a state-led approach, consolidating uranium enrichment under governmental control, specifically within the military sphere overseen by the Brazilian Navy. This strategy underscored Brazil's emphasis on technological sovereignty and autonomy in nuclear processes. The Navy's stewardship of enrichment activities reflected its central role in advancing Brazil's broader nuclear agenda, including the development of SSNs. These contrasting approaches highlight a fundamental difference: Australia relied on private enterprise and international partnerships, while Brazil maintained a state-controlled and international partnership framework to achieve its nuclear objectives.

Concerning SSNs, although efforts towards pursuing them had been ongoing in Brazil since the late 1970s, significant advancements were realized only in 2008, marking a pivotal

moment with the establishment of the PROSUB. This program was initiated primarily to enable the construction of SSNs. PROSUB encompasses the production of four conventional submarines, culminating in the development of Brazil's first domestically constructed SSN. In the same year, a technology transfer agreement was signed between Brazil and France. Under this agreement, Paris became responsible for contributing to the construction of the SSN hulls but was not involved in the development of the nuclear propulsion system for the SSN. Beyond the submarines themselves, the program included the creation of an extensive industrial and operational support infrastructure. This infrastructure comprises shipyards, a naval base, and the Metallic Structures Manufacturing Unit. Initiated in 2009, the SSN project is projected to reach completion by 2034. However, the program is confronted with several technological challenges, including the negotiation of safeguards with the IAEA and the procurement of nuclear fuel required for the submarine's operation.

Meanwhile, in Australia, an important development in this area was made in 2021 through the AUKUS agreement, centered on strengthening defense capabilities in the Indo-Pacific region. A key feature of AUKUS is the provision for Australia to acquire SSNs, marking a significant shift in its defense posture and technological capacity. This collaboration reflects a strategic response to perceived threats from China's growing assertiveness in the region, signaling a deeper alignment among these allies to counterbalance Beijing's influence. The agreement also underscores the role of advanced technologies in modern defense, including artificial intelligence, quantum computing, and cybersecurity. However, AUKUS has sparked international debate, particularly concerning its implications for the NWNPR, as it involves transferring sensitive nuclear propulsion technology to a NNWS. It also raised tensions with France, whose conventional submarine deal with Australia was abruptly canceled.

In contrast to PROSUB, the AUKUS agreement represents a fundamentally different approach to leveraging nuclear submarine technology, underscoring Australia's strategic dependence on its allies, the US and the UK. While Brazil's PROSUB reflects a deliberate pursuit of technological and operational autonomy, prioritizing the indigenization of key components such as the nuclear propulsion system, AUKUS highlights Australia's reliance on transferring advanced technologies and expertise from its partners. This reliance positions Australia as a middle power that aligns closely with the strategic interests of the US and UK, reaffirming its place within a hierarchical alliance structure rather than seeking autonomous capabilities. AUKUS reinforces Australia's conditional status in the global order, dependent on its allies for both the procurement and operational sustainability of SSNs. This contrasts

sharply with Brazil's efforts to build domestic industrial and technological capacities through PROSUB. These diverging paths illustrate the geopolitical priorities of the two nations: while Australia emphasizes securing its position within a Western-led alliance in the Indo-Pacific, Brazil seeks to enhance its autonomy and independent influence in the South Atlantic.

4.2 Regional level

During the mid-20th century, Latin America emerged as a key advocate for regional disarmament and denuclearization. Costa Rica's 1958 proposal within the OAS was the first to emphasize arms control and the prohibition of nuclear weapons development, calling for gradual demilitarization and reductions in defense spending. Chile further advanced these efforts in 1959 with proposals to balance and limit armaments to address regional security concerns. Before the Cuban Missile Crisis, Brazil presented a comprehensive denuclearization initiative to the UN, extending its scope to both Latin America and Africa. Brazil's leadership was partly driven by African nations' reaction to French nuclear tests in the Sahara in 1960 and concerns over South Africa's nuclear ambitions under apartheid. Reflecting this context, the UNGA passed a resolution in 1961 calling for Africa to be established as a NWFZ (United Nations, 1961). Brazil voted in favor, when many western countries and Latin American nations abstained. However, the Brazilian initiative failed to gain approval. The proposal's dual focus on Africa and Latin America, coupled with the challenge of reconciling regional ideological and strategic interests, limited its immediate feasibility (Franco, 2007, p. 250; Martinez, 2008, p. 78-84; Wrobel, 1993, p. 28).

A significant consequence of the Cuban Missile Crisis for Latin America was the impetus it provided for the establishment of a regional NWNPR. Following the resolution of the crisis, marked by the withdrawal of Soviet missiles from Cuba and the country's expulsion from the OAS, Latin America and the Caribbean resolved to prevent their territories from ever again becoming sites of potential nuclear conflict (Epstein, 1997, p. 23). Brazilian motivations were notably reinforced by the crisis. On October 29, 1962, a day after Khrushchev announced the withdrawal of Soviet missiles from Cuba, Brazil resubmitted its proposal to the UN, this time with a clearer focus on establishing Latin America as a NWFZ. Brazil's proposal received support from Bolivia, Chile and Ecuador. However, procedural challenges at the UNGA, including insufficient time for dissemination and debate, hindered the

proposal's ability to garner adequate support among delegates, resulting in its exclusion from a formal vote⁶⁴ (Duarte, 2023, p. 90; Martinez, 2008, p. 84-85).

Nevertheless, Mexico's 1963 initiative at the UN marked a turning point in advancing regional disarmament. The proposal to establish Latin America as a NWFZ sought to prevent the deployment of nuclear weapons and testing within the region, garnering support from nations such as Brazil, Bolivia, Chile, and Ecuador. This collective effort began with a joint declaration in April, 1963, where the presidents of these nations pledged to pursue a multilateral agreement prohibiting the manufacture, receipt, or storage of nuclear weapons. Shortly thereafter, the UNGA adopted Resolution 1.991, outlining measures for Latin America's denuclearization. By 1964, 17 Latin American countries convened to establish the Preparatory Commission for the Denuclearization of Latin America (COPREDAL) in Tlatelolco, Mexico, tasked with drafting the foundational multilateral framework that would later become the Treaty for the Prohibition of Nuclear Weapons in Latin America⁶⁵ (Duarte, 2023, p. 90; Nascimento, 2009, p. 41). According to Wrobel (1993, p. 27-28), four key factors shaped the context for initiating the treaty's negotiations: 1) a longstanding Latin American diplomatic tradition favoring multilateral agreements and prioritizing legal frameworks for addressing regional issues; 2) the existence of a collective security pact with the US, formalized in the 1947 Rio Treaty, which placed the region under the protection of the US "nuclear umbrella"; 3) the relative absence of inter-regional conflict – while internal political instability and regime dynamics in the region had significant international dimensions, particularly following the Cuban Revolution of 1959, Latin America remained geographically distant from the primary epicenters of global tension and Cold War rivalries; and 4) the leadership of key regional powers, particularly Brazil and Mexico, in promoting the initiative.

The Inter-American Treaty of Reciprocal Assistance (TIAR) and the OAS played key roles in shaping Latin America's security framework and contributed to the eventual formation of the Treaty. However, their principles often aligned with US strategic interests rather than addressed the aspirations of Southern countries. As Enrique Román-Morey (1997, p. 9) observed, Latin America's decision to establish the first NWFZ reflected an assertion of

⁶⁴ Brazil played a significant role as an intermediary between the US and Cuba. Initially aligned with Washington, it later adopted a neutral stance, advocating for a peaceful resolution through international oversight. Unlike Argentina, which fully supported the US, Brazil's balanced approach was seen by Cuba as more favorable than Mexico's. Brazil's mediation efforts included General José Albino Silva's mission to Havana as a special courier for President João Goulart during the crisis. However, Washington perceived these efforts as sympathetic to Fidel Castro's regime, further deepening US skepticism toward Goulart's reformist policies (Avila, 2012, p. 379-380, 389).

⁶⁵ In July 1990 a modification in the Treaty title was made through Resolution 267 (E-V) to include "and the Caribbean" becoming: Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (UNODA, 1992)

sovereign and independent foreign policy, opposing external interventions in the region. Discontentment among NNWS over the discriminatory nature of nuclear non-proliferation measures further underscored tensions between NNWS and NWS, as the latter sought to restrict access to nuclear technology under the guise of non-proliferation. Barry Buzan (1998, p. 60) emphasized the inseparability of nuclear technology for peaceful and military purposes, which NWS used to justify blocking technology access. The Treaty of Tlatelolco sought to bridge this divide, permitting PNEs while ensuring a nuclear-weapon-free region. Opened for signature on February 14, 1967, the treaty came into force on April 25, 1969, after 11 nations ratified it, establishing obligations for contracting parties to prohibit and prevent nuclear weapons activities within the region. These included banning the testing, use, manufacturing, production, or acquisition of nuclear weapons, either directly or indirectly, as well as the receipt, storage, installation, or possession of such weapons under any circumstances (UNODA, 1992).

The enforcement of the Treaty of Tlatelolco was facilitated through the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL), tasked with overseeing compliance, organizing treaty-related consultations, and supervising the Control System. Verification was conducted via multilateral and bilateral agreements integrating the IAEA, which applies safeguards to member states' nuclear activities. Two Additional Protocols amplified the treaty's scope: Protocol I extended denuclearization obligations to territories under the jurisdiction of France, the Netherlands, the UK, and the US, all of which have signed and ratified it; Protocol II committed NWS to respect the region's denuclearized status and refrain from using or threatening nuclear weapons against treaty parties. In cases of non-compliance, OPANAL's General Conference may report violations to the UNSC, UNGA, and the OAS, ensuring a robust framework for maintaining regional nuclear disarmament (NTI, 2023).

The Treaty of Tlatelolco faced significant criticism, particularly regarding Article 18, which permitted PNEs—a provision strongly opposed by the US (Wrobel, 2014, p. 236). According to Nascimento (2009, p. 43), this article was included to counterbalance the perceived technological monopoly of nuclear powers, ensuring NNWS access to nuclear technology. The NNWS sought to avoid legitimizing the monopoly on nuclear technology that NWS desired. Brazil, a strong proponent of Article 18, viewed it as essential for protecting sovereignty and accessing peaceful nuclear technologies, believing it could aid in resource exploration and development. Supported by Argentina and Colombia, Brazil sought to benefit from US programs like Plowshare. Despite Mexico's skepticism, arguing that the technology

for safe and economically viable nuclear explosions did not yet exist, Brazil made Article 18 a principle of its policy, opposing efforts by the US, USSR, and UK to restrict such activities. This stance was rooted in Brazil's broader concerns about technological inequality between developed and developing nations. The NWS signed the Treaty's additional protocols but explicitly rejected Article 18 during ratification (Cervo, 1998, p.74; Spektor, 2016; p. 636; Wrobel, 1993, p. 39; 2014, p. 236; 2017, p. 2). Additionally, there was a major disagreement over the Treaty's entry into force. Mexico advocated for a model where the treaty would apply once eleven states ratified it, enabling the automatic establishment of OPANAL. At the same time, Brazil insisted on stricter conditions: ratification by all COPREDAL members, including those covered by Additional Protocols I and II, and establishing a security framework with the IAEA. This impasse was resolved through Article 28, which accommodates Brazil's demands but allows states to waive these conditions (Martinez, 2008, p. 183-186).

During the Treaty of Tlatelolco negotiations, two distinct coalitions emerged, reflecting divergent approaches to nuclear governance in Latin America. Mexico, supported by the US, advocated for a stringent treaty, whereas Brazil and Argentina sought flexibility to accommodate their nuclear energy ambitions, including PNEs. Simultaneously, while the US, France, and the UK pushed to permit the transit of nuclear weapons through the denuclearized zone, opposition from the Southern Cone coalition resulted in the decision being left to individual states. Ultimately, the treaty's provisions aligned with Brazilian and Argentine interests by allowing PNEs (Martinez, 2008, p. 95). However, Brazil conditioned its full adherence to the nuclear powers' ratification of Protocols I and II, leading to a delayed implementation of its treaty obligations from its initial ratification in 1968 until 1994, by which time Brazil had already acknowledged the NPT view that there was no distinction between peaceful and military nuclear tests. Full regional enforcement of the treaty was achieved only on October 23, 2002, when Cuba became the final signatory state, and today, all 33 Latin American and Caribbean nations have signed and ratified the treaty, marking comprehensive regional adherence (NTI, 2023). Despite this achievement, Brazil has consistently urged NWS to withdraw reservations and interpretative declarations to Protocols I and II, as well as similar provisions in other nuclear-weapon-free treaties, arguing that such reservations undermine the core objectives of these agreements and the disarmament obligations outlined in Article VI of the NPT. Specifically, Brazil has criticized reservations that dilute the commitment in Article 3 of Protocol II, which obligates NWS not to use or threaten to use nuclear weapons against Treaty parties. Advocating for stronger negative

security assurances and a no-first-use commitment, Brazil and its regional partners emphasize that such measures could foster détente, slow down the arms race, and reinforce global non-proliferation efforts (NPT/CONF.2020/11).

The Treaty of Tlatelolco represented a significant milestone, as it established the first NWFZ in a densely populated region that had never possessed nuclear weapons. The treaty strengthened global non-proliferation efforts and set a precedent for future agreements. Following this example, the South Pacific became the second populated region to establish an NWFZ. This NWFZ emerged as a direct response to the region's traumatic experience with nuclear weapons testing from the 1940s to the mid-1990s and its far-reaching consequences. Between the 1940s and 1963, when the PTBT prohibited atmospheric nuclear detonations, the US conducted extensive tests in the Marshall Islands, while the UK carried out similar tests in Australia and Kiribati. Despite the PTBT, France continued nuclear testing in French Polynesia until 1996, exacerbating environmental degradation and public health crises. The fallout from these tests caused radioactive contamination, forced relocations, and heightened cancer risks, creating widespread humanitarian and ecological disasters. Beyond testing, South Pacific states also expressed alarm over the disposal of nuclear waste, which threatened fragile marine ecosystems. During the Cold War, growing apprehension about the global nuclear arms race intensified fears in the region, particularly in countries like New Zealand, Australia, Fiji, Vanuatu, and Papua New Guinea. These fears were fueled by events such as the 1962 Cuban Missile Crisis, the establishment of US nuclear command bases in Australia, missile testing in the Marshalls, and the possibility of Pacific sites becoming nuclear targets in superpower conflicts (Hamel-Green, 2020, p. 1-2; NTI, 2020). Against this backdrop, the South Pacific Forum (SPF)⁶⁶ initiated formal discussions in the early 1970s to create a NWFZ.

The concept of a NWFZ in the South Pacific had long been central to regional discussions on nuclear issues. Initially championed by New Zealand's Labor Prime Minister Norman Kirk (1972–1974) as a means to pressure France into ceasing nuclear testing in the Pacific, the idea was revived in 1975 by his successor, Wallace Rowling, who expanded it to include restrictions on nuclear weapons and nuclear-powered ships. In early 1975, New Zealand officials presented a draft proposal to the US Ambassador, emphasizing that the zone would apply only to South Pacific nations' territories, waters, and airspace, excluding the high

⁶⁶ The South Pacific Forum was established in 1971 as a regional organization of independent South Pacific states that included Australia, New Zealand, Fiji, Papua New Guinea, Niue, Tonga, Western Samoa, Nauru, Solomon Islands, Cook Islands, Vanuatu, and Kiribati. In 2000 the regional body was renamed to Pacific Island Forum and now includes other Pacific Island states and self-governing territories, including the Marshalls, French Polynesia, New Caledonia, Palau, Federated States of Micronesia, and Tokelau, although these have not as yet become part of the SPNFZ Treaty.

seas, and would not undermine New Zealand's ANZUS treaty obligations. Despite these assurances, the US expressed reservations, fearing the zone might restrict freedom of movement for its ships and aircraft. This is critical to its strategic interests in the Pacific, particularly given their increasing reliance on nuclear-powered ships. Tensions escalated when Rowling publicly advocated banning nuclear-armed vessels, contradicting earlier guarantees and raising doubts about New Zealand's commitment to existing security arrangements. The Rowling government sought international support, with Fiji and Papua New Guinea co-sponsoring a resolution at the UN. In December 1975, the UNGA endorsed the principle of a South Pacific NWFZ, but the initiative faltered with the electoral defeat of New Zealand's Labor government. The incoming National Party government under Robert Muldoon dismissed the proposal as impractical, citing concerns over navigation and security. Australia's lack of support also played a role (United States, 1979, p. 1-2). Between 1976 and 1983, conservative governments in Australia and New Zealand actively opposed proposals for establishing a NWFZ in the South Pacific, ensuring that the issue remained absent from the agendas of South Pacific Forum meetings. Notably, both nations blocked a Fijian-backed draft declaration that sought to commit Forum members to creating a NWFZ, effectively stalling regional progress on the initiative (O'Neil, 2004, p. 569).

However, in 1983, Australia's Labor government revitalized the SPNFZ initiative at a SPF meeting. The following year, the Forum convened in Tuvalu, where member states endorsed principles emphasizing the prevention of superpower rivalries, the preservation of regional peace, and the protection of natural resources. During negotiations in 1984 and 1985, Australia worked to maintain member state commitment and ensure adherence to the principles established in Tuvalu. The Hawke government achieved its policy objectives with strong support from New Zealand, also under a Labor government, and Polynesian delegations. However, Australia struggled to secure backing from the five NWS. Despite safeguarding the freedom of transit for nuclear platforms in the South Pacific and intensive lobbying for its traditional allies, Britain and the US ultimately declined to support the Treaty⁶⁷. By contrast, Australian diplomacy successfully secured the USSR's unqualified endorsement⁶⁸. Scholars remain divided on the motivations behind Australia's approach.

⁶⁷ Australia expected US support for the SPNFZ Treaty after addressing American and British concerns over nuclear transit and port access. However, the US criticized the treaty as strategically flawed, fearing it would aid Soviet interests. While Hawke publicly projected confidence, internal documents reveal concerns over US opposition. Meanwhile, France lobbied intensely in Washington, with Prime Minister Chirac warning that US endorsement would be seen as an 'unfriendly act'. Caught off guard by France's influence, Australia was surprised when the US and UK formally rejected the treaty protocols in 1987 (O'Neil, 2004, p. 577-578).

⁶⁸ The USSR initially warned that it would abandon its non-use commitments under Protocol II if any Party violated the nuclear-free zone's status or allowed aggression involving a NWS to utilize its territory, airspace,

Critics suggest the policy prioritized short-term political gains and US strategic interests over non-proliferation. Mogami (1988, p. 419) and Bolt (1990, p. 54) argue the Treaty provisions were diluted to align with US priorities, while McDougall (1998, p. 227) and Hamel-Green (1990, p. 3, 66) contend that Australia sought to counter more radical nuclear-free proposals and legitimize existing nuclear activities. However, O'Neil (2004, p. 568, 581) challenges the prevailing view that alliance considerations primarily drove Australia's approach to the SPNFZ. Instead, he argues that the Labor government's initiative was significantly influenced by its ambition to enhance Australia's international profile on non-proliferation issues within multilateral forums such as the UNGA and the Conference on Disarmament. Additionally, Australia's strategy was shaped by concerns that more restrictive SPNFZ proposals—such as those prohibiting nuclear transit or civil nuclear activities like uranium exports—could jeopardize the country's alliance and economic interests. By advancing a set of principles to guide SPNFZ negotiations, the Hawke government sought to pre-empt and moderate more comprehensive proposals that might emerge within the SPF.

The Rarotonga Treaty, signed in 1985 and enforced in 1986, established the SPNFZ, prohibiting signatories from manufacturing, acquiring, or possessing nuclear explosive devices and from assisting such activities. It also banned nuclear weapons' stationing, testing, and radioactive waste dumping within the zone while ensuring IAEA safeguards on nuclear materials. The treaty's three protocols extended its provisions to NWS. Protocol I required NWS with territories in the region to comply with the treaty, signed by France, the UK, and the US, though only the first two ratified it. Protocol II prohibited NWS from using or threatening nuclear weapons against treaty members and was ratified by all NWS except the US, which has only signed it. Protocol III, banning nuclear testing, was similarly ratified by all except the US. Notably, France attached reservations to Protocols II and III, citing self-defense rights and conditional commitments in cases of treaty violations (UNODA, 1986).

A significant issue the SPNFZ Treaty had to address was nuclear-armed ship visits, which was handled through a compromise in Article 5, allowing individual states to decide whether to permit or prohibit them. This enabled Australia to continue hosting US nuclear-capable vessels, while New Zealand and other Pacific nations upheld bans. During

or waters for nuclear transit. This stance was further emphasized in a statement affirming that nuclear transit through the SPNFZ would conflict with the treaty's aims and that any Party engaging in aggression with the support of a NWS would release the USSR from its commitments. Despite these warnings, the Soviet Union ratified Protocols II and III unconditionally in 1988. Documents revealed that Australian lobbying efforts, particularly by the Hawke government, played a significant role in influencing this decision, as confirmed by communications from the Soviet embassy to Australian officials (O'Neil, 2004, p. 579-580).

negotiations, Papua New Guinea and Vanuatu raised concerns that frequent and prolonged nuclear ship visits could amount to de facto stationing, undermining the treaty's intent. However, Australia, chairing the negotiations, rejected proposals for time limits or prior warnings, fearing it would strain US alliance commitments. While New Zealand accepted the Article 5 compromise, it remained firm in its nuclear-free stance, ensuring that it was not seen as imposing its policy on other nations. Although the US removed tactical nuclear weapons from its naval vessels in 1991, recent nuclear modernization efforts by the US, Russia, and China have renewed concerns about the return of nuclear-armed vessels to the Pacific (Hamel-Green, 2020, p. 5-6). Hamel-Green (2020, p. 7) argues that vague treaty language allows for prolonged port visits, which violates the treaty's anti-stationing principles. Additionally, Australia's continued hosting of US nuclear-capable forces contradicts the treaty's spirit, raising regional security risks. In this sense, he proposes to strengthen treaty enforcement and to clarify the legal definitions on nuclear ship visits to prevent nuclear weapons from reentering the South Pacific under the guise of routine naval operations.

Australia has long advocated for the US to ratify the SPNFZ Treaty's protocols, which is crucial to regional nonproliferation and disarmament. Despite spearheading the treaty's establishment, Australia faced US resistance, as Washington saw the treaty as challenging nuclear deterrence doctrines. After nine years of Australian diplomacy, the US signed the protocols in 1996 but required specific declarations and understandings for Senate ratification. In 2010, Washington formally announced its intent to submit the protocols for Senate approval, with President Obama pushing for ratification in 2012, but the US has yet to take further steps. Its continued assertion of the right to transit nuclear-armed vessels through the South Pacific has drawn criticism, particularly from Pacific Island nations, including during the 2014 Pacific Islands Forum, where states urged US ratification. Despite Australia's efforts to strengthen the SPNFZ, actions like its 2014 civil nuclear agreement with India have raised concerns about its commitment to nonproliferation principles. However, Australia maintains that it remains fully compliant with the treaty obligations (NTI, 2020).

More recently, the AUKUS partnership has renewed debates over Australia's treaty commitments, with Australia, the UK, and the US reaffirming their full compliance with the NPT and the Treaty of Rarotonga. Australia has explicitly stated that the rotational presence of UK and US submarines under AUKUS adheres fully to its treaty obligations, emphasizing that the Treaty of Rarotonga does not cover nuclear propulsion, as it prohibits only the manufacture, use, testing, and possession of nuclear weapons. Under Article 5, the decision to allow nuclear-armed vessels remains at the discretion of individual states. In August 2023,

New Zealand Foreign Minister Nanaia Mahuta highlighted Australia's transparency and adherence to international legal commitments, affirming that AUKUS is consistent with the Treaty of Rarotonga. The document emphasized Australia's reputation as a responsible actor in upholding legal obligations, reinforcing that the treaty's scope does not extend to nuclear propulsion (New Zealand, 2024). This reflects a broader strategic effort to ensure that AUKUS remains in line with existing treaty frameworks while maintaining regional stability; however, as Hamel-Green (2020, p. 7) observed that it contradicts the treaty's spirit.

The Treaty of Tlatelolco and the Treaty of Rarotonga differ significantly in scope, provisions, and enforcement mechanisms. The Tlatelolco Treaty covers a broader geographical area, extending to parts of both the Atlantic and Pacific Oceans (Article 4). In comparison, the Rarotonga Treaty limits its nuclear prohibitions to South Pacific territories and their 12-mile territorial seas (Annex 1) without extending them to the larger oceanic area. Substantively, the Tlatelolco Treaty permits PNEs, whereas the Rarotonga Treaty aligns with the NPT by eliminating the distinction between peaceful and military nuclear tests and categorically banning PNEs. One of the Rarotonga Treaty's most innovative features is its prohibition of radioactive waste dumping—a provision absent from the Tlatelolco Treaty but highly significant for the region and became a very contentious topic during the negotiations (O'Neil, 2004, p. 574). The treaties also differ in enforcement structures: the Tlatelolco Treaty establishes a dedicated agency with multiple organs to oversee compliance, while the Rarotonga Treaty relies on a single Consultative Committee. Additionally, the Tlatelolco Treaty includes mechanisms for addressing violations, such as escalation to the UNSC and UNGA, whereas the Rarotonga Treaty lacks similar enforcement provisions. Despite these differences, both treaties share notable limitations: neither prohibits the testing of nuclear weapon delivery systems within their zones, nor do they ban access to ports and airfields by nuclear-armed vessels and aircraft. However, both include protocols requiring NWS to commit not to use or threaten nuclear weapons against treaty parties, underscoring a shared commitment to regional security within a broader disarmament framework (Talrea, [1986?], p. 34-36).

The roles of Brazil and Australia in the establishment of the Tlatelolco and Rarotonga Treaties reflect their distinct geopolitical contexts, strategic priorities, and relationships with the global nuclear order. Brazil was actively involved in early discussions leading to the Tlatelolco Treaty, proposing two models for a Latin American NWFZ. However, Mexico's proposal ultimately prevailed, leading to a divide between Mexico and the US, which favored strict prohibitions, and Brazil and Argentina, which advocated for retaining PNE rights. This

debate highlighted broader tensions between NWS and NNWS over inequities in the nuclear regime. The Tlatelolco Treaty provided a platform for Brazil to challenge the technological and economic disparities within global nonproliferation frameworks, particularly the NWS monopoly on advanced nuclear technology. In contrast, Australia's role in the Rarotonga Treaty was driven by alliance commitments and economic interests. However, both countries shared a common ambition to enhance their international standing on nonproliferation issues, leveraging their engagement in these treaties to strengthen their influence within multilateral forums. Australia revived New Zealand's earlier SPNFZ proposal. Still, unlike Brazil, which opposed nuclear-armed vessel transit, Canberra strongly advocated for the Rarotonga Treaty to include exceptions allowing such transit through Australian territory. This provision reflected the country's strategic prioritization of its US alliance under ANZUS, demonstrating a pragmatic balance between nonproliferation commitments and defense ties. These contrasting approaches illustrate different strategies employed by the countries—autonomy and alignment. Brazil pursued a more independent stance, prioritizing sovereignty and technological advancement through PNEs, delaying full adherence to the Tlatelolco Treaty until 1994 after significant shifts in its nuclear policy. In contrast, Australia swiftly signed and ratified the Rarotonga Treaty, ensuring its provisions aligned with US security commitments. Despite Australia's diplomatic efforts to encourage US ratification, Washington has yet to do so, highlighting the limitations of Canberra's influence as a middle power. While both countries played key roles in advancing regional nuclear-free zones, Brazil's approach was marked by strategic autonomy. At the same time, Australia's efforts were shaped by alignment with US interests, reflecting persistent asymmetries in the global nuclear order.

This alignment continues to shape Australia's position on efforts to NWFZ in the southern hemisphere. Since 1996, Brazil and New Zealand have jointly submitted a biannual resolution to the First Committee of the UNGA titled "Nuclear-Weapon-Free Southern Hemisphere and Adjacent Areas". This resolution aims to advance the creation of a NWFZ in the southern hemisphere and surrounding regions. Examining voting patterns reveals some notable shifts. Brazil has consistently supported the resolution, voting in favor on every occasion. In contrast, Australia, which had initially supported the resolution, changed its stance in 2017 and has since abstained. While most NWS either vote against or abstain, China consistently votes in favor. Australia's alignment with its allies is also evident in its approach to establishing a NWFZ in the Middle East. While Brazil and China consistently vote in favor of such initiatives, Australia has always abstained, aligning with the positions of the UK and the US, which abstained and voted against it, respectively. Even after the UK shifted its stance

and began voting in favor of the resolution in 2023, Australia remained consistent in its abstention. Australia justifies its position by criticizing the resolution, titled “The Risk of Nuclear Proliferation in the Middle East”, as being unbalanced. Specifically, Australia argues that the resolution unfairly singles out one country—Israel—while failing to address the broader and deepening risks of nuclear proliferation elsewhere in the region, a perspective it claims necessitates abstention (United Nations, 2013).

4.3 International level

From the 1970s onward, Australia positioned itself as a strong advocate of the NPT, actively promoting arms control within its framework. In contrast, Brazil was initially critical of the treaty, viewing it as a mechanism that entrenched global inequalities. This fundamental divergence reflected two competing visions of disarmament: one prioritizing arms control and non-proliferation, and the other emphasizing a more equitable system that held all states accountable under collective security principles. Australia’s diplomatic activism aligned with the former, from the 1990s forward, in terms of working within existing structures to strengthen safeguards and prevent proliferation. Nonetheless, Brazil sought a transformative approach, challenging the legitimacy of the NPT’s asymmetrical obligations and advocating for more inclusive global disarmament measures (United Nations, 2021a,b).

By the 1980s and 1990s, both nations deepened their engagement with nuclear disarmament, albeit through different means. Australia, under Prime Ministers Hawke and Keating, leveraged its status as a middle power to promote key initiatives such as establishing the SPNWFZ, advocating for the CTBT, and securing the indefinite extension of the NPT. These efforts, while reinforcing Australia’s commitment to disarmament, also aligned with its alliance obligations to Washington. Brazil, meanwhile, moved toward greater integration within the NWNPR in the 1990s, signing the Quadripartite Agreement, joining the CTBT, and fully adhering to the Treaty of Tlatelolco. Its co-founding of the NAC demonstrated a commitment to advancing equitable disarmament, emphasizing the need for NWS to fulfill their Article VI obligations. While Australia pursued a pragmatic, incremental approach within the existing framework, Brazil remained focused on challenging structural imbalances and advocating for more comprehensive disarmament commitments. Their contrasting strategies underscore broader geopolitical priorities—Australia’s alignment with Western security frameworks and Brazil’s pursuit of a more egalitarian nuclear order.

Since the late 1990s, Brazil and Australia have continued to diverge in their approaches to disarmament. Brazil, a key member of the NAC since its inception in 1998, has been a vocal proponent of substantive reforms, particularly in response to the perceived stagnation following the 1995 NPT extension. Through the NAC, Brazil has linked NNWS obligations to concrete disarmament commitments from NWS, pushing for initiatives such as the "13 Practical Steps" at the 2000 NPT RevCon and supporting the TPNW. In contrast, Australia's co-founding of the NPDI in 2010 reflects a more cautious approach, emphasizing incremental progress, transparency, and the balanced implementation of the NPT's three pillars: disarmament, non-proliferation, and peaceful nuclear energy. While Australia's reliance on the US nuclear umbrella constrains its ability to advocate for total abolition, Brazil remains committed to a legally binding prohibition on nuclear weapons. These differing priorities highlight the broader spectrum of nuclear governance strategies. Brazil champions comprehensive accountability, and Australia navigates the complexities of alliance commitments while maintaining a role in arms control diplomacy (United Nations, 2021b,c).

This contrast in disarmament strategies highlights Brazil and Australia's different approaches regarding export controls and their alignment with global power dynamics. While the NPT permits access to nuclear technologies for peaceful purposes, such exports are tightly regulated to prevent military proliferation. Table 1 outlines key differences in how Canberra and Brasília participate in nuclear export regimes, shaped by their distinct foreign policy orientations.

Table 1 – Brazil and Australia in nuclear export control

Year Created	Nuclear Export Regime/Groups	Year that Australia joined	Year that Brazil joined
1971	Zanger Committee	[1971?]	Not a member
1974	Nuclear Suppliers Group	1978	1996
1985	The Australia Group	1985	Not a member
1986	Zone of Peace and Cooperation of the South Atlantic	Not a member	1986
1993	Missile Technology Control Regime	1990	1995
1996	Wassenaar Arrangement	1996	Not a member

2002	Hague Code of Conduct against Ballistic Missile Proliferation (HCoC)	2002	Not a member
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Source: Elaborated by the author.

Australia, a member of multiple regimes such as the Zander Committee, NSG, the Australia Group, Wassenaar, and the HCoC, aligns closely with regulatory frameworks that reinforce the global nuclear order. This alignment underscores its role as a middle power integrated into mechanisms that uphold existing hierarchies within the NWNPR, often mirroring the interests of leading nuclear powers. In contrast, Brazil's engagement with the NWNPR is more nuanced and occasionally adversarial. Despite adherence to major agreements, including the MTCR, NSG, and CTBT, and its formal renunciation of nuclear weapons, Brazil faces selective restrictions and technological containment, exacerbated by the US export control system. These challenges are intensified by international pressure, including diplomatic efforts and criticisms aimed at enforcing adherence to the AP and curtailing Brazil's autonomous nuclear initiatives (Brustolin, 2014; Moreira, 2013). Nevertheless, Brazil maintains a positive standing within the NWNPR while contending with systemic inequities and asymmetries influenced by US policies. This dichotomy illustrates the inequitable dynamics of the NWNPR, where NNWS like Brazil face heightened scrutiny despite compliance with non-proliferation commitments, contrasting with Australia's strategy of supporting incremental reform within existing frameworks to maintain the status quo.

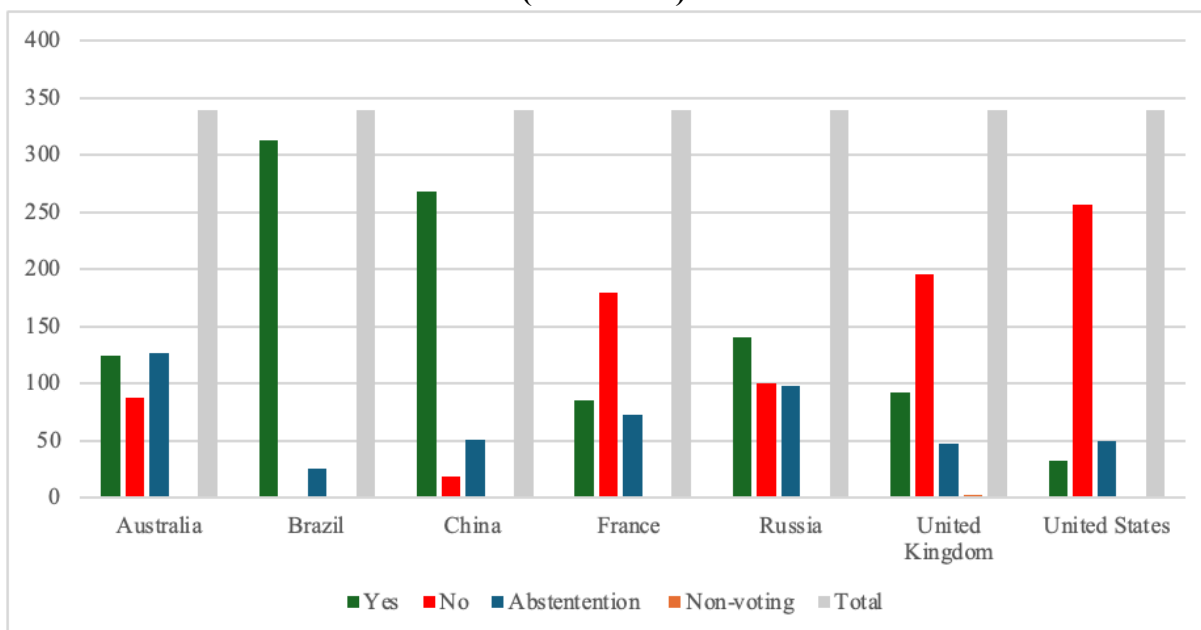
4.3.1 UNGA voting pattern

The UNGA functions through six principal committees, each tasked with addressing distinct global challenges. The First Committee, formally known as the Disarmament and International Security Committee, concentrates on disarmament, global challenges and threats to peace, aiming to provide solutions to the challenges in the international security regime. As outlined in the UN Charter, its responsibilities include advancing international peace, regulating armaments, and fostering stability through disarmament measures. The committee addresses critical issues such as nuclear disarmament, arms control, nonproliferation, and international security, providing recommendations in the form of resolutions for adoption by the UNGA plenary (United Nations, 2024a). Notably, many resolutions recur annually with minimal amendments. This research compiled and examined approximately 500 resolutions, though not all were included in the analysis. Priority was given to resolutions with a longer

voting history, those closely related to previously voted resolutions, and those considered critical to the study. Since some resolutions are recent, their inclusion would undermine long-term comparisons. Ultimately, over 300 resolutions were effectively incorporated to the analysis to investigate Brazil and Australia's voting patterns on nuclear disarmament from 1997 to 2023, capturing post-Cold War transformations and shifts within the NWNPR framework. Brazil's adherence to the NPT serves as a comparative benchmark, highlighting the role of disarmament progress in maintaining NNWS commitment to the treaty.

The voting patterns displayed in graph 1 reveal significant differences in how the countries approach these resolutions, reflecting their strategic priorities and international positions. Brazil and China stand out for their overwhelmingly high number of "Yes" votes, suggesting a consistent alignment with the broader international consensus (as can be seen in graph 2) and support for nuclear disarmament initiatives within the UN framework. In contrast, the US exhibits the highest proportion of "No" votes, underscoring its selective and often critical approach to resolutions, likely informed by its strategic interests and policy priorities. The UK and France also display significant numbers of "No" votes, albeit with a more balanced approach, suggesting a nuanced stance that aligns with their roles as NWS and permanent members of the UNSC. Australia occupies an intermediate position, balancing "Yes" votes and abstentions, which may signal a pragmatic approach to maintaining its alliance commitments while engaging with global disarmament and security efforts. Russia's voting behavior similarly combines agreement with selective opposition, indicative of its broader geopolitical positioning. These disparities underscore the diverse strategies employed by states in navigating the international security dynamics within the First Committee, highlighting the interplay between normative commitments and realpolitik considerations.

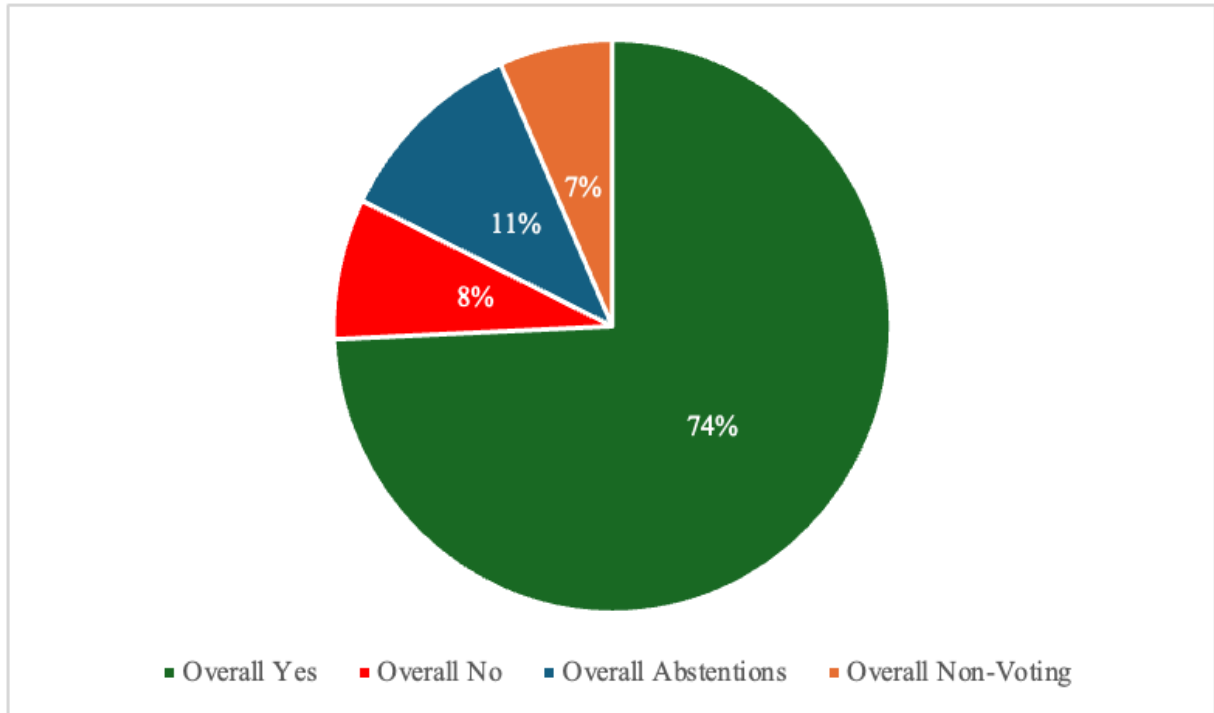
Graph 1 – Voting Patterns of Australia, Brazil, and NWS on UNGA First Committee Resolutions on Nuclear Disarmament (1998–2023)



Source: Elaborated by the author using data from the United Nations Digital Library.

In graph 2, all voting records—including overall "Yes", "No", "Abstentions", and "Non-voting"—were compiled to analyze overall voting patterns and determine whether Brazil and Australia aligned with the majority or minority of the voting states. The results indicate that a significant majority (71%) of countries voted "Yes", followed by "Abstentions" (11%). "No" votes and instances of "Non-voting" were nearly equal, representing a smaller proportion of countries. Brazil's voting pattern clearly aligns with the majority of countries, which either voted in "Yes" or abstained. This outcome is consistent with the fact that most countries are NNWS, whose primary leverage or main incentive to remain part of the NWNPR is the prospect of nuclear disarmament. In contrast, Australia's voting behavior aligns with a smaller group of states that likely benefit from the nuclear umbrella provided by NWS and whose voting decisions are often influenced by alliance commitments.

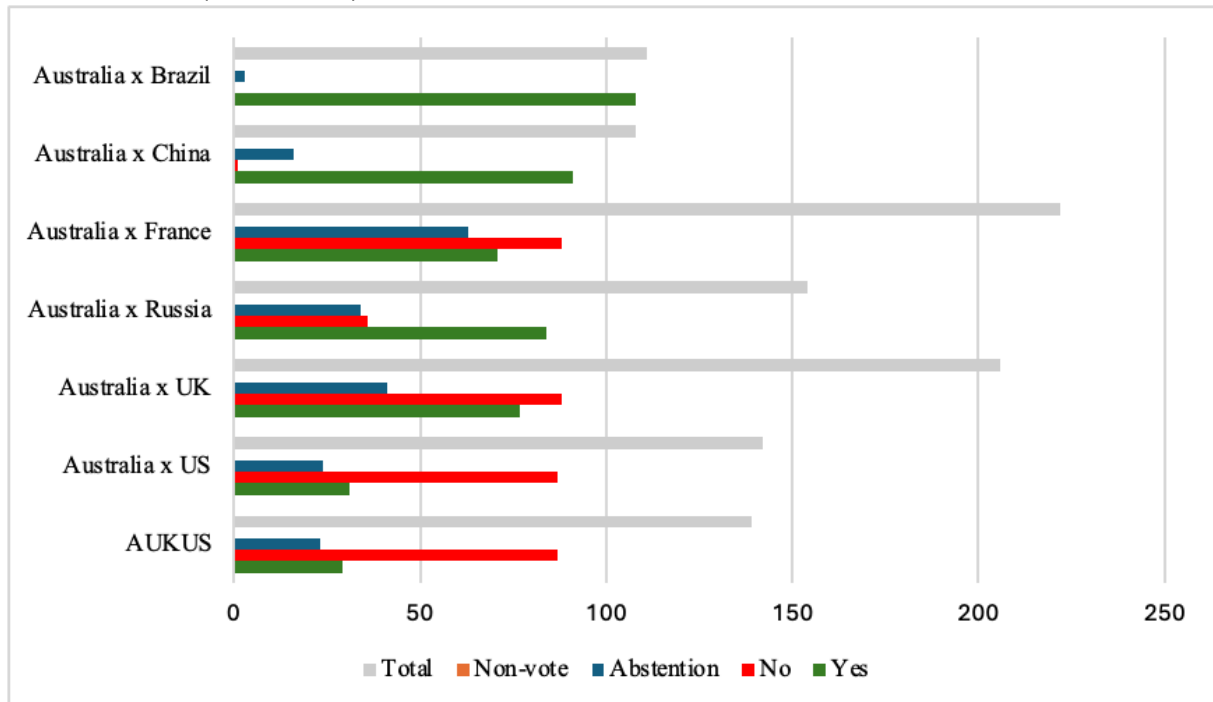
Graph 2 – Overall percentage of voting patterns on UNGA First Committee Resolutions on Nuclear Disarmament (1998–2023)



Source: Elaborated by the author using data from the United Nations Digital Library.

Australia's voting records displayed in graph 2 provide interesting insights into its alignment patterns within the UN. Consistent with expectations, Australia demonstrated significant voting congruence with its traditional ally, the UK, emerging as the second most aligned state. However, contrary to prevailing assumptions, the US ranked behind Russia regarding voting similarity with Australia. This finding aligns with the observations in the US nuclear proliferation assessment statement, which notes occasional divergences between Washington and Canberra on matters such as nuclear disarmament (United States, 1999). Further examination reveals that China consistently exhibited the least alignment with Australia in voting patterns among all states. Among the NWS, Australia showed the highest degree of voting congruence with France, a result that invites deeper inquiry into the specific areas of shared policy preferences between the two nations. These findings highlight the nuanced and sometimes counterintuitive dynamics shaping Australia's voting behavior.

Graph 3 – Australia voting pattern on UNGA First Committee Resolutions on Nuclear Disarmament (1998–2023)

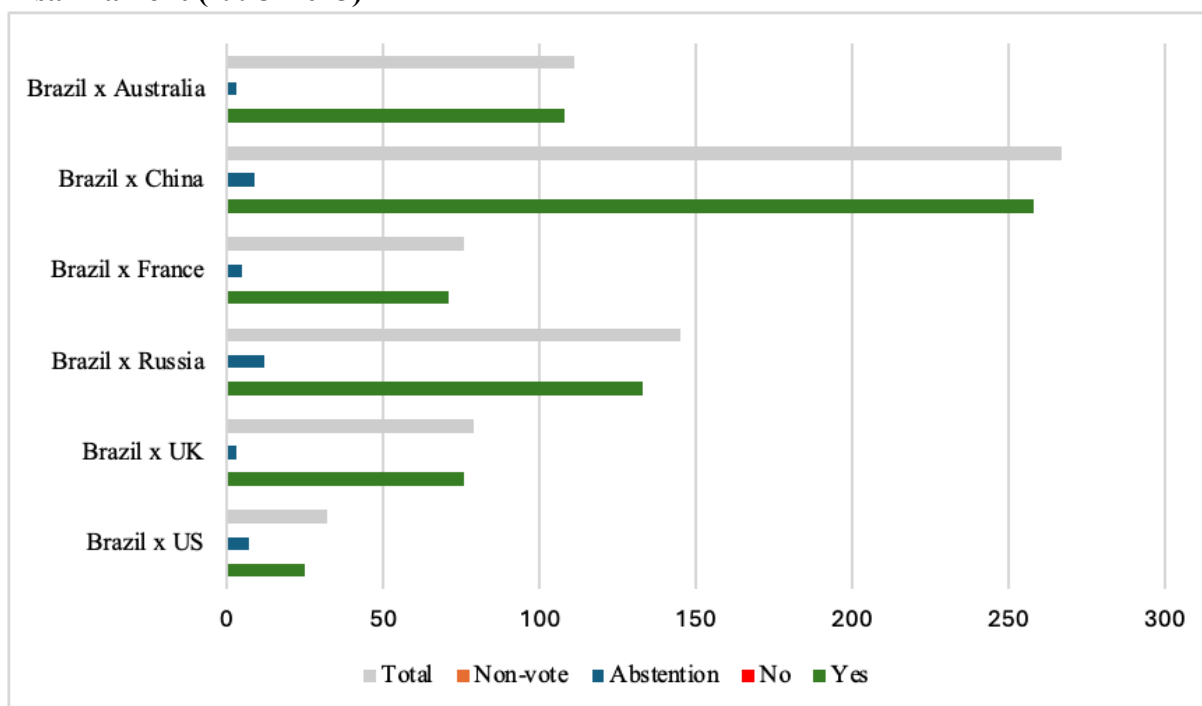


Source: Elaborated by the author using data from the United Nations Digital Library.

Building on these insights into Australia's voting patterns, Brazil's records reveals equally compelling dynamics within its multilateral alignments. The country's voting records yield notable findings that challenge traditional narratives about its international positioning. For instance, Brazil demonstrated significant congruence in voting patterns with China, a result that contests prevailing assumptions about Brasília's autonomy in global decision-making. This unexpected alignment hints at a deeper diplomatic or strategic affinity between the two nations, warranting further exploration to understand better the intricacies of their bilateral relationship within multilateral contexts. Similarly, Brazil exhibited a substantial degree of voting alignment with Russia, prompting questions regarding the cohesion of BRICS nations in their multilateral behavior in nuclear disarmament. Despite the formal establishment of BRICS in 2006, the analysis uncovered substantial disparities between Russia and China in their respective voting records, challenging the notion of a unified voting bloc. Indeed, the hypothesis that Russia's voting patterns became more aligned with other BRICS members, particularly Brazil, following the group's formation is not substantiated by this dataset. A contrasting trend is observed in Brazil's divergence from the US and France. While Brazil has historically cooperated with these nations in areas such as nuclear technology, stark differences in their positions on nuclear disarmament likely explain the limited voting congruence. These findings illuminate the multifaceted nature of Brazil's

multilateral engagements.

Graph 4 – Brazil voting pattern on UNGA First Committee Resolutions on Nuclear Disarmament (1998–2023)

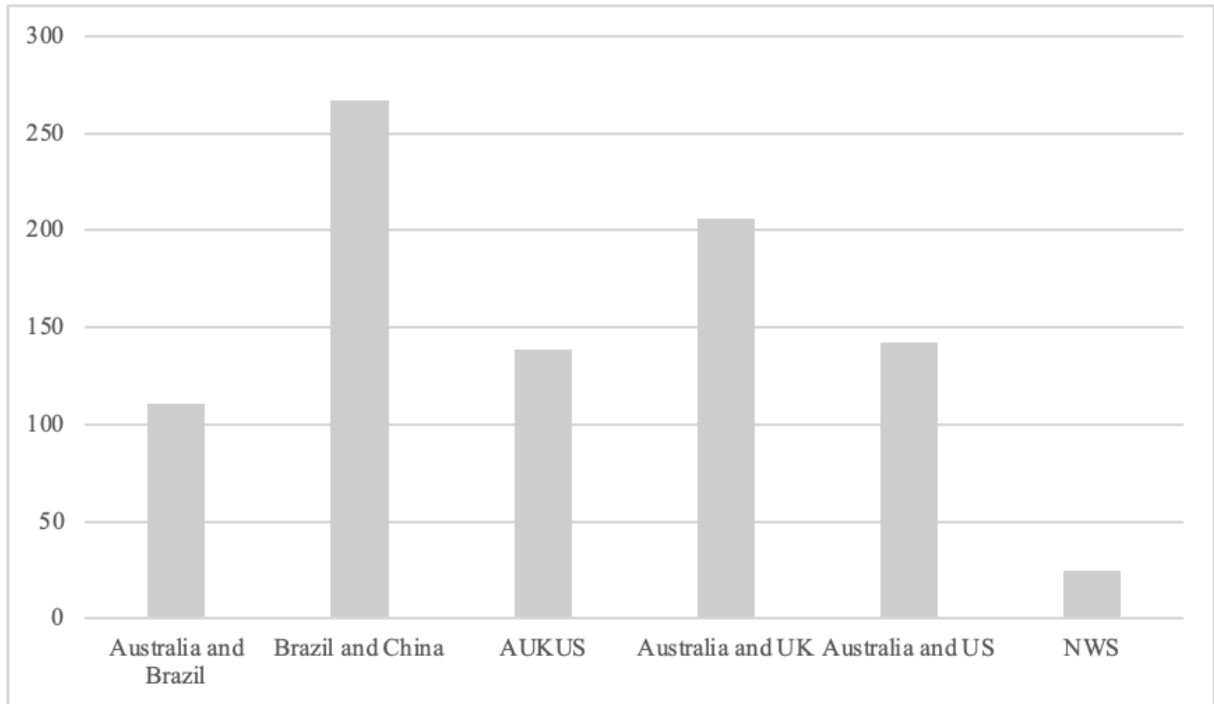


Source: Elaborated by the author using data from the United Nations Digital Library.

This final graph underscores the voting dynamics among AUKUS countries, the NWS, Brazil and Australia. Given the significant alignment observed between Brazil and China, a comparison between these two countries was included alongside the broader dataset. Strikingly, the analysis reveals that Brazil and China share the highest voting congruence, surpassing even the alignment between Australia and the UK, which ranks as the second highest. The findings also emphasize the heterogeneity in voting behaviors among the NWS, reflecting diverse priorities and perspectives that challenge any assumption of uniformity within this group. Additionally, an intriguing nuance emerges regarding the AUKUS members: while these countries exhibit a generally higher degree of alignment relative to other NWS, their voting patterns do not align as closely as might be anticipated, indicating subtle but meaningful divergences in their international positions. Finally, the analysis highlights that Brazil and Australia share the fewest votes in common, signaling a significant divergence in their foreign policy orientations and international priorities. This divergence is particularly noteworthy given their status as NNWS and their historically prominent roles in global non-proliferation and disarmament efforts. The contrasting voting patterns between Brazil and Australia, despite their shared commitment to the NWNPR, are better contextualized through the qualitative analysis, which shed light on the distinct foreign policy

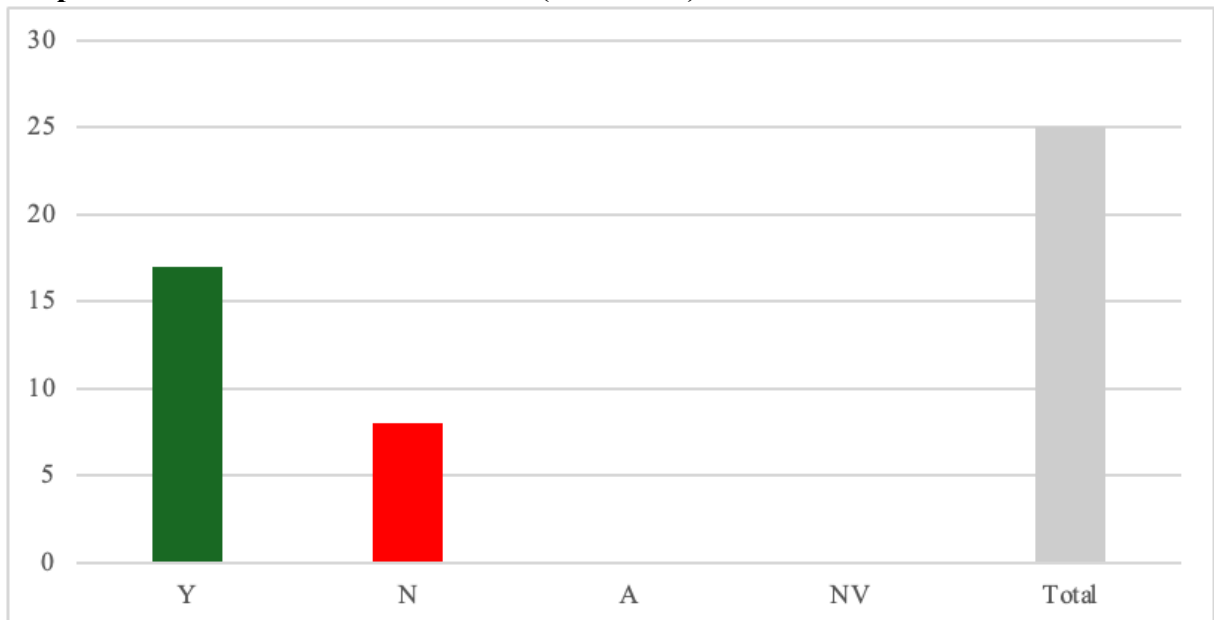
frameworks and strategic priorities shaping the multilateral engagements of these two nations.

Graph 5 – Total vote similarities Brazil, Australia and NWS (1998-2023)



Source: Elaborated by the author using data from the United Nations Digital Library.

Graph 6 – Total vote similarities NWS (1998-2023)



Source: Elaborated by the author using data from the United Nations Digital Library.

4.3.2 Nuclear Safeguards

Brazil and Australia, both NNWS under the NPT, are pursuing SSNs, a move that raises complex safeguards implications. Their respective legal frameworks regarding this issue are different. Brazil has been charting a more autonomous path, relying on its unique bilateral framework with Argentina under ABACC, and notably has not signed the AP to its safeguards agreement with the IAEA. In contrast, Australia was one of the first countries to sign the AP, and its pursuit of SSNs is through the AUKUS partnership highlighting its close alignment with its allies.

Article 14 of INFCIRC/217, Australia's CSA with the IAEA signed in 1974, has the same content as Paragraph 14 of INFCIRC/153. This Article of INFCIRC/217 provides a clear framework should Australia intend to use nuclear material for submarine propulsion. In accordance with its provisions, Canberra must notify the IAEA of its intent and establish a formal arrangement with the Agency. This arrangement should delineate the specific conditions or duration during which safeguards will not be applied. Additionally, the state is required to keep the IAEA apprised of the quantity, composition, and potential export of the nuclear material excluded from safeguards, as specified by the agreement (IAEA, 1974). Consequently, Australia cannot unilaterally invoke the right to use nuclear material for submarine propulsion as a means to exempt such fissile material from international safeguards. Instead, compliance with its CSA necessitates that Australia engage in negotiations with the IAEA to formalize the requisite arrangement (Silva, 2023, p. 15).

Meanwhile, the CSA between Brazil and the IAEA was formalized through INFCIRC/435 (Quadripartite Agreement), in 1994, and adheres to the framework outlined in INFCIRC/153. Despite the foundational reliance of INFCIRC/435 on INFCIRC/153, significant differences exist between the two documents. These distinctions affect the safeguards governing nuclear material used for submarine propulsion as outlined in the respective agreements. Notably, Paragraph 14 of INFCIRC/153 is addressed in Article 13 of the Brazilian CSA, under the title "Special Procedures". A comparative analysis of the texts of INFCIRC/153 and INFCIRC/435 reveals both shared elements and critical divergences. The explicit acknowledgment in INFCIRC/435 of the State Party's right to utilize nuclear energy for submarine propulsion is of particular importance. However, a fundamental difference emerges in the treatment of safeguards. While INFCIRC/153 permits arrangements for the non-application of safeguards under specific circumstances, INFCIRC/435 stipulates arrangements for applying Special Procedures to the nuclear material used in submarine

propulsion. As summarized in Table 1, these provisions highlight the nuanced approach adopted in INFCIRC/435. It is crucial to observe that Article 13 of INFCIRC/435 does not allow for the withdrawal of nuclear material from the safeguards system, in contrast to the provisions of Paragraph 14 of INFCIRC/153, which explicitly address the non-application of safeguards.

Article 13 of INFCIRC/435 establishes that a State Party may decide to utilize nuclear energy for submarine propulsion, provided that this decision is communicated to the IAEA through ABACC. Following this notification, the State Party is required to negotiate an arrangement with the IAEA to implement Special Procedures applicable to the nuclear material designated for propulsion. This arrangement must specify the conditions or duration under which the Special Procedures will be applied, and the IAEA must receive regular updates regarding the total quantity, composition, and any export of such material (IAEA, 1994). It is particularly noteworthy that, as in the Australian case, there is no stipulated deadline for concluding these negotiations with the IAEA, however the IAEA has stipulated that it may take five years (Gielow, 2024). A key distinction within Article 13 of INFCIRC/435 is its absence of language referring to the "withdrawal" or "non-application" of safeguards. Instead, the article emphasizes the continued application of safeguards through the establishment of an arrangement involving Special Procedures. This distinction underscores a critical point: under INFCIRC/435, there is no provision permitting a State Party, whether Brazil or Argentina, to unilaterally declare the exclusion of fissile material associated with SSNs from the application of safeguards (Silva, 2023, p. 15).

Table 2 – Comparison of article 14 in INFCIRC/217 and INFCIRC/153 to Article 13 in INFCIRC/435

INFCIRC/217	INFCIRC/153	INFCIRC/435
Article 14	Paragraph 14	Article 13
14. If Australia intends to exercise its discretion <u>to use nuclear material</u> which is required to be safeguarded under this Agreement <u>in a nuclear activity which does</u>	14. The Agreement should provide that if the State intends to exercise its discretion <u>to use nuclear material</u> which is required to be safeguarded thereunder <u>in</u>	13. If a State Party intends to exercise its discretion <u>to use nuclear material</u> which is required to be safeguarded under this Agreement <u>for nuclear propulsion or</u>

<u>not require the application of safeguards</u> under this Agreement, the following procedures shall apply:	<u>a nuclear activity which does not require the application of safeguards</u> under the Agreement, the following procedures will apply:	<u>operation of any vehicle, including submarines and prototypes</u>, or in such other non-proscribed nuclear activity as agreed between the State Party and the Agency, the following procedures shall apply:
(a) Australia <u>shall inform the Agency</u> of the activity, making it clear:	(a) The State <u>shall inform the Agency</u> of the activity, making it clear:	a) that State Party <u>shall inform the Agency, through ABACC</u>, of the activity, and shall make it clear:
(i) That <u>the use of the nuclear material in a non-proscribed military activity will not be in conflict</u> with an undertaking Australia may have given and in respect of which <u>Agency safeguards</u> apply, that the nuclear material will be used only in a peaceful nuclear activity; and	(i) That <u>the use of the nuclear material in a non-proscribed military activity will not be in conflict</u> with an undertaking the State may have given and in respect of which <u>Agency safeguards</u> apply, that the nuclear material will be used only in a peaceful nuclear activity; and	(i) that the use of the nuclear material <u>in such an activity</u> will not be in conflict with any undertaking of the State Party__under agreements concluded with the Agency in connection with Article XI of the Statute of the Agency or any other agreement concluded with the Agency in connection with INFCIRC/26 (and Add.1) or INFCIRC/66 (and Rev.1 or 2), as applicable; and
(ii) That <u>during the period of non-application of safeguards</u> the nuclear material will not be used for	(ii) That <u>during the period of non-application of safeguards</u> the nuclear material will not be used for	(ii) that <u>during the period of application of the special procedures</u> the nuclear material will not be used for

the production of nuclear weapons or other nuclear explosive devices.	the production of nuclear weapons or other nuclear explosive devices.	the production of nuclear weapons or other nuclear explosive devices.
(b) Australia and the Agency shall make an Arrangement so that, only <u>while the nuclear material is in such an activity, the safeguards provided for in this Agreement will not be applied.</u> The Arrangement shall identify, to the extent possible, <u>the period or circumstances during which safeguards will not be applied.</u> In any event, the <u>safeguards provided for in this Agreement shall apply again as soon as the nuclear material is reintroduced into a peaceful nuclear activity.</u> The Agency shall be kept <u>informed of the total quantity and composition of such unsafeguarded nuclear material in Australia</u> and of any export of such nuclear material; and	(b) The Agency and the State shall make an Arrangement so that, only while the nuclear material is in such an activity, <u>the safeguards provided for in the Agreement will not be applied.</u> The Arrangement shall identify, to the extent possible, the period or circumstances during which safeguards will not be applied. In any event, the <u>safeguards provided for in this Agreement shall apply again as soon as the nuclear material is reintroduced into a peaceful nuclear activity.</u> The Agency shall be kept <u>informed of the total quantity and composition of such unsafeguarded nuclear material in the State</u> and of any exports of such material; and	(b) the State Party and the Agency shall make an Arrangement so that, <u>these special procedures shall apply only while the nuclear material is used for nuclear propulsion or in the operation of any vehicle, including submarines and prototypes,</u> or in such other non-proscribed nuclear activity as agreed between the State Party and the Agency. The arrangement shall identify, to the extent possible, the period or circumstances during which the special procedures shall be applied. In any event, <u>the other procedures provided for in this Agreement shall apply again as soon as the nuclear material is reintroduced into a nuclear activity other than the above.</u> The Agency shall be kept informed of the total quantity and composition of such material in that State

		Party and of any export of such material; and
(c) Each arrangement shall be made in agreement with the Agency. Such agreement shall be given as promptly as possible and shall relate only to such matters as, inter alia, temporal and procedural provisions and reporting arrangements, and shall not involve any approval or classified knowledge of the military activity or relate to the use of the nuclear material therein.	(c) Each arrangement shall be made in agreement with the Agency. The Agency's agreement shall be given as promptly as possible; it shall only relate to die temporal and procedural provisions, reporting arrangements, etc., but shall not involve any approval or classified knowledge of the military activity or relate to the use of the <i>nuclear material</i> therein.	(c) each arrangement shall be concluded between the State Party concerned and the Agency as promptly as possible and shall relate only to such matters as temporal and procedural provisions and reporting arrangements, but shall not involve any approval or classified knowledge of such activity or relate to the use of the nuclear material therein.

Source: Elaborated and highlighted by the author based on the contents of INFCIRC/153, INFCIRC/217, and INFCIRC/435 (IAEA 1972; IAEA, 1974; IAEA 1994).

On September 15, 2021, following the establishment of AUKUS, the IAEA was formally notified of the initiative. In November 2021, the IAEA reminded the involved parties of their safeguards obligations. For the NWS involved, these obligations arise from their Voluntary Offer Agreements (VOAs) and APs, which are essential for implementing safeguards within the program. For Australia, compliance with its CSA requires the submission of advance design information for new facilities and, under the AP, the provision of a ten-year plan outlining fuel cycle development. In May 2022, Australia declared it had no plans to engage in nuclear material enrichment or fuel reprocessing to support its naval nuclear propulsion program (IAEA, 2023a, item 7). In response to the AUKUS announcement, Brazil initiated discussions with the IAEA under Article 13 of INFCIRC/435, an action highlighted by IAEA Director General Rafael Mariano Grossi in his Introductory Statement to the Board of Governors on June 6, 2022. A pivotal development was Brazil's formal communication to the IAEA Secretariat, signaling its intent to negotiate an

arrangement for Special Procedures to manage the use of nuclear material under safeguards for nuclear propulsion and submarine operations, as outlined in INFCIRC/435. Initial discussions on these Special Procedures, involving Brazil, ABACC and the IAEA Secretariat, began in late May 2022, with a follow-up meeting planned for later that year (IAEA, 2022). The Director General commended Brazil for its transparency and proactive engagement with the IAEA on this significant project. These discussions focused on developing Special Procedures for the nuclear reactor prototype and onboard nuclear plant associated with Brazil's SSN program. This initiative highlighted Brazil's adherence to INFCIRC/435 and its commitment to fulfilling its international safeguards obligations.

During the 10th NPT RevCon in August, AUKUS member states submitted a joint working paper reaffirming their commitment to equipping Australia with SSN capabilities while adhering to the highest nonproliferation standards. The paper emphasized that the transfer would involve complete, welded power units, eliminating Australia's need for uranium enrichment, fuel fabrication, or reprocessing facilities. This approach is claimed to minimize the risk of nuclear material diversion, as these reactors are expected to contain nuclear material unsuitable for weapons use without extensive chemical processing—a capability Australia neither possesses nor plans to develop. Additionally, it is argued that special safeguard procedures, negotiated with the IAEA, further ensure that any diversion would be highly improbable and easily detectable. The working paper also outlined ongoing collaboration with the IAEA to establish a verification framework consistent with international safeguards. Regarding NWS obligations under the NPT, the document affirmed that neither the US nor the UK would assist Australia in acquiring or manufacturing nuclear weapons, fully complying with their treaty commitments. It further clarified that Australia's operation of SSNs aligns with its obligations under the NPT, IAEA safeguards agreements, and the SPNFZ Treaty. Notably, the paper highlighted that activities related to naval nuclear propulsion are permissible under the NPT and INFCIRC/153, the foundation of Australia's CSA, which represents the highest verification standard when paired with an AP ⁶⁹(United Nations, 2020a).

⁶⁹ In summary, this working paper provides a direct response to concerns raised by China and Indonesia in their submissions. It underscores Australia's exemplary record of compliance with the NWNPR, as evidenced by its CSA and AP commitments, which ensure that fissile material used in its submarines will be strictly confined to propulsion purposes. For Silva (2023, p. 10) claims of a regulatory gap in the NWNPR stemming from Australia's SSN program appear exaggerated. For him Australia's existing safeguards obligations are robust enough to preclude the diversion of fissile material for weapons development. Despite opposition from China, it is reasonable to anticipate that Australia will negotiate an arrangement involving Special Procedures that satisfies the IAEA's requirements, effectively minimizing any potential risks of diversion.

Brazil also submitted a working paper for deliberation, outlining its initial proposal to the IAEA Secretariat on the Special Procedures to be applied to nuclear material designated for naval propulsion, as mandated under Article 13 of INFCIRC/435. The document specified that the naval nuclear propulsion system reactor would utilize LEU. It highlighted Brazil's unique status as the only NNWS with military facilities under IAEA safeguards, fulfilling its legal obligations under the CSA. These facilities, which include uranium enrichment and ultracentrifuge manufacturing, reflect Brazil's distinct position in combining military use with adherence to international safeguards. Brazil emphasized that its compliance with existing treaties, including the NPT, is essential for the developing and operating its SSN program, with the CSA providing a pathway for negotiating Special Procedures to govern the use of nuclear material for naval propulsion. In this context, Silva (2023, p. 15) argues that claims of a legal gap within the NPT framework for NNWS are overstated, as the CSA framework sufficiently addresses the matter. Nevertheless, the negotiation of Special Procedures between a NNWS and the IAEA for submarine propulsion lacks precedent, making Brazil's case significant. The working paper also underscores the vital role of ABACC, which will ensure compliance by maintaining detailed records of the quantity and composition of nuclear material allocated for naval propulsion. Furthermore, Brazil assured that the Special Procedures would not compromise the IAEA's ability to draw safeguards conclusions, with consultations focusing on balancing the non-diversion of nuclear material and the protection of sensitive technological and operational information related to SSN operations. Through the working paper, Brazil reaffirmed its commitment to negotiating robust Special Procedures that align with its obligations under the safeguards regime while enabling the secure and transparent advancement of its naval nuclear propulsion program (United Nations, 2020b).

On March 10, 2023, Australia formally notified the IAEA, under Article 14 of INFCIRC/217, of its intent to initiate negotiations for the development of a proposed arrangement related to its naval nuclear propulsion program. In accordance with modified Code 3.1 of the Subsidiary Arrangements (General Part) to the CSA, Australia also submitted preliminary design information for the new facilities associated with the program. It invited the IAEA to conduct a Design Information Verification (DIV) at the naval base designated for maintaining its SSNs (IAEA, 2023a, items 11, 14). Following this, the IAEA emphasized its role in ensuring a transparent process guided by its statutes, Australia's CSA, and its AP. The IAEA also underscored the reporting obligations of the NWS involved, which include declaring international nuclear material transfers and exporting relevant equipment as required under their APs (IAEA, 2023a, items 12, 13). Since then, Australia has continued

collaborating closely with the IAEA to meet its safeguards obligations, providing regular updates and submitting early design information for new program facilities. Notable milestones include updated submissions in 2024 and the announcement of a consolidated Defence Precinct at Henderson shipyard to support SSN maintenance and docking. The IAEA has complemented these efforts by conducting environmental sampling, satellite imagery analysis, and other verification activities at relevant locations. These steps underscore Australia's commitment to transparency and to advancing its naval nuclear propulsion program while upholding the highest nonproliferation standards.

Meanwhile, since May 2023, Brazil, the IAEA, and ABACC have engaged in ongoing technical discussions regarding safeguards measures for Brazil's naval nuclear propulsion program, focusing on the land-based prototype reactor. These discussions, held across four meetings in Brazil and Vienna, have emphasized balancing the application of safeguards with protecting classified and sensitive technology and information. In February 2024, the IAEA organized a "safeguards-by-design" workshop in Brazil to highlight the importance of integrating safeguards considerations into facility design. Responding to requests from the IAEA and ABACC, Brazil provided updated design information for the prototype reactor in September 2024, a critical step in developing the safeguards approach for the facility. Concurrently, DIV activities continued, with the Agency, ABACC, and Brazil collaboratively developing a specialized DIV procedure to safeguard sensitive information. This procedure was successfully tested during the September 2024 DIV, ensuring that the prototype reactor adheres to international safeguards while protecting classified details as construction progresses.

The IAEA so far has not indicated that ongoing negotiations concerning naval nuclear propulsion will compromise the existing safeguards system or, by extension, the NWNPR. However, as Silva (2023, p. 10) notes, when fissile material is allocated for military applications—regardless of whether these applications fall within the bounds of the NPT—reliance on a state's non-proliferation credentials and declarations of good faith is insufficient. In such cases, the principle of *doveryai, no proveryai* ("trust, but verify") remains essential to ensuring compliance and maintaining the integrity of the non-proliferation regime. The Australian and Brazilian cases underscores this necessity, highlighting the importance of rigorous oversight and international collaboration in mitigating proliferation risks.

Within this broader debate, the cases of Australia and Brazil exemplify two distinct approaches to SSNs, each presenting unique proliferation concerns. Critics of AUKUS, such as Maria Rost Rublee (2022), challenge official assurances that HEU used in Australian

submarines will remain inaccessible without detection. Rublee contends that extraction is feasible without cutting into the hull, as HEU fuel could be removed from the pressure vessel and extracted via cargo hatches or designated access points. Given that modern US submarines reportedly have trunks wide enough to accommodate an entire HEU core, the risk of diversion remains a critical concern. While proponents argue that safeguards and transparency measures will mitigate these dangers, reliance on HEU continues to present a significant proliferation risk. By contrast, Brazil is pursuing an indigenous nuclear submarine program that relies on LEU, which is not directly usable in nuclear weapons. Although this reduces the proliferation risks associated with HEU, Brazil's approach raises concerns about the precedent it may set for other NNWS seeking to develop nuclear propulsion. However, as Spektor (2017, p. 1-2) suggests, Brazil's decades-long struggle to develop SSNs may serve as a deterrent rather than an incentive for proliferation, demonstrating the immense technical and financial challenges involved. Nevertheless, its success in advancing an independent SSN program challenges the traditional non-proliferation framework, highlighting the potential for states to bypass reliance on NWS and develop sensitive nuclear technologies autonomously. Consequently, both the Australian and Brazilian cases underscore the evolving complexities of nuclear naval propulsion within the NPT framework and the broader implications for non-proliferation governance.

Nonetheless, both countries have shown commitment to establish a good precedent through the development of a robust regulatory framework that could serve as a model for future cases. Australia and Brazil have indeed a unique opportunity to shape the evolving framework with the IAEA regarding naval nuclear propulsion. Collaborative efforts between these countries and the Agency could foster greater international cooperation and coordination in monitoring and regulating these activities. By engaging in negotiations and influencing the framework with the IAEA, these countries may impact the establishment of new norms and standards regarding the use of nuclear materials for military purposes. This could lead to the development of more comprehensive and nuanced regulations. Effective regulations and oversight mechanisms could mitigate proliferation risks associated with using nuclear technology in military contexts, thereby enhancing transparency, accountability, and safety measures within the nuclear domain. The extent to which these nations can contribute will likely influence the broader trajectory of nuclear non-proliferation governance. Consequently, this could strengthen NWNPR efforts and contribute to regional and global security.

Through a comprehensive literature review, various proposals have been identified as potential strategies to mitigate the risks associated with fissile nuclear materials in the naval

sector. These proposals include: the Nuclear Propulsion Reactor Control Regime (NPRCR) proposed by Moltz (1998); IAEA actions, such as the use of GOV/INF documents or Information Circulars (INFCIRC), as suggested by Reddie and Goldblum (2018); the Fissile Material Cut-off Treaty (FMCT), discussed by Ma and Hippel (2001), Miller and Rauf (2003), and Kaplow (2017); transitioning naval reactors to use LEU, advocated by Ma and Hippel (2001) and Kaplow (2017); nuclear safeguards in military environments, analyzed by Philippe (2014); the Naval Use Safeguards Agreement (NUSA) proposed by Egel, Goldblum, and Suzuki (2015); the Quid Pro Quo (QPQ) strategy advanced by Shea (2017); the IAEA Supplemental Protocol (SP) framework by Reddie and Goldblum (2018); and a model for special procedures in the nuclear fuel cycle introduced by Silva (2024b)⁷⁰.

These proposals encompass a range of regulatory approaches, which vary in their legal and normative characteristics. Some are "soft" (non-binding) mechanisms, while others are "hard" (binding) regulations. Additionally, these strategies differ in their scope and applicability: some are designed for universal implementation, while others target specific categories of states, such as NWS or NNWS. The evolution of these proposals reflects historical tensions between discriminatory approaches and efforts to promote non-discriminatory practices within the NWNPR, as states increasingly resist measures perceived as inequitable. Binding proposals frequently focus on controlling sensitive aspects of the naval nuclear fuel cycle, such as uranium enrichment or plutonium extraction from irradiated fuel—critical concerns in the context of nuclear non-proliferation (Philippe, 2014, p. 47). While many of these strategies do not fully eliminate the naval propulsion loophole, they aim to limit its exploitation or mitigate associated risks. Notably, Sébastien Philippe's (2014) verification model, which is specifically tailored to the Brazilian case, has garnered attention. Brazilian diplomat Marcelo Böhlke (2022, p. 196) underscores that this proposal, given its detailed dissemination and relevance, may be considered by the IAEA Safeguards Department as a viable option for addressing these challenges.

An analysis of the identified proposals reveals that the majority were developed by American scholars or in US research institutions, with only one contribution originating from Brazil (Silva, 2024b). This imbalance highlights a predominantly Western perspective in shaping the discourse on mitigating risks associated with fissile materials in the naval sector, which may have significant implications for countries like Brazil and Australia. This scholarly gap for Brazil, which is actively pursuing an autonomous SSN program,

⁷⁰ In addition to these proposals, Rockwood's (2018) consideration of mechanisms for developing a verification approach for naval nuclear propulsion is noteworthy.

underscores the need for domestic expertise and frameworks tailored to its specific strategic and technological context. The existence of predominantly foreign public proposals could complicate Brazil's ability to assert its unique requirements within international regulatory discussions. In contrast, Australia's strategic partnership under the AUKUS framework, which includes delivering complete, welded naval reactor units, minimizes its direct engagement with fissile material handling and safeguards development. Nevertheless, both nations must address the broader implications of these proposals for the NWNPR particularly as they navigate the sensitivities of pursuing nuclear naval propulsion within their distinct geopolitical contexts. For Brazil, in particular, the absence of a robust domestic scholarly contribution could limit its capacity to influence international norms and safeguard frameworks effectively.

4.4 Findings

At the domestic, regional, and international levels, the contrasting approaches of Brazil and Australia to nuclear submarine technology and the broader NWNPR reveal diverging strategic objectives shaped by their geopolitical contexts and alliance dynamics. Domestically, Brazil's PROSUB program exemplifies a deliberate pursuit of technological and operational autonomy, clearly emphasizing on developing domestic industrial capacities, including indigenous nuclear propulsion systems. In stark contrast, Australia's reliance on the AUKUS agreement highlights a conditional middle-power status, as described by Guimarães, Tossini and Caetano (no prelo), wherein its defense and strategic posture remain heavily reliant on the advanced technology transfers and expertise of its principal allies, the US and the UK. This dependency situates Australia firmly within a hierarchical alliance structure, prioritizing its integration into a Western-led security framework over pursuing autonomous capabilities. These differing orientations illustrate Brazil's commitment to autonomy and regional influence in the South Atlantic, juxtaposed with Australia's Indo-Pacific strategy, which underscores its alignment with Western powers and alliance obligations.

At the regional level, Brazil and Australia's engagements with the Tlatelolco and Rarotonga Treaties reflect their distinct approaches to nuclear diplomacy and strategic priorities. Brazil leveraged the Tlatelolco Treaty to address inequities within the global nuclear regime, advocating for equitable access to nuclear technology and opposing strict prohibitions on PNEs favored by NWS. This approach highlights Brazil's resistance to entrenched disparities and its strategic focus on autonomy within the nonproliferation

framework. Conversely, Australia's leadership in the Rarotonga Treaty emphasized a pragmatic alignment with US and UK security interests, particularly through provisions allowing nuclear-armed vessel transit to uphold its commitments under the ANZUS alliance. This negotiation underscores the constraints imposed by Australia's alliance obligations and the balance it seeks to maintain between nonproliferation commitments and its defense priorities. These contrasting trajectories in regional nuclear-free zone diplomacy underscore Brazil's autonomous aspirations and Australia's alliance-dependent posture, reflecting their broader geopolitical orientations within the nuclear order.

The differing visions of nuclear disarmament and naval propulsion safeguards at the international level further illuminate the divergence between the two nations. Brazil advocates for a disarmament framework emphasizing equity and collective accountability, aligning more closely with the majority of countries. In contrast, Australia focuses on arms control and nonproliferation under its alliance commitments. Regarding naval propulsion, Brazil's commitment to domestically developing its nuclear submarine capabilities contrasts with Australia's reliance on preassembled, sealed reactor units under AUKUS, minimizing its direct engagement with fissile material handling. An analysis of existing proposals on naval propulsion safeguards reveals a predominance of contributions from American institutions, with limited input from Brazilian scholars. This imbalance raises critical implications: for Brazil, the lack of a robust domestic scholarly contribution risks limiting its ability to assert its unique strategic and technological needs in international regulatory discussions. For Australia, while the AUKUS framework insulates it from direct fissile material concerns, it reinforces a dependency on allied expertise. Both nations face the challenge of navigating the NWNPR within their distinct geopolitical contexts. Yet, Brazil's constrained influence on international norms could impede its efforts to advance autonomous safeguards tailored to its strategic priorities. These dynamics reflect broader inequities in shaping the global discourse on nuclear naval propulsion, underscoring the asymmetries that define their respective roles in the nuclear order.

5 FINAL CONSIDERATIONS

This research aimed to understand the reasons that led Brazil and Australia, both non-nuclear weapons states (NNWS) pursuing nuclear powered submarines (SSNs), to have taken such divergent paths in their SSN programs. The central hypothesis posited that despite both being NNWS, these differences stem from their contrasting strategic frameworks: Brazil has prioritized nuclear autonomy as a core principle of its SSN program, consistent with its broader nuclear policy, while Australia's approach reflects its pursuit of middle-power status, emphasizing alliance-building and external support. The analysis demonstrated that Brazil's emphasis on autonomy and Australia's focus on middle-power status have shaped the trajectory of their respective SSN programs. Brazil's development of nuclear propulsion emerged in the context of the Autonomous Program of Nuclear Technology (PATN). Despite fluctuations in investment, it remained committed to indigenously developing the nuclear component of its SSN program while partnering with France for non-nuclear aspects. In contrast, Australia's SSN program is embedded within alliances with historical partners—all of which are NWS. The research further highlighted that neither country's trajectory was linear; both experienced periods of progress and setbacks in pursuing these strategic goals. Domestic, regional, and international factors influenced their respective paths, underscoring the complexity of their decisions.

The autonomy school provided a crucial framework for analyzing Brazil's nuclear strategy, viewing the global nuclear order as a hierarchical system where nuclear weapon states (NWS) dictate the rules while NNWS remain constrained. Brazil's critique of the NWNPR, particularly the NPT, stemmed from its rigid division of states, which it saw as limiting technological and economic progress. Although Brasília initially sought cooperation by major powers such as the US, France, and Germany, it ultimately recognized the necessity of indigenous development and regional integration, forging a nuclear partnership with Argentina and contributing to the Latin American Nuclear Weapon Free Zone (NWFZ). Within this framework, nuclear technology is not just a tool of deterrence but a means for states to assert sovereignty and development amid systemic inequalities that restrict access to advanced technology. Brazil's nuclear ambitions reflect this pursuit of autonomy, shaped by domestic, regional, and international influences. The Brazilian Navy played a key role in advancing nuclear technology, with progress fluctuating alongside shifting government policies. Regionally, Argentina's program influenced Brazil's trajectory, while Treaty of Tlatelolco negotiations underscored Latin America's reciprocal disarmament dynamics.

Internationally, Brazil's stance in relation to the NWNPR evolved from early support and critical confrontation/rejection in the 1960s to a more distant position in the 1970s and 1980s, followed by post-Cold War adjustments in the 1990s, support for disarmament through the Treaty on the Prohibition of Nuclear Weapons in the mid-2010s, and recent negotiations with the IAEA in response to the 2021 AUKUS agreement, which significantly impacted its SSN program.

The concept of Middle Power was crucial for analyzing Australia's foreign policy, as it provided a framework to understand its relationships with key allies. This research examined how Australia navigated shifting international norms, projected influence, and shaped the nuclear order both regionally and globally. It explored Australia's strategic approaches, from securing British and US nuclear commitments in the 1940s–1960s to advocating for arms control in the 1980s and 1990s through multilateral platforms. These efforts reflected a behavioral Middle Power approach, emphasizing coalition-building, multilateral advocacy, alignment with Western liberal values, and a commitment to being a "good international citizen". By the mid-2010s, Australia adapted to the evolving Indo-Pacific power dynamics amid China's rise. The AUKUS partnership exemplifies its strategic alignment with major powers to counter hegemonic shifts. While such alliances allow Middle Powers to exert influence, their agency remains constrained, highlighting the broader limitations of multipolarity on states outside the Great Power hierarchy.

At the outset of this thesis, the strategic advantages of SSNs for modern naval operations were presented. While these benefits are numerous, a deeper analysis of the motivations driving states to pursue nuclear-powered submarines reveals divergent underlying rationales. In the Brazilian case, despite the SSN's inherent role as a military asset, its development is primarily driven by a quest for international recognition and respect. That is, the pursuit of such capabilities is less about direct military confrontation and more about asserting its autonomy and elevating national standing within the global order. In contrast, Australia's decision to acquire SSNs must be understood within the framework of its strategic alliances with the US and the UK. This pursuit is fundamentally linked to counterbalancing China's influence in the Indo-Pacific. While Australia is not merely a subordinate actor within this alliance, its historical alignment with Anglo-American geopolitical interests shapes its strategic calculus. Nevertheless, as a nation with a smaller population and more limited military capacity relative to its great-power allies, Canberra operates within a structure where its strategic autonomy is circumscribed. Its defense posture is thus not independent but rather an extension of the broader strategic imperatives of the US and the UK.

These differing approaches to SSNs reflect broader shifts in global power dynamics, particularly the evolving contest between China and the US. This geopolitical tension has intensified pressures on middle powers like Australia and Brazil to navigate an increasingly multipolar world order, shaping their respective strategies in distinct ways. In response, Australia has sought to reinforce its security by deepening its alliances with nuclear-armed states such as the US and the UK, while Brazil has pursued a strategy of strategic autonomy. The autonomy school framework provides a useful lens for understanding Brazil's nuclear policy, which views nuclear technology as a means of self-determination rather than purely a military deterrent. This contrasts with Australia's approach, which remains constrained by alliance commitments and strategic reliance on allied nuclear capabilities. These differing strategies reflect broader geopolitical realities and underline the importance of considering national interests and security doctrines when analyzing nuclear non-proliferation and disarmament policies.

Ultimately, an analysis of the cases of Australia and Brazil highlights the nuanced and complex relationship these states maintain with the NWNPR in the context of their pursuit of SSNs. This strategic ambiguity presents a significant challenge both for the regime and for these nations, as it occupies a space between adherence to non-proliferation commitments and the acquisition of military-use nuclear technologies. While both states formally support non-proliferation and, like Brazil, critique the inequities of the global nuclear order, their strategic choices are shaped by their respective security imperatives and technological capacities. Rather than constituting a contradiction, this dynamic reflects distinct geopolitical realities. Despite their divergent motivations and strategic orientations, a degree of convergence emerges in how they navigate this evolving and contested landscape.

Concerning safeguards it should be underscored that there is a fundamental distinction between Article 14 of INFCIRC/217 and Article 13 of INFCIRC/435 which lies in the former permitting arrangements for the non-application of safeguards under specific conditions, while the latter establishes Special Procedures for nuclear material used in submarine propulsion. While Australia may arrange for the non-application of safeguards under specific conditions, it cannot unilaterally exempt nuclear material for submarine propulsion and must negotiate with the International Atomic Energy Agency (IAEA). In this sense, as declared by Silva (2023, p. 15), claims of a legal gap in the NPT framework are overstated, as the Comprehensive Safeguards Agreement framework sufficiently addresses the issue, prohibiting states from unilaterally excluding fissile material for SSNs from safeguards. However, the negotiation of Special Procedures between a NNWS and the IAEA for

submarine propulsion is unprecedented, making these cases important. Both nations have initiated negotiations with the Agency, with IAEA estimates suggesting a process of up to five years, though no formal deadline exists (Gielow, 2024). Notably, Brazil has emphasized ABACC's role in ensuring compliance through rigorous record-keeping while affirming that Special Procedures will not undermine IAEA safeguards. The IAEA has not suggested that these negotiations will weaken the existing safeguards system or the NWNPR. Both nations have demonstrated commitment to establish a regulatory framework that could serve as a model, potentially strengthening the NWNPR.

Further research could be made to evaluate proposals to mitigate the risks associated with fissile materials in the naval sector. Examining the potential impact of various safeguard measures on Brazil and Australia's SSN programs is particularly important, as these measures could shape ongoing negotiations and set precedents for future cases. Key considerations include transparency mechanisms, verification protocols, non-proliferation commitments, and the degree to which these proposals align with or challenge the strategic and operational objectives of both nations. A comprehensive assessment of these factors would provide valuable insights into how countries can navigate the balance between advancing their naval capabilities and adhering to international nuclear governance frameworks.

Beyond technical and regulatory concerns, these cases underscore broader asymmetries in the NWNPR. Brazil's indigenous SSN program challenges long-standing inequities in the NPT framework, while Australia's, supported by the US and UK, reinforces them. If successful, these efforts will establish a new intermediate category—NNWS with SSNs—one receiving direct NWS support and the other pursuing an autonomous path, further straining an already fragile treaty. The selective treatment of NNWS seeking SSNs highlights the strategic, rather than principled, nature of non-proliferation policies. At the same time, the US and UK endorse Australia's HEU-fueled SSNs, they remain skeptical of similar Brazilian efforts and would likely oppose such initiatives if supported by Russia or China for states like Iran or Brazil. This selective authorization entrenches a nuclear hierarchy in which NWS and their allies enjoy greater flexibility, while developing nations face restrictions, exacerbating disparities and undermining the NWNPR's legitimacy. The regime's long-term credibility depends on whether these asymmetries are perceived as temporary or structural. The geopolitical alignment of NNWS pursuing SSNs raises concerns about fairness, deepens divisions, and exposes inconsistencies in nuclear governance. Russia's ambiguous stance further complicates this landscape; while maintaining discretion, Moscow has actively supported India's SSN program through submarine leases, crew training, and possible

technology transfers. Unlike NNWS under the NPT, India is not required to subject its military nuclear facilities to IAEA safeguards, though it has voluntarily accepted agreements covering its civilian sector. Meanwhile, France has neither opposed nor explicitly endorsed NNWS nuclear propulsion, while China selectively objects, rejecting Australia's SSN acquisition but remaining neutral on Brazil's. These inconsistencies reveal how strategic interests, rather than legal or normative commitments, shape NWS policies, reinforcing asymmetries in the regime. As more NNWS pursue naval nuclear propulsion, these contradictions will become increasingly untenable, raising fundamental questions about the future of the NWNPR (Silva, 2024a, p. 55-56).

For NNWS, the primary incentive to remain part of the NWNPR is the prospect of nuclear disarmament. However, the lack of commitment from NWS to fulfill their disarmament obligations under the NPT has led to skepticism among NNWS. In Brazil's case, this skepticism is a key reason for its reluctance to sign the AP and make further commitments to nuclear safeguards. The perception that NWS have failed to uphold their end of the bargain undermines the legitimacy of the non-proliferation framework in the view of NNWS. Therefore, this research has examined the position of Brazil and Australia on nuclear disarmament, particularly in comparison to the positions adopted by NWS in their voting pattern.

The analysis of voting patterns in the UNGA First Committee revealed significant differences between Brazil and Australia in their approaches to nuclear disarmament. Brasília consistently supported most disarmament resolutions, voting in alignment with the majority of NNWS and only occasionally abstaining. In contrast, Australia demonstrated a more balanced stance, aligning itself more closely with most NWS. While Brazil's voting record reflects the concerns of NNWS advocating for nuclear disarmament, Australia's pattern suggests a strategic alignment with a minority of states likely under the protection of NWS. These differences indicate broader geopolitical considerations influencing each country's approach to non-proliferation and disarmament.

Understanding the justifications states provide for their votes in UN committees is an important area for further research. Unlike the General Assembly, where voting often occurs without explanation, committee discussions provide insight into national priorities by allowing states to justify their positions. Over time, a systematic analysis of these statements could help identify trends shaped by regional dynamics, leadership changes, and evolving international norms. Additionally, examining bilateral interactions, statements in disarmament forums, and broader voting patterns in the UNGA and the UNSC could clarify whether voting

similarities or divergences stem from ideological alignment or pragmatic decision-making. For instance, Brazil and China frequently vote similarly on nuclear disarmament resolutions despite one being a NNWS and the other being a NWS. Meanwhile, Australia's voting pattern aligns more with France and Russia, than its traditional US and UK allies. Both these cases warrant further scrutiny.

The divergence in voting patterns among NWS further highlights the complexity of their strategic interests. While some NWS support gradual disarmament initiatives, others categorically reject resolutions they view as restrictive. Investigating how national security doctrines shape voting behavior would provide valuable insights into these differences. Further research could also assess whether members of coalitions such as the NAC and the NPDI exhibit consistent voting patterns. Given that these groups frequently issue joint statements and working papers, analyzing their voting behavior could reveal the extent of their policy cohesion. Similarly, examining whether signatories of regional NWFZ treaties, such as the Treaty of Tlatelolco and the Treaty of Rarotonga, vote in alignment would shed light on the strength of regional unity in nuclear governance. If discrepancies arise, exploring their causes—ranging from divergent national interests to external pressures—could further illuminate the complexities of international disarmament diplomacy.

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APPENDIX A – UNGA First Committee Voting Records

Follow-up to the advisory opinion of the International Court of Justice on the legality of the threat or use of nuclear weapons	
A_RES_78_33 (2023)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 135 No: 35 Abstentions: 15 Non-Voting: 8 Total voting membership: 193	
A_RES_77_57 (2022)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 133 No: 35 Abstentions: 13 Non-Voting: 12 Total voting membership: 193	
A_RES_76_59 (2021)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 143 No: 33 Abstentions: 14 Non-Voting: 3 Total voting membership: 193	
A_RES_75_59 (2020)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 136 No: 33 Abstentions: 15 Non-Voting: 9 Total voting membership: 193	
A_RES_74_59 (2019)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 138 No: 33 Abstentions: 15 Non-Voting: 7 Total voting membership: 193	
A_RES_73_64 (2018)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 138 No: 32 Abstentions: 17 Non-Voting: 6 Total voting membership: 193	
A_RES_72_58 (2017)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 131 No: 31 Abstentions: 18 Non-Voting: 13 Total voting membership: 193	
A_RES_71_58 (2016)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 136 No: 25 Abstentions: 22 Non-Voting: 10 Total voting membership: 193	
A_RES_70_56 (2015)	Australia: A Brazil: Yes China: Y France: N Russia: N UK: N US: N
Yes: 137 No: 24 Abstentions: 25 Non-Voting: 7 Total voting membership: 193	
A_RES_69_43 (2014)	Australia: A Brazil: Yes China: Y France: N Russia: N UK: N US: N
Yes: 134 No: 23 Abstentions: 23 Non-Voting: 13 Total voting membership: 193	
A_RES_68_42 (2013)	Australia: A Brazil: Yes China: Y France: N Russia: N UK: N US: N
Yes: 133 No: 24 Abstentions: 25 Non-Voting: 11 Total voting membership: 193	
A_RES_67_33 (2012)	Australia: A Brazil: Yes China: Y France: N Russia: N UK: NV US: N
Yes: 135 No: 22 Abstentions: 26 Non-Voting: 10 Total voting membership: 193	
A_RES_66_46 (2011)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 130 No: 26 Abstentions: 23 Non-Voting: 14 Total voting membership: 193	
A_RES_65_76 (2010)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N

Yes: 133 No: 28 Abstentions: 23 Non-Voting: 8 Total voting membership: 192	
A_RES_64_55 (2009)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 124 No: 31 Abstentions: 21 Non-Voting: 16 Total voting membership: 192	
A_RES_63_49 (2008)	Australia: N Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 127 No: 30 Abstentions: 23 Non-Voting: 12 Total voting membership: 192	
A_RES_62_39 (2007)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 127 No: 27 Abstentions: 27 Non-Voting: 11 Total voting membership: 192	
A_RES_61_83 (2006)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 125 No: 27 Abstentions: 29 Non-Voting: 11 Total voting membership: 192	
A_RES_60_76 (2005)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 126 No: 29 Abstentions: 24 Non-Voting: 12 Total voting membership: 191	
A_RES_59_83 (2004)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 132 No: 29 Abstentions: 24 Non-Voting: 6 Total voting membership: 191	
A_RES_58_46 (2003)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 124 No: 29 Abstentions: 22 Non-Voting: 16 Total voting membership: 191	
A_RES_57_85 (2002)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 117 No: 30 Abstentions: 24 Non-Voting: 20 Total voting membership: 191	
A_RES_56_24 [S](2001)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 111 No: 29 Abstentions: 21 Non-Voting: 28 Total voting membership: 189	
A_RES_55_33 [X](2000)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 119 No: 28 Abstentions: 22 Non-Voting: 20 Total voting membership: 189	
A_RES_54_54[Q](1999)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 114 No: 28 Abstentions: 22 Non-Voting: 24 Total voting membership: 188	
A_RES_53_77[W](1998)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 123 No: 25 Abstentions: 25 Non-Voting: 12 Total voting membership: 185	
A_RES_52_38[O](1997)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 116 No: 26 Abstentions: 24 Non-Voting: 19 Total voting membership: 185	
Taking forward multilateral nuclear disarmament negotiations	
A_RES_72_31 (2017)	Australia: N Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 125 No: 39 Abstentions: 14 Non-Voting: 15 Total voting membership: 193	

A_RES_71_258 (2016)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 113 No: 35 Abstentions: 13 Non-Voting: 32 Total voting membership: 193	
A_RES_70_33 (2015)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 138 No: 12 Abstentions: 34 Non-Voting: 9 Total voting membership: 193	
A_RES_69_41 (2014)	Australia: Y Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 154 No: 5 Abstentions: 20 Non-Voting: 14 Total voting membership: 193	
A_RES_68_46 (2013)	Australia: Y Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 158 No: 4 Abstentions: 20 Non-Voting: 11 Total voting membership: 193	
A_RES_67_56 (2012)	Australia: Y Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 147 No: 4 Abstentions: 31 Non-Voting: 11 Total voting membership: 193	
Towards a nuclear-weapon-free world: accelerating the implementation of nuclear disarmament commitments	
A_RES_78_42 (2023)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 133 No: 26 Abstentions: 25 Non-Voting: 9 Total voting membership: 193	
A_RES_76_49 (2021)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 140 No: 34 Abstentions: 15 Non-Voting: 4 Total voting membership: 193	
A_RES_75_65 (2020)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 138 No: 33 Abstentions: 15 Non-Voting: 7 Total voting membership: 193	
A_RES_74_46 (2019)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 137 No: 33 Abstentions: 16 Non-Voting: 7 Total voting membership: 193	
A_RES_73_70 (2018)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 139 No: 32 Abstentions: 17 Non-Voting: 5 Total voting membership: 193	
A_RES_72_39 (2017)	Australia: A Brazil: Y China: N France: N Russia: N UK: N US: N
Yes: 137 No: 31 Abstentions: 16 Non-Voting: 9 Total voting membership: 193	
A_RES_71_54 (2016)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 137 No: 25 Abstentions: 19 Non-Voting: 12 Total voting membership: 193	
A_RES_70_51 (2015)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 142 No: 7 Abstentions: 36 Non-Voting: 8 Total voting membership: 193	
A_RES_69_37 (2014)	Australia: Y Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 169 No: 7 Abstentions: 5 Non-Voting: 12 Total voting membership: 193	

A_RES_68_39 (2013)	Australia: Y Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 171 No: 7 Abstentions: 5 Non-Voting: 10 Total voting membership: 193	
A_RES_67_34 (2012)	Australia: Y Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 175 No: 6 Abstentions: 5 Non-Voting: 7 Total voting membership: 193	
A_RES_66_40 (2011)	Australia: Y Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 169 No: 6 Abstentions: 6 Non-Voting: 13 Total voting membership: 193	
A_RES_65_59 (2010)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: A US: N
Yes: 173 No: 5 Abstentions: 5 Non-Voting: 9 Total voting membership: 192	
A_RES_64_57 (2009)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: A US: N
Yes: 169 No: 5 Abstentions: 5 Non-Voting: 13 Total voting membership: 192	
A_RES_63_58 (2008)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: A US: N
Yes: 166 No: 5 Abstentions: 7 Non-Voting: 14 Total voting membership: 192	
A_RES_62_25 (2007)	Australia: A Brazil: Y China: Y France: N Russia: A UK: A US: N
Yes: 156 No: 5 Abstentions: 14 Non-Voting: 17 Total voting membership: 192	
A_RES_61_65 (2006)	Australia: A Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 157 No: 7 Abstentions: 13 Non-Voting: 15 Total voting membership: 192	
A_RES_60_56 (2005)	Australia: A Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 153 No: 5 Abstentions: 20 Non-Voting: 13 Total voting membership: 191	
A_RES_59_75 (2004)	Australia: A Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 151 No: 6 Abstentions: 24 Non-Voting: 10 Total voting membership: 191	
High-level meeting of the General Assembly on nuclear disarmament	
A_RES_67_39 (2012)	Australia: Y Brazil: A China: Y France: A Russia: Y UK: A US: A
Yes: 179 No: 0 Abstentions: 4 Non-Voting: 10 Total voting membership: 193	
Follow-up to the 2013 High-Level Meeting of the General Assembly on Nuclear Disarmament : resolution / adopted by the General Assembly	
A/RES/74/54 (2023)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 140 No: 35 Abstentions: 10 Non-Voting: 8 Total voting membership: 193	
A/RES/77/47 (2022)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 136 No: 35 Abstentions: 8 Non-Voting: 14 Total voting membership: 193	
A/RES/76/36 (2021)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 145 No: 34 Abstentions: 9 Non-Voting: 5 Total voting membership: 193	

A/RES/75/45 (2020)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 143 No: 34 Abstentions: 9 Non-Voting: 7 Total voting membership: 193	
A/RES/74/54 (2019)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 142 No: 34 Abstentions: 10 Non-Voting: 7 Total voting membership: 193	
A/RES/73/40 (2018)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 143 No: 27 Abstentions: 14 Non-Voting: 9 Total voting membership: 193	
A/RES/72/251 (2017)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 114 No: 30 Abstentions: 14 Non-Voting: 35 Total voting membership: 193	
A/RES/71/71 (2016)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 140 No: 30 Abstentions: 15 Non-Voting: 8 Total voting membership: 193	
A/RES/70/34 (2015)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 140 No: 26 Abstentions: 17 Non-Voting: 10 Total voting membership: 193	
A/RES/69/58 (2014)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 139 No: 24 Abstentions: 19 Non-Voting: 11 Total voting membership: 193	
A/RES/68/32 (2013)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 137 No: 28 Abstentions: 20 Non-Voting: 8 Total voting membership: 193	
United action towards the total elimination of nuclear weapons	
A_RES_74_63 (2019)	Australia: Y Brazil: A China: N France: Y Russia: N UK: Y US: A
Yes: 160 No: 4 Abstentions: 21 Non-Voting: 8 Total voting membership: 193	
A_RES_73_62 (2018)	Australia: Y Brazil: A China: N France: A Russia: N UK: Y US: A
Yes: 162 No: 4 Abstentions: 23 Non-Voting: 4 Total voting membership: 193	
A_RES_72_50 (2017)	Australia: Y Brazil: A China: N France: Y Russia: N UK: Y US: Y
Yes: 156 No: 4 Abstentions: 24 Non-Voting: 9 Total voting membership: 193	
A_RES_71_49 (2016)	Australia: Y Brazil: Y China: N France: A Russia: N UK: A US: Y
Yes: 167 No: 4 Abstentions: 16 Non-Voting: 6 Total voting membership: 193	
A_RES_71_49 (2015)	Australia: Y Brazil: Y China: N France: A Russia: N UK: A US: A
Yes: 166 No: 3 Abstentions: 16 Non-Voting: 8 Total voting membership: 193	
A_RES_69_52 (2014)	Australia: Y Brazil: A China: A France: Y Russia: A UK: Y US: Y
Yes: 170 No: 1 Abstentions: 14 Non-Voting: 8 Total voting membership: 193	
A_RES_68_51 (2013)	Australia: Y Brazil: A China: A France: Y Russia: A UK: Y US: Y

Yes: 169 No: 1 Abstentions: 14 Non-Voting: 9 Total voting membership: 193	
A_RES_67_59 (2012)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: Y
Yes: 174 No: 1 Abstentions: 13 Non-Voting: 5 Total voting membership: 193	
A_RES_66_45 (2011)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: Y
Yes: 169 No: 1 Abstentions: 11 Non-Voting: 12 Total voting membership: 193	
A_RES_65_72 (2010)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: Y
Yes: 173 No: 1 Abstentions: 11 Non-Voting: 7 Total voting membership: 192	
United action with renewed determination towards the total elimination of nuclear weapons : resolution / adopted by the General Assembly	
A/RES/74/63 (2019)	Australia: Y Brazil: A China: N France: Y Russia: N UK: Y US: A
Yes: 160 No: 4 Abstentions: 21 Non-Voting: 8 Total voting membership: 193	
A/RES/73/62 (2018)	Australia: Y Brazil: A China: N France: A Russia: N UK: Y US: A
Yes: 162 No: 4 Abstentions: 23 Non-Voting: 4 Total voting membership: 193	
A/RES/72/50 (2017)	Australia: Y Brazil: A China: N France: Y Russia: N UK: Y US: Y
Yes: 156 No: 4 Abstentions: 24 Non-Voting: 9 Total voting membership: 193	
A/RES/71/49 (2016)	Australia: Y Brazil: Y China: N France: A Russia: N UK: A US: Y
Yes: 167 No: 4 Abstentions: 16 Non-Voting: 6 Total voting membership: 193	
A/RES/70/40(2015)	Australia: Y Brazil: Y China: N France: A Russia: N UK: A US: A
Yes: 166 No: 3 Abstentions: 16 Non-Voting: 8 Total voting membership: 193	
Renewed determination towards the total elimination of nuclear weapons	
A_RES_72_50 (2017)	Australia: Y Brazil: A China: N France: Y Russia: N UK: Y US: Y
Yes: 156 No: 4 Abstentions: 24 Non-Voting: 9 Total voting membership: 193	
A_RES_64_47 (2009)	Australia: Y Brazil: Y China: A France: A Russia: Y UK: Y US: Y
Yes: 171 No: 2 Abstentions: 8 Non-Voting: 11 Total voting membership: 192	
A_RES_63_73 (2008)	Australia: Y Brazil: Y China: A France: Y Russia: Y UK: Y US: N
Yes: 173 No: 4 Abstentions: 6 Non-Voting: 9 Total voting membership: 192	
A_RES_62_37 (2007)	Australia: Y Brazil: Y China: A France: A Russia: Y UK: Y US: N
Yes: 170 No: 3 Abstentions: 9 Non-Voting: 10 Total voting membership: 192	
A_RES_61_74 (2006)	Australia: Y Brazil: Y China: A France: Y Russia: Y UK: Y US: N
Yes: 167 No: 4 Abstentions: 7 Non-Voting: 14 Total voting membership: 192	
A_RES_60_65 (2005)	Australia: Y Brazil: Y China: A France: Y Russia: NY UK: Y US: N

Yes: 168 No: 2 Abstentions: 7 Non-Voting: 14 Total voting membership: 191	
Humanitarian Consequences of Nuclear Weapons	
A_RES_76_30 (2023)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 141 No: 11 Abstentions: 33 Non-Voting: 8 Total voting membership: 193	
A_RES_77_53 (2022)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 138 No: 14 Abstentions: 31 Non-Voting: 10 Total voting membership: 193	
A_RES_76_30 (2021)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 148 No: 12 Abstentions: 29 Non-Voting: 4 Total voting membership: 193	
A_RES_74_42 (2020)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 146 No: 13 Abstentions: 29 Non-Voting: 5 Total voting membership: 193	
A_RES_74_42 (2019)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 144 No: 13 Abstentions: 28 Non-Voting: 8 Total voting membership: 193	
A_RES_73_47 (2018)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 142 No: 15 Abstentions: 26 Non-Voting: 10 Total voting membership: 193	
A_RES_72_30 (2017)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 141 No: 15 Abstentions: 27 Non-Voting: 10 Total voting membership: 193	
A_RES_71_46 (2016)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 144 No: 16 Abstentions: 24 Non-Voting: 9 Total voting membership: 193	
A_RES_70_47 (2015)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 144 No: 18 Abstentions: 22 Non-Voting: 9 Total voting membership: 193	
Nuclear Disarmament	
A_RES_78_53 (2023)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 121 No: 44 Abstentions: 17 Non-Voting: 11 Total voting membership: 193	
A_RES_77_65 (2022)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 120 No: 42 Abstentions: 20 Non-Voting: 11 Total voting membership: 193	
A_RES_76_46 (2021)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 124 No: 41 Abstentions: 22 Non-Voting: 6 Total voting membership: 193	
A_RES_75_63 (2020)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 123 No: 41 Abstentions: 22 Non-Voting: 7 Total voting membership: 193	
A_RES_74_45 (2019)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N

Yes: 120 No: 41 Abstentions: 22 Non-Voting: 10 Total voting membership: 193	
A_RES_73_50 (2018)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 125 No: 40 Abstentions: 18 Non-Voting: 10 Total voting membership: 193	
A_RES_72_38 (2017)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 122 No: 44 Abstentions: 17 Non-Voting: 10 Total voting membership: 193	
A_RES_71_63 (2016)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 122 No: 44 Abstentions: 17 Non-Voting: 10 Total voting membership: 193	
A_RES_70_52 (2015)	Australia: N Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 127 No: 43 Abstentions: 15 Non-Voting: 8 Total voting membership: 193	
A_RES_69_48 (2014)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 121 No: 44 Abstentions: 17 Non-Voting: 11 Total voting membership: 193	
A_RES_68_47 (2013)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 122 No: 44 Abstentions: 17 Non-Voting: 10 Total voting membership: 193	
A_RES_67_60 (2012)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 124 No: 44 Abstentions: 18 Non-Voting: 7 Total voting membership: 193	
A_RES_66_51 (2011)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 117 No: 45 Abstentions: 18 Non-Voting: 13 Total voting membership: 193	
A_RES_65_56 (2010)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 120 No: 45 Abstentions: 18 Non-Voting: 9 Total voting membership: 192	
A_RES_64_53 (2009)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 111 No: 45 Abstentions: 19 Non-Voting: 17 Total voting membership: 192	
A_RES_63_46 (2008)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 117 No: 45 Abstentions: 19 Non-Voting: 11 Total voting membership: 192	
A_RES_62_42 (2007)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 117 No: 47 Abstentions: 17 Non-Voting: 11 Total voting membership: 192	
A_RES_61_78 (2006)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 115 No: 48 Abstentions: 18 Non-Voting: 11 Total voting membership: 192	
A_RES_60_70 (2005)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 113 No: 45 Abstentions: 20 Non-Voting: 13 Total voting membership: 191	
A_RES_59_77 (2004)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N

Yes: 117 No: 43 Abstentions: 21 Non-Voting: 10 Total voting membership: 191	
A_RES_58_56 (2003)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 112 No: 45 Abstentions: 20 Non-Voting: 14 Total voting membership: 191	
A_RES_57_79 (2002)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 107 No: 41 Abstentions: 21 Non-Voting: 22 Total voting membership: 191	
A_RES_56_24 [R] (2001)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 103 No: 41 Abstentions: 17 Non-Voting: 28 Total voting membership: 189	
A_RES_55_33 [T] (2000)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 109 No: 39 Abstentions: 20 Non-Voting: 21 Total voting membership: 189	
A_RES_54_54 [P] (1999)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 104 No: 41 Abstentions: 17 Non-Voting: 26 Total voting membership: 188	
A_RES_53_77 [X] (1998)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 110 No: 41 Abstentions: 18 Non-Voting: 16 Total voting membership: 185	
A_RES_52_38 [L] (1997)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 109 No: 39 Abstentions: 18 Non-Voting: 19 Total voting membership: 185	
A path to the total elimination of nuclear weapons	
A_RES_59_76 (2004)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: N
Yes: 165 No: 3 Abstentions: 16 Non-Voting: 7 Total voting membership: 191	
A_RES_58_59 (2003)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: N
Yes: 164 No: 2 Abstentions: 14 Non-Voting: 11 Total voting membership: 191	
A_RES_57_78 (2002)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: N
Yes: 156 No: 2 Abstentions: 13 Non-Voting: 20 Total voting membership: 191	
A_RES_56_24 [N] (2001)	Australia: Y Brazil: A China: A France: Y Russia: Y UK: Y US: N
Yes: 139 No: 3 Abstentions: 19 Non-Voting: 28 Total voting membership: 189	
A_RES_55_33 [R] (2000)	Australia: Y Brazil: Y China: A France: A Russia: A UK: Y US: Y
Yes: 155 No: 1 Abstentions: 12 Non-Voting: 21 Total voting membership: 189	
Nuclear-weapon-free southern hemisphere and adjacent areas	
A_RES_78_50 (2023)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 147 No: 5 Abstentions: 29 Non-Voting: 12 Total voting membership: 193	
A_RES_76_44 (2021)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N

Yes: 149 No: 5 Abstentions: 31 Non-Voting: 8 Total voting membership: 193	
A_RES_74_48 (2019)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 148 No: 5 Abstentions: 30 Non-Voting: 10 Total voting membership: 193	
A_RES_72_45 (2017)	Australia: A Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 149 No: 5 Abstentions: 29 Non-Voting: 10 Total voting membership: 193	
A_RES_71_51 (2016)	Australia: Y Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 179 No: 4 Abstentions: 1 Non-Voting: 9 Total voting membership: 193	
A_RES_70_45 (2015)	Australia: Y Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 178 No: 4 Abstentions: 1 Non-Voting: 10 Total voting membership: 193	
A_RES_69_35 (2014)	Australia: Y Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 173 No: 4 Abstentions: 3 Non-Voting: 13 Total voting membership: 193	
A_RES_67_55 (2012)	Australia: Y Brazil: Y China: Y France: N Russia: N UK: N US: N
Yes: 179 No: 4 Abstentions: 4 Non-Voting: 6 Total voting membership: 193	
A_RES_65_58 (2010)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 174 No: 3 Abstentions: 6 Non-Voting: 9 Total voting membership: 192	
A_RES_64_44 (2009)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 170 No: 3 Abstentions: 6 Non-Voting: 13 Total voting membership: 192	
A_RES_63_65 (2008)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 171 No: 3 Abstentions: 7 Non-Voting: 11 Total voting membership: 192	
A_RES_62_35 (2007)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 169 No: 3 Abstentions: 8 Non-Voting: 12 Total voting membership: 192	
A_RES_61_69 (2006)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 167 No: 3 Abstentions: 9 Non-Voting: 13 Total voting membership: 192	
A_RES_60_58 (2005)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 167 No: 3 Abstentions: 9 Non-Voting: 13 Total voting membership: 192	
A_RES_59_85 (2004)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 171 No: 4 Abstentions: 8 Non-Voting: 8 Total voting membership: 191	
A_RES_58_49 (2003)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 168 No: 3 Abstentions: 8 Non-Voting: 12 Total voting membership: 191	
A_RES_57_73 (2002)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N

Yes: 160 No: 3 Abstentions: 5 Non-Voting: 23 Total voting membership: 191	
A_RES_56_24 [G] (2001)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 160 No: 3 Abstentions: 5 Non-Voting: 23 Total voting membership: 191	
A_RES_55_33 [I] (2000)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 159 No: 4 Abstentions: 5 Non-Voting: 21 Total voting membership: 189	
A_RES_54_54 [L] (1999)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 157 No: 3 Abstentions: 4 Non-Voting: 24 Total voting membership: 188	
A_RES_53_77 [Q] (1998)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 154 No: 3 Abstentions: 10 Non-Voting: 18 Total voting membership: 185	
A_RES_52_38 [N] (1997)	Australia: Y Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 131 No: 3 Abstentions: 34 Non-Voting: 17 Total voting membership: 185	
Implementation of the Declaration of the Indian Ocean as a Zone of Peace	
A_RES_78_13 (2023)	Australia: Y Brazil: Y; China: Y; France: N; Russia: Y; UK: N; US: N
Yes: 138 No: 4 Abstentions: 42 Non-Voting: 9 Total voting membership: 193	
A_RES_76_17 (2021)	Australia: Y Brazil: Y; China: Y; France: N; Russia: Y; UK: N; US: N
Yes: 133 No: 3 Abstentions: 45 Non-Voting: 12 Total voting membership: 193	
A_RES_74_25 (2019)	Australia: Y Brazil: Y; China: Y; France: N; Russia: Y; UK: N; US: N
Yes: 134 No: 3 Abstentions: 45 Non-Voting: 11 Total voting membership: 193	
A_RES_72_21 (2017)	Australia: Y Brazil: Y; China: Y; France: N; Russia: Y; UK: N; US: N
Yes: 132 No: 3 Abstentions: 46 Non-Voting: 12 Total voting membership: 193	
A_RES_70_22 (2015)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 128 No: 3 Abstentions: 45 Non-Voting: 17 Total voting membership: 193	
A_RES_68_24 (2013)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 130 No: 4 Abstentions: 45 Non-Voting: 14 Total voting membership: 193	
A_RES_66_21(2011)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 168 No: 1 Abstentions: 1 Non-Voting: 23 Total voting membership: 193	
A_RES_64_23 (2009)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 128 No: 3 Abstentions: 45 Non-Voting: 16 Total voting membership: 192	
A_RES_62_14 (2007)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 130 No: 3 Abstentions: 47 Non-Voting: 12 Total voting membership: 192	

A_RES_60_48 (2005)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 132 No: 3 Abstentions: 46 Non-Voting: 10 Total voting membership: 191	
A_RES_58_29 (2003)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 130 No: 3 Abstentions: 42 Non-Voting: 16 Total voting membership: 191	
A_RES_56_16 (2001)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 110 No: 3 Abstentions: 41 Non-Voting: 35 Total voting membership: 189	
A_RES_54_47 (1999)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 120 No: 3 Abstentions: 41 Non-Voting: 24 Total voting membership: 188	
A_RES_52_44 (1997)	Australia: Y Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 125 No: 3 Abstentions: 40 Non-Voting: 17 Total voting membership: 185	
Follow-up to nuclear disarmament obligations agreed to at the 1995, 2000 and 2010 Review Conferences of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons	
A_RES_78_30 (2023)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 116 No: 45 Abstentions: 19 Non-Voting: 13 Total voting membership: 193	
A_RES_76_31 (2021)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 122 No: 44 Abstentions: 17 Non-Voting: 10 Total voting membership: 193	
A_RES_74_36 (2019)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 118 No: 43 Abstentions: 19 Non-Voting: 13 Total voting membership: 193	
A_RES_66_28 (2011)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 118 No: 52 Abstentions: 6 Non-Voting: 17 Total voting membership: 193	
A_RES_64_31 (2009)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 109 No: 56 Abstentions: 15 Non-Voting: 13 Total voting membership: 192	
A_RES_62_24 (2007)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 109 No: 55 Abstentions: 10 Non-Voting: 17 Total voting membership: 192	
A_RES_60_72 (2005)	Australia: N Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 87 No: 56 Abstentions: 26 Non-Voting: 22 Total voting membership: 191	
Treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices	
A_RES_67_53 (2012)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 166 No: 1 Abstentions: 21 Non-Voting: 5 Total voting membership: 193	
A_RES_66_44 (2011)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y

Yes: 158 No: 2 Abstentions: 21 Non-Voting: 12 Total voting membership: 193	
A_RES_65_65 (2010)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 179 No: 1 Abstentions: 2 Non-Voting: 10 Total voting membership: 192	
Towards a nuclear-weapon-free world: a new agenda	
A_RES_58_51 (2003)	Australia: A Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 133 No: 6 Abstentions: 38 Non-Voting: 14 Total voting membership: 191	
Towards a nuclear-weapon-free world: the need for a new agenda	
A_RES_58_51 (2003)	Australia: A Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 133 No: 6 Abstentions: 38 Non-Voting: 14 Total voting membership: 191	
A_RES_57_59 (2002)	Australia: A Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 125 No: 6 Abstentions: 36 Non-Voting: 24 Total voting membership: 191	
A_RES_55_33 [C](2000)	Australia: Y Brazil: Y China: Y France: A Russia: A UK: Y US: Y
Yes: 154 No: 3 Abstentions: 8 Non-Voting: 24 Total voting membership: 189	
A_RES_54_54 [G] (1999)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 111 No: 13 Abstentions: 29 Non-Voting: 25 Total voting membership: 188	
A_RES_53_77 [Y] (1998)	Australia: A Brazil: Y China: A France: N Russia: N UK: N US: N
Yes: 114 No: 18 Abstentions: 38 Non-Voting: 15 Total voting membership: 185	
Nuclear disarmament with a view to the ultimate elimination of nuclear weapons	
A_RES_54_54 [D] (1999)	Australia: A Brazil: Y China: A France: A Russia: A UK: Y US: Y
Yes: 153 No: 0 Abstentions: 12 Non-Voting: 23 Total voting membership: 188	
A_RES_53_77 [U] (1998)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 160 No: 0 Abstentions: 11 Non-Voting: 14 Total voting membership: 185	
A_RES_52_38 [K] (1997)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 156 No: 0 Abstentions: 10 Non-Voting: 19 Total voting membership: 185	
Comprehensive Nuclear-Test-Ban Treaty	
A_RES_78_66 (2023)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 181 No: 1 Abstentions: 4 Non-Voting: 7 Total voting membership: 193	
A_RES_77_94 (2022)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 179 No: 1 Abstentions: 4 Non-Voting: 9 Total voting membership: 193	
A_RES_76_66 (2021)	Australia: Y Brazil: Y China: Y France: NV Russia: Y UK: Y US: Y

Yes: 182 No: 1 Abstentions: 3 Non-Voting: 7 Total voting membership: 193	
A_RES_75_87 (2020)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 182 No: 2 Abstentions: 3 Non-Voting: 6 Total voting membership: 193	
A_RES_74_78 (2019)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 182 No: 1 Abstentions: 4 Non-Voting: 6 Total voting membership: 193	
A_RES_73_86 (2018)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 183 No: 1 Abstentions: 4 Non-Voting: 5 Total voting membership: 193	
A_RES_66_64 (2017)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 180 No: 1 Abstentions: 4 Non-Voting: 8 Total voting membership: 193	
A_RES_70_73 (2016)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 175 No: 1 Abstentions: 3 Non-Voting: 14 Total voting membership: 193	
A_RES_66_64 (2015)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 181 No: 1 Abstentions: 3 Non-Voting: 8 Total voting membership: 193	
A_RES_66_64 (2014)	Adopted without a vote
A_RES_68_68 (2013)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 181 No: 1 Abstentions: 3 Non-Voting: 8 Total voting membership: 193	
A_RES_67_76 (2012)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 184 No: 1 Abstentions: 3 Non-Voting: 5 Total voting membership: 193	
A_RES_66_64 (2011)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 175 No: 1 Abstentions: 3 Non-Voting: 14 Total voting membership: 193	
A_RES_65_91 (2010)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 179 No: 1 Abstentions: 3 Non-Voting: 9 Total voting membership: 192	
A_RES_64_69 (2009)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 175 No: 1 Abstentions: 3 Non-Voting: 13 Total voting membership: 192	
A_RES_63_87 (2008)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 175 No: 1 Abstentions: 3 Non-Voting: 13 Total voting membership: 192	
A_RES_62_59 (2007)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 176 No: 1 Abstentions: 4 Non-Voting: 11 Total voting membership: 192	
A_RES_61_104 (2006)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 172 No: 2 Abstentions: 4 Non-Voting: 14 Total voting membership: 192	

A_RES_60_95 (2005)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 172 No: 2 Abstentions: 4 Non-Voting: 14 Total voting membership: 191	
A_RES_59_109 (2004)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 177 No: 2 Abstentions: 4 Non-Voting: 8 Total voting membership: 191	
A_RES_58_71 (2003)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 173 No: 1 Abstentions: 4 Non-Voting: 13 Total voting membership: 191	
A_RES_57_100 (2002)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 164 No: 1 Abstentions: 5 Non-Voting: 21 Total voting membership: 191	
A_RES_55_41 (2000)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 161 No: 0 Abstentions: 6 Non-Voting: 22 Total voting membership: 189	
A_RES_54_63 (1999)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: Y
Yes: 158 No: 0 Abstentions: 6 Non-Voting: 24 Total voting membership: 188	
The risk of nuclear proliferation in the Middle East	
A_RES_78_63 (2023)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 151 No: 6 Abstentions: 27 Non-Voting: 9 Total voting membership: 193	
A_RES_77_91 (2022)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 149 No: 6 Abstentions: 26 Non-Voting: 12 Total voting membership: 193	
A_RES_76_63 (2021)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 157 No: 6 Abstentions: 24 Non-Voting: 6 Total voting membership: 193	
A_RES_75_84 (2020)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 153 No: 6 Abstentions: 25 Non-Voting: 9 Total voting membership: 193	
A_RES_74_75 (2019)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 152 No: 6 Abstentions: 24 Non-Voting: 11 Total voting membership: 193	
A_RES_73_83 (2018)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 158 No: 6 Abstentions: 21 Non-Voting: 8 Total voting membership: 193	
A_RES_72_67 (2017)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 157 No: 5 Abstentions: 20 Non-Voting: 11 Total voting membership: 193	
A_RES_71_83 (2016)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 157 No: 5 Abstentions: 22 Non-Voting: 9 Total voting membership: 193	
A_RES_70_70 (2015)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N

Yes: 157 No: 5 Abstentions: 20 Non-Voting: 11 Total voting membership: 193	
A_RES_69_78 (2014)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 161 No: 5 Abstentions: 18 Non-Voting: 9 Total voting membership: 193	
A_RES_68_65 (2013)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 169 No: 5 Abstentions: 6 Non-Voting: 13 Total voting membership: 193	
A_RES_67_73 (2012)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 174 No: 6 Abstentions: 6 Non-Voting: 7 Total voting membership: 193	
A_RES_66_61 (2011)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 167 No: 6 Abstentions: 5 Non-Voting: 15 Total voting membership: 193	
A_RES_65_88 (2010)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 172 No: 6 Abstentions: 8 Non-Voting: 6 Total voting membership: 192	
A_RES_64_66 (2009)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 167 No: 6 Abstentions: 6 Non-Voting: 13 Total voting membership: 192	
A_RES_63_84 (2008)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 169 No: 5 Abstentions: 6 Non-Voting: 12 Total voting membership: 192	
A_RES_62_56 (2007)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 170 No: 5 Abstentions: 7 Non-Voting: 10 Total voting membership: 192	
A_RES_61_103 (2006)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 166 No: 5 Abstentions: 6 Non-Voting: 15 Total voting membership: 192	
A_RES_60_92 (2005)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 164 No: 5 Abstentions: 5 Non-Voting: 17 Total voting membership: 191	
A_RES_59_106 (2004)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 170 No: 5 Abstentions: 9 Non-Voting: 7 Total voting membership: 191	
A_RES_58_68 (2003)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 162 No: 4 Abstentions: 10 Non-Voting: 15 Total voting membership: 191	
A_RES_57_97 (2002)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 153 No: 3 Abstentions: 8 Non-Voting: 22 Total voting membership: 191	
A_RES_56_27 (2001)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 153 No: 3 Abstentions: 6 Non-Voting: 27 Total voting membership: 189	
A_RES_55_36 (2000)	Australia: A Brazil: Y China: Y France: Y Russia: Y UK: Y US: N

Yes: 157 No: 3 Abstentions: 8 Non-Voting: 21 Total voting membership: 189	
A_RES_54_57 (1999)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 149 No: 3 Abstentions: 9 Non-Voting: 27 Total voting membership: 188	
A_RES_53_80 (1998)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 158 No: 2 Abstentions: 11 Non-Voting: 14 Total voting membership: 185	
A_RES_52_41 (1997)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 147 No: 2 Abstentions: 14 Non-Voting: 22 Total voting membership: 185	
Conclusion of effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons	
A_RES_78_18 (2023)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 123 No: 0 Abstentions: 62 Non-Voting: 8 Total voting membership: 193	
A_RES_77_39 (2022)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 120 No: 0 Abstentions: 60 Non-Voting: 13 Total voting membership: 193	
A_RES_76_21 (2021)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 126 No: 0 Abstentions: 59 Non-Voting: 8 Total voting membership: 193	
A_RES_75_34 (2020)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 125 No: 0 Abstentions: 62 Non-Voting: 6 Total voting membership: 193	
A_RES_74_31 (2019)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 122 No: 0 Abstentions: 64 Non-Voting: 7 Total voting membership: 193	
A_RES_73_29 (2018)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 125 No: 0 Abstentions: 58 Non-Voting: 10 Total voting membership: 193	
A_RES_72_25 (2017)	Australia: A Brazil: A China: Y France: A Russia: A UK: A US: A
Yes: 125 No: 0 Abstentions: 62 Non-Voting: 6 Total voting membership: 193	
A_RES_71_30 (2016)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 128 No: 0 Abstentions: 57 Non-Voting: 8 Total voting membership: 193	
A_RES_70_25 (2015)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 127 No: 0 Abstentions: 55 Non-Voting: 11 Total voting membership: 193	
A_RES_69_30 (2014)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 125 No: 0 Abstentions: 56 Non-Voting: 12 Total voting membership: 193	
A_RES_68_28 (2013)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 127 No: 0 Abstentions: 57 Non-Voting: 9 Total voting membership: 193	

A_RES_67_29 (2012)	Australia: A Brazil: Y China: NV France: A Russia: A UK: NV US: A
Yes: 126 No: 0 Abstentions: 57 Non-Voting: 10 Total voting membership: 193	
A_RES_66_26 (2011)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 120 No: 0 Abstentions: 57 Non-Voting: 16 Total voting membership: 193	
A_RES_65_43 (2010)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 119 No: 0 Abstentions: 58 Non-Voting: 15 Total voting membership: 192	
A_RES_64_27 (2009)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 118 No: 0 Abstentions: 58 Non-Voting: 16 Total voting membership: 192	
A_RES_63_39 (2008)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: N
Yes: 122 No: 1 Abstentions: 58 Non-Voting: 11 Total voting membership: 192	
A_RES_62_19 (2007)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: N
Yes: 121 No: 1 Abstentions: 56 Non-Voting: 14 Total voting membership: 192	
A_RES_61_57 (2006)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: N
Yes: 119 No: 1 Abstentions: 59 Non-Voting: 13 Total voting membership: 192	
A_RES_60_53 (2005)	Australia: A Brazil: A China: Y France: A Russia: A UK: A US: A
Yes: 120 No: 0 Abstentions: 59 Non-Voting: 12 Total voting membership: 191	
A_RES_59_64 (2004)	Australia: A Brazil: A China: Y France: A Russia: A UK: A US: A
Yes: 118 No: 0 Abstentions: 63 Non-Voting: 10 Total voting membership: 191	
A_RES_58_35 (2003)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 119 No: 0 Abstentions: 58 Non-Voting: 14 Total voting membership: 191	
A_RES_67_29 (2002)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 106 No: 0 Abstentions: 55 Non-Voting: 30 Total voting membership: 191	
A_RES_56_22 (2001)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 105 No: 0 Abstentions: 54 Non-Voting: 30 Total voting membership: 189	
A_RES_55_31 (2000)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 111 No: 0 Abstentions: 54 Non-Voting: 24 Total voting membership: 189	
A_RES_54_52 (1999)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 111 No: 0 Abstentions: 53 Non-Voting: 24 Total voting membership: 188	
A_RES_53_75 (1998)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 117 No: 0 Abstentions: 52 Non-Voting: 16 Total voting membership: 185	

A_RES_52_36 (1997)	Australia: A Brazil: Y China: Y France: A Russia: A UK: A US: A
Yes: 116 No: 0 Abstentions: 51 Non-Voting: 18 Total voting membership: 185	
Promotion of multilateralism in the area of disarmament and non-proliferation	
A_RES_78_26 (2023)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 130 No: 5 Abstentions: 50 Non-Voting: 8 Total voting membership: 193	
A_RES_77_48 (2022)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 127 No: 6 Abstentions: 49 Non-Voting: 11 Total voting membership: 193	
A_RES_76_40 (2021)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 134 No: 4 Abstentions: 51 Non-Voting: 4 Total voting membership: 193	
A_RES_75_47 (2020)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 130 No: 4 Abstentions: 51 Non-Voting: 8 Total voting membership: 193	
A_RES_74_55 (2019)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 127 No: 5 Abstentions: 51 Non-Voting: 10 Total voting membership: 193	
A_RES_73_41 (2018)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 128 No: 4 Abstentions: 52 Non-Voting: 9 Total voting membership: 193	
A_RES_72_48 (2017)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 130 No: 4 Abstentions: 51 Non-Voting: 8 Total voting membership: 193	
A_RES_71_61 (2016)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 132 No: 4 Abstentions: 50 Non-Voting: 7 Total voting membership: 193	
A_RES_70_31 (2015)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 129 No: 4 Abstentions: 50 Non-Voting: 10 Total voting membership: 193	
A_RES_69_54 (2014)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 131 No: 5 Abstentions: 49 Non-Voting: 8 Total voting membership: 193	
A_RES_68_38 (2013)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 127 No: 5 Abstentions: 52 Non-Voting: 9 Total voting membership: 193	
A_RES_67_38 (2012)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 132 No: 5 Abstentions: 50 Non-Voting: 6 Total voting membership: 193	
A_RES_66_32 (2011)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 125 No: 5 Abstentions: 48 Non-Voting: 15 Total voting membership: 193	
A_RES_65_54 (2010)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N

Yes: 129 No: 5 Abstentions: 49 Non-Voting: 9 Total voting membership: 192	
A_RES_64_34 (2009)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 122 No: 5 Abstentions: 49 Non-Voting: 16 Total voting membership: 192	
A_RES_63_50 (2008)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 126 No: 5 Abstentions: 50 Non-Voting: 11 Total voting membership: 192	
A_RES_62_27 (2007)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 123 No: 6 Abstentions: 51 Non-Voting: 12 Total voting membership: 192	
A_RES_61_62 (2006)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 120 No: 7 Abstentions: 51 Non-Voting: 14 Total voting membership: 192	
A_RES_60_59 (2005)	Australia: A Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 122 No: 8 Abstentions: 50 Non-Voting: 11 Total voting membership: 191	
A_RES_59_69 (2004)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 125 No: 9 Abstentions: 49 Non-Voting: 8 Total voting membership: 191	
A_RES_58_44 (2003)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 118 No: 12 Abstentions: 46 Non-Voting: 15 Total voting membership: 191	
A_RES_57_63 (2002)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: N US: N
Yes: 105 No: 12 Abstentions: 44 Non-Voting: 30 Total voting membership: 191	
Prevention of an arms race in outer space	
A_RES_78_19 (2023)	Adopted without a vote
A_RES_77_40 (2022)	Adopted without a vote
A_RES_76_22 (2021)	Adopted without a vote
A_RES_72_26 (2020)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 182 No: 0 Abstentions: 3 Non-Voting: 8 Total voting membership: 193	
A_RES_74_32 (2019)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 183 No: 2 Abstentions: 0 Non-Voting: 8 Total voting membership: 193	
A_RES_73_30 (2018)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 178 No: 2 Abstentions: 0 Non-Voting: 13 Total voting membership: 193	
A_RES_72_26 (2017)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 182 No: 0 Abstentions: 3 Non-Voting: 8 Total voting membership: 193	
A_RES_71_31 (2016)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A

Yes: 182 No: 0 Abstentions: 4 Non-Voting: 7 Total voting membership: 193	
A_RES_70_26 (2015)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 179 No: 0 Abstentions: 2 Non-Voting: 12 Total voting membership: 193	
A_RES_69_31 (2014)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 178 No: 0 Abstentions: 2 Non-Voting: 13 Total voting membership: 193	
A_RES_68_29 (2013)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 180 No: 0 Abstentions: 2 Non-Voting: 11 Total voting membership: 193	
A_RES_67_30 (2012)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: NV US: A
Yes: 183 No: 0 Abstentions: 2 Non-Voting: 8 Total voting membership: 193	
A_RES_66_27 (2011)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 176 No: 0 Abstentions: 2 Non-Voting: 15 Total voting membership: 193	
A_RES_65_44 (2010)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 178 No: 0 Abstentions: 2 Non-Voting: 12 Total voting membership: 192	
A_RES_64_28 (2009)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 176 No: 0 Abstentions: 2 Non-Voting: 14 Total voting membership: 192	
A_RES_63_40 (2008)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 177 No: 1 Abstentions: 1 Non-Voting: 13 Total voting membership: 192	
A_RES_62_20 (2007)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 178 No: 1 Abstentions: 1 Non-Voting: 12 Total voting membership: 192	
A_RES_61_58 (2006)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 178 No: 1 Abstentions: 1 Non-Voting: 12 Total voting membership: 192	
A_RES_60_54 (2005)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: N
Yes: 180 No: 2 Abstentions: 0 Non-Voting: 9 Total voting membership: 191	
A_RES_59_65 (2004)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 180 No: 2 Abstentions: 0 Non-Voting: 9 Total voting membership: 191	
A_RES_58_36 (2003)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 174 No: 0 Abstentions: 4 Non-Voting: 13 Total voting membership: 191	
A_RES_57_57 (2002)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 159 No: 0 Abstentions: 3 Non-Voting: 29 Total voting membership: 191	
A_RES_56_23 (2001)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A

Yes: 156 No: 0 Abstentions: 4 Non-Voting: 29 Total voting membership: 189	
A_RES_55_32 (2000)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 163 No: 0 Abstentions: 3 Non-Voting: 23 Total voting membership: 189	
A_RES_54_53 (1999)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 162 No: 0 Abstentions: 2 Non-Voting: 24 Total voting membership: 188	
A_RES_53_76 (1998)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 174 No: 0 Abstentions: 4 Non-Voting: 13 Total voting membership: 191	
A_RES_52_37 (1997)	Australia: Y Brazil: Y China: Y France: Y Russia: Y UK: Y US: A
Yes: 128 No: 0 Abstentions: 39 Non-Voting: 18 Total voting membership: 185	
No first placement of weapons in outer space	
A_RES_78_21 (2023)	Australia: N Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 127 No: 51 Abstentions: 6 Non-Voting: 9 Total voting membership: 193	
A_RES_77_42 (2022)	Australia: N Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 122 No: 50 Abstentions: 4 Non-Voting: 17 Total voting membership: 193	
A_RES_76_23 (2021)	Australia: N Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 130 No: 35 Abstentions: 20 Non-Voting: 8 Total voting membership: 193	
A_RES_75_37 (2020)	Australia: N Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 132 No: 34 Abstentions: 21 Non-Voting: 6 Total voting membership: 193	
A_RES_74_33 (2019)	Australia: N Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 128 No: 14 Abstentions: 38 Non-Voting: 13 Total voting membership: 193	
A_RES_73_31 (2018)	Australia: N Brazil: Y China: Y France: N Russia: Y UK: N US: N
Yes: 128 No: 12 Abstentions: 40 Non-Voting: 13 Total voting membership: 193	
A_RES_72_27 (2017)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 131 No: 4 Abstentions: 48 Non-Voting: 10 Total voting membership: 193	
A_RES_71_32 (2016)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 130 No: 4 Abstentions: 48 Non-Voting: 11 Total voting membership: 193	
A_RES_70_27 (2015)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 129 No: 4 Abstentions: 46 Non-Voting: 14 Total voting membership: 193	
A_RES_69_32 (2014)	Australia: A Brazil: Y China: Y France: A Russia: Y UK: A US: N
Yes: 129 No: 4 Abstentions: 46 Non-Voting: 17 Total voting membership: 193	

Convention on the Prohibition of the Use of Nuclear Weapons	
A_RES_78_55 (2023)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 120 No: 50 Abstentions: 14 Non-Voting: 9 Total voting membership: 193	
A_RES_77_82 (2022)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 116 No: 50 Abstentions: 15 Non-Voting: 12 Total voting membership: 193	
A_RES_76_56 (2021)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 125 No: 50 Abstentions: 13 Non-Voting: 5 Total voting membership: 193	
A_RES_75_75 (2020)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 120 No: 50 Abstentions: 14 Non-Voting: 9 Total voting membership: 193	
A_RES_74_68 (2019)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 118 No: 50 Abstentions: 15 Non-Voting: 10 Total voting membership: 193	
A_RES_73_74 (2018)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 124 No: 50 Abstentions: 13 Non-Voting: 6 Total voting membership: 193	
A_RES_72_59 (2017)	Australia: N Brazil: A China: Y France: N Russia: A UK: N US: N
Yes: 123 No: 50 Abstentions: 10 Non-Voting: 10 Total voting membership: 193	
A_RES_71_75 (2016)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 128 No: 50 Abstentions: 9 Non-Voting: 6 Total voting membership: 193	
A_RES_70_62 (2015)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 130 No: 48 Abstentions: 8 Non-Voting: 7 Total voting membership: 193	
A_RES_69_69 (2014)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 125 No: 50 Abstentions: 7 Non-Voting: 11 Total voting membership: 193	
A_RES_68_58 (2013)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 126 No: 49 Abstentions: 9 Non-Voting: 9 Total voting membership: 193	
A_RES_67_64 (2012)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 129 No: 49 Abstentions: 10 Non-Voting: 5 Total voting membership: 193	
A_RES_66_57 (2011)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 117 No: 48 Abstentions: 12 Non-Voting: 16 Total voting membership: 193	
A_RES_65_80 (2010)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 124 No: 49 Abstentions: 12 Non-Voting: 16 Total voting membership: 193	
A_RES_64_59 (2009)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N

Yes: 116 No: 50 Abstentions: 12 Non-Voting: 14 Total voting membership: 192	
A_RES_63_75 (2008)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 121 No: 50 Abstentions: 10 Non-Voting: 11 Total voting membership: 192	
A_RES_62_51 (2007)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 120 No: 52 Abstentions: 10 Non-Voting: 10 Total voting membership: 192	
A_RES_61_97 (2006)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 119 No: 52 Abstentions: 10 Non-Voting: 11 Total voting membership: 192	
A_RES_60_88 (2005)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 111 No: 49 Abstentions: 13 Non-Voting: 18 Total voting membership: 191	
A_RES_59_102 (2004)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 125 No: 48 Abstentions: 12 Non-Voting: 6 Total voting membership: 191	
A_RES_58_64 (2003)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 118 No: 46 Abstentions: 13 Non-Voting: 14 Total voting membership: 191	
A_RES_57_94 (2002)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: N
Yes: 110 No: 45 Abstentions: 12 Non-Voting: 24 Total voting membership: 191	
A_RES_56_25 [B] (2001)	Australia: N Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 104 No: 46 Abstentions: 11 Non-Voting: 28 Total voting membership: 189	
A_RES_55_34 [G] (2000)	Australia: N Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 109 No: 43 Abstentions: 16 Non-Voting: 21 Total voting membership: 189	
A_RES_54_55 [D] (1999)	Australia: N Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 104 No: 42 Abstentions: 17 Non-Voting: 25 Total voting membership: 188	
A_RES_53_78 [D] (1998)	Australia: N Brazil: Y China: A France: N Russia: A UK: N US: N
Yes: 111 No: 39 Abstentions: 22 Non-Voting: 13 Total voting membership: 185	
A_RES_52_39 [C] (1997)	Australia: N Brazil: Y China: Y France: N Russia: A UK: N US: Y
Yes: 109 No: 30 Abstentions: 27 Non-Voting: 19 Total voting membership: 185	

Source: Elaborated by the author using data from the United Nations Digital Library.

UNITED NATIONS DIGITAL LIBRARY Available at:

<https://digitallibrary.un.org/search?cc=Voting+Data&ln=en&c=Voting+Data>. Accessed on: 14.02.2025.

APPENDIX B – AUSTRALIA, BRAZIL AND THE TREATIES OF THE NWNPR

Date of Adoption	Open for signature	Entered into Force	Treaties	Brazil	
				Signature	Deposit
01.12.1959	01.12.1959	23.06.1961	Antarctic Treaty		16.05.1975 (Accession)
05.08.1963	08.08.1963	10.10.1963	Partial Test Ban Treaty	08.08.1963 Moscow London Washington	15.12.1964 (Moscow) 04.03.1965 (London) 15.01.1965 (Washington) (Ratification)
27.01.1967	27.01.1967	10.10.1967	Outer Space Treaty	30.01.1967 (Moscow) 02.02.1967 (Londres) 02.02.1967 (Washington)	05.03.1969 Moscow London Washington (Ratification)
14.02.1967	1967	For each State Party individually	Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean	09.05.1967	29.01.1968 (Ratification)
01.07.1968	01.07.1968	05.03.1970	Nuclear Non-Proliferation Treaty		18.09.1998 Moscow London Washington (Accession)
11.02.1971	11.02.1971	18.05.1972	Sea-bed Treaty	03.09.1971 Moscow Londres Washington	04.08.1988 (Moscow) 10.05.1988 (London) 10.05.1988 (Washington) (Ratification)
05.12.1979	18.12.1979	11.07.1984	Agreement Governing the Activities of States on the Moon and Other Celestial Bodies	Brazil did not sign	
1986	1985	1986	South Pacific Nuclear Free Zone Treaty	Does not apply to Brazil	
10.09.1996	24.09.1996	-	Comprehensive Nuclear-Test-Ban Treaty	24.09.1996	24.07.1998 (Ratification)
07.07.2017	20.09.2017	22.01.2021	Treaty on the Prohibition of Nuclear Weapons	20.09.2017	-

Source: Elaborated by the author using data from UNODA (2024).

UNODA. Disarmament Treaties. Available at: <https://treaties.unoda.org/treaties>. Accessed on: 14.02.2025.

Date of Adoption	Open for signature	Entered into Force	Treaties	Australia	
				Signature	Deposit
01.12.1959	01.12.1959	23.06.1961	Antarctic Treaty	01.12.1959	23.01.1961 (Ratification)
05.08.1963	08.08.1963	10.10.1963	Partial Test Ban Treaty	08.10.1963 Moscow London Washington	12.11.1963 Moscow London Washington (Ratification)
27.01.1967	27.01.1967	10.10.1967	Outer Space Treaty	27.01.1967 Washington	10.10.1967 Moscow London Washington (Ratification)
01.07.1968	01.07.1968	05.03.1970	Nuclear Non-Proliferation Treaty	27.02.1970 Moscow London Washington	23.01.1973 Moscow London Washington (Ratification)
11.02.1971	11.02.1971	18.05.1972	Sea-bed Treaty	11.02.1971 Moscow London Washington	23.01.1973 Moscow London Washington (Ratification)
05.12.1979	18.12.1979	11.07.1984	Agreement Governing the Activities of States on the Moon and Other Celestial Bodies		07.07.1986 (Accession)
1986	1985	1986	South Pacific Nuclear Free Zone Treaty	06.08.1985 South Pacific Forum	11.12.1986 South Pacific Forum
10.09.1996	24.09.1996	-	Comprehensive Nuclear-Test-Ban Treaty	24.09.1996	09.07.1998 (Ratification)
07.07.2017	20.09.2017	22.01.2021	Treaty on the Prohibition of Nuclear Weapons	Australia did not sign	

Source: Elaborated by the author using data from UNODA (2024).

UNODA. Disarmament Treaties. Available at: <https://treaties.unoda.org/treaties>. Accessed on: 14 Feb. 2025.

APPENDIX C – NAVAL NUCLEAR PROPULSION RECENT DEVELOPMENTS

Naval nuclear propulsion developments Brazil
10 December 2021
Brazil informed the Agency of its decision to initiate discussions with the Agency on an arrangement for Special Procedures for the use of nuclear material under safeguards in nuclear propulsion and in the operation of submarines and prototypes, in accordance with Article 13 of the Quadripartite Safeguards Agreement (QSA).
25 May 2022
Brazil provided the Agency with a “proposal of safeguards special procedures for the nuclear material for use in naval propulsion prototypes and in the conventionally armed nuclear powered submarine” in relation to the provisions of Article 13 of the QSA.
26 May 2022
Preliminary discussions between Brazil and the Agency were initiated. ABACC representatives also participated in these discussions. Brazil provided the Agency with general information on the nuclear submarine operation, facilities that would be involved in the programme, and what Brazil considers “classified and sensitive technology and information”. Brazil indicated the facilities that would be involved in the development of naval nuclear propulsion including a land-based prototype reactor and submarine, and provided its understanding of how safeguards under the QSA could be applied under the arrangement for Special Procedures. The Agency indicated that it would continue the technical consultations with Brazil to develop the required arrangement. The Agency also reiterated its commitment to protect related classified knowledge, as required by the QSA and the Agency’s regime for the protection of classified safeguards information
6 June 2022
The Director General informed the Board of Governors of Brazil’s proposal and the preliminary discussions with the Agency. He stated that for the Agency, the

non-proliferation aspects and the legal obligations of all concerned were central.
October 2022
The Agency held a second meeting with Brazil and visited relevant facilities upon Brazil's invitation. Brazil provided additional information regarding its proposal and on the relevant facilities. ABACC also participated in the meeting and the visits of the facilities.
November 2022
A third meeting was held at which the Agency presented a conceptual proposal of safeguards measures to be considered as part of the discussions on the arrangement under Special Procedures in relation to Article 13 of the QSA. The Agency's proposal was customized to protect information that Brazil considers sensitive, while maintaining a sound technical verification basis to enable it to provide assurances that nuclear material to be subject to the arrangement will not be diverted while it is used for nuclear propulsion or in the operation of the prototype reactor.
9 May 2023
The Agency sent a letter to ABACC reminding Brazil of its obligations under Article 40 of the QSA and the Subsidiary Arrangements (General Part) to the QSA to provide to the Agency the required early design information and updates, as appropriate, for planned facilities that will be involved in the naval nuclear propulsion programme of Brazil.
25 May 2023
The Agency received from Brazil through ABACC preliminary information related to the planned facilities of the naval nuclear propulsion programme Since the Director General's report in May 2023, the Agency, ABACC and Brazil held four meetings in Brazil and Vienna to continue technical discussions on possible safeguards measures for the land-based prototype reactor and on how classified and sensitive technology and information can be protected while applying such measures. The Agency also proposed possible technical measures to protect classified information related to the fuel to be used in the land-based prototype reactor and submarines.

February 2024
The Agency organized a workshop on ‘safeguards-by-design’ in Brazil for Brazilian regulators, facility designers and operators. The Agency highlighted the importance of taking safeguards into account when designing the facilities that would be involved in Brazil’s naval nuclear propulsion programme.
September 2024
<u>Brazil</u>, in response to requests by the Agency and ABACC, provided updated design information for the land-based prototype reactor. This information is essential for the Agency and ABACC to develop the safeguards approach for the facility. The Agency and ABACC have continued to conduct design information verification (DIV) at the land-based prototype reactor. As construction progresses and in order to protect sensitive information, the Agency, ABACC and Brazil developed a DIV procedure which was tested during the DIV conducted at the facility in September 2024.

Source: Elaborated by the author based on IAEA (2023; 2024).

INTERNATIONAL AGENCY OF ATOMIC ENERGY (IAEA). Board of Governors. (GOV/INF/2023/11). Naval Nuclear Propulsion: Brazil. Report by the Director General. 31 May 2023. [S.l.], 2023. Available at: <https://www.iaea.org/sites/default/files/documents/govinf2023-11.pdf>. Accessed in: 15 Jan. 2025.

INTERNATIONAL AGENCY OF ATOMIC ENERGY (IAEA). Board of Governors. (GOV/INF/2024/13). Naval Nuclear Propulsion: Brazil. Report by the Director General. 15 Nov. 2024. [S.l.], 2024. Available at: <https://www.iaea.org/sites/default/files/24/11/govinf2024-13.pdf>. Accessed in: 15 Jan. 2025.

Naval nuclear propulsion developments AUKUS/Australia
15 September 2021
Australia, the United Kingdom, and the United States informed the Director General of their decision to establish an enhanced trilateral security partnership called "AUKUS" and indicates that the first initiative under the partnership is a trilateral effort of 18 months to identify the optimal pathway to support Australia's acquisition of a conventionally armed, nuclear-powered submarine capability for the Royal Australian Navy. They also mentioned that as they work out the details of this cooperation, they would prioritize maintaining the strength of the nuclear non-proliferation regime and upholding Australia's strong non-proliferation record. Additionally, they indicated that they would remain engaged with the IAEA in the coming months.
16 September 2021
The Director General informed the Board of Governors that the Agency, in line with its statutory non-proliferation mandate, would engage with the three parties involved to consider any implications in the context of the application of Agency safeguards. The Director General recalled that under a CSA, a State undertook to accept Agency safeguards on all *nuclear material in all peaceful nuclear activities within its territory, under its jurisdiction or carried out under its control anywhere. He also noted the provision in the CSA regarding the non-application of safeguards to nuclear material to be used by States in a non-proscribed military activity. The Director General reiterated that the Agency would work with the interested parties on that complex, technical matter guided by its non-proliferation mission which would be observed, in accordance with both the Agency's statutory mandate and the CSA. Article 14 of INFCIRC/217, provides that if Australia intends to exercise its discretion to use nuclear material which is required to be safeguarded under the CSA in a nuclear activity which does not require the application of safeguards under the CSA, the procedures provided in paragraphs (a) – (c) of Article 14 shall apply. Australia informed the Agency, inter alia, that, with respect to its naval nuclear propulsion programme, it considers all relevant provisions of its CSA, including Article 14, and of its Additional Protocol6 (AP) to apply, as well as additional verification measures, which may include enhanced

transparency and access. In developing that approach, the Agency will protect the related classified information, as required in Australia's CSA and AP as well as the Agency's regime for the protection of classified safeguards information.

The Board of Governors authorized the Director General "to conclude and subsequently implement" all safeguards agreements submitted to it, including the CSA with Australia, the voluntary offer safeguards agreement (VOA) with the US (INFCIRC/288) and the VOA with the UK (INFCIRC/951). In accordance with the provisions set out in the above-mentioned safeguards agreements providing for cooperation between the parties to facilitate safeguards implementation, and based on longstanding Agency practice, the Director General has consulted and engaged with AUKUS members on the implementation of safeguards pursuant to their respective safeguards agreements in the context of naval nuclear propulsion under the trilateral partnership. The Agency regularly has such interactions on safeguards implementation matters with all States with safeguards agreements in force. The Agency's aim is to ensure that the safeguards measures and approach to be used in the context of naval nuclear propulsion under AUKUS will enable the Agency to attain the technical objectives established for Australia (GOV/2014/41, Section C.4 and C.4.1.). The Agency's capability to develop suitable verification measures and approach in the context of naval nuclear propulsion under AUKUS is enhanced by Australia having in force and implementing the AP.

*any source or any special fissionable material as defined in Article XX of the Statute (...). See Article 99.O. of INFCIRC/217.

November 2021

The Agency reminded the AUKUS members of their reporting obligations under their respective safeguards agreements and APs that could be of relevance to safeguards implementation in the context of Australia's naval nuclear propulsion programme. Specifically, the Agency reminded Australia that, in accordance with modified Code 3.1 of the Subsidiary Arrangements (General Part) to the CSA, it was required to provide early design information for any new facility as soon as it had decided to construct or authorize construction of such a facility, including in connection with its plans to acquire nuclear-powered submarines. Australia was also required, under its AP, to provide to the

Agency information on its general plans for the succeeding ten-year period relevant to the development of the nuclear fuel cycle (NFC), including NFC-related research and development activities, once these had been approved. The Agency also sent separate letters to the UK and the US reminding them of their reporting obligations under their respective VOAs and APs that could be of relevance to safeguards implementation in the context of Australia's naval nuclear propulsion programme.

January 2022

On January 31st, Australia informed the Agency that it had not yet decided whether to construct or authorize the construction of any nuclear facility related to the acquisition of nuclear-powered submarines. Australia reaffirmed its full commitment to meeting its obligations and commitments, including those related to reporting, under the NPT, CSA, associated Subsidiary Arrangements, and the AP.

On the same day the US informed the Agency that, due to the ongoing 18-month consultation period, it would provide necessary information or declarations to the Agency in a timely manner if any decisions or actions required it to do so under its obligations under the VOA and AP. The US also emphasized its awareness of its commitment to maintaining and strengthening the nuclear non-proliferation regime, as well as its obligations under the NPT, VOA, and AP, and assured that it would ensure appropriate transparency.

February, 2022

On February 1st, 2022, the UK informed the Agency that it had acknowledged the reporting requirements outlined in the VOA and AP. It affirmed its intention to fulfill these requirements and report to the IAEA as necessary. The UK also reiterated its strong commitment to maintaining the global nuclear non-proliferation regime and expressed its willingness to engage with the Agency on matters related to AUKUS.

March, 2022

On March 7th, 2022, the Director General informed the Board of Governors that in recent discussions with the Agency, the three involved parties had confirmed their understanding

of their obligations and their full commitment to meeting them as AUKUS progressed. He also noted that the first technical meeting had taken place between the three parties and the Secretariat's AUKUS team. Additionally, he emphasized that all parties were dedicated to upholding the highest standards of non-proliferation and safeguards.

May 2022

On May 10th, 2022, as part of its annual update of AP declarations for 2021, Australia submitted a declaration to the Agency regarding the AUKUS partnership. In this declaration, Australia reported that a framework had been established among the three partners for sharing and utilizing information related to naval nuclear propulsion, aimed at determining the optimal approach for acquiring conventionally armed, nuclear-powered submarines.

Australia also informed the Agency that, as of March 2022, it had neither conducted nor planned any activities listed in Annex I of the AP, nor had it transferred or planned to transfer any equipment or material listed in Annex II of the AP. Additionally, no decision had been made to construct or acquire a nuclear reactor or any other nuclear facility in connection with AUKUS. Australia further stated that it had no intention of undertaking nuclear material enrichment or nuclear fuel reprocessing in support of its nuclear-powered submarine program.

June, 2022

On June 6th, 2022, the Director General reported to the Board of Governors that since March 2022, two additional technical meetings had taken place between the three parties and the Secretariat's AUKUS team, with more meetings planned in the coming months. He also expressed approval of the engagement and transparency demonstrated by the three countries up to that point.

July 2022

On July 9th, 2022, during a visit to Australia, the Director General met with Prime Minister Anthony Albanese, who reaffirmed Australia's strong commitment to nuclear non-proliferation within the framework of AUKUS.

In a letter dated July 21, 2022, Australia, representing the AUKUS parties, informed the Director General that they were seeking an optimal pathway to developing a conventionally armed, nuclear-powered submarine capability for Australia. Australia outlined four key elements guiding their approach. First, regarding the nuclear fuel cycle, Australia confirmed that it would neither pursue uranium enrichment nor reprocessing for this initiative and had no plans to engage in nuclear fuel fabrication. Second, the plan involved Australia receiving fully assembled, welded power units, which would be designed to make the removal of nuclear material extremely difficult, rendering both the power unit and the submarine inoperable if tampered with. Additionally, the nuclear material inside these reactors would not be in a form that could be directly used in nuclear weapons without further chemical processing, which Australia lacked the facilities for and did not intend to acquire. Third, Australia stated that it was already engaging regularly with the IAEA to develop a verification approach ensuring that nuclear material from Australian nuclear-powered submarines would not be diverted. While the detailed verification process would take time to establish, Australia confirmed that it would be conducted under its CSA and AP. Fourth, Australia emphasized its commitment to working with the IAEA to strengthen and expand additional safeguards measures beyond the nuclear-powered submarine program to uphold international non-proliferation standards.

Since the Board of Governors' meeting in June, four additional technical meetings took place between the three parties and the Secretariat's AUKUS team.

The Agency acknowledges that since 2000, it has consistently concluded that all nuclear material in Australia has remained in peaceful activities (the "broader conclusion"). Additionally, Australia has met its reporting obligations under its CSA and AP, including those required by Modified Code 3.1 of the Subsidiary Arrangements to its CSA.

Based on the technical consultations and exchanges conducted so far, the Agency was satisfied with the level of engagement from the AUKUS parties. As discussions are still ongoing, the technical deliberations on appropriate verification measures and approaches remain open-ended and do not preempt the final decisions to be made and announced by the AUKUS parties.

March 2023

On March 13, 2023, Australia, the UK, and the US announced their phased approach to delivering conventionally armed, nuclear-powered submarines to Australia. Each phase will progress based on mutual commitments among the three nations. The first phase commenced in 2023, while the final phase is expected to begin in the early 2040s, with the delivery of the first Australian-built submarine to the Royal Australian Navy. The initiative aims to develop Australia's infrastructure, technical expertise, industry, and workforce necessary to build, maintain, and operate a sovereign fleet of such submarines. The parties also reaffirmed their ongoing consultations with the IAEA to establish a robust non-proliferation framework for the project.

On March 10, 2023, the Director General received separate communications from Australian Foreign Minister Penny Wong, and officials from the UK and the US regarding the announcement. In her message, Australia's Foreign Minister expressed the country's intention to initiate negotiations with the IAEA on an arrangement under Article 14 of Australia's CSA.

On March 14, 2023, the Director General released a statement regarding the previously mentioned announcement, highlighting several key points. He emphasized that all parties must fulfill their safeguards obligations in accordance with their respective safeguards agreements and APs with the Agency. Under Article 14 of Australia's CSA, the country is permitted to use safeguarded nuclear material for activities such as submarine nuclear propulsion, provided that an arrangement is established with the Agency.

This arrangement must strictly comply with the existing legal framework and, once finalized, will be submitted to the Board of Governors for consideration. Additionally, under their VOAs, the UK and the US are required to report any international transfers of nuclear material to NNWSs and, in accordance with their APs, must disclose the export of specific equipment listed in the APs.

The Director General reaffirmed that legal obligations and non-proliferation considerations remain a top priority. The Agency will continue to uphold its verification and non-proliferation responsibilities with impartiality, objectivity, and technical rigor. He further assured that the process will be conducted in a technically and legally sound manner,

strictly adhering to the Agency's statutory mandate and the safeguards agreements and APs of the involved parties.

The Agency reaffirmed that the legal obligations and non-proliferation aspects of the agreement are of utmost importance. It will maintain its verification and non-proliferation mandate with impartiality, objectivity, and technical rigor. The Director General assured that the process would be conducted transparently, strictly in accordance with the Agency's statutory mandate, as well as the CSA and AP between Australia and the IAEA.

On March 14, 2023, the Director General sent separate letters to the Prime Minister and the Minister for Foreign Affairs of Australia, stating that the Agency would guarantee a transparent process, strictly adhering to its statutory mandate, as well as the CSA and AP between Australia and the Agency.

On March 10, 2023, in compliance with modified Code 3.1 of the Subsidiary Arrangements (General Part) to the CSA, Australia provided the IAEA with preliminary design information for planned facilities associated with its naval nuclear propulsion program. It also expressed its willingness to allow the Agency to conduct a design information verification (DIV) and extended an invitation for a transparency visit to a naval base designated for the maintenance of nuclear-powered submarines.

May 2023

In May 2023, the Agency carried out activities in Australia related to the country's naval nuclear propulsion program. These included a technical visit to the designated naval base and a DIV at the declared site intended for future submarine construction. During this time, the Agency and Australia engaged in initial discussions on the technical aspects of an arrangement under Article 14 of Australia's CSA. They also explored potential verification and monitoring measures, including voluntary transparency initiatives related to the program. Additionally, the Agency met with senior Australian officials, who reaffirmed Australia's commitment to upholding its international nuclear non-proliferation obligations.

In line with Australia's CSA and AP, the Agency will develop a safeguards approach that accounts for the nuclear material and activities associated with Australia's naval nuclear propulsion program. The Agency will also ensure the protection of classified information,

as stipulated in Australia's CSA and AP and in accordance with its own safeguards information protection framework. The goal is to establish an arrangement and safeguards approach that will allow the Agency to achieve its technical safeguards objectives for Australia.

Also in May 2023, Australia submitted its annual update to the Agency under the AP and provided additional relevant details, in accordance with Article 2.a.(x) of the AP, regarding its future plans for the naval nuclear propulsion program.

May 2024

Australia submitted its annual update to the Agency under the AP, including additional details under Article 2.a.(x) regarding its future plans for the naval nuclear propulsion program. A subsequent update was provided in August 2024.

For a state with a CSA in place, before nuclear material subject to safeguards under the CSA becomes subject to an arrangement required under Article 14, the state is required to notify the Agency in advance of the expected transfer to the recipient state. This notification must include details such as the identification, expected quantity, and composition of the nuclear material and must be provided no later than the date on which the recipient state assumes responsibility for the material.

Bilateral consultations between the Agency and Australia regarding the structure and content of an Article 14 arrangement are ongoing. These discussions are guided by the provisions of the Agency's Statute, as well as Australia's CSA and AP. The focus includes provisions for advance notification, reporting, and verification before nuclear material enters an Article 14 arrangement. The aim is to ensure that the Agency continues to meet its technical safeguards objectives established for Australia, while maintaining the protection of classified information. Discussions also cover the conditions under which the Article 14 arrangement will apply, its duration, and the point at which safeguards under the CSA and AP will be reinstated once nuclear material is transferred from a non-proscribed military activity.

Additionally, as part of these bilateral consultations, the Agency and Australia are exploring the technical aspects and procedures necessary for potential verification and monitoring

activities. This includes the implementation of voluntary transparency measures related to Australia's naval nuclear propulsion program.

Further discussions between the Agency and Australia have also focused on defining the structure of the material balance area (MBA), the facility, and the site for the new naval nuclear propulsion-related facilities. In accordance with modified Code 3.1 of the Subsidiary Arrangements (General Part), Australia has already provided early design information for these planned facilities. Australia recognizes the importance of allowing Agency access to relevant locations both before and during the period in which the Article 14 arrangement will be in effect.

16 October 2024

Australia has announced plans to establish a unified Defence Precinct at the Henderson shipyard in Western Australia, which will serve as the hub for "depot-level maintenance and contingency docking" of its future conventionally armed, nuclear-powered submarines. Prior to this announcement, Australia provided relevant information to the Agency, aligning with its commitment to keeping the Agency informed about developments in this area. In accordance with the modified Code 3.1 of the Subsidiary Arrangements (General Part) to the CSA, Australia submitted updated preliminary design details to the Agency regarding the planned new facilities for its naval nuclear propulsion program.

The Agency continues to carry out activities in Australia related to the country's naval nuclear propulsion program, including complementary access and environmental sample collection. Additionally, it maintains oversight by monitoring open-source information and analyzing satellite imagery of the relevant declared sites in Australia.

Source: Elaborated by the author based on IAEA (2021; 2022; 2023; 2024).

INTERNATIONAL AGENCY OF ATOMIC ENERGY (IAEA). Board of Governors. (GOV/INF/2022/20). IAEA Safeguards in relation to AUKUS. Report by the Director General. 09 Sep. 2022. [S.I.], 2022. Available at: <https://www.iaea.org/sites/default/files/documents/govinf2022-20.pdf>. Accessed in: 15 Jan. 2025.

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INTERNATIONAL AGENCY OF ATOMIC ENERGY (IAEA). INFCIRC/963. Communication dated 15 September 2021 received from the Permanent Mission of the United States of America to Agency. 21 Sep. 2021. Available at: <https://www.iaea.org/sites/default/files/publications/documents/infcircs/2021/infcirc963.pdf>. Accessed in: 02 Mar. 2025.