Undersea Power: A Framework for Evaluating AUKUS

Submission to the AUKUS Public Inquiry

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by

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Acronyms and abbreviations

ACRONYM	MEANING
ADF	Australian Defence Force
AIP	Air Independent Propulsion
ANSTO	Australian Nuclear Science and Technology Organisation
ANU	Australian National University
ANZUS	Australia, New Zealand and United States Security Treaty
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASLCG	Australian Security Leaders Climate Group
ASW	Anti-Submarine Warfare
AUKUS	Australia–United Kingdom–United States security partnership
AUSCANS	Australian Universal Scheme for Community and National Service
AUV	Autonomous Underwater Vehicle
DSTG	Defence Science and Technology Group
HMAS	His Majesty's Australian Ship
HMS	His Majesty's Ship
IAEA	International Atomic Energy Agency
INTERFET	International Force East Timor
ITAR	International Traffic in Arms Regulations
JORN	Jindalee Operational Radar Network
NATO	North Atlantic Treaty Organization
RAN	Royal Australian Navy
RSL	Returned and Services League of Australia
SAR	Synthetic Aperture Radar
SDSC	Strategic and Defence Studies Centre
SME / SMEs	Small and Medium-sized Enterprise / Enterprises
SRF-West	Submarine Rotational Force–West
SSN	Conventionally armed, nuclear-powered attack submarine
SSN-AUKUS	AUKUS-designed nuclear-powered attack submarine
UK	United Kingdom
UKUSA	United Kingdom–United States of America Agreement
UNSW	University of New South Wales
US	United States
UAV	Unmanned Aerial Vehicle
UUV	Unmanned Underwater Vehicle
XLUUV	Extra-Large Unmanned Underwater Vehicle

Executive Summary

AUKUS – A Controversial & Consequential Choice. Five years after its announcement, the decision ranks among Australia's most consequential since the ANZUS Treaty in September 1951. Debate has been animated by its surprise spawning in 2021 and has since focused on critiques of acquisition of conventionally armed, nuclear-powered submarines (SSNs). Australians deserve clarity on cost, feasibility, workforce outcomes, sovereignty, nuclear stewardship and risk. Those questions are central to credibly assessing the partnership, but the scope is broader.

Changed Strategic Environment. Australia's security environment has deteriorated markedly in recent years, contributing to a broader poly-crisis characterised by coercive great-power competition, technological disruption, environmental stress and wider governance challenges. Assumptions supporting Australian defence policy since the 1990s—extended warning times, relatively uncontested maritime approaches and a stable regional balance of power—can no longer be relied upon. Retaining capability settings designed for an earlier strategic period also carries risk.

Technology & Geography Imperatives. Activities on or above the ocean's surface today are observable, and targetable. Beneath it, the picture is different. Advances in distributed sensing, autonomous systems and data fusion erode submarine stealth, but detection and concealment co-evolve. What remains is an asymmetry: a submarine that surfaces to snort is now exposed; one remaining submerged is not. Australia's geography meanwhile has not changed. As an island continent dependent on secure maritime access, Australia must operate across vast distances and contribute to a favourable regional balance of power. So, long-range, persistent and survivable undersea capability is important. Nuclear propulsion is costly, but it offers speed, endurance, stealth, reach and sustained presence that conventional submarines cannot match across distances Australia requires – even to operate around its shores. Accepting less capability imposes its own constraints and risks.

Bolstered Undersea Power is key. Changed conditions place greater weight on Undersea Power— the capacity to understand, protect and, if necessary, contest under the sea. It encompasses submarines, autonomous systems, seabed sensing, infrastructure protection, science and industry. That is the framework used here.

Institutionalising Cooperation. AUKUS reflects a continuation of Australia's established strategic trajectory, not a sudden departure from it. Cooperation with the UK and US extends over a century, spanning wartime operations, signals intelligence, joint operational planning and defence-technology collaboration. AUKUS institutionalises and extends accumulated trust; it did not invent allied integration.

Broader Capability Outcomes. Success should be measured by more than submarine delivery schedules. It should include development of a qualified workforce, sovereign sustainment, advanced manufacturing, participation in allied supply chains, expanded research cooperation and greater resilience. Where parts

of the program face delay, progress still portends significant gains. Without such development, Australia would remain more reliant on external industrial capacity, specialist expertise and supply chains over which it has limited, if any, control.

Regional Engagement. Australia must also deepen ties with Southeast Asian and Pacific neighbours. AUKUS must be accompanied by political transparency, compliance with non-proliferation obligations, and greater practical regional cooperation in maritime security and capacity-building. Australia is a middle power with an important regional role. AUKUS is best presented as a component of its commitment to a stable, open and largely rules-based order. Recent security pacts and deeper regional engagement suggest neighbours understand this.

Managing Risks. AUKUS is not without implementation and strategic risks. These must be weighed against risks of delay, capability loss, industrial dependence and reduced freedom of action. The submission recognises concerns about AUKUS. Implementation risks are real, but they do not demonstrate that abandoning AUKUS would produce a better outcome. Sustained public confidence can be strengthened by enhanced transparency, realistic contingency planning, sustained investment in Australian industrial capacity and measurable implementation benchmarks.

Strategic Agency. AUKUS should ultimately be judged by whether it strengthens Australian strategic agency – that is, Australia's capacity to make independent decisions with the industrial, technological, military and institutional capabilities to implement them. This is neither isolation nor complete self-sufficiency—both are unrealistic for a middle power like Australia. Nor is it unquestioning dependence on allies. It is prudent statecraft in pursuit of Australia's own long-term interests.

Deterrence and Risk of Entrapment. Australia must balance competing concerns: the risk of entrapment in a conflict not of its choosing, the risk of abandonment by a major ally, and the pursuit of deterrence through stronger national capability. Deeper alliance integration may reduce abandonment risk while also increasing Australia's exposure and challenge of avoiding a future regional conflict, the risk of which, it appears, reduces with greater deterrence. That integration also can enhance independent reach and regional influence. So, AUKUS involves accepting alliance entanglement in exchange for stronger deterrence, capability and strategic agency.

Commitment. Australia cannot afford another five lost years. Its commitment to AUKUS must be affirmed while bolstering workforce development, transparency, contingency planning and sovereign industrial planning. Its success depends on whether Australia emerges more capable and resilient. Australia should stick to AUKUS as it is a relatively coherent and achievable way to strengthen deterrence and sovereign defence capability in an age when Undersea Power is critical. Abandoning AUKUS would not remove risk; it would leave Australia exposed, managing the deteriorating strategic environment with lesser capabilities, industrial pathways, and alliance mechanisms. On the available evidence, the case for abandoning AUKUS has not been established.

AUKUS Public Inquiry Question Response Matrix

The Public Inquiry has framed six questions concerning submarine delivery, nuclear waste, Australian jobs and opportunity cost, China, sovereignty and national security. These are legitimate questions. This submission addresses each within a framework for evaluating AUKUS in a broader strategic and historical context, examining whether the partnership strengthens Australia's Undersea Power, national capability and strategic agency while managing the risks and obligations that accompany it.

Public Inquiry must answer	**Response in submission**	**Where addressed**
Will Australia ever receive the submarines we're paying for?	Australia's pathway to nuclear-powered submarines is difficult, but not implausible. The principal obstacles are industrial: US production rates, UK capacity, workforce shortages and the long lead times associated with nuclear shipbuilding. The submission therefore treats delay as a real possibility and argues for contingency measures, including Collins life-extension, Submarine Rotational Force–West (SRF-West), stronger Australian sustainment capacity and more disciplined trilateral delivery planning.	**Part 11** – *Introduction*; *The American Submarine Industrial Base*; *British industrial limitations and the AUKUS SSN Follow-on*; *Political Risk and Strategic Continuity*; *Potential Loss of Submarine Capability*; *Contingency Planning*; *Industrial Risks, Not Conceptual Ones*. **Part 14** – *Criterion Nine: Delivery Capability*.
Where and how will the high-level nuclear waste be stored?	If Australia operates nuclear-powered submarines, it must also accept responsibility for the waste they generate. The submission proposes a two-stage approach: secure interim storage after decommissioning, followed by permanent disposal in a deep geological repository. The challenge is not simply technical. Any future site will also require rigorous regulation, long-term stewardship, and legitimate arrangements with Traditional Owners and affected communities. .	**Part 12** – *Sovereign Capability Entails Sovereign Responsibility*; *Technical Requirements*; *It Will Take Time, but Australia Should Start Now*; *What the System Could Look Like*; *Land, Consent and Burden of Proof*; *Obligations*.

Public Inquiry must answer	Response in submission	Where addressed
How many real Australian jobs will this create and at what opportunity cost?	AUKUS will require a much larger Australian workforce across shipbuilding, engineering, science, advanced manufacturing, sustainment and related industries. The precise number of enduring jobs cannot yet be established with confidence. The more important measure is whether Australia emerges with skills, industrial depth and technological capability that endure beyond individual submarine milestones. The submission also recognises that AUKUS will compete for scarce labour, industrial capacity and public funding, and that these opportunity costs must be considered seriously.	**Part 1** – *Program Costs* **Part 7** – *Perspective 13: Barrie, Environmental Security and AUKUS*; *Perspective 16: Palazzo and the Character of Maritime Strategy*. **Part 10** – *Pillar I: Building National Capability*; *Industrial Mobilisation as National Strategy*; *What Pillar I Should Deliver*. **Part 11** – *British industrial limitations and the AUKUS SSN Follow-on*. **Part 13** – *Building Sovereign Industrial Capability*; *Universities, Science and the National Innovation System*; *What Pillar II Should Deliver*. **Part 14** – *Criterion Two: Industrial Sovereignty*; *Criterion Three: Scientific and Technological Capability*; *Criterion Four: Human Capital*.
Why are we joining the US to potentially go to war against China, our major trading partner?	AUKUS does not predetermine an Australian decision to fight China, nor does the submission assume that conflict is inevitable. Its purpose is to strengthen deterrence and Australia's capacity to shape its own strategic environment, thus making such a war less likely. Deeper trilateral military, industrial and intelligence integration also creates a genuine tension: in a major regional crisis, the political and strategic costs of remaining outside a US-led conflict may rise considerably. The submission treats that tension as one of the central tests of Australian strategic agency.	**Part 3** – *Beyond Great-Power Competition*. **Part 7** – *Perspective 6: White*; *Perspective 7: Roggeveen*. **Part 9** – *The Argument for Amelioration: Credible Deterrence and Agency*; *The Argument for Exacerbation: The Structural Dynamics of Entrapment*; *The Taiwan Variable: Autonomy vs. Alliance*; *Synthesizing amelioration and exacerbation*; *Deterrence – Theory, Practice and AUKUS*; *Weighing Capability and Intent*; *Entanglement Accepted for Deterrence*.

Public Inquiry must answer	Response in submission	Where addressed
Will AUKUS jeopardise our sovereignty?	AUKUS creates deeper interdependence with allies, and therefore some risk of dependence and entrapment, but it may also strengthen Australian sovereignty if that integration builds rather than substitutes for national capability. The submission argues that sovereignty is not measured simply by whether Australia can formally say yes or no. It also depends on whether Australia possesses the military, industrial, scientific and institutional capability to give effect to its own decisions. This is the paper's concept of **strategic agency**.	**Part 1** – *Framing the Public Debate*; *Central Propositions*; *Analytical Framework*. **Part 9** – *Abandonment, Entrapment or Deterrence?*; *The Taiwan Variable: Autonomy vs. Alliance*; *Entanglement Accepted for Deterrence*. **Part 10** – *Strategic Agency Through Alliance*. **Part 11** – *Alliance Dependence and Strategic Agency*. **Part 14** – *Strategic Agency as the Principal Measure*. **Part 15** – *Strategic Agency*.
Will AUKUS make us safer — or turn us into a nuclear target?	AUKUS is intended to make Australia harder to coerce by increasing its ability to operate at long range, remain concealed, gather intelligence and deny an adversary freedom of action. That is the deterrence argument. The submission also acknowledges the other side of the equation: SRF-West and associated infrastructure increase Australia's strategic importance and may make it a more significant military target in a future conflict. The issue is therefore not whether exposure disappears, but whether the additional deterrence and defensive capability outweigh that increased exposure. The submission concludes that they do.	**Part 6** – *The Strategic Functions of Undersea Power*; *Why Range and Persistence Matter*; *Why Nuclear-Powered Submarines Form the Core of the Future Force*. **Part 9** – *The Argument for Exacerbation: The Structural Dynamics of Entrapment*; *The Targeting Problem*; *Deterrence – Theory, Practice and AUKUS*; *Entanglement Accepted for Deterrence*. **Part 14** – *Criterion One: Operational Capability*; *Criterion Seven: National Resilience*.

Part 1. Introduction: AUKUS as Australia's largest strategic capability-building enterprise since 1945

The announcement of the Australia–United Kingdom–United States (AUKUS) partnership in September 2021 immediately attracted intense and understandable public and political attention. Parliament was not involved in the decision, the public was not consulted, and some regional neighbours noted the announcement was being made without consultation. As a result, AUKUS has suffered from a lack of social license – as the AUKUS inquiry demonstrates. Much of the subsequent debate has revolved around the question of whether Australia should acquire conventionally armed, nuclear-powered submarines. Questions of cost, delivery schedules, industrial capacity, alliance politics, nuclear stewardship and relations with China have also dominated public discussion. These are important issues, and they deserve scrutiny. They are central to any credible assessment of the partnership, but they do not capture the full scope of the Program and its implications.

These concerns are not peripheral to the AUKUS debate. They affect whether Australians can have confidence that the partnership will be delivered responsibly, strengthen national capability, preserve sovereign decision-making and improve Australia's security. This submission therefore treats these as matters to be tested through evidence, governance and measurable outcomes rather than reassurance alone. That assessment also requires AUKUS to be considered in its full strategic context.

AUKUS is not simply a submarine acquisition program. It is a long-term strategic partnership encompassing defence capability, industrial capacity, scientific and technological cooperation, workforce development, intelligence collaboration and institutional reform. This submission therefore evaluates AUKUS not only by whether submarines are delivered, but by whether the partnership strengthens Australia's undersea power, national capability and strategic agency over the coming decades.

Program cost

On cost, much attention has focused on the figure of $368 billion over 30 years, which reflects a 50% contingency figure on the more conservative figure of $244 billion. Divided over 30 years, that would be $8.1-$12.3 billion per year. Meanwhile, overall spending for 2026-27 is estimated to be $60 billion by Defence. Assuming no change, that amounts to $1800 billion or $1.8 trillion over thirty years. To be fair, we should compare like with like. While estimates are hard to confirm because government accounting methodologies are multifaceted and sometimes opaque, the Australian Commonwealth government's estimated annual expenditure for 2026-27 is $770 billion. That covers health, welfare, education, disability insurance, governance, foreign aid, infrastructure investments and more. Assuming no change, that would see the Australian federal government spend $23.1 trillion over thirty

years. In that context, $244-$368 billion seems a reasonable investment in what is widely seen as the apex predator of the seas – a concept discussed below.

Comprehensive partnership

The prominence of the submarine debate also has obscured a broader strategic reality. AUKUS is not merely a submarine acquisition program. It is a comprehensive strategic partnership involving a capability program intended to transform Australia's capacity to create, sustain and employ advanced military capability over coming decades. The fact that this was not debated in parliament before a decision on AUKUS was reached is regrettable but does not detract from this phenomenon. The reality is that the submarine enterprise is only one part of a larger undertaking that builds on decades of history and encompasses advanced technologies, defence industrial integration, intelligence cooperation, scientific collaboration, workforce development, and institutional reform. Viewed in this broader context, AUKUS is Australia's most ambitious strategic capability-building enterprise since the mobilisation of the Second World War.

As naval historian Sean Andrews argues, Australia has long understood that it cannot secure its sea-lanes alone. It has always aligned with major maritime powers to ensure Australian interests are embedded in their strategic calculations. That logic remains sound. This submission argues that the Inquiry should assess AUKUS through this wider lens. The central question is not whether every milestone in the Optimal Pathway will be achieved precisely according to schedule. Large defence programs rarely proceed exactly as planned. The Inquiry is right to examine whether the Optimal Pathway can be delivered, whether its costs are sustainable and whether its strategic risks are acceptable. Those questions should also be considered within the larger question of whether AUKUS provides Australia with a credible means of strengthening its long-term security, technological capability, national resilience and strategic agency. No major national security undertaking is. Instead, the right question is whether AUKUS is the most credible and strategically advantageous means of strengthening Australia's long-term security, technological capability and national resilience in the strategic circumstances the nation now confronts. This submission concludes that it does.

Changed circumstances

Australia's strategic circumstances have changed profoundly during the past decade. The optimism that characterised much of the immediate post-Cold War era has given way to renewed geopolitical competition, even faster military modernisation, economic coercion, technological rivalry and growing uncertainty about the future regional balance of power. Strategic warning times have shortened considerably, while developments in cyber capabilities, space systems, autonomous technologies and precision strike have altered the character of military competition without diminishing the importance of maritime power. Australia must therefore prepare for a future that is likely to be more contested, more technologically sophisticated and less

predictable than the one that shaped defence planning during the final decades of the twentieth century.

Surface transparency

Ease of monitoring surface activity has increased dramatically. When the Collins Class diesel-electric submarines were first commissioned in 1996, only the United States had almost pervasive satellite coverage that could assist in detecting submarines that had surfaced or simply exposed their snort mast and generated a bow wave effect from cutting through the waves. Today Australia's submarines face almost saturation low earth orbit Chinese satellites. This can be coupled with thirty-plus years of pattern analysis, watching where Australian submarines go and where and when they surface to recharge their batteries. When coupled with the proliferation of long range and armed drones, as well as increased use of artificial intelligence for anomaly detection, it has become almost impossible for a diesel electric submarine to hide in the Indian Ocean. Transiting from Perth to, say, Darwin (or any other Australian port), takes a dozen or more 'snorts' – that is the action required to bring the snort mast above the waterline to allow the diesel engines to be turned on to charge the batteries. That 'loiter' time on the surface is now detectable to a degree where survival in a conflict becomes a highly risky proposition. The only way around the problem is to stay underwater. The only way to do that for long transits between Australian ports like Perth and Darwin is to use nuclear propulsion.

Subsurface enduring opacity

The oceans under the sea remain opaque. My late colleague Roger Bradbury claimed that the era of the "stealthy" submarine is approaching its end due to the convergence of multiple, rapidly evolving technologies. Bradbury argued that the integration of many technologies will make the seas transparent. These include advances in autonomous underwater vehicles (AUVs), persistent sensor networks, quantum sensing, satellite imagery, and high-performance computing (using artificial intelligence and machine learning), which are creating a system of systems. That is reinforced by data fusion, drawing together vast amounts of disparate data—acoustic, magnetic, thermal, and visual—to track targets. He suggested this shift is likely to reach a critical threshold by 2050, potentially rendering current stealth-based nuclear deterrence strategies obsolete. This, however, is an incomplete argument.

Critics point out that transparency in a laboratory setting differs greatly from operational reality. The disappearance of Malaysian Airlines flight MH370 in the Southern Indian Ocean illustrates the difficulty of the tyranny of the ocean. Unlike an aircraft, a submarine's entire design is focused on minimizing its physical, acoustic, and electromagnetic signatures. Naval experts also argue that submarine warfare is a perpetual game of cat and mouse. As detection technology improves, so does stealth technology. Quieting technologies, advanced hull coatings, and new operational tactics (such as deep lurking or operating in high-noise environments) have historically kept pace with, or stayed ahead of, sensor development. The

ocean's size reinforces the challenge. The ocean is vast, deep, and acoustically chaotic. Critics argue that even with advanced sensor networks, the ocean's noise floor—biological sounds, geological activity, and surface weather—creates a natural camouflage that is incredibly difficult to pierce consistently, especially against a target actively trying to remain hidden.

The proliferation of satellite surveillance capabilities is a significant challenge for conventional submarines. Still, strategists tend to be more concerned about the array of sensors China is developing in the underwater Great Wall. That is seen as the real threat to SSNs in the western Pacific. A sensor-saturated ocean requires massive infrastructure (underwater cables, buoys, satellites). In a high-intensity conflict, these networks would be prime targets for an adversary. A sensor network that is destroyed or degraded early in a conflict does not provide undersea transparency.

In short, while Bradbury provides a compelling technological forecast of the *potential* for transparency, implementing such a system faces massive hurdles related to the physics of the ocean, the ingenuity of submarine design, and the vulnerability of the very networks required to create that transparency. Such thinking also has not slowed the manufacture of submarines by many countries in the Indo-Pacific region, not the least of which is China.

Constancy of geography

At the same time, Australia's geography remains remarkably constant. As an island continent situated between the Indian and Pacific Oceans, Australia's prosperity and security continue to depend upon secure maritime access, freedom of navigation and the maintenance of a stable regional order. Geography still imposes the same fundamental operational realities that confronted Australian planners during the Second World War, the Cold War and the decades that followed. Distances remain vast. Maritime approaches remain extensive. Sea lines of communication remain indispensable. While emerging technologies continue to reshape warfare, they have not abolished the strategic significance of geography. Australia's defence policy must therefore continue to reflect the demands of its location and evolving military technology.

Historical context

Understanding AUKUS also requires an appreciation of history. Public commentary often treats the partnership as though it appeared suddenly in response to China's military rise or the strategic anxieties of the early 2020s. Such interpretations underestimate the extraordinary depth of cooperation that has developed among Australia, the United Kingdom and the United States over more than eight decades. Intelligence sharing, scientific collaboration, operational planning and advanced defence technology cooperation have evolved progressively since the Second World War, creating an unparalleled level of strategic trust. The decision by the United States and United Kingdom to share naval nuclear propulsion technology with

Australia should therefore be understood not as a revolutionary departure but as the culmination of a long, iterative, historical process in which Australia has consistently shown itself to be one of their most trusted strategic partners.

This historical perspective (explored in Part 2 below) also helps explain why predictions of AUKUS' imminent collapse have proved wrong. Political leadership changes inevitably cause uncertainty. Governments differ in their priorities, budgets and styles of diplomacy. Nevertheless, the institutions underpinning Australia–United Kingdom–United States cooperation have consistently demonstrated resilience across successive administrations because they are founded upon enduring convergences of strategic interest rather than temporary political convenience. That observation does not imply that AUKUS is guaranteed to succeed. It does suggest, however, that assessments of its prospects should focus less upon individual political personalities and more upon the structural interests that continue to bind the three countries together.

Vigilance and determination

Support for AUKUS should not, however, be mistaken for strategic complacency. The program faces substantial implementation challenges. The industrial capacity of the United States submarine enterprise remains under considerable pressure. Australia faces acute shortages of highly specialised engineers, nuclear-qualified personnel and skilled tradespeople. The cost of the program is substantial and will require sustained bipartisan commitment across successive decades. Regional diplomacy will remain crucial if Australia is to reassure neighbours regarding nuclear stewardship and strategic stability. Furthermore, governments must prepare contingency plans should elements of the agreed pathway be delayed or require adjustment. Recognising these challenges does not weaken the case for AUKUS; rather, it strengthens the case for more disciplined implementation and more transparent governance.

Framing the public debate

A central argument of this submission is that the questions shaping public debate are important, but incomplete when considered in isolation. Critics ask whether Australia is becoming too dependent upon the United States. Supporters sometimes respond by emphasising the strength of the alliance. Both perspectives contain elements of truth, yet neither fully captures the strategic purpose of AUKUS. The more important question is whether Australia is increasing its strategic agency.

Viewed through this lens, AUKUS should not be understood as a choice between alliance and sovereignty. Instead, it is an attempt to strengthen Australian sovereignty by expanding the capabilities that make meaningful sovereign decision-making possible. Sovereignty depends not on rhetorical assertions of independence but on possession of credible military capability, resilient industrial capacity, technological sophistication, secure supply chains, effective intelligence, and highly

skilled people. Alliances may help such assets, but they cannot substitute for them. And the assets, however valuable, cannot replace the strategic advantages and opportunities, often unlooked for and unexpected, and sometimes priceless, which are created and nurtured only by trusted and longstanding alliances.

Central propositions

The submission therefore advances the propositions that:

1. AUKUS Pillar I is Australia's largest strategic capability-building enterprise since 1945 – a focus on just one aspect of it, the submarine acquisition program, has caused the scale, importance and history of the enterprise to be overlooked.
2. AUKUS is the latest stage in a long historical evolution of intelligence, technological and military cooperation among Australia, the United Kingdom and the United States rather than a sudden or unprecedented departure from it.
3. AUKUS is creating an interdependent capability system, where each country's ability to deliver depends to an extent on the industrial capacity, workforce, technology and performance of the other two.
4. AUKUS's success should ultimately be judged by whether it strengthens Australia's strategic agency to act in the national interest.
5. Investment in AUKUS has a positive spillover effect on Australia's influence in the Pacific and beyond, which is not to be underestimated considering the forces driving the poly-crisis.

Analytical framework

The partnership's main legacy will not be the number of submarines eventually commissioned into the Royal Australian Navy. It is largely an economic and broader security one: will Australia emerge with a stronger industrial base, a more highly skilled workforce, deeper technological expertise, more resilient defence supply chains, greater capacity for innovation and a stronger ability to protect and advance its national interests. The legacy is also about stronger relationships, not only between the AUKUS partners, but between them and others, particularly in Australia's own region.

These propositions provide the analytical framework for the remainder of this submission. The parts that follow examine the strategic environment confronting Australia, the historical origins of AUKUS, the operational rationale for a long-range undersea capability, the principal criticisms levelled against the partnership, and deterrence. It also addresses the risk of entrapment. The paper also then considers the implications of American industrial and political developments, and the importance of sustained regional diplomacy. Throughout, the objective is not to defend AUKUS uncritically, but to assess how Australia can maximise the strategic benefits while managing its undeniable risks.

Part 2. The historical foundations of AUKUS (1941–2025): Five waves of Australia–UK–US strategic integration

This historical context is relevant to the Inquiry because questions of sovereignty, alliance dependence and strategic risk cannot be assessed as though AUKUS emerged in isolation in 2021.

AUKUS as the latest stage of a long strategic evolution

A persistent misconception surrounding AUKUS is that it represents a sudden departure in Australian strategic policy—a dramatic realignment prompted by China's rise or by deteriorating regional security conditions. Such interpretations underestimate both the depth and the longevity of Australia's strategic relationships with the United Kingdom and the United States. They also overlook more than eight decades of intelligence, military, scientific, and technological cooperation among the three countries on which AUKUS is built.

Rather than viewing AUKUS as an isolated policy innovation announced in September 2021, it is more appropriate to understand it as the culmination of a long historical process. Since before the Second World War, successive Australian governments have deepened cooperation with trusted partners while enhancing Australia's own capacity to defend its national interests. The process has been neither linear nor without disagreement. Yet, viewed over the longer term, a clear pattern emerges. Australia–United Kingdom–United States cooperation has evolved through five successive waves, each characterised by deeper strategic integration. Each wave was shaped by changing geopolitical circumstances and technological developments, while simultaneously laying the foundations for the next.

This historical perspective is important because it demonstrates that AUKUS did not create strategic trust between the three nations; rather, it institutionalises and extends trust accumulated over decades of collaborative operational experience, shared sacrifice and mutual dependence.

First Wave: First World War precursors

The US Great White Fleet visited Australia with its suite of battleships and battle cruisers on its round-the-world cruise in 1908. Greeted very warmly, American navy personnel looked on Australia more concerned with potential challenges that might arise from operating in Australian waters in wartime. The overlap of interests that would prove enduring for generations in the twentieth century and beyond was not yet apparent.

Indeed, when the Royal Australian Navy was established (partly inspired by that visit), the principal warships were battleships and battle cruisers. These were the ‘apex predators’ at sea. In Australia’s case, His Majesty’s Australian Ship (HMAS)

Australia was purchased and built with a view to outgun the nearest perceived threat – that of the Imperial German East Asia Squadron based at Tsingtao in China. Evidently, that squadron was not prepared to take its chances up against HMAS Australia and fled across the Pacific, before rounding Cape Horn and meeting its fate when Royal Navy sister ships of HMAS Australia were instrumental in its defeat at the Battle of the Falklands in December 1914.

Back then, submarines were a nascent capability, but they were already recognised as an important part of the nation's ability to exercise maritime power. Australia's first two submarines, AE1 and AE2, purchased from Britain, were deployed in pursuit of Australia's interests in the early days of the First World War. These submarines did not survive the war, and halting additional efforts were made to pursue more submarines while Britain remained the main security guarantor. With the United States joining the Allied cause from 1917 until the war's end, collaboration was civil and practical, but minimal for Australia. Nonetheless, this was an important precursor to what can be described as the second wave of three-way integration which took place during the Second World War.

Second Wave: Wartime operational and intelligence integration, 1941–1945

This second wave emerged from the existential pressures of the Second World War and the advent of new technologies that changed the focus of defensive measures and enhanced the ability to detect and respond to threats. Prior to 1941, Australia's defence planning centered on support for and reliance on the British Empire. That included reliance on the empire's network of undersea cables. Axis undersea cables were cut (as they were at the outset of the First World War a generation earlier), and allied undersea cable landing points were carefully protected while the cables were vigilantly surveilled.

Some see the defeat in Singapore in February 1942 as a point of betrayal by Britain. This is an unfair characterization. In addition to substantial ground and air forces, Britain sent its best warships His Majesty's Ship (HMS) Prince of Wales and Repulse, which were sunk. It also deployed an aircraft carrier, which broke down in Ceylon (now Sri Lanka). This was all while Britain was still fighting Nazi Germany and Fascist Italy. Meanwhile Australia had spent the inter-war years studious avoiding tough decisions about defence expenditure.

The lesson for Australia, therefore, is not that allies aren't helpful, but that a self-reliant nation must seek to build more of its own necessary military capabilities. That lesson became more urgent as Japan's advance transformed the regional balance and exposed the limits of Australia's existing defence posture.

The rapid Japanese advances across Southeast Asia reinforced this trend, fundamentally altered Australia's strategic circumstances, and accelerated

cooperation with both Britain and the United States – particularly over submarines. While not yet seen as the apex predator, their role in the war would expand.

The pain of defeat in Singapore was reinforced by undersea attacks by Japanese submarines that infiltrated Sydney Harbour in May 1942 which struck HMAS Kuttabul, killing 21 sailors. Meanwhile Australia's security was being decided by battles in the Coral Sea (off the coast of Townsville), the fighting in the Solomon Islands (notably Guadalcanal), the Battle of Midway in the northern Pacific and in and around what is now Papua New Guinea. These battles were on, or relatively close to, the Australian mainland and had a direct and tangible effect on the nation's security.

Evolving technology changed dynamics substantially as well. Initially, Radar was one step away from a laboratory experiment. By 1944 Radar would be retrofitted to hundreds of warships for multiple tasks, all with trained people, new procedures, and equipment to the extent that the Royal Navy could find and sink a German battlecruiser off North Cape at night in the middle of winter and a storm, barely sighting the German ship at all. This effectively ended the era of the battleship as the apex predator at sea. Thereafter, aircraft carriers played dominant roles. The battles of the Coral Sea, Midway and beyond illustrated this ascendancy.

By 1943, Cockburn Sound, just south of Perth, where the current submarine facilities are located, became the largest wartime Allied submarine base in the Indian Ocean – second only to Pearl Harbor. At its peak in 1944, about 50 US submarines were based there, and a total of 170 Allied submarines transited through. These vessels roamed the waters of the Indian Ocean and up into the archipelago of modern-day Indonesia, Malaysia and Singapore.

Meanwhile, Australian prisoners of war played a key role in building the Thai Burma Railway under brutal conditions. Today, the Hellfire Pass Memorial is the site of Anzac Day Dawn ceremonies. That railway had to be built, their captors reckoned, because ships could not make safe passage transiting through the Malacca Strait into the Bay of Bengal to reinforce and resupply their forces in Burma. That safe passage was made impossible because of the submarines operating from Cockburn Sound. The deterrent effect of a substantial submarine capability based at Cockburn Sound has enduring resonance.

Australian, British and American forces fought as close coalitions across the Pacific and Southwest Pacific theatres and beyond. Operational planning, logistics, naval operations, air power and intelligence became progressively intertwined as the demands of modern coalition warfare demanded unprecedented levels of coordination.

One legacy of this period was the development of highly classified signals intelligence cooperation. Australian cryptographers, linguists, and intercept operators participated in Allied code-breaking efforts against Imperial Japan. Intelligence sharing, once highly restricted, became routine among trusted partners. These

wartime experiences demonstrated not only the operational value of shared intelligence but also the importance of institutional trust in managing highly sensitive information.

The wartime partnership also reshaped Australia's strategic outlook. While Britain remained an important partner, the United States became the dominant Pacific power. Australia's security would increasingly depend upon maintaining close relationships with both nations. The habits of cooperation established during the war created institutional relationships that survived long after hostilities ceased. Perhaps most importantly, this wave established a principle that underpins AUKUS today: that the sharing of highly sensitive capabilities is possible only where profound trust has already been established.

Finally, on the second wave, the experience in the Second World illustrates that Australia’s recurring strategic dilemma is not isolation versus alliance. It is how an isolated continent obtains the protection of a great power without becoming so dependent that Australian strategic choices cease to be genuinely Australian. This would be the ongoing challenge for Australia policymakers during the waves that followed.

Third Wave: Cold War institutionalisation, 1945–1991

The conclusion of the Second World War did not diminish strategic cooperation; rather, in effect, it institutionalised it. The onset of the Cold War fundamentally altered the international security environment. Intelligence collection, technological competition and nuclear deterrence became central features of strategic competition. Australia became part of the developing Western security architecture – which is evidence of Australia’s emergence as a middle power.

At this time, the apex predator was the aircraft carrier. Australia acquired two of them – HMAS Melbourne and HMAS Sydney. HMAS Sydney saw action during the Korean War in support of the coalition efforts under a United Nations mandate on the Korean peninsula.

Several institutions created during this period remain among the most significant pillars of Australian national security. The 1951 ANZUS Treaty formalised Australia's defence alliance relationship with the United States and the UKUSA Agreement institutionalised signals intelligence cooperation among the English-speaking allies, eventually evolving into what is now known as the Five Eyes partnership.

Yule and Woolner note in *The Collins Class Submarine Story* that in 1959 the Australian Chiefs of Staff Committee looked at the value of nuclear submarines and decided they were not yet needed, until either Indonesia or China had nuclear submarines and advanced anti-submarine capabilities, or the price substantially came down, given they assessed a nuclear submarine was twice as capable and enduring as a conventionally powered option. Instead, they purchased four Oberon diesel-electric submarines from Britain in the mid-1960s.

As Peter Scott illustrates in *Running Deep,* these submarines roamed far and wide, making routine port visits around Australia's coast and into Southeast Asian waters and beyond. Indeed, Southeast Asian waters have been patrolled from Australian ports for generations, going back to the First World War. The work of the Oberons, and subsequently the Collins, continued this practice. These deployments were often closely deconflicted with the UK and US counterparts. As an aside, the argument that the SSNs would be unusual and set new precedents by ranging far and wide in Asian waters is an ahistorical assertion.

Apart from a few platforms like the Oberons, the 1960s saw Australia largely pivot from British-derived defence equipment, procedures and systems to those from the United States. The establishment of joint intelligence and communications facilities across Australia took place in the mid-1960s. This included the Joint Defence Facility Pine Gap, which Clare Birgin and I wrote about in *Revealing Secrets.* It also included the Naval Communication Station Harold E. Holt and other sensitive installations that became part of allied strategic warning, satellite intelligence, missile verification and communications networks. This was because of what my late colleague, Des Ball said of Australia – it was a *Suitable Piece of Real Estate*.

Indeed, part of the impetus for the United States' heightened defence integration with Australia is because of the renewed geostrategic significance of Australia as that suitable piece of real estate. As Lieutenant General (Ret'd) Peter Leahy observed recently, 'The Yanks Are Coming'. They see Australia as sitting in a geostrategic sweet spot. Australia offers distance from China's missile envelope, proximity to the operational theatre, and a stable, aligned territory.

These arrangements were never simply expressions of dependence. Australia contributed its geography, skilled personnel, political reliability and operational capability. Successive governments judged that Australia's national interests were enhanced by participation in these arrangements while retaining sovereign decision-making authority over Australian policy. Coral Bell rightly argued that Australia was a *Dependent Ally*, dependent on its great and powerful friends for much equipment and support. Conversely, Shannon Tow also was correct to assert that Australia remained an *Independent Ally.* Critics may argue Australia frequently followed the lead of its bigger partner, but Tow observes that Australian cabinets consistently weighed their own assessments of choices to consider what was in Australia's national interests.

By the conclusion of the Cold War, Australia had become one of the United States' most trusted intelligence partners. Intelligence sharing had evolved from an operational necessity to a strategic institution. With the retirement of the two aircraft carriers, submarines came to be recognised as the key naval asset to be able to project maritime power. It was with this in mind that, as the Oberons were approaching their end of life, the Hawke government commissioned the manufacture of six Collins-class diesel-electric submarines in Australia. This was based on a Swedish design, but with a US combat system and US torpedoes.

Interestingly, in the mid-1980s Australia's *Strategic Cousins* in Canada came very close to acquiring nuclear-powered submarines. But with the ending of the Cold War, the rationale for bolstering North Atlantic Treaty Organization (NATO) defences against the Soviet Union with Canadian SSNs waned, and the project was cut.

Meanwhile, as Australia proceeded with its Collins Class, critics declared it was extravagantly expensive, controversial, and problematic for a country like Australia to manufacture. In the end, however, the Collins overcame numerous obstacles to perform as intended. They entered service during the fourth wave described below and remain in service today.

Fourth Wave: Expeditionary coalitions and networked warfare, 1991–2021

The collapse of the Soviet Union transformed the character of allied military cooperation. Rather than preparing primarily for global nuclear confrontation, Australia increasingly participated alongside the United States and the United Kingdom in coalition operations across the Middle East, the Balkans, Afghanistan and Iraq.

Operations during the 1990s and early 21st century emphasised interoperability in virtually every aspect of military capability. Australian forces increasingly operated using common doctrine, compatible communications systems, shared intelligence, integrated logistics, precision weapons and network-enabled command systems. Coalition warfare became more sophisticated as advances in information technology enabled unprecedented operational integration.

Australia's leadership of the International Force East Timor (INTERFET) in East Timor in 1999 (later renamed Timor-Leste) demonstrated another dimension of alliance relationships. While Australia relied upon intelligence, logistics and diplomatic support from allies, it simultaneously exercised operational leadership in its own region. The experience showed that close alliance cooperation and national strategic agency are not mutually exclusive. Rather, effective alliances can enable middle powers to undertake operations that would otherwise exceed their independent capacity.

The campaigns in Afghanistan and Iraq further deepened professional relationships among military personnel, intelligence agencies, defence scientists and policy communities, encouraging discussions regarding more ambitious technological cooperation. The fourth wave also witnessed the forging of integrated defence-industrial relationships. Collaborative research, defence procurement, advanced weapons development and scientific cooperation expanded steadily. Nevertheless, significant barriers remained. Export controls—particularly under the United States International Traffic in Arms Regulations (ITAR)—continued to constrain the movement of sensitive technologies even among these trusted allies. By the late

2010s, it had become apparent that traditional forms of alliance cooperation, while extensive, were no longer enough.

Fifth Wave: Industrial and technological integration, 2021 onwards

In the 2020s, the apex predator at sea is no longer the battleship or the aircraft carrier. Today, it is the nuclear-propulsion submarine. It is the ultimate insurance policy intended to deter a potential aggressor. Countries around the Indo-Pacific appreciate its efficacy and are building them at speed. In this context, AUKUS represents the fifth and most ambitious wave of Australia–United Kingdom–United States strategic integration. Unlike previous waves, which focused on operations, intelligence or interoperability, this phase centres on joint creation of capability.

The defining feature of AUKUS is therefore that the three countries have committed to integrating elements of their defence industrial bases, research sectors, technological innovation systems and workforce development in ways previously regarded as politically or legally unattainable. Integration increasingly creates interdependence: AUKUS is becoming one capability system operating across three national jurisdictions. That creates a requirement for greater system-level planning and governance. There is a danger, however, that the story will become exclusively that Australia will eventually operate nuclear-powered submarines.

Pillar I exemplifies this transformation through the sharing of naval nuclear propulsion technology—one of the most closely protected US capabilities ever developed. Washington's agreement to share this technology with Australia—having previously done so only with the United Kingdom in 1958—reflects an extraordinary level of political confidence earned through decades of cooperation, not simply a sudden policy innovation. This has led to significant legislative change in the US Congress (with extensive bipartisan support) to enable the transfer of nuclear propulsion technology to Australia. It has also led to significant changes to ITAR provisions, accommodating Australia as part of a trusted inner circle.

Pillar II is also significant

Beyond Pillar I, Pillar II encompasses a range of advanced sensitive technologies designed to complement the innovation associated with the introduction of SSNs under Pillar I. Specifically, it focuses on artificial intelligence, autonomous systems, cyber capabilities, quantum technologies, advanced undersea systems, electronic warfare, hypersonic technologies and other emerging capabilities. This focus on Pillar II recognises that future advantage will depend upon rapid trilateral innovation.

The significance of Pillar II lies not merely in technology transfer but in collaborative innovation. It seeks to reduce institutional barriers that have historically prevented trusted partners from jointly developing, testing, manufacturing and fielding advanced capabilities. Recent reforms to export-control arrangements reflect recognition that industrial integration has become as important as intelligence integration was during the Cold War.

In this sense, AUKUS represents a transition from interoperability to interdependence in selected areas of advanced defence capability. Properly managed, this interdependence strengthens rather than diminishes Australia's strategic position as it increases access to technologies, industrial opportunities and scientific collaboration that would otherwise be out of reach. Still, considerable work remains to be done to build momentum for the Pillar II initiatives underway.

Lessons from eighty-plus years of strategic cooperation

Several conclusions emerge from this historical review. First, AUKUS is the latest stage in a long institutional evolution rather than a radical departure in Australian strategic policy. Each successive wave has reflected changing strategic circumstances while building upon relationships established during earlier periods.

Second, trust—not technology—has consistently been the critical enabler. Intelligence sharing during the Second World War, nuclear cooperation during the Cold War and advanced industrial integration today have each depended upon decades of demonstrated political reliability and operational collaboration.

Third, Australia's role has evolved significantly. During the early years of the alliance, Australia was primarily a contributor of geography, personnel and political support. Today it is expected to contribute sophisticated industrial capacity, advanced research, technological innovation and operational leadership. Indeed, Australia’s level of capability has substantially increased, as proven by its ability to lead multinational coalitions in its neighbourhood and also to conduct operations in complex theatres such as Afghanistan and Iraq. Those campaigns illustrated to NATO countries and the broader global community that Australia’s forces, troops, and technology were equal to their own, if not better. AUKUS therefore reflects not simply Australia's dependence upon allies but its growing value to them.

Finally, the fifth wave of cooperation has not yet come to a head. Previous waves institutionalised intelligence cooperation, operational interoperability and scientific collaboration. The success of the current phase will depend upon whether Australia can translate unprecedented access to allied technology into sovereign capability. The true measure of AUKUS will not be the eventual commissioning of nuclear-powered submarines. It will be whether Australia emerges with stronger industrial capacity, deeper technological expertise, a highly skilled workforce and greater strategic agency than would otherwise have been possible.

For these reasons, the historical record suggests that AUKUS should be viewed neither as an historical anomaly nor as a temporary policy experiment. That would do a disservice. It represents the logical evolution of an alliance relationship that has adapted to changing strategic circumstances for more than eighty years. Understanding this continuity is essential if contemporary debates about cost, risk and implementation are to be placed within their proper historical context.

Part 3: Australia's strategic environment: Strategy in an age of Poly-Crisis

Introduction

Australia faces the most complex strategic environment since the end of the Second World War. Unlike earlier periods when defence planning focused on military threats, contemporary Australian strategy must address a broader spectrum of connected challenges. Great-power competition, technological disruption, climate change, demographic pressures, economic resilience, energy security, cyber threats, social cohesion and the quality of national governance interact to shape Australia's security. These challenges cannot be viewed in isolation. They reinforce one another, creating what is being seen as a poly-crisis: overlapping disruptions whose cumulative effects are greater than the sum of their individual parts.

This part argues that Australia's strategic environment should therefore be understood as a whole-of-nation challenge rather than a narrowly military one. Defence remains indispensable, but it is only one element of national security. Australia's long-term security will increasingly depend upon the interaction of military capability, economic resilience, scientific innovation, technological competitiveness, social cohesion, effective governance and regional diplomacy. Australia requires not simply a defence strategy, but an integrated national security strategy capable of harnessing all elements of national power. AUKUS is a part of this.

Beyond great-power competition

Contemporary strategic debate frequently portrays the international environment primarily through the prism of competition between the United States and China. This is undoubtedly a defining feature of the 21st century. China's economic rise, military modernisation and dramatic expansion, technological ambition and assertive regional posture have altered the strategic balance throughout the Indo-Pacific.

Australia's decision to purchase three nuclear-powered submarines pales when compared to China's 60-70 submarines (15-20 nuclear-powered), plus additional ballistic-missile submarines that are nuclear-armed. This growing capability does not make conflict inevitable. Australia's objective is deterrence and strategic stability.

Some, like Marc Ablong, suggest the People's Liberation Army Navy will reach 80 submarines by 2035, against a US fleet that will hover in the mid-fifties. To mitigate risk, the government, informed by intelligence assessments, has weighed this and decided Australia needs to bolster its own capabilities and deepen alliance ties.

Meanwhile, the United States has sought to reinforce some alliances, strengthen deterrence and preserve a favourable regional balance through initiatives like the Quadrilateral Security Dialogue (the Quad), AUKUS and enhanced bilateral defence cooperation. Yet great-power competition alone does not adequately describe Australia's circumstances. Australia faces a much broader set of challenges.

With climate change, natural disasters in the Indo-Pacific are more frequent and severe. Fragile states face growing pressures from food insecurity, water scarcity, migration challenges, and environmental degradation. Pandemics and fule shortages expose the vulnerability of global supply chains and public health systems. Cyber-attacks target critical infrastructure and government networks. Artificial intelligence and autonomous systems reshape economic competitiveness and military capability simultaneously. Disinformation challenges democratic governance while social fragmentation complicates national resilience. None of these developments occur independently. They interact. The environment confronting Australia is therefore characterised less by a single threat than by a convergence of multiple pressures.

The Poly-Crisis

The concept of poly-crisis provides a useful framework for understanding Australia's contemporary strategic circumstances because it emphasises interaction rather than isolated events. Australia's security environment is shaped by the convergence of several mutually reinforcing transformations.

The first is accelerating technological change. Artificial intelligence, quantum technologies, biotechnology, autonomous systems, advanced robotics, cyber capabilities and space systems are transforming every dimension of national power. These technologies generate economic opportunity, military advantage and strategic vulnerability while also compressing decision-making time. Competitive advantages appear and then disappear at a dizzying speed. AUKUS Pillars I and II help address these concerns.

The second is environmental change. Rising temperatures, changing weather patterns, water scarcity, biodiversity loss and more frequent natural disasters affect economic productivity, population movement, food security and regional stability. For Australia, climate change also has direct strategic implications through humanitarian assistance, disaster relief, infrastructure resilience and growing demands upon the Australian Defence Force. But this is not an either/or equation. Focusing on environmental concerns will not make the technological challenges go away. Nor will it remove attention from the third leg of the poly-crisis, which concerns great power competition.

The post-Cold War expectation of uncontested American predominance has given way to a more contested regional order characterised by great power competition, coercive statecraft, economic security concerns and expanding defence expenditure throughout the Indo-Pacific. This includes an almost exponential increase in Chinese maritime military capabilities, notably a surge in nuclear-powered submarines.

The fourth is governance itself. Democratic societies face challenges associated with political polarisation, declining public trust, foreign interference, transnational organised crime, irregular migration, digital disinformation and the difficulty of sustaining long-term policy within short electoral cycles.

Individually, each challenge is significant. Collectively, they create a strategic environment of unprecedented complexity – arguably as complex and dangerous as we have seen since 1941. In that context, the pursuit of advanced technologies under AUKUS Pillars I and II should not be dismissed lightly. Nor are they to be perceived as stand-alone solutions to complex challenges arising from the poly-crisis.

Technology as a driver of strategic change

Technology has become one of the principal determinants of national power. The Fourth Industrial Revolution is reshaping both economic competitiveness and military capability. Artificial intelligence, quantum computing, advanced manufacturing, autonomous systems, biotechnology and cyber capabilities determine comparative national advantage. Technological superiority no longer influences military outcomes alone; it shapes productivity, education, industrial competitiveness, scientific leadership and diplomatic influence.

Australia therefore faces a strategic imperative extending beyond defence procurement. The nation must strengthen sovereign research capability, advanced manufacturing, scientific education, digital infrastructure and innovation ecosystems capable of translating research into operational capability. This imperative underpins much of the rationale for AUKUS Pillar II. Viewed narrowly, Pillar II concerns defence technology. Viewed strategically, it represents an investment in Australia's future technological competitiveness across multiple sectors. That investment should also generate benefits for Australia's regional security partners.

Environmental security and national resilience

Climate change is no longer simply an environmental issue. It has become a national security issue. The Indo-Pacific is expected to experience growing pressure from rising sea levels, severe weather events, water shortages, and food disruption. These developments are likely to increase humanitarian crises, population displacement, demands for disaster relief and competition for scarce resources.

Even climate change sceptics must realise this is a felt need, particularly for Australia's neighbours in the South Pacific, many of whom are affected by storm surges and more. In an age where we have gone from being web-enabled to web-dependent and, in turn, web-vulnerable, electricity and computing power have become critical infrastructure – existential even. We ignore this issue at our peril.

Australia's security institutions will therefore be required to perform an expanding range of missions extending beyond conventional defence. This reinforces the need for greater national resilience. Critical infrastructure, energy systems, transport networks, communications, emergency services and supply chains must all be capable of operating under demanding conditions. National resilience has consequently become an integral component of deterrence. The direct and indirect

bolstering of resilience that likely will emerge through both pillars of AUKUS has yet to be fathomed, but the potential is significant.

Governance as a strategic capability

Perhaps the least appreciated dimension of Australia's strategic environment concerns governance itself. Strong institutions constitute a strategic asset. The capacity to formulate coherent policy, coordinate across government, integrate scientific advice, engage industry, sustain public confidence and respond rapidly to emerging crises increasingly differentiates resilient societies from vulnerable ones.

Australia possesses considerable strengths in this regard, including stable democratic institutions, respected public administration, independent courts and trusted professional defence and intelligence organisations. Nevertheless, contemporary challenges transcend traditional departmental boundaries. Cyber security affects defence, finance, education and energy all at once. Climate adaptation involves Defence, Home Affairs, Treasury, Infrastructure and state governments. Artificial intelligence raises questions for industry, ethics, education, intelligence and national security.

These realities reinforce the need for a genuinely integrated national security strategy that builds on the momentum of projects underway rather than changing direction repeatedly, which adds years of delay and increases costs. Indeed, as Grant Mason observes, this extends beyond national governance. If AUKUS is increasingly one interdependent capability system operating across three national jurisdictions, the arrangement also needs governance that can see and manage the system as a whole — particularly where workforce, industrial capacity, and delivery constraints in one country increasingly affect the other two. Submarines do not replace other capabilities, but they are an important part of the mix.

A whole-of-nation challenge

Australia's strategic environment is increasingly characterised by interaction rather than isolation. Military competition, technological disruption, environmental change and governance challenges reinforce one another in ways that traditional defence planning cannot adequately address. This reality requires a broader conception of national security. The question confronting Australia is therefore not simply how to build a more capable Defence Force. It is how to build a more resilient nation. This points to the need to look beyond the unusual political spawning of AUKUS to see the arguably inadvertent strategic benefits that accrue.

The parts that follow argue that Australia's maritime strategy, its development of Undersea Power and its participation in AUKUS should all be understood within this broader framework. They are not isolated defence initiatives. They are components of a comprehensive national strategy designed to strengthen Australia's strategic agency amid the complex and interconnected challenges of the 21st century.

Part 4: From sea power to Undersea Power: extending maritime strategic theory

Introduction

Every generation inherits strategic concepts from its predecessors. The challenge for scholars and policymakers alike is determining which ideas remain enduring, which require adaptation, and which have become obsolete. Maritime strategy is no exception. The fundamental relationship between geography, commerce, naval power and national security has remained remarkably constant for more than a century. Yet, the technological and geopolitical context within which maritime power is exercised has changed profoundly.

This part argues that the undersea domain has now surfaced as the next major evolution in maritime strategic thought. Rather than displacing the classical theorists, contemporary developments extend many of their central insights.

The central proposition advanced in this part is that Australia's future security depends less on acquiring a particular class of submarine than on developing Undersea Power—a comprehensive national capability integrating military force, industrial capacity, scientific innovation, intelligence, critical infrastructure, and alliance cooperation.

Classical maritime strategy: Sea power as national power

Modern maritime strategy begins with Alfred Thayer Mahan. Although his work is frequently reduced to advocacy of decisive fleet battles and battleship supremacy, such interpretations underestimate his more enduring contribution. Mahan's principal insight was that sea power is not simply naval power. It is an expression of national strength arising from the interaction of geography, maritime commerce, industrial capacity, political institutions, and naval capability. Nations with these characteristics have greater opportunities to shape international affairs because they can better secure trade, sustain military operations, and project influence beyond their shores.

This broader understanding of sea power remains highly relevant to Australia. Australia's security has always depended upon secure maritime communications, economic openness and access to regional sea lanes, suggesting that AUKUS should not be evaluated solely by the acquisition of submarines. Rather, consistent with Mahan's conception of sea power, it should be assessed by whether it strengthens Australia's industrial capacity, scientific capability, technological sophistication, and maritime resilience. Conventionally armed, nuclear-powered submarines are therefore only one manifestation of a much larger strategic enterprise.

Julian Corbett reshaped maritime strategic thought by shifting attention away from decisive battle towards the political purposes of naval power. Corbett argued that

command of the sea is neither absolute nor permanent. Naval forces do not exist to seek battle for their own sake. They exist to advance national policy.

For Australia, Corbett's insight is especially significant. Australia's objective has never been to dominate the Indo-Pacific as a global naval hegemon. Rather, Australian maritime strategy has consistently sought to preserve freedom of navigation, protect vital sea lines of communication, contribute to regional stability and deny hostile powers the capacity to coerce Australia into taking actions against its own interests. Undersea capabilities should therefore be understood not as symbols of status but as instruments serving clearly defined national objectives. Those capabilities must be fit for purpose in an environment where surface detection is far more likely than ever before.

Modern maritime theory: Beyond naval combat

During the latter half of the twentieth century maritime strategic thought broadened considerably. Among the most influential contributions was Ken Booth's argument that navies simultaneously perform military, diplomatic and constabulary functions. Rather than viewing naval forces solely through the prism of warfighting, Booth demonstrated that they contribute equally to deterrence, alliance management, maritime governance, law enforcement and the maintenance of international order.

This insight provides an important bridge to contemporary undersea strategy. Australia's future undersea capability will likewise perform multiple functions simultaneously, extending our understanding of the maritime domain. Conventionally armed, nuclear-powered submarines contribute to military deterrence through their ability to complicate an adversary's operational planning. Persistent undersea presence reinforces alliance confidence by demonstrating Australia's capacity to contribute meaningfully to collective security. At the same time, the broader undersea enterprise—including seabed surveillance, protection of submarine communications cables and monitoring offshore infrastructure—performs important constabulary functions that strengthen national resilience during peacetime.

In *Seapower,* Geoffrey Till expanded maritime strategy beyond naval operations altogether. His work demonstrates that modern sea power concerns the interaction of economics, technology, law, information, diplomacy and globalisation rather than simply the relative strength of opposing fleets. Maritime strategy has consequently become a whole-of-nation endeavour in which commercial shipping, critical infrastructure, scientific research, digital communications and military operations coexist within a single interconnected maritime system.

The concept of Undersea Power advanced in this submission represents a logical extension of Till's argument. If maritime strategy has evolved from controlling sea lanes to managing increasingly complex maritime systems, the undersea environment now demands similar strategic attention as part of the maritime domain.

Advent of undersea competition

The 21st century has witnessed a transformation in the strategic significance of the oceans. Twentieth-century maritime strategy concentrated overwhelmingly upon control of the sea surface and, to a lesser extent, the airspace above it. Contemporary strategic competition extends throughout the entire water column—from space-based maritime surveillance to the seabed itself.

Several developments illustrate this transformation. Global digital communications now depend upon submarine fibre-optic cables traversing the ocean floor. Offshore petroleum and gas production, undersea pipelines and emerging renewable energy infrastructure have become integral components of national economies. Autonomous underwater vehicles, persistent seabed sensors, underwater communications systems and advances in artificial intelligence are transforming the character of maritime surveillance and undersea warfare. Concepts such as the Internet of Underwater Things further illustrate the growing integration of civilian and military technologies beneath the sea.

These developments feature in the news and in the works of think tanks and academia. They suggest that future maritime competition will concern more than control of the sea surface; it will also focus on the capacity to understand, protect, and exploit the undersea environment. Evidently, the undersea domain has become an arena of strategic competition. Consequently, the appropriate unit of analysis is no longer the submarine. It is maritime power with an underwater focus, or Undersea Power.

Part 5. Emerging scholarship: The undersea domain as critical and vulnerable national infrastructure

While the classical literature on maritime strategy provides the conceptual foundations for understanding sea power, a growing body of 21st century scholarship demonstrates that strategic competition is reaching beneath the surface of the oceans. This literature reinforces the argument in this submission that Australia should adopt a broader conception of maritime power emphasising Undersea Power – encompassing not only submarines but also critical infrastructure, autonomous systems, scientific capability and industrial resilience.

Significance of the seabed

One of the most significant developments has been the recognition that the seabed is a critical component of the global economy. Scholars like Christian Bueger and Tobias Liebetrau have argued that submarine telecommunications cables should no longer be regarded merely as commercial infrastructure but as strategic assets whose protection has become integral to national security. Their work shows that global digital connectivity, financial transactions, military command-and-control systems, and intelligence sharing all depend on an extensive network of undersea fibre-optic cables. Damage to these systems—whether through accident, coercion, sabotage or armed conflict—would have consequences extending well beyond the maritime domain.

This perspective has become more influential following incidents involving damage to subsea pipelines and communications infrastructure in European waters, in the Pacific, and off the coast of Taiwan. Such incidents have highlighted the vulnerability of critical undersea infrastructure to both state and non-state actors. The strategic significance of the seabed therefore extends beyond traditional naval operations to encompass economic resilience, cyber security and national continuity.

For Australia, these developments are particularly relevant. Australia's digital economy depends upon relatively few international submarine cable connections linking the continent to Southeast Asia, North America and the wider Indo-Pacific. The protection, repair and resilience of these systems should therefore be regarded as an integral component of Australian national security rather than merely a commercial responsibility. Future defence planning should consequently incorporate undersea infrastructure protection alongside more traditional naval missions.

The same applies to Australia's offshore energy infrastructure. Offshore petroleum and gas production has long contributed significantly to Australia's economic prosperity. In contrast, investments in offshore renewable energy and hydrogen production are likely to increase the strategic importance of maritime infrastructure over coming decades. Undersea power must therefore include the capacity not only

to contest hostile military activity but also to protect the economic systems upon which national resilience depends.

Autonomous systems and augmented undersea operations

A second major development concerns the evolution of autonomous underwater technologies that can augment undersea operations. Whereas twentieth-century undersea warfare centred almost exclusively on crewed submarines, contemporary military innovation increasingly emphasises autonomous underwater vehicles (AUVs), extra-large unmanned underwater vehicles (XLUUVs), persistent seabed sensors and distributed surveillance networks.

Scholars of maritime security argue that these technologies should not be understood as replacements for crewed submarines but as force multipliers that expand the effectiveness of undersea operations. Autonomous systems can undertake persistent surveillance, environmental monitoring, mine countermeasures, seabed mapping and intelligence collection over extended periods without exposing crews to danger. Advances in artificial intelligence further enable these systems to process increasing volumes of sensor data and operate with greater autonomy within contested environments.

This trend reinforces rather than diminishes the strategic importance of conventionally armed, nuclear-powered submarines. Rather than replacing submarines, autonomous systems are likely to operate alongside them within integrated undersea architectures. Crewed submarines will continue to provide strategic judgment, flexible command authority, long-range deterrence and sophisticated multi-mission capability, while autonomous systems expand surveillance coverage, increase persistence and reduce operational risk.

This emerging system-of-systems approach represents one of the most significant transformations in maritime warfare since the advent of nuclear propulsion. Australia’s future undersea strategy should therefore emphasise integration rather than substitution. AUKUS Pillar II—through its focus on autonomous systems, artificial intelligence and advanced undersea technologies—provides an important mechanism for Australia to participate in this transformation.

Undersea sensing threat

While much of the emerging technology can enhance Australia’s own capabilities, much of it can also be used to detect and counter Australia’s initiatives. The vulnerability of SSNs in the Indian Ocean and the archipelagic waters of Southeast Asia is driven by the complex interaction of geography, oceanography, and an accelerating trend toward pervasive undersea surveillance.

Out in the open ocean, stealth remains relatively straightforward for SSNs. In shallow, crowded, and acoustically complex environments, however, emerging scholarship indicates traditional quiet submarine stealth is challenged by non-

acoustic and multi-sensor fusion technologies. SSNs face threats from a layered sensor web that includes these five possibilities:

1. Distributed Acoustic Sensor Networks (Underwater Surveillance Systems). These systems include arrays of bottom-mounted hydrophones linked to shore processing centres. Countries in the region are expanding their ability to "fence" choke points (such as the Sunda, Lombok, and Malacca Straits) with permanent acoustic listening posts that create a persistent tracking environment – but are themselves also traceable and targetable.
2. Gliders and Unmanned Underwater Vehicles are perhaps the most significant emerging threat. Autonomous Underwater Gliders are reported to be able to loiter for months, using their silence and persistence to create a sensor net that doesn't rely on active sonar. By collecting localized oceanographic data (salinity, temperature, sound speed profiles), they allow adversaries to predict acoustic propagation paths, effectively stripping away the "thermal layer" protection submarines rely on.
3. Magnetic Anomaly Detection and Advanced Sensors are also available. Traditionally, these have limited range, but new quantum-based magnetic sensors are theorized to increase the range at which a massive metal hull (like an SSN) can be detected. Even in shallow waters, the displacement and magnetic footprint of an SSN can be correlated against background noise.
4. Non-Acoustic Detection (Wake and Turbulence) is another possible approach. In shallow, often murky waters of the Indonesian archipelago, for instance, SSNs can be vulnerable to non-acoustic detection. This includes detecting surface disturbances (surface wakes, thermal scarring/upwelling) via high-resolution satellite synthetic aperture radar (SAR) and multispectral optical sensors.
5. Active Sonar also present a threat. In narrow, shallow archipelagic waters, submarines cannot easily evade active sonar. The increasing proliferation of dipping sonar from anti-submarine warfare helicopters and variable-depth sonar from surface combatants creates a contested acoustic environment where the submarine cannot hide behind oceanographic features.

Mitigation strategies for the undersea sensing threat

Mitigating these threats requires a shift from stealth-only tactics to a five-fold strategy involving complexity and endurance. It is these mitigation strategies that point to the enduring viability of submarines.

1. Oceanographic Data Dominance is the first point. To counter undersea sensor nets, submarines must possess superior, real-time understanding of the local water column. If a submarine knows the environment better than the hunter, it can exploit acoustic shadow zones and ducts that sensor nets might miss. In this sense, the sensor suite available on the US-sourced SSNs is as capable as possible for addressing this.

2. Unmanned Teaming is the second mitigating strategy. This can involve deploying the submarine's own Unmanned Underwater Vehicle (UUVs) and Unmanned Aerial Vehicles (UAVs) to deceive or overwhelm an adversary's sensor net. By deploying decoy drones that mimic the acoustic or magnetic signature of an SSN, a submarine can draw attention away from its actual position. The Royal Australian Navy is already working to develop its unmanned teaming capabilities to supplement the intrinsic capabilities of SSNs.
3. Advanced Signal Processing is the third strategy. This involves using onboard artificial intelligence to filter background noise in real-time. In crowded archipelagic waters, for instance, the noise floor is high. This includes noises generated by biological, shipping, and seismic factors. Artificial Intelligence can help identify and classify the specific signature of an adversary's sensor array before the submarine enters its detection range. This is a moving feast, with technological breakthroughs advancing apace.
4. Operational Flexibility is the fourth and perhaps most important strategy. In the archipelagic waters of Southeast Asia and around Pacific Islands, the best mitigation is often depth management. Navigating bottom-hugging routes or utilizing the complex bathymetry of the seafloor, including trenching and seamounts, to break the line-of-sight for an adversary's sonar. Australian submariners are already reputed to be highly skilled at this.
5. A fifth mitigation involves system-level counter-sensing. This involves using the wider joint (land, sea, air, space and cyber force elements) and allied (partner nation) systems to detect, deceive, disrupt or degrade the adversary's sensing network. This also reinforces the broader argument that AUKUS's value lies in the integrated capability system, rather than the submarine alone.
6. This review of threats and mitigations is a simple distillation of quite complex procedures, technologies, and strategies. Suffice to say here, though, that undersea sensing remains a game of cat and mouse with measures and countermeasures iteratively evolving as tactics and technology adapt to changing circumstances. With a suite of detection technologies and an understanding of how potential adversaries apply them in certain geographic circumstances, many navies continue to build and operate on the understanding that these risks can be mitigated and deterrence maintained.

Critical infrastructure and national resilience

Recent scholarship has also expanded traditional understandings of maritime security by emphasising the relationship between undersea infrastructure and national resilience. Rather than viewing maritime security solely through the lens of naval operations, contemporary analysts increasingly recognise that economic security, energy security, digital connectivity and military effectiveness are interconnected.

This broader perspective aligns closely with Australia's own strategic circumstances. Australia is among the world's most trade-dependent advanced economies. Maritime

trade accounts for most of Australia's exports and imports by volume, while undersea communications infrastructure supports financial markets, government administration, scientific collaboration and defence cooperation.

Consequently, undersea competition should not be viewed exclusively as a military phenomenon. It increasingly occupies the intersection of defence policy, economic policy, industrial policy and technological policy. Decisions regarding cable resilience, offshore infrastructure protection, maritime domain awareness and advanced manufacturing therefore become matters of national strategy rather than narrow questions of defence procurement.

This understanding also reinforces the rationale for AUKUS. If the partnership is interpreted solely as a submarine acquisition program, its broader strategic significance may be overlooked, along with the opportunities that accompany it. However, if Australians understand AUKUS as facilitating Australia's transition towards greater technological sophistication, industrial integration and undersea capability across multiple sectors, those strategic opportunities can be appreciated and seized.

The Indo-Pacific context

The strategic significance of the undersea environment is particularly pronounced in the Indo-Pacific. Unlike the comparatively enclosed maritime theatres of Europe, the Indo-Pacific encompasses immense oceanic spaces linked by a small number of strategically important maritime chokepoints. Much of the region's economic activity, energy flows and digital communications traverse undersea infrastructure concentrated around narrow maritime corridors.

Increasing strategic competition has consequently expanded interest in seabed mapping, hydrographic knowledge, undersea surveillance and autonomous maritime systems. States are investing heavily in technologies that improve situational awareness beneath the surface while protecting their own critical infrastructure.

Geographically, Australia is at the intersection of the Indian and Pacific Oceans and adjacent to many of these critical maritime routes. This location creates both opportunities and responsibilities. Australia possesses significant comparative advantages in oceanographic research, hydrography, undersea engineering and maritime domain awareness that can be leveraged through closer cooperation with trusted allies and regional partners.

Developing these comparative advantages should become a prime objective of Australian defence and industry policy. That way Australia would strengthen its own security, the resilience of the wider Indo-Pacific maritime system upon which regional prosperity depends, and Australia's influence within the Indo-Pacific more broadly.

Towards a national undersea enterprise

Taken together, the classical and contemporary literature points towards a broader understanding of maritime strategy than has traditionally informed Australian defence debates. The implication is that Australia should move beyond viewing submarines as isolated platforms and instead see them as part of a national undersea enterprise. Such an enterprise would integrate defence, intelligence, science, industry, academia and infrastructure policy into a coherent national endeavour. Conventionally armed, nuclear-powered submarines would remain its operational centrepiece, but they would be supported by advanced manufacturing, quantum technologies, artificial intelligence, cyber resilience, autonomous underwater systems, hydrographic research, seabed surveillance and critical infrastructure protection.

This conception also provides a more comprehensive framework for evaluating AUKUS. The partnership should not be assessed solely by the number of submarines eventually commissioned into the Royal Australian Navy or by the precise timetable of their delivery. Rather, it should be judged by whether it leaves Australia with a stronger industrial base, deeper scientific capability, more resilient undersea infrastructure, greater technological sophistication and enhanced strategic agency.

Understood in this way, AUKUS represents not merely an investment in naval capability but the continuation of Australia's historic national strategic trajectory and the basis for operating effectively within what is becoming one of the defining strategic domains of the 21st century.

Part 6. Australia's undersea strategy: Why Undersea Power matters in the 21st Century

Strategy before platforms

Public debate surrounding AUKUS has been dominated by a single question: should Australia acquire conventionally armed, nuclear-powered submarines? Catchier and easier to understand than the real strategic meaning of AUKUS discussed above, this framing is also misleading because this framing places the platform before the strategy. Decisions about defence capability should begin not with particular technologies but with the strategic problems governments seek to solve. The more important question is therefore not whether Australia should buy nuclear-powered submarines, but what combination of capabilities Australia requires to protect its national interests in an increasingly contested Indo-Pacific.

This distinction matters because AUKUS is frequently portrayed as a submarine acquisition program when it is part of a much broader transformation in Australia's approach to national security. The submarine enterprise under Pillar I is the most visible manifestation of that transformation. Still, it is only one element of a wider effort to strengthen Australia's technological base, industrial capacity, intelligence integration, scientific capability and strategic resilience. Viewed in this context, submarines are not the objective. They are one component of a broader Australian undersea strategy. This submission argues that Australia should think less in terms of acquiring submarines and more in terms of developing Undersea Power as a major component of maritime power. Failure to do so risks not only missing opportunities, but Australia selling itself short as a member of this historic strategic partnership.

Emergence of the undersea domain

For much of the twentieth century, military strategy was organised around land, sea and air. During the Cold War, outer space assumed increasing strategic importance, while the digital revolution established cyberspace as a fifth domain of military competition. The 21st century is witnessing the emergence of a further strategic domain that deserves greater recognition: the undersea environment.

This is not because submarines are new. Rather, it reflects the growing strategic significance of everything that lies beneath the surface of the oceans. The seabed now hosts critical communications infrastructure, offshore energy installations, surveillance systems, autonomous vehicles, intelligence collection platforms and sophisticated military technologies. Commercial and military interests are converging in scarcely imaginable ways only a generation ago. The recent work of Brewster, Bashfield, and others confirms this.

Most international digital communications travel through submarine fibre-optic cables laid across the seabed. These undersea cables underpin global finance, commerce,

government communications and military command and control. Offshore gas fields, petroleum infrastructure and emerging renewable energy installations have become integral to national economies. At the same time, advances in autonomous underwater vehicles, seabed sensors, quantum sensing, artificial intelligence and underwater communications are transforming the operational character of the maritime domain.

The seabed is now a contested strategic space. The implications are profound. Undersea competition is no longer confined to submarines hunting submarines. It now encompasses the protection of critical national infrastructure, intelligence collection, surveillance, seabed warfare, offshore energy security, cyber-physical systems, autonomous technologies and maritime resilience. Nations that fail to understand this transformation risk preparing for yesterday's maritime competition rather than tomorrow's. In this context, the AUKUS arrangements are part of the mix, but not its entirety.

Australia as an undersea nation

Few countries are more dependent upon the undersea environment than Australia. Australia possesses one of the world's largest Exclusive Economic Zones. Its prosperity depends overwhelmingly upon maritime trade carried across the Indian and Pacific Oceans. Its offshore energy production, fisheries, digital connectivity, and defence communications all rely on infrastructure beneath or on the sea. Undersea cables connect Australia to Asia, North America and Europe. Offshore petroleum facilities contribute significantly to national energy security and export earnings. Future industries—including offshore renewable energy and seabed resource development—are likely to increase this dependence further.

Australia's strategic geography reinforces these realities. Unlike many European states, Australia cannot rely upon short internal lines of communication or closely clustered allied bases. It occupies an island continent separated from its principal allies by vast expanses of ocean with its own major ports spread far apart. Its sea lines of communication extend thousands of nautical miles across some of the world's most strategically contested waters.

Geography therefore imposes constant operational demands. Australian governments cannot choose where future crises may arise, but they can reasonably anticipate that they will involve long distances, contested maritime environments and increasing technological sophistication. Any defence strategy that fails to account for these realities risks leaving Australia unable to influence events beyond its immediate coastline. Australia has long described itself as a maritime nation. Increasingly, it must also recognise itself as an undersea nation.

This context led to the creation of the Border Protection Command in 2005. This Command included Australian Defence Force personnel and members of what has become the Department of Home Affairs. Their remit has included monitoring

Australia's Exclusive Economic Zone. This remit spans issues such as undersea cables, criminal activity, and piracy. It also involves Navy and Customs vessels, charter aircraft, uncrewed/unmanned aerial vehicles, the over the horizon Jindalee Operational Radar Network (JORN), and more.

From undersea capability to Undersea Power

The distinction between undersea capability and Undersea Power is central to this submission. Undersea capability refers to individual assets: submarines, autonomous underwater vehicles, seabed sensors, surveillance systems or underwater communications networks. Undersea power is something much broader. It is the national capacity to understand, monitor, exploit, protect and, where necessary, contest the undersea environment across the full spectrum of peace, crisis and conflict. Maritime power, with a focus on Undersea Power, comprises:

- Capable, crewed submarines;
- Autonomous underwater vehicles and sensor networks;
- Seabed surveillance and intelligence systems;
- Anti-submarine warfare capabilities;
- Secure undersea communications;
- Protection of submarine cable networks;
- Resilience of offshore energy infrastructure;
- Scientific and hydrographic expertise;
- Advanced underwater robotics;
- Naval shipbuilding and sustainment;
- Nuclear stewardship and engineering;
- Cyber resilience for maritime systems;
- Secure shore support facilities able to detect and counter threats; and
- Industrial capacity to design, build, maintain and upgrade undersea technologies.

Seen in this way, submarines are indispensable—but they are no longer the entirety of Australia's undersea strategy. They operate within a wider ecosystem of capabilities that together create operational effects.

This broader conception also aligns closely with the ambitions of AUKUS Pillar II. Artificial intelligence, quantum technologies, autonomous systems, cyber capabilities and advanced undersea technologies should not be viewed as separate initiatives existing alongside the submarine enterprise. They are integral components for Australia's future undersea architecture.

The strategic functions of Undersea Power

An effective undersea strategy performs multiple functions simultaneously:

1. **It provides strategic intelligence**. Undersea platforms can collect information discreetly over extended periods, contributing to situational awareness, indications and warning, and decision-making.

2. **It strengthens deterrence**. The uncertainty created by undersea forces complicates an adversary's operational planning. A potential adversary rarely knows where submarines or autonomous underwater systems are operating, how many are present, or what missions they have been assigned. This uncertainty imposes costs and influences behaviour even in the absence of conflict.
3. **It contributes to maritime denial**. Australia's objective has never been to achieve command of the sea comparable to that of a major naval power. Rather, Australia's strategic interest has been to prevent hostile forces from operating freely within areas vital to Australian security and regional stability. Undersea forces are well suited to this task.
4. **It protects critical national infrastructure**. As recent incidents involving subsea infrastructure off the coast of Western Australia and elsewhere in the world have shown, undersea cables, pipelines, and offshore installations are increasingly vulnerable to sabotage, espionage, and coercion. Protecting these assets is becoming an essential component of national resilience.
5. **It enhances coalition operations**. Australia has long sought to contribute meaningfully to allied operations rather than merely relying upon allied protection. A sophisticated undersea capability increases Australia's value as a security partner to neighbours and allies alike, while strengthening the capacity for independent action.

Why range and persistence matter

Australia's geography distinguishes its operational requirements from those of most other maritime states. A submarine departing Perth (HMAS Stirling) or Sydney (Fleet Base East) may need to travel several thousand nautical miles before reaching its patrol area, let alone to visit another Australian port, be it Darwin, Melbourne or Brisbane. Time spent in transit is time not spent conducting operational tasks. A force structure with less capable submarines (in terms of range, stealth, speed and endurance) optimised for shorter distances may therefore generate considerably less persistent operational presence than raw platform numbers might suggest. That might be okay for countries with relatively small exclusive economic zones. That's not the case for Australia.

Range, persistence and endurance become strategic characteristics rather than merely technical specifications. The ability to deploy for prolonged periods, operate at sustained speed, reposition rapidly across vast maritime spaces and remain continuously stealthy and submerged significantly increases the proportion of each deployment devoted to operational effect. These characteristics become increasingly important as Australia's strategic interests extend across both the Indian and Pacific Oceans. This is why the operational discussion should be about geography, not just propulsion.

What about Air Independent Propulsion (AIP)?

Air Independent Propulsion (AIP) involves operating a boat's engines without needing to surface to dispel exhaust and suck in air by snorting. This is touted as the solution for conventional submarines, and several navies are acquiring them. Conventional boats with AIP come with newer batteries and offer an indiscretion rate (the time between snorts) of two weeks. This means they could operate in their patrol areas without snorting for that length of time. They would also have a smaller signature than SSNs. This gives them a significance advantage over traditional diesel-electric submarines like the Collins Class boats.

Given Australia's vast geography and the length of transits from Perth to any other port, however, such conventional submarine transits are problematic, particularly for a small fleet. Australia does not have the same potential benefits from AIP that countries with smaller coastlines might favour. At least not yet. So that alternative does not have the value it does for other nations. Related to this is the lack of capable infrastructure, industry, and workforce to support permanent basing of advanced warships of that kind in northern Australia. A Switch to AIP also would still take a decade or more for delivery. Operationally, SSNs are much faster. That makes for longer time on station and, critically, a far greater chance of survival once detected (say, after firing a torpedo or missile). That is largely because the SSN can relocate stealthily from the detection site at speeds and over distances that conventional submarines cannot match.

Why nuclear-powered submarines form the core of the future force

The case for conventionally armed, nuclear-powered submarines rests not upon prestige or symbolism but upon operational suitability. Nuclear propulsion provides sustained speed, extended endurance, continuous stealthy submerged operations and exceptional persistence within distant operating areas. These characteristics directly address Australia's geographic circumstances.

This does not imply that conventional submarines are obsolete. The Collins-class has demonstrated remarkable capability, and future conventional submarines will continue to improve through advances in batteries, automation and air-independent propulsion. Nor does it suggest that submarines alone will determine future maritime competition. Rather, the argument is that no available conventional submarine fully replicates the combination of speed, endurance, stealth, persistence and flexibility required for the missions Australia is likely to undertake over coming decades. This applies particularly to the direct defence of Australia's interests within its exclusive economic zone and along its key sea lines of communication.

Within a broader undersea strategy, nuclear-powered submarines provide the central manoeuvre element around which other capabilities can be integrated. This includes autonomous systems, seabed sensors, intelligence networks, maritime patrol aircraft, cyber capabilities and long-range strike systems.

An integrated undersea architecture

Australia's future undersea strategy should therefore be understood as an integrated system rather than a collection of individual platforms. Space-based surveillance, maritime patrol aircraft, surface combatants, autonomous underwater vehicles, fixed seabed sensors, intelligence systems, cyber capabilities, advanced analytics and conventionally armed nuclear-powered submarines should increasingly operate as mutually reinforcing elements of a single undersea architecture. The objective is not simply to acquire better submarines. It is to create a national capacity to observe, understand, protect and influence the undersea environment critical to Australia's security, stability and prosperity and its influence and access with neighbours and allies across the Indo-Pacific.

This systems-based approach also highlights the broader significance of AUKUS. Pillar I provides Australia with the operational core of a future undersea force. Meanwhile, Pillar II provides many of the technologies that will enable this architecture to evolve over coming decades. These include artificial intelligence, quantum sensing, autonomous systems, advanced cyber capabilities and collaborative research. Together, if pursued with determination and commitment, they represent not merely a procurement program but the foundation of a new strategic enterprise.

From submarine operator to Undersea Power

The principal question before policymakers should not be "How many submarines does Australia require?" Nor should it be framed simply as a choice between nuclear-powered and conventional designs. The more fundamental question is this: What form of Undersea Power will Australia require to protect its national interests in the Indo-Pacific through the middle of the 21st century? This submission argues that Australia should step up to the plate by becoming an Undersea Power rather than merely a submarine operator. Such an ambition reflects Australia's geography, its dependence upon secure maritime infrastructure, the reliance of its smaller neighbours on the availability of Australian capabilities for security support, the changing character of strategic competition and the growing importance of the seabed as an arena of contestation.

Within that broader strategy, conventionally armed, nuclear-powered submarines are not an end in themselves. They are an indispensable centrepiece of an integrated undersea capability that encompasses intelligence, surveillance, autonomous systems, industrial capacity, scientific innovation, infrastructure protection and allied cooperation. Understood in this light, therefore, AUKUS is not simply about acquiring submarines. It is about positioning Australia to compete, deter and contribute effectively in what is rapidly becoming one of the defining strategic domains of the 21st century.

Part 7: Reviewing Australian maritime strategic perspectives

Australian maritime perspectives

Australia has produced a rich body of strategic scholarship addressing alliance policy, maritime strategy and defence planning. While individual scholars often reach different conclusions, their work collectively has fuelled Australia's strategic debate. The proposition advanced in this submission—that Australia should think in terms of Undersea Power rather than simply submarine acquisition—also builds upon this long tradition of Australian strategic thought. While Australian defence debates have often been characterised as oscillating between the concepts of Forward Defence and the Defence of Australia, a closer reading of the literature reveals a more fundamental concern with Australia's maritime geography and the relationship between national power and the maritime domain.

Successive Australian strategists have differed over force structure, alliance management and strategic priorities, yet they have shared an appreciation that Australia's security is inseparable from its maritime environment. The perspectives of a number of these authors are presented in the following section. They are included because they reflect competing and yet complementary perspectives on Australia's maritime options. In doing so, the intention is to move the argument beyond simple binaries. This is to broaden the Inquiry's scope of understanding of the issues at hand. It also demonstrates the complexity of the arguments and the importance of being prepared to consider a range of perspectives.

Perspective 1: Millar

Among the earliest and most influential contributors was Tom Millar, the founder of the Strategic and Defence Studies Centre, my home department in the Australian National University. Writing during the Cold War, Millar consistently argued that Australia's strategic circumstances could not be understood through European analogies. Rather, Australia's security depended upon the stability of its maritime approaches, the political evolution of Southeast Asia and maintaining effective alliances without sacrificing independent strategic judgement. Long before the term "Indo-Pacific" was in popular use, Millar recognised that Australia's strategic interests extended well beyond the continent itself into the wider maritime region. His work encouraged Australian policymakers to view maritime geography not simply as a defensive barrier but as the medium in which Australia's security and prosperity would be shaped.

Millar's contribution was particularly significant because he rejected simplistic distinctions between continental and maritime strategy. Instead, he considered Australia's defence required a sophisticated integration of diplomacy, military capability, intelligence and regional engagement. In this respect, his work anticipated

later conceptions of comprehensive national strategy that underpin contemporary debates about AUKUS.

Perspective 2: Dibb

Paul Dibb's 1986 Review of Australia's Defence Capabilities was another watershed in Australian strategic thought. Often associated with the Defence of Australia concept, Dibb's review has occasionally been interpreted as advocating a narrowly continental strategy focused upon the defence of Australia's northern approaches. Such interpretations underestimate the review's sophistication and its continuing relevance.

At its core, the Dibb Review argued that Australian force structure should be determined by geography rather than inherited alliance assumptions. It recognised that Australia's vast maritime and air approaches required surveillance, intelligence, long-range strike and maritime denial capabilities capable of preventing hostile forces from projecting power against the continent. The review emphasises maritime surveillance, anti-submarine warfare, control of Australia's northern sea-air gap and submarines.

Although the strategic circumstances confronting Australia have changed substantially since 1986, the Dibb Review's methodological contribution remains highly relevant. Dibb demonstrated that force structure should follow strategic analysis rather than institutional preference. This submission adopts precisely that principle. It departs from Dibb's 1986 conception not by rejecting the centrality of geography but by arguing that Australia's strategic geography now extends across the wider Indo-Pacific and that undersea competition has become a defining feature of contemporary maritime strategy. Undersea power may therefore be understood as an evolution of the Defence of Australia concept.

Perspective 3: Babbage

Ross Babbage further developed Australian strategic thinking by emphasising the importance of technological superiority, maritime reach and deterrence in maintaining Australia's strategic position. Over several decades, Babbage has argued that Australia's relatively modest population and resource base required defence capabilities capable of generating disproportionate strategic effect. His analyses have consistently highlighted the importance of long-range maritime operations, intelligence integration, advanced technology, and close cooperation with allies.

Babbage's work anticipated several themes that emerged within the AUKUS agreement, particularly the emphasis upon technological innovation, advanced undersea capabilities and integrated deterrence. His argument that Australia should seek qualitative advantage rather than quantitative parity remains highly pertinent in an era characterised by rapid advances in autonomous systems, artificial intelligence and undersea technologies.

Perspective 4: Stevens and the sea power centre

The historical development of Australian naval thought has been documented and enriched by the work of David Stevens and the Navy's Sea Power Centre–Australia. Stevens' scholarship has demonstrated that Australia's maritime experience cannot be understood solely through the history of naval operations. Rather, Australian naval history reflects the broader interaction of geography, alliance relationships, technological adaptation and national policy.

Equally significant has been the contribution of the Sea Power Centre–Australia itself. Since its establishment, the Centre has become Australia's principal institution for the development of maritime strategic thought. Through publications on maritime strategy, naval history, Indo-Pacific security, maritime law, logistics, sea control and, more recently, subsea and seabed warfare, it has progressively broadened Australian understanding of sea power beyond fleet operations alone.

Recent Sea Power Centre publications addressing critical subsea infrastructure, seabed warfare and the integration of autonomous systems illustrate the continuing evolution of Australian maritime thought. They recognise that the undersea environment is becoming an increasingly contested operational domain and that future maritime competition will extend well beyond traditional submarine-versus-submarine operations. These developments reinforce the argument advanced in this submission that Australia's future maritime strategy should be organised around the broader concept of Undersea Power.

Perspective 5: Goldrick

Among contemporary Australian maritime strategists, James Goldrick occupies a particularly important position because he successfully integrated the insights of Mahan, Corbett and modern naval practice within an Australian strategic context. Goldrick consistently argued that sea power cannot be reduced to naval hardware or fleet numbers. Rather, maritime capability derives from the interaction of geography, maritime trade, alliances, intelligence, logistics, technology and political purpose.

Goldrick's interpretation of Corbett is especially relevant to Australia. He emphasised that maritime operations should always be understood as instruments supporting national policy rather than autonomous military activities. This perspective aligns closely with the central argument advanced throughout this submission: conventionally armed, nuclear-powered submarines are not strategic objectives in themselves but instruments contributing to Australia's broader national strategy.

Goldrick also recognised that technological change continually reshapes maritime operations without fundamentally altering the relationship between geography and strategy. Advances in precision strike, information systems, cyber capabilities and autonomous technologies modify the character of maritime competition but do not eliminate the importance of sea control, maritime denial or secure communications. The emergence of the undersea domain should therefore be understood as the

latest phase in this continuing evolution rather than as a break with classical maritime thought. Sadly, Goldrick is no longer with us. Before he passed, he expressed concern that AUKUS success depends as much on solving workforce and demographic problems as on building submarines. If the former are not addressed, the partnership's strategic benefits could be undermined.

Perspective 6: White

My Strategic and Defence Studies Centre (SDSC) colleague, Hugh White, has consistently argued that Australia should prepare for a future in which American primacy can no longer be assumed. Many would contest this view. This is evident in the writings of people like Michael Green, Elbridge Colby and the author. White's work rightly identifies uncertainty about the future balance of power, the possibility of strategic abandonment, and the fiscal challenges of acquiring increasingly sophisticated military capabilities. But the future is unknowable. Few straight-line projections of economic, demographic, political, and military power in history have proven accurate. The demise of the United States has been predicted and proven wrong on numerous occasions.

This submission shares White's concern regarding strategic uncertainty but reaches a different conclusion regarding AUKUS and Australia's approach to the US alliance. White tends to analyse AUKUS primarily through the lens of alliance dependence and the risks associated with relying upon American capability. Ironically, as the US manifests a transactional retreat from ideational leadership, US interest in Australia as a suitable piece of real estate continues to grow. This trend flows in the opposite direction to White's predictions since he first outlined his thesis of US decline when he wrote *The China Choice* in 2012.

In *How to Defend Australia*, Hugh White advocated for a strategy of maritime denial. He suggested that rather than trying to control the seas with a small number of expensive surface ships or SSNs, Australia would make it prohibitively costly for an adversary—especially China—to project force through the approaches to the continent. Up to 40 relatively affordable diesel-electric submarines would provide mass, concealment and geographic coverage, allowing Australia to exploit the so-called sea-air gap to its north and defend itself independently.

The proposal's main weaknesses were practical and strategic. Forty submarines would require an enormous expansion of Australia's specialised personnel, infrastructure, maintenance and defence budget, despite existing recruitment and sustainment difficulties. The identified limitations of diesel electric submarines remain. In addition, the focus on defending the continent offered limited capacity to protect wider Indo-Pacific interests. Its scale, cost, challengeable technological and geopolitical assumptions and political demands make it problematic. Today it would also require a massive dislocation of current plans.

Meanwhile, the demand for more robust capabilities in the Australian Defence Force (ADF) inventory grow. With much of the ADF operating either US sourced equipment or equipment that operates to US standards, the need to double down on access to, and even licenced production of, US sourced equipment is greater not lesser. Feasible alternatives are not at hand. This submission evaluates AUKUS through the lens of national capability creation. Properly implemented, AUKUS should strengthen rather than diminish Australia's strategic agency by expanding sovereign industrial capacity, scientific capability and operational competence.

Perspective 7: Roggeveen

Sam Roggeveen similarly raises important questions regarding strategic restraint and the risks of unnecessarily intensifying great-power competition. His work emphasises that Australian strategy should always be guided by Australia's own national interests rather than by automatic alignment with allied preferences. He stresses the need to engage more with neighbours, and this author heartily endorses that notion.

The present analysis, however, begins from a different premise. Australia's geography, maritime dependence and extensive sea lines of communication mean that preserving a favourable regional maritime balance is not simply an alliance objective; it is a permanent Australian national interest. So, framing it in alliance terms overlooks its centrality for a sovereign and self-reliant posture regarding access to the sea. The principal question, therefore, is not whether Australia should avoid strategic competition altogether, but how it can best contribute to regional stability while preserving its own strategic freedom of action. Roggeveen's suggestion of closer regional engagement is part of the mix, but it is not a zero-sum, either/or equation.

Perspective 8: Behm

Allan Behm has repeatedly argued that procurement should never be mistaken for strategy. This submission agrees entirely. Indeed, it adopts that proposition precisely as one of its organizing principles. It departs from Behm in its assessment of AUKUS itself. If AUKUS were merely a submarine acquisition program, many of Behm's criticisms would have considerable force. Viewed instead as a comprehensive program of industrial mobilisation, scientific collaboration, technological innovation and alliance integration, AUKUS assumes a substantially different strategic significance.

Perspective 9: Briggs

Peter Briggs has contributed detailed and technically informed assessments. These observations deserve serious consideration. Briggs identifies real implementation vulnerabilities: inadequate US submarine production and maintenance capacity, workforce shortages, infrastructure bottlenecks, nuclear stewardship obligations and

the danger of a capability gap. These warrant serious attention rather than dismissal as opposition to AUKUS.

The weakness in his analysis is that Briggs does not always apply an equally demanding feasibility test to the alternatives. The relevant comparison is not AUKUS against an ideal submarine program, but against extending Collins, acquiring another conventional submarine, establishing a French-derived nuclear program, or accepting a potentially serious capability gap.

Consequently, Briggs's critique can support a different conclusion from his own. Rather than demonstrating that Australia should abandon AUKUS, it provides a valuable stress test for AUKUS. Australia should maintain credible contingency options, accelerate Collins sustainment, expand autonomous undersea capabilities, increase technical training and infrastructure investment, and establish clear decision points should Virginia transfers become impossible. The strategic objective should therefore be to de-risk AUKUS while preserving alternatives, rather than prematurely abandoning a partnership that is poised to substantially enhance Australia's strategic agency.

Perspective 10: Patrick

Similarly, former South Australian Senator Rex Patrick has consistently emphasised transparency, parliamentary accountability and public scrutiny of major defence programs. These concerns should be embraced rather than resisted. A project of AUKUS' scale can only sustain public confidence through rigorous oversight and institutional accountability.

Perspective 11: Carr

Andrew Carr argues that Australia's geography is fundamentally archipelagic, citing the over 8,000 islands under its sovereign claim. He shifts the perspective from thinking of Australia as an island continent to one more like an archipelago. In so doing, he suggests that Australia's strategic self-conception must move away from a fortress mentality (where the focus is merely on the mainland perimeter) toward a more nuanced appreciation of its maritime domain.

Recognizing Australia as an archipelago highlights that the nation is inextricably linked to, and defined by, the vast maritime spaces and complex island chains surrounding it. This reframing forces policymakers to move beyond simple a simple continental defence focus and embrace a strategy that accounts for the governance, protection, and projection of power across an expansive, water-dominated territory.

By viewing the surrounding ocean as part of an integrated archipelagic space, this author contends it is reasonable to see AUKUS submarines become essential tools for so-called denial operations. They allow Australia to hold adversaries at bay well before they reach the mainland, transforming the surrounding maritime environment from a vulnerability into a strategic buffer that the Australian Defence Force can actively influence.

Perspective 12: Dunley

In ‘A Global Commons No Longer’, naval historian Richard Dunley calls for us to reimagine sea control. He argues that in recent years, the way states perceive the value of the seas has changed. The processes of legal and extra-legal territorialisation have meant that the seas are now viewed as having value in terms of resources, security, and sovereignty. The buildup of critical maritime infrastructure has bestowed additional value on large areas of the seas. These shifts in the way in which states view the oceans are already having a profound impact on the missions that navies are expected to conduct. The requirement to protect this value means that sea control is being reimagined as a persistent and absolute concept. The importance of the various pieces of maritime infrastructure to modern economies and societies ensures that specific parts of the seas, both inside territorial waters and exclusive economic zones, and on the high seas, now have huge value to states. AUKUS needs to be seen with this reimagination of sea control in mind.

Perspective 13: Barrie, Environmental Security and AUKUS

Admiral (Ret’d) Chris Barrie, a former Chief of the Australian Defence Force, is a leading figure in the Australian Security Leaders Climate Group (ASLCG). The ASLCG's central purpose is to reposition climate change from primarily an environmental issue to an immediate national and human security challenge.

In essence, Barrie argues that Australian strategic policy gives disproportionate attention to conventional military threats while underestimating the potentially systemic consequences of climate change. Rising temperatures, extreme weather, drought, food and water insecurity and sea-level rise can generate cascading effects: infrastructure failure, economic disruption, population displacement, political instability and conflict. These problems are particularly acute in Australia's Indo-Pacific neighbourhood. The ASLCG therefore argues for a whole-of-nation climate-security risk assessment, stronger national resilience, dedicated climate-threat intelligence and greater emphasis on prevention and preparedness. Barrie consequently weighs in on a strategic debate dominated by China and military competition, arguing that climate change could ultimately prove a greater threat to Australians than conventional military challenges and has called for an emergency mobilisation commensurate with the potential consequences.

This presents an important challenge to AUKUS. If climate disruption represents an existential, urgent and systemic threat, committing hundreds of billions of dollars and considerable technological, industrial, and human capital to nuclear-powered submarines may impose substantial opportunity costs. Climate change could simultaneously increase demands on the ADF for domestic disaster relief, humanitarian assistance and regional stabilisation while degrading northern Australian bases and infrastructure through extreme heat, flooding, cyclones and

other environmental stresses. ASLCG's *Too Hot to Handle* specifically identifies risks to northern defence facilities under higher-temperature scenarios.

There is considerable merit in this critique. A defence strategy focused narrowly upon high-intensity conflict would inadequately capture Australia's broader security environment. Climate resilience, energy security, infrastructure, food and water security, national mobilisation and regional disaster-response capacity should therefore be integral to national security planning.

The counterargument is that climate security and AUKUS need not be alternative strategic choices. Australia confronts a poly-crisis rather than a single overriding threat. We have already seen that climate change can exacerbate instability without removing conventional geopolitical competition; indeed, environmental pressures may intensify competition over resources, territory, migration and political influence. Preparing for one while neglecting the other would reproduce precisely the strategic monoculture Barrie criticises.

Moreover, submarines address a security problem climate adaptation cannot: deterring coercion and providing Australia with strategic agency in a region experiencing rapid military expansion. Conversely, SSNs cannot address bushfires, climate-induced migration or Pacific environmental insecurity. Different risks require different instruments.

A stronger synthesis, therefore, is to incorporate Barrie's environmental-security perspective into AUKUS rather than against it. AUKUS should form one component of a comprehensive national-security strategy encompassing undersea deterrence, climate adaptation, renewable and resilient energy systems, hardened northern infrastructure, sovereign industrial capacity, disaster preparedness and intensified Pacific engagement. Barrie's strongest contribution is thus his insistence that Australian security be conceived systemically. The qualification is that climate change should broaden Australia's conception of security, not displace the requirement to prepare for conventional strategic competition.

Perspective 14: Strating and Wallis

In their book *Girt by Sea: Re-imagining Australia’s Security*, Rebecca Strating and Joanne Wallis argue that Australia’s traditional security policy has been too narrowly focused on great power dynamics—specifically the US-China rivalry—often at the expense of ignoring the complex, immediate maritime environment on Australia's doorstep. They contend that Australian security policy frequently suffers from "continental drift"—a tendency to view the country as a fortress island that is separate from its neighbourhood. They argue that this mindset overlooks the reality that Australia is inherently a maritime nation deeply connected to its Indo-Pacific region.

The authors call for a shift in focus toward the maritime domain (the Blue space), emphasizing the importance of non-traditional security challenges like illegal fishing, climate change, and human security. They also call for a more active role in the South Pacific and Southeast Asia, recognizing that Australia's security is fundamentally tied to the stability and sovereignty of these smaller island states.

Strating and Wallis provide a critical lens through which to view AUKUS, prompting readers to ask whether such hard power investments, that SSNs represent, risk deepening the divide between Australia and its regional neighbours.

A counterpoint is that *Girt by Sea* may set up too sharp a contrast between high-end defence capability and so-called Blue Security. AUKUS need not mean that Australia is choosing great-power competition over its immediate region; proponents argue that nuclear-powered submarines are one component of a broader maritime strategy that can help secure the regional conditions (notably stability and security) on which other forms of cooperation and human security depend.

To be sure, illegal fishing, disaster response and climate-related insecurity matter greatly, but they are difficult to manage if coercion, blockade or kinetic conflict (that is, a war) threatens the sea lanes and regional states' freedom of action. SSNs are intended principally for surveillance, deterrence and sea denial against sophisticated military forces—not for routine policing or development assistance. A more capable Australian Navy may contribute to coalition operations, intelligence-sharing and maritime-domain awareness. The agreement is also embedded in a wider trilateral framework involving technology, undersea capabilities and defence-industrial cooperation, rather than being solely a submarine purchase.

Australia's participation in AUKUS is not an act of subordination to US strategy but a move to ensure that Australia can carry more of its own regional security burden. A stable maritime order may create the strategic space for diplomacy, humanitarian assistance, fisheries enforcement, and engagement with Pacific and Southeast Asian partners. The relevant policy question is therefore not whether Australia should choose AUKUS *or* Blue Security, but whether it can fund and organise both without allowing AUKUS to crowd out regional diplomacy and non-traditional security programs.

This submission does not dismiss Strating and Wallis's concerns. AUKUS is extraordinarily expensive; it takes many years to deliver and may be viewed by some neighbours as escalatory or closely tied to US–China rivalry. Its advocates must therefore demonstrate that the capability contributes to a broader, inclusive regional order—and that submarine investment does not displace the practical maritime cooperation on which Australia's everyday security also depends.

Perspective 15: Parker

Jennifer Parker, a former naval officer, has emerged as a prominent voice in the debate over AUKUS. Her arguments are distinct because she does not treat AUKUS

as a "silver bullet." Instead, she frames it as one necessary—but insufficient—component of a much broader, more urgent maritime strategy for Australia.

Parker sees AUKUS is a necessary, though partial, response. She pushes back against critics who rarely offer a credible, viable alternative for the same level of strategic deterrence. She maintains that nuclear-powered submarines provide unique capabilities—specifically in stealth, endurance, and range—that are essential for operating in a contested Indo-Pacific environment where conventional diesel-electric boats are more vulnerable to detection.

For Parker, the primary utility of AUKUS Pillar I is regional deterrence. She argues that the changing security environment in the Indo-Pacific necessitates a shift toward capabilities that can compel adversaries to think twice before acting. She contends that Australia's maritime sovereignty is linked to its ability to deny an adversary freedom of action, and that AUKUS provides the teeth necessary to back up regional diplomacy. She also argues that focus on the long-term AUKUS timeline should not distract from the urgent need to maintain and modernize the current fleet and address staffing and industrial base shortages in the near term.

Perspective 16: Palazzo and the character of maritime strategy

Among contemporary Australian commentators on AUKUS, Albert Palazzo offers one of the more sophisticated critiques, questioning not simply its cost or implementation but whether technological change is undermining traditional assumptions about maritime power. Precision weapons, long-range strike, autonomous platforms and pervasive surveillance, he argues, change the dynamics: as land-based systems can play a pivotal role in shaping the maritime battlespace, particularly in the Western Pacific. This raises questions about investing heavily in a small number of complex, crewed naval platforms.

Palazzo also cautions against overstating what nuclear-powered submarines can achieve. Australia depends upon extensive commercial shipping networks for its economic security, yet even highly capable submarines cannot protect thousands of merchant movements across vast oceanic distances, he argues. More fundamentally, AUKUS imposes significant opportunity costs. Resources devoted to submarines cannot simultaneously fund long-range strike, integrated air and missile defence, autonomous systems, logistics, fuel resilience, cyber capabilities and national mobilisation. Palazzo therefore advocates greater emphasis on distributed denial, resilient land-based capabilities and autonomous systems.

These arguments provide an important corrective to any tendency to equate procurement with strategy. And he is right to stress the efficacy of, and resources required for, littoral military operations. Nevertheless, the central point of departure concerns the appropriate unit of analysis. Palazzo largely asks whether nuclear-powered submarines represent the optimal platform for Australia's future defence**.** A

broader question is how Australia should create Undersea Power in the middle decades of the 21st century.

Undersea Power subsumes submarines. It encompasses autonomous underwater vehicles, seabed sensors, intelligence collection, protection of submarine communications cables and offshore infrastructure, cyber resilience, advanced undersea sensing, scientific research, advanced manufacturing and alliance integration. Submarines remain an essential component, but not the sole expression, of this wider capability.

Indeed, much of Palazzo's diagnosis of technological change can be accepted without accepting all of his conclusions. Artificial intelligence, autonomous systems, distributed sensing and precision strike are transforming maritime warfare, but this arguably increases rather than diminishes the importance of the undersea domain. Competition extends throughout the water column, from space-based surveillance to autonomous underwater vehicles and critical seabed infrastructure, as well as the littorals, which Palazzo highlights so well.

Geography reinforces this requirement. Technology and doctrine change rapidly; Australia's geography does not. Australia remains an island continent between the Indian and Pacific Oceans, dependent upon maritime trade, undersea communications, offshore infrastructure and freedom of navigation across an enormous maritime theatre. Technological change will alter how Australia exercises maritime power, not eliminate the requirement for it.

This also reframes Palazzo's opportunity-cost argument. If AUKUS becomes a broader national capability-building enterprise, investment in nuclear stewardship, autonomous systems, quantum technologies, advanced manufacturing, scientific research, workforce development and sovereign industry can bring benefits beyond the submarines themselves.

Palazzo is therefore right that force structure must adapt to the changing character of warfare. The appropriate response, however, is not to move beyond submarines but to move beyond thinking about submarines alone. Australia's objective should acknowledge the efficacy of land power and air power, while also managing the requirement for comprehensive Undersea Power that integrates submarines, autonomous technologies, science, industry, intelligence, infrastructure protection and alliances.

Beyond the existing literature

The literature reviewed here demonstrates remarkable continuity in maritime strategic thought. Scholars have consistently argued that maritime power cannot be reduced simply to ships or fleets. Rather, it reflects broader expressions of national capability. This submission accepts that proposition but extends it in an important respect. Existing scholarship has generally continued to treat submarines as the principal object of analysis within the undersea environment.

This submission argues that the more appropriate unit of analysis is Undersea Power. Undersea Power encompasses conventionally armed, nuclear-powered submarines, autonomous systems, intelligence collection, seabed infrastructure, critical communications, offshore energy, quantum sensing, cyber resilience, scientific research, industrial capability and alliance integration. It therefore offers a broader conception of national capability than submarine acquisition alone. Viewed through this lens, AUKUS ceases to be simply a submarine project. It becomes Australia's long-term strategy for developing comprehensive Undersea Power as part of its maritime strategy. This shift in perspective has important policy implications. It directs attention away from individual platforms and towards the longstanding national institutions, industrial capacity, scientific capability and technological innovation that will determine Australia's ability to exercise strategic agency throughout the Indo-Pacific over the coming decades.

Concept of Undersea Power

Taken together, the work of these scholars and strategists recognise that Australia's geography imposes distinctive requirements; each emphasised the importance of maritime capability; and each understood that military force must ultimately serve broader national objectives. The concept of Undersea Power, as a significant component of maritime power, that is proposed in this submission seeks to extend that tradition into the strategic realities of the 21st century.

Contemporary strategy must encompass the many facets mentioned above. The organising principle, however, remains unchanged: Australia's security ultimately depends upon its capacity to understand, influence and, where necessary, control the maritime environment upon which its prosperity and sovereignty depend. That task involves developing the concept of Undersea Power while acknowledging the significance and complementarity of the other domains – cyber, space, air and land.

Part 8. AUKUS in Australian strategic practice: From procurement to national capability

A distinguishing feature of AUKUS is that it represents a rare convergence between Australia's strategic assessments, defence policy, industrial policy and scientific policy. While public debate has often portrayed AUKUS primarily as a submarine acquisition program, Australian governments and senior Defence leaders have described it in much broader terms. Read together, these official statements suggest an important evolution in Australian strategic thinking—from viewing defence capability principally as the acquisition of military platforms towards understanding it as the development of enduring national capacity. This evolution did not begin with AUKUS. It has been developing incrementally for years.

Evolving defence white papers

The 2009 Defence White Paper first identified the importance of Australia's maritime geography and foreshadowed the need for a significantly expanded future submarine capability. Although conceived before the announcement of AUKUS, the White Paper recognised that Australia's strategic circumstances demanded greater operational reach across the Indian and Pacific Oceans and concluded that long-range undersea capability would become central to Australian defence planning. While subsequent governments modified force structure priorities, this fundamental judgement concerning Australia's geography remained remarkably consistent.

The 2013 and 2016 Defence White Papers further reinforced this trajectory. Both emphasised Australia's dependence upon an open maritime trading system and highlighted the strategic significance of the Indo-Pacific as Australia's primary operating environment. The 2016 White Paper argued that Australia's future prosperity depended upon maintaining a favourable regional balance in which freedom of navigation, secure sea lines of communication and a stable rules-based order could be preserved. These documents therefore established the strategic logic that would later underpin AUKUS, even though nuclear-powered submarines had not yet entered official policy.

Decisive shift

The decisive shift occurred following the publication of the 2020 Defence Strategic Update and, more comprehensively, the 2023 Defence Strategic Review. These documents marked a significant departure from previous assumptions regarding strategic warning time. Rather than anticipating lengthy periods in which Australia could progressively mobilise, the Defence Strategic Review concluded that Australia now faced what it described as the most challenging strategic circumstances since the Second World War. It recommended a strategy of National Defence in which deterrence, long-range projection, industrial resilience and technological advantage became central organising principles of defence policy.

More than procurement

Importantly, the 2023 Review did not present AUKUS simply as a procurement decision. Instead, it treated the partnership as one component of a broader transformation in Australia's defence posture. Its emphasis upon integrated capability, sovereign industrial capacity, workforce development and technological innovation closely aligns with the concept of Undersea Power advanced in this submission.

This evolution became even more explicit in the 2024 *National Defence Strategy*. For the first time, an Australian strategic document placed the national defence industrial base alongside military capability as a central component of deterrence. The Strategy argued that Australia's security depends not only on the capabilities possessed by the Australian Defence Force but also on the nation's ability to generate, sustain, and adapt those capabilities over time. This is a big conceptual shift. Industrial capacity is no longer viewed simply as a support function; it has become an element of national power in its own right.

These themes have been echoed by successive Chiefs of Navy. Vice Admiral Tim Barrett, for instance, argued in *The Navy and the Nation* that maritime power should be understood as a national enterprise integrating government, industry, education, research and diplomacy. His central proposition—that sea power reflects the strength of the nation rather than the Navy alone—provides an important intellectual bridge between classical maritime strategy and the contemporary challenges confronting Australia. The concept of Undersea Power advanced in this submission applies Barrett's insight to the strategic significance of the undersea domain.

Submarine Agency's expansive mandate

The establishment of the Australian Submarine Agency is a significant indicator of government intent. It plays an important role in overseeing much of the AUKUS endeavour. Its responsibilities extend beyond procurement. Its mandate encompasses workforce development, industrial mobilisation, infrastructure, nuclear stewardship, regulatory coordination and long-term capability generation. Such an institutional design implicitly recognises that acquiring conventionally armed, nuclear-powered submarines requires the creation of a national ecosystem rather than the purchase of a discrete weapon system.

Broader articulation of optimal pathway

Australian political leaders have consistently articulated this broader understanding. In announcing the Optimal Pathway in San Diego in March 2023, Prime Minister Anthony Albanese described AUKUS as the biggest single investment in Australia's defence capability in the nation's history, while emphasising the development of Australian industry, advanced manufacturing, education and skilled employment alongside the acquisition of submarines. Deputy Prime Minister and Defence Minister Richard Marles similarly argued that AUKUS was fundamentally about

building a sovereign industrial capability capable of supporting Australia's long-term strategic interests rather than merely receiving platforms constructed elsewhere.

The Sea Power Centre–Australia has made an important contribution to this evolution in strategic thinking. Recent work on subsea and seabed warfare is particularly significant because it explicitly recognises the seabed as an increasingly contested operational environment requiring new forms of thinking. These publications reinforce the argument that future maritime competition will concern not only surface fleets and submarines but also autonomous systems, critical infrastructure, seabed sensors and the protection of underwater communications.

Technological research and innovation

The Defence Science and Technology Group (DSTG) has likewise anticipated many of the themes now embodied within AUKUS. For decades, DSTG has been internationally recognised for research in sonar, underwater acoustics, oceanography, hydrography and anti-submarine warfare. More recently, its work has expanded into artificial intelligence, trusted autonomous systems, human-machine teaming, quantum technologies and advanced maritime decision support. Collectively, this research points towards a future force in which crewed submarines operate as part of a distributed undersea architecture comprising autonomous underwater vehicles, persistent sensor networks, cyber-enabled command systems and advanced analytics.

The Ghost Shark extra-large autonomous underwater vehicle program provides an instructive example of this evolution. Developed collaboratively by DSTG, the Royal Australian Navy and Australian industry, Ghost Shark demonstrates how sovereign innovation can complement rather than replace conventionally armed, nuclear-powered submarines. It exemplifies the integrated approach envisaged under AUKUS Pillar II, in which autonomous systems extend the reach, persistence and effectiveness of crewed platforms while simultaneously strengthening Australia's domestic industrial and technological base.

Australian universities have become important participants in this national enterprise. Institutions including the Australian Maritime College, UNSW Canberra, the University of Adelaide, Curtin University, the Australian National University and other research-intensive universities now undertake internationally recognised work in naval architecture, ocean engineering, robotics, cyber security, quantum technologies and autonomous systems. Their growing collaboration with Defence, DSTG and Australian industry demonstrates that future maritime capability depends as much on sustained investment in education, research and innovation as on military procurement.

Framework for interconnected endeavour

Taken together, these developments reveal a remarkable continuity across Australian strategic policy. Successive governments, Defence reviews, Chiefs of

Navy, Defence scientists, and research institutions have reached a common understanding: Australia's future security will depend increasingly on its ability to create sovereign capability through the integration of military operations, industrial capacity, scientific excellence, and technological innovation.

This submission builds on that emerging consensus while proposing a broader conceptual framework for understanding it. Rather than viewing these developments as separate initiatives—continuous naval shipbuilding, AUKUS, DSTG research, autonomous systems, university partnerships and industrial mobilisation—they should be recognised as interconnected elements of a single national endeavour: the development of Australian Undersea Power.

Understood in this way, AUKUS becomes not simply how Australia acquires conventionally armed, nuclear-powered submarines. It becomes the institutional framework through which Australia develops the scientific capability, industrial resilience, skilled workforce, technological sophistication and alliance integration necessary to emerge as one of the leading Undersea Powers of the Indo-Pacific.

Part 9: Abandonment, entrapment or deterrence?

Australia has long faced the strategic dilemma of balancing the Australian fear of abandonment with the fear of entrapment. Effectively, Australia has sought the Goldilocks solution – not too hot and not too cold – just right. In a more contested world, that position is proving more difficult to sustain. This dialectic is an important aspect of the current debate surrounding AUKUS, the acquisition of SSNs, and the establishment of Submarine Rotational Force–West (SRF-West). The deployment of SSNs to Australia does not strictly resolve this tension; rather, it shifts the strategic calculus in ways that arguably exacerbate the risk of entrapment while simultaneously aiming to mitigate the risk of abandonment.

Argument for amelioration: Credible deterrence and agency

Proponents of AUKUS argue that the integration of SSNs and the presence of SRF-West do not lead to entrapment, but rather to a more stable regional order that makes a conflict scenario less likely to occur in the first place. Three factors are worth considering:

1. **Deterrence by Capability.** The primary argument in support of SSNs as bolstering stability is that by significantly increasing the collective undersea warfare capability of the US, UK, and Australia, the allies raise the cost of aggression for any potential adversary. If deterrence holds, the risk of a major conflict—and thus the risk of entrapment—decreases.
2. **Influencing the Ally.** Some argue that by becoming a more capable, Tier-One ally through the acquisition of sovereign SSN capability, Australia gains a seat at the table in American planning. From this angle, the goal would be to move Australia from being a passive observer of US strategy to an active shaper of it. In this view, Australia is less likely to feel entrapped and forced into a bad decision if it is part of the decision-making process at a high level.
3. **Strategic Autonomy**. While counterintuitive, the acquisition of sovereign SSN capability is framed as an eventual move away from total dependence. Arguably, the current reliance on the US security umbrella is a form of passive entrapment, and sovereign nuclear-powered subs give Australia the ability to act more independently in its own maritime approaches, providing a buffer against the whims of an ally.

Argument for exacerbation: The structural dynamics of entrapment

Critics, and even some cautious supporters, suggest that the infrastructure of AUKUS—specifically the physical basing of US submarines in Western Australia (SRF-West)—creates a reality that is almost impossible to disentangle from the prospect of a US-led conflict. Three factors spring to mind:

1. **The Targeting Problem.** Establishing SRF-West at HMAS Stirling in Cockburn Sound fundamentally changes Australia's strategic profile. During a crisis over

what Brendan Taylor described as one of *The Four Flashpoints* (Korea, East China Sea, South China Sea and/or the Taiwan Strait) an adversary may no longer view Australia as a peripheral supporter, but as a primary staging ground for US power projection. This creates a dilemma – use it or lose it; if the US operates from Australian soil, the political and military pressure for Australia to participate in a conflict involving those assets becomes nearly insurmountable.

2. **Deep Integration and Sunk Cost**. The sheer level of technical, operational, and personnel integration required for SRF-West and the future SSN-AUKUS fleet creates a form of administrative entrapment. When two navies are operationally seamless—sharing training, maintenance, and provisions—the logistical reality of separating them during a crisis becomes a massive strategic disadvantage. The sunk cost of this integration makes neutrality or non-participation a practical impossibility.
3. **Reduced Strategic Flexibility**. By tying Australia's long-term submarine capability so tightly to the US (and UK) industrial base and design philosophy, Australia loses the flexibility to decouple its military posture from the United States. If the US shifts its strategic focus or changes its approach to the flashpoints, Australia is effectively locked into the US trajectory for decades due to the life cycle of these platforms.

The Taiwan variable: Autonomy vs. alliance

As indicated, the Taiwan variable is but one of many possible future scenarios. But it represents the ultimate test of this tension. The whole point of developing a more muscular Undersea Power is to make war less likely. Still, in what I see as the unlikely event that a conflict were to arise, Australia would face what would look like a binary choice: it could participate, accept entrapment, and contribute its own SSN capabilities to the fight, thereby cementing the alliance and addressing the fear of abandonment, but incurring the direct military and diplomatic costs of a conflict with China. Alternatively, it could abstain and risk damage to, if not abandonment of, the alliance—the fear that by failing to support the US in its most critical hour, Australia would fundamentally break the ANZUS treaty and lose the security guarantee it relies upon. In essence, though, Australia would retain formal sovereign discretion, although deeper operational integration could increase the political and strategic costs of declining participation.

Synthesizing amelioration and exacerbation

The acquisition of SSNs and the creation of SRF-West act as a double-edged sword. They bolster deterrence and effectively ameliorate the fear of abandonment by creating the deepest possible material entanglement with the United States, making it structurally and politically difficult for the US to ever ignore Australia's security needs. However, this same entanglement exacerbates the fear of entrapment. By making Australia a central node in US regional power projection, the cost of *opting out* of a US-led conflict rises. In short, AUKUS creates a strategic environment where

the choice between abandonment and entrapment is no longer a political option to be exercised in a crisis, but a structural reality decided in advance.

It is important to stress that the argument in favour of SSNs is predicated on the prospect of reducing the likelihood of outright conflict in a place such as the Taiwan Strait materialising. This is achieved by contributing to a robust allied defensive capability such that would-be war planners contemplating an attack should hesitate, and continue to hesitate, reckoning their chances of success in carrying out an attack being insufficient to warrant the risk. To understand this better, we need to turn to deterrence theory and practice.

Deterrence – Theory, practice and AUKUS

It is worth reflecting on what deterrence means in the Australian national security context before proceeding further, particularly as it applies to SSNs. The concept in the Australian context of its Defence White Papers has evolved from a traditional posture of territorial defense into a concept known as deterrence through denial and impactful projection. Unlike nuclear-armed states that rely on deterrence by punishment (that is, the threat of massive retaliation), Australia—as a non-nuclear state—cannot rely on that model. Instead, Australian strategic thinking, particularly following the 2023 *Defence Strategic Review*, emphasizes deterrence by denial.

Deterrence by Denial. The goal with deterrence by denial is to make the cost of aggression against Australia or its interests so high, and the probability of success so low, that a potential adversary chooses not to act. It shifts the focus from simply defending the border to being able to hold an adversary's assets at risk at a distance from the Australian continent. Impactful Projection is outlined in the *Defence Strategic Review (2023).* It is the practical application of this doctrine of deterrence by denial. It refers to the Australian Defence Force's ability to exert influence and deny access to key maritime approaches, such as the northern archipelagic waters, using long-range capabilities. Long range strike capabilities, including SSNs are key to this construct.

Submarines in Deterrence. Submarines are widely considered the most potent asset in Australia's deterrence-by-denial strategy. Submarines are designed to complicate an adversary's planning calculus. By simply having the *capability* to threaten a maritime blockade or interdict shipping lanes, Australia gains significant leverage in regional diplomacy and crisis management. Without long-range, stealthy, and persistent undersea platforms, the Australian Defence Force would be unduly constrained, if not effectively neutralized, in a potential conflict. Their contribution rests on three pillars:

1. **The Undersea Advantage - Persistent Presence**. Submarines provide the only platform capable of remaining undetected in hostile environments for extended periods. Their ability to go dark (becoming virtually invisible), creates a permanent state of uncertainty for an adversary. An adversary must assume a

submarine could be present, forcing them to allocate significant resources (ships, aircraft, sensors) to Anti-Submarine Warfare (ASW), which drains their capacity for other operations. This is what happened during the Falklands War in 1982. The Argentines found out the British had an SSN in their vicinity and were prepared to use it (as demonstrated by the sinking of the Argentine Navy's ARA General Belgrano). From that point on, the Argentine Navy was unprepared to risk a further encounter and stayed in port for the duration of the war. It would have taken enormous political will and great naval bravery to risk another confrontation at sea with a submarine they had no way to identify and attack.

2. **Lethal Long-Range Strike.** Modern Australian submarine strategy, particularly with the planned transition to SSNs under AUKUS, is shifting toward integrating long-range land-attack missiles. This allows Australia to hold distant adversary assets, including ports, airfields, and command centres at risk – in a way intended to approximate, if not match, existing capabilities that could be used against Australia. This involves extending the reach of deterrence beyond the immediate maritime approaches. That means any threat of violence or plans to attack Australia would have to take into account the risk of retaliation.
3. **Intelligence, Surveillance, and Reconnaissance.** Submarines also act as silent eyes and ears. By operating covertly, they provide high-fidelity intelligence on adversary or would-be adversary movements. This helps Australia detect preparations for conflict early, allowing pre-emptive diplomatic or military signalling—a key component of deterrence. Occasional visits to the ports of allied and friendly neighbours helps reinforce the messaging that Australia has a robust and stealthy capability, and the port visit signifies the goodwill towards the host country – hinting also at the benefits of extended deterrence which accrue from being well disposed to, if not completely aligned with, Australia.

A wager on denial. As Marc Ablong argued recently, AUKUS denies China a hegemonic position in the Indo-Pacific. First, on the cognitive level, a survivable submarine force injects permanent uncertainty into a coercive plan, and uncertainty is the solvent of hegemonic confidence. The clearest proof that this works comes from Beijing itself, which invested diplomatic capital at the IAEA and across Southeast Asia opposing AUKUS, even though it claims it to be irrelevant. Second, on the strategic level, AUKUS adds a node to a distributed system in which the cost of dominance is raised by a coalition of powers in the neighbourhood. Third, at the operational level, the SSN provides sea denial, holding an adversary's forces at risk in the choke points and making regional sea control prohibitively expensive. This, he argues, is a coalition effect to which a handful of Australian boats is a serious addition.

Deterrence ultimately depends not just on possessing an SSN, but on having the sovereign ability to generate, sustain, deploy, and credibly employ that capability when required. This reinforces the broader argument that AUKUS is about the capability system behind the submarine, rather than simply the platform itself.

AUKUS may increase Australia's exposure as a potential military target because SRF-West and associated infrastructure will increase Australia's importance to allied operations. That risk should be acknowledged rather than dismissed. It does not follow, however, that AUKUS uniquely makes Australia a “nuclear target”. Australia has long hosted strategically important alliance, intelligence and communications facilities. The relevant question is whether the additional deterrence and defensive capability generated by AUKUS outweighs the increased exposure associated with deeper integration. This submission concludes that it does.

Weighing capability and intent

As a military intelligence analyst, I was trained to conceive potential threats in terms of capability and intent. Capability includes a nation's military and economic power. This includes its weapon types, quantities, ranges, precision, and the proficiency of its armed forces in using them. A potential adversary’s intentions are uncertain and can change at short notice, which is why capability matters so much to defence planning. On that front, China stands out as having expanded its offensive military capabilities to a marked degree. In some countries this has lulled governments into a form of stasis – hoping to ignore and thus avoid confrontation. The Philippines is on the front lines of this confrontation. Numerous reports by a range of international and domestic institutions point to the dramatic expansion in Chinese capability.

The other half of the analytical equation concerns intent. To measure intent, analysts monitor official declarations. But in statecraft, governments often avoid revealing their true intentions, or masking them, in order to lull an opponent into a false sense of security. Looking for signs of secret or alternative plans and intentions is the remit of the intelligence community. As we have noted, intentions, declared and undeclared, can change at short notice. Declared intentions – their words – are weighed against their actions – their deeds. Capabilities take time to alter. Intentions can switch at short notice. Prudence dictates that Australia pursue the dictum to speak softly and carry a bigger stick.

Entanglement accepted for deterrence

This part argues that AUKUS places Australia at the intersection of three competing strategic imperatives: the fear of abandonment by the United States, the fear of entrapment in a conflict not of its choosing, and the pursuit of deterrence to offset these risks through enhanced national capability. The acquisition of nuclear-powered submarines and establishment of SRF-West may reduce abandonment risk by deepening Australia’s operational, industrial, and strategic integration with the United States and United Kingdom, while giving Canberra greater influence and independent reach. Yet, in extreme circumstances, the same integration may increase Australia’s exposure as a potential staging area and target, reduce its capacity to remain detached from a future regional conflict, and limit long-term strategic flexibility. Within this dilemma, Australian defence policy increasingly relies on deterrence by denial and impactful projection: using stealthy, persistent, and

potentially long-range submarine capabilities to raise the costs and hopefully reduce the prospects of aggression from a would-be aggressor.

The commitment to AUKUS is largely predicated on the belief that bolstering Australia's Undersea Power and tightening the connection with the United States and United Kingdom will have a significant additional deterrent effect – beyond that supplied by the extant security arrangements. That requirement for deterrence is evident in light of the substantial increase in China's military capabilities, its gunnery exercise off Australia's coast, its testing of ballistic missiles in the Pacific its apparent efforts to exact revenge for the century of humiliation, and its persistent and expanding military power. In this context, it is prudent for Australia to bolster capabilities that mitigate the risk of acts of aggression, or coercion with threats of aggression, pursued in a way that is contrary to Australia's interests in Southeast Asia and the Pacific. AUKUS represents a deliberate decision to accept greater alliance entanglement in exchange for stronger deterrence, strategic agency, and a more credible capacity to protect Australian interests across the Indo-Pacific.

Part 10: AUKUS as the practical means of building Australian Undersea Power

From strategic concept to national enterprise

The preceding parts of this paper have argued that Australia's principal strategic challenge is not simply the acquisition of conventionally armed, nuclear-powered submarines. Rather, it is developing a national capacity to understand, monitor, protect and, where necessary, contest the undersea domain across the Indo-Pacific. This broader conception of Undersea Power recognises that undersea competition extends beyond traditional naval warfare to include digital connectivity, offshore energy security, autonomous systems, and the resilience of the maritime economy. Viewed through this lens, AUKUS should be understood not as an end in itself but as the principal mechanism through which Australia can translate this strategic concept into practical reality.

Much of the debate has framed AUKUS as a procurement project. This is understandable. Yet it is more accurately understood as a long-term program of national capability formation. It represents Australia's most ambitious strategic capability-building enterprise since the industrial mobilisation that accompanied the Second World War. This broader interpretation is consistent with the 2023 *Optimal Pathway* announcement, which devoted as much attention to workforce, industrial uplift, regulatory reform, and infrastructure as it did to the submarine acquisition itself. The accompanying statements by the three national leaders emphasised that AUKUS is intended to strengthen defence industrial integration, scientific collaboration, and technological innovation. This recognises that strategic advantage comes from the capability that is generated collectively rather than independently.

New phase of alliance cooperation

The historical review presented in Part 2 argued that Australia–United Kingdom–United States cooperation has evolved through five successive waves: wartime operational integration, Cold War intelligence institutionalisation, post-Cold War operational interoperability and, most recently, industrial and technological integration. AUKUS is the beginning of this fifth phase.

Previous alliance arrangements largely focused on sharing intelligence, operational planning, and military capability. AUKUS instead seeks to integrate the processes through which military capability is generated. It therefore is more ambitious, encompassing collaborative research and development, common industrial standards, workforce exchanges, technology transfer, harmonisation of export controls, advanced manufacturing and long-term industrial planning.

This transition reflects broader changes in the international strategic environment. As the 2022 United States *National Defense Strategy* observed, contemporary strategic competition is characterised by technological rivalry, defence industrial resilience

and innovation rather than the numerical balance of military platforms. Allies' ability to innovate collectively, share advanced technologies, and maintain resilient supply chains has become a strategic asset in its own right. The significance of AUKUS therefore extends well beyond submarines. It creates institutional arrangements that enable Australia to participate more fully in allied technological ecosystems than at any previous point in its history.

Pillar I: Building national capability

Public attention naturally focuses upon Pillar I because conventionally armed, nuclear-powered submarines are its most visible product. Yet Pillar I's strategic importance lies as much in the capabilities it compels Australia to develop as in the submarines themselves. Operating nuclear-powered submarines requires Australia to establish an extensive national ecosystem. This includes a nuclear-qualified engineering workforce, specialist regulatory authorities, nuclear stewardship arrangements, advanced shipbuilding and sustainment infrastructure, sophisticated systems integration capabilities and a cadre of naval personnel experienced in operating and maintaining one of the world’s most complex military platforms.

The Commonwealth’s *Optimal Pathway* plan recognised this reality by allocating substantial investment to infrastructure at HMAS Stirling, Osborne and associated industrial precincts. This also includes long-term investments in education, apprenticeships, university partnerships and advanced manufacturing. These investments are not just supporting activities. They are themselves strategic outcomes.

AUKUS requires Australia to become an active participant in design support, sustainment, technological innovation and industrial production. This transition has implications far beyond naval capability. It strengthens Australia’s broader industrial base, expands advanced engineering skills and creates opportunities for Australian firms to participate in global defence supply chains.

The practical significance of this transition has been recognised by the United States Congress. Congressional debate surrounding AUKUS has consistently emphasised that successful implementation depends not only upon transferring submarines to Australia but also upon expanding industrial production in all three countries. The AUKUS legislation passed by Congress in 2023 and 2024 therefore sought simultaneously to streamline technology transfer while investing in submarine industrial capacity and workforce expansion.

Pillar II: Foundation of future Undersea Power

If Pillar I provides the operational core of Australia’s future undersea capability, Pillar II provides some of its technological foundations. Artificial intelligence, autonomous systems, quantum technologies, cyber capabilities, advanced sensing, electronic warfare and undersea robotics are often discussed as though they were supplementary to the submarine enterprise. They are fundamental to it.

Recent work by the DSTG, together with allied research organisations, envisages future maritime operations as integrated systems in which crewed submarines, autonomous underwater vehicles, seabed sensor networks, maritime patrol aircraft, cyber capabilities and artificial intelligence operate together as mutually reinforcing elements of a distributed force.

This conception closely aligns with emerging United States naval doctrine, particularly the concept of Distributed Maritime Operations and associated work on Joint All-Domain Command and Control. Rather than relying on individual platforms acting independently, it relies on rapidly integrating multiple sensors, autonomous systems, and precision effects across the battlespace. SSNs, with greater capacity, range and transit speeds, are likely to be important contributors to undersea networks, and more capable than conventionally powered submarines.

Pillar II positions Australia to participate in this transformation. Its strategic importance therefore extends beyond technology acquisition. It creates opportunities for Australian universities, research institutions, DSTG laboratories and Australian industry to contribute directly to the development of next-generation capabilities. Success should consequently be measured not merely by collaborative research projects but by growth in sovereign intellectual property, scientific expertise and advanced manufacturing capability.

Industrial mobilisation as national strategy

The industrial dimension of AUKUS warrants more attention than it has thus far received in public debate. Mahan argued more than a century ago that maritime power ultimately rests upon commerce, industry and productive capacity rather than naval strength alone. Contemporary strategic competition has reinforced rather than diminished this insight.

The 2024 Australian *National Defence Strategy* identifies the defence industrial base as a component of national power rather than merely a support function. Similarly, the *Defence Strategic Review* argued that Australia must move from a business-as-usual approach to one characterised by continuous industrial mobilisation and sustained capability generation. This shift is important in Australian strategic thinking.

The objective is no longer simply to maintain defence capability. It is to build a resilient national industrial ecosystem capable of designing, manufacturing, sustaining and continuously improving sophisticated military systems over many decades. AUKUS incorporates both the necessity and the opportunity to achieve this transformation. Investment in Osborne, Henderson, educational institutions, vocational training and advanced manufacturing should therefore be regarded as strategic investments in national power. Their benefits will extend beyond submarines into aerospace, cyber security, quantum technologies, robotics, advanced materials and wider high-technology sectors of the Australian economy.

Strategic agency through alliance

Perhaps the most persistent criticism of AUKUS is that it increases Australia's dependence upon the United States. This concern should not be dismissed lightly. History abounds with examples of alliances causing tensions between dependence and autonomy. Alliance politics can be characterised as the twin risks of abandonment and entrapment. According to one school of thought, alliances last as long as they continue to serve the interests of all participating states rather than one alone. Concerns of US overstretch, coupled with a transactional and mercantilist approach to international affairs, have led many to question American staying power. These insights and concerns are directly relevant to AUKUS. Australia should neither assume that allied support is automatic nor conclude that deeper cooperation necessarily diminishes sovereignty. Instead, Australia should be looking to accelerate and make more robust its own military capabilities. AUKUS should be seen as a mechanism through which Australia can manage these competing risks.

Strategic agency does not require strategic isolation. Rather, it requires sufficient national capability to make sovereign decisions while working effectively with trusted partners. Australia's experience within the Five Eyes intelligence partnership illustrates this principle. Intelligence integration has not prevented successive Australian governments from reaching independent assessments or pursuing distinct policy positions. Instead, access to shared intelligence has enhanced Australia's capacity for informed sovereign decision-making. The same logic applies to AUKUS.

Australia contributes geography, political reliability, scientific capability, operational experience and industrial potential. The United States and the United Kingdom contribute advanced technologies, nuclear stewardship, industrial collaboration and access to highly sophisticated defence innovation ecosystems. The relationship is therefore reciprocal. Far from reducing Australia's strategic agency, successful implementation of AUKUS can be expected to enhance Australia's ability to influence allied strategy by making Australia a more capable and more valuable partner.

Managing Risk while preserving strategic purpose

Support for AUKUS should not imply complacency regarding implementation. Serious challenges remain. Studies have highlighted continuing shortfalls in United States submarine production and workforce capacity. Meanwhile, pressures from the simultaneous construction of Virginia-class and Columbia-class submarines indicate that industrial expansion will be required to meet current production targets.

Australian analysts have therefore been correct to emphasise the importance of workforce development, industrial readiness and realistic transition planning. Likewise, calls for greater transparency, parliamentary oversight and public accountability are justified. The appropriate policy response is not strategic retreat but better execution. Government should continue investing in workforce development, industrial capacity, regulatory reform and contingency planning while publishing clearer measures of progress against agreed capability objectives. Large

strategic enterprises inevitably encounter uncertainty. The relevant question is not whether risks exist, but whether they can be managed more effectively than the risks associated with abandoning the enterprise altogether.

What Pillar I should deliver

Ultimately, AUKUS should not be judged solely by the date on which Australia commissions its first conventionally armed, nuclear-powered submarine. Its success should instead be assessed according to whether Australia has, by the mid-2030s:

- Established a sovereign nuclear-qualified workforce;
- Created a world-class submarine sustainment capability;
- Embedded Australian firms within allied defence supply chains;
- Strengthened advanced manufacturing;
- Expanded sovereign research in quantum technologies, artificial intelligence and autonomous systems;
- Improved protection of critical undersea infrastructure;
- Enhanced maritime domain awareness;
- Developed integrated crewed and autonomous undersea systems; and
- Increased Australia's capacity to shape the regional strategic environment.

These outcomes would represent the emergence of an Australian undersea enterprise. They would also demonstrate that AUKUS has achieved its broader purpose: strengthening Australia's strategic agency through capability, innovation and trusted alliance cooperation.

Part 11: US and UK industrial capacity, political risk and alliance resilience

Introduction

No aspect of AUKUS has attracted greater scrutiny than whether the United States will ultimately be able—or willing—to transfer Virginia-class submarines to Australia under the timetable announced in the Optimal Pathway in March 2023. Critics have pointed to persistent production shortfalls within the United States submarine industrial base, increasing demand for skilled workers generated by the concurrent manufacture of Columbia-class ballistic missile submarines, uncertainty surrounding future American administrations, and the possibility that strategic competition with China may leave insufficient submarines available for transfer.

These concerns are legitimate. They deserve careful consideration because they identify genuine implementation risks. However, implementation risk should not be confused with strategic failure. The appropriate question is not whether AUKUS faces obstacles—it unquestionably does—but whether those obstacles outweigh the partnership's strategic advantages or justify abandoning it altogether. This is the opportunity of a generation which likely would not come again and abandoning it would have consequences - including having to explain to the next generation why such an opportunity was missed. This submission concludes that the obstacles do not outweigh the advantages. Rather, the existence of implementation risks strengthens the case for accelerating industrial cooperation, expanding sovereign Australian capability and developing credible contingency arrangements.

The American submarine industrial base

The greatest practical challenge confronting Pillar I lies within the United States submarine industrial base. For more than a decade, the United States Navy has struggled to increase production of Virginia-class submarines to the planned rate of two boats per year while commencing serial production of the Columbia-class strategic deterrent submarines. Production remains below planned levels owing to workforce shortages, supply-chain constraints, infrastructure limitations, and the demands of expanding highly specialized manufacturing capacity. Likewise, current shipbuilding plans will require sustained industrial expansion and long-term investment if they are to be achieved. Efforts are underway to expand the workforce accordingly.

This production bottleneck highlights structural rather than temporary challenges. Yet the United States Congress has not responded by questioning AUKUS's strategic rationale. Rather, it has repeatedly sought to strengthen the industrial foundations necessary to overcome the bottleneck. Legislation enacted between 2023 and 2025 has included funding for supplier expansion, workforce development, infrastructure investment and export-control reform, reflecting bipartisan congressional recognition

that allied industrial resilience forms an integral component of long-term strategic competition. This distinction is important. The principal debate in Washington is increasingly not whether AUKUS should proceed, but how to strengthen the industrial base to make it possible.

British industrial limitations and the AUKUS SNN follow-on

As Grant Mason observed, a harder constraint on AUKUS is not just the money, but the scarce industrial and human capacity. For the British Defence industrial base, this is a major issue. Governments can ultimately appropriate more money and even then they find that hard to do – as illustrated by the UK trying to fund its Defence Industry Plan. But they cannot appropriate another 5,000 nuclear-qualified engineers into existence. Given that each country does not currently have the workforce it needs to deliver its own mega projects and civil infrastructure ambitions, this issue is not academic. The important question then becomes not simply what AUKUS costs, but what scarce workforce, industrial and supply-chain capacity it consumes across all three nations — particularly when US, UK and Australian requirements increasingly overlap. Challenges in building the workforce also point to challenges in sharing it between the three countries and ensuring the right people are in the right place at the right time to deliver.

These concerns suggest the three countries will be seriously pressed to keep the submarine construction pipeline flowing. They will also be pressed to develop and implement the plan for a follow-on AUKUS SSN. This is intended to be built collaboratively between the three countries, with the main assembly and construction work scheduled to take place in Adelaide, South Australia.

Marc Ablong and Adam Leslie at The Alliance Futures Initiative observe that AUKUS is not just convenient for Australia and the United States. For London, they say, AUKUS fills the design and production gap at Barrow-in-Furness between the Dreadnought and the next attack boat, it gives the Royal Navy its next submarine on a shared development burden, and it makes the Indo-Pacific tilt concrete through the fifty-year *Geelong Treaty*. Three problems, three countries, and one program, which is why it has survived changes in government in all three capitals. They suggest, though, that given the personnel and other logistical and financial challenges associated, the answer is not to pursue construction of the follow-on AUKUS SSN but to invest in areas of advantage such as undersea drones, missile testing, and critical minerals.

Political risk and strategic continuity

Meanwhile, public debate has often focused upon changes of administration in Washington, particularly following the return of President Donald Trump. Such attention is understandable, given President Trump’s emphasis upon burden-sharing and alliance reciprocity. However, excessive focus upon statements and actions of individual political leaders’ risks overlooking the enduring institutional foundations of

American strategic policy that span multiple presidencies and reflect a remarkable bipartisan congressional commitment to AUKUS.

The United States Congress has consistently supported AUKUS on a bipartisan basis. Senior military leaders have similarly emphasised the strategic value of a more capable Australian Navy operating alongside the United States and the United Kingdom. The United States has repeatedly identified Australia as one of America's most trusted and capable allies. At the same time, successive US official documents have highlighted the importance of strengthening allied capability as a central component of long-term competition. The historical record also provides reassurance.

Australia–United Kingdom–United States cooperation has repeatedly survived substantial political transitions over more than eighty years. The UKUSA Agreement, ANZUS, the Five Eyes intelligence-sharing partnership, and successive generations of operational cooperation have endured because they are rooted in longstanding shared strategic interests rather than specific four-year-term administrations.

This should not be interpreted as a guarantee that every element of AUKUS will proceed exactly as planned. Governments change priorities, budgets fluctuate, and strategic circumstances evolve. Rather, it suggests that assessments of political risk should distinguish between temporary implementation challenges and the deeper structural and overlapping interests that bind the three countries together.

Alliance dependence and strategic agency

Critics argue that uncertainty within the United States reinforces the case for reducing Australia's reliance upon alliance relationships. This argument deserves careful consideration. The possibility of delayed submarine transfers altered production priorities or changing political circumstances demonstrates that Australia cannot prudently assume uninterrupted access to allied capabilities. Yet the appropriate response is not strategic disengagement, which would only add to uncertainty. It is greater Australian capability.

This distinction lies at the heart of the concept of strategic agency developed throughout this submission. Australia cannot eliminate interdependence. No advanced military power can. Every modern defence capability depends on international technology, specialised supply chains, scientific collaboration and trusted industrial partners. For Australia this applies to weapons and platforms of not just the Navy but the Army and Air Force as well. The relevant policy objective is therefore not independence from allies but resilience within alliance relationships. AUKUS contributes directly to this objective by expanding Australian capability. In doing so, it reduces rather than increases Australia's long-term vulnerability to external uncertainty.

Potential loss of submarine capability

Australia's own delay in deciding upon a submarine type to purchase and then changing its mind on the type of submarine to operate has left the Navy facing a critical shortage – and all at a time when other Indo-Pacific powers accelerate their rate of submarine production. Further delay is likely, but efforts to derail the AUKUS project point to even worse prospects. In short, there are no easy fixes to the mess of Australia's own making.

The rate of US submarine manufacturing is undoubtedly slower than we would like, and Australia's financial contributions, while helpful, only incrementally accelerate the rate of production. Still, significant legislative and procedural reform has been made, allowing for the transfer of technology to Australia in due course. This is no small accomplishment.

Meanwhile, the rate of production gradually increases, and with the prospect of the delivery of Australia's own Virginia Class submarines being delayed, the shortfall will be temporarily filled by boats operating as part of SRF-West. Several of the submarines expected to participate in SRF-West operations are already likely to have a proportion of their crew filled by Australian Navy personnel. Critics understandably are concerned about the lack of Australia's own sovereign capability. But this shortfall is not something for which to blame others. Nonetheless, SRF-West can be expected to operate in and out of Cockburn Sound from 2027. This is a convenient stop-gap measure to compensate for Australia's own dithering and prevarication.

Indeed, the basing of the US 3rd Submarine Squadron in Western Australia is strategically and operationally more significant than the Royal Australian Navy (RAN) SSNs. Australia will, after all, only be able to generate two to three boats at sea in a mature state. Noting the US will replace boats that go into refit, they will probably generate more at sea out of Fleet Base West (Cockburn Sound) than the Australia Navy. The AUKUS agreement refers to SSN transfers being dependent on there being no reduction in US undersea capability. So, the SRF-West and autonomous unattended underwater vehicles (UUVs), would also be part of the reckoning. In essence, therefore, SRF-West is worth the equivalent of another two SSNs in the US order of battle. This reckoning is largely based on reduced transit times and the bolstered maintenance functions that SRF-West will be able to manage without returning to US bases elsewhere. That then reduces the risk of US congressional or presidential baulking at transferring SSNs to Australia.

Contingency planning

Support for AUKUS should not preclude contingency planning. Indeed, wise governments routinely prepare for multiple futures. Accordingly, Australia should continue to develop contingency options should elements of the current pathway experience significant delay. These should include:

- Extending Collins-class life-of-type extension where operationally feasible;
- Accelerating sovereign sustainment capability;
- Expanding autonomous undersea systems;
- Strengthening long-range maritime strike;
- Increasing investment in seabed surveillance and undersea infrastructure protection; and
- Maintaining flexibility regarding future force structure.

Such measures should be viewed as complements to AUKUS rather than alternatives. Successful implementation depends upon reducing strategic risk while preserving long-term purpose.

Industrial risks, not conceptual ones

The principal risks confronting AUKUS are industrial rather than conceptual. Production shortfalls, workforce constraints and political uncertainty require sustained attention. They justify stronger governance, clearer performance metrics and enhanced industrial cooperation. They do not invalidate the strategic rationale. Indeed, they reinforce one of the central themes of this submission: Australia must use AUKUS to become more capable, more resilient and more strategically self-reliant within an enduring alliance framework.

Part 12. Taking responsibility for nuclear propulsion waste

Australia's acquisition of nuclear-powered submarines under AUKUS raises an unavoidable long-term question: what should happen to their nuclear reactors and radioactive waste when the submarines are eventually decommissioned? There is a strong strategic, ethical and practical case that Australia should accept responsibility for this material and develop the capacity to dispose of it safely within Australia.

This does not mean Australia should become an international nuclear-waste repository. The appropriate principle is narrower: Australia should manage the radioactive waste generated by Australian-operated submarines. This is already Australian government policy. Australia has committed to managing all radioactive waste generated by its Virginia-class and SSN-AUKUS submarines, while stating that it will not accept spent fuel or reactors from other countries.

Sovereign capability entails sovereign responsibility

The strongest argument is one of sovereignty. Australia will derive substantial strategic benefits from nuclear propulsion: greater range, endurance, speed, stealth and capacity to remain on station. If Australia wishes to describe this as a sovereign capability, it should also accept responsibility for the consequences throughout the submarines' life cycle. This distinguishes naval nuclear waste from Australia's uranium exports. Australia is a major uranium supplier, but exported uranium is sold under bilateral agreements requiring safeguards, peaceful use, physical protection and controls over reprocessing, enrichment and onward transfer. Australia does not generally take back the resulting spent nuclear fuel. Australian submarines are different. Their nuclear material becomes waste because of an Australian sovereign defence capability. Responsibility for its ultimate disposition should therefore remain Australian.

Technical requirements

Australia is well placed to manage this responsibility. It is a politically stable, technologically sophisticated, continental-scale country with extensive sparsely populated regions and some of the world's oldest and most geologically stable formations. Remoteness alone does not make a site suitable. Groundwater, seismicity, geochemistry, rock characteristics and potential mineral resources would require extensive investigation. Nevertheless, Australia's geography provides a much larger range of potential sites than exists in many densely populated nuclear states.

The internationally accepted long-term solution for high-level and long-lived radioactive material is deep geological disposal. The Australian Radiation Protection And Nuclear Safety Agency (ARPANSA) identifies disposal several hundred metres underground in stable geological formations as the recognised approach for high-level radioactive waste. The International Atomic Energy Agency (IAEA) similarly

identifies geological disposal as the appropriate means of permanently isolating high-level radioactive waste. The quantities involved would also be comparatively small. Naval nuclear material presents an exceptionally demanding safety and security challenge, but it is not a large-volume waste stream. The issue is therefore less one of finding enormous amounts of space than creating a highly secure repository capable of isolating relatively small quantities of hazardous material for extremely long periods.

It will take time, but Australia should start now

The Australian Government has stated that disposal of the first Australian submarine reactor will not be required until the 2050s. This provides several decades to identify potential sites, characterise their geology and hydrology, develop regulations, train specialists, construct facilities and establish durable arrangements with affected communities and Traditional Owners.

This time should not encourage procrastination. Geological repositories typically take decades to develop. Australia's Parliamentary Library has previously noted the very long lead times associated even with repositories for intermediate-level radioactive waste.

What the system could look like

Australia should envisage a two-stage system. When submarines are decommissioned, reactor components and radioactive material would initially enter a secure, purpose-built interim storage facility. Shielded storage allows radioactive decay while providing time for preparation for eventual permanent disposal. The IAEA recognises engineered storage as an established component of radioactive-waste management pending final disposal.

The ultimate destination should be a deep geological repository, potentially several hundred metres underground. Finland and Sweden demonstrate how such systems can operate. Finland's Onkalo repository extends approximately 400–430 metres underground, while Sweden's Forsmark repository is planned at around 500 metres. The principle is defence in depth. Radioactive material is contained within engineered packages, surrounded by additional barriers, emplaced within tunnels and chambers, and finally isolated by hundreds of metres of stable rock. Long-term safety therefore does not depend upon a single container—or upon future generations continually maintaining the facility.

Land, consent and burden of proof

Australia should investigate remote Commonwealth-controlled land, including parts of the Defence estate. Such locations potentially combine low population density, controlled access, security, large exclusion areas and established Commonwealth authority. This possibility is already contemplated by Defence. Government documentation has envisaged a facility on current or future Defence land in a remote

location. The appropriate sequence is geology and hydrology first, coupled with security, accessibility and social acceptability. Nor should "remote" be confused with "empty". Much of inland Australia has profound significance to Aboriginal Australians. Traditional Owners should consequently participate from the beginning of site identification rather than being consulted after governments have effectively made their decisions. Australia's experience with the proposed but terminated Kimba radioactive-waste facility demonstrates the importance of establishing legitimacy and consent early.

Obligations

AUKUS will require Australia to develop expertise in nuclear engineering, radiation science, regulation, environmental monitoring, safeguards and radioactive-waste management. Australia already possesses approximately seven decades of nuclear-science and reactor experience through the Australian Nuclear Science Technology Organisation (ANSTO), while the submarine program will greatly expand the country's nuclear stewardship capability. Australia should therefore establish a National Naval Nuclear Waste Program well before the first submarines require decommissioning. Geoscience Australia, Defence, ANSTO and Australia's nuclear regulators could progressively identify geologically promising regions, establish an underground research facility and undertake decades of geological and groundwater monitoring before selecting a permanent repository. The principle should be straightforward: Australia should become exceptionally good at managing its own nuclear liabilities. Australia has the geological possibilities, scientific expertise, financial capacity and—crucially—the time to close that nuclear stewardship cycle responsibly.

Part 13: Pillar II and Australia's defence industrial transformation

Beyond the submarine debate

Public discussion of AUKUS has been overwhelmingly dominated by Pillar I. This is understandable. Nuclear-powered submarines represent one of the most ambitious defence capability projects ever undertaken by Australia. Yet an exclusive focus upon submarines risks overlooking what may ultimately become the partnership's most enduring legacy. Pillar II seeks to transform the technological and industrial foundations upon which future military capability will depend. Artificial intelligence, autonomous systems, quantum technologies, cyber capabilities, electronic warfare, advanced sensing, hypersonic systems and undersea technologies are not peripheral to Australia's future defence posture. They are likely to define military competitiveness throughout the coming decades. Some critics see Pillar II as an adjunct to the submarine enterprise. It has the potential, however, to be an important pillar of Australia's long-term strategic transformation.

From technology transfer to collaborative innovation

Historically, defence cooperation often involved the transfer of completed technologies from larger allies to smaller partners. AUKUS seeks something more ambitious. Its objective is collaborative innovation. Rather than simply acquiring technologies developed elsewhere, Australia is expected to contribute directly to research, design, experimentation, testing and production across multiple advanced technology sectors. This represents a significant and welcome departure from previous patterns of defence cooperation. It also creates important opportunities for Australian universities, DSTG, industry and small innovative enterprises known as small and medium sized enterprises (SMEs). Success will therefore depend less upon purchasing technology than upon developing Australia's capacity to develop it.

Building sovereign industrial capability

The *Defence Strategic Review* and the *National Defence Strategy* both argue that Australia's defence industrial base should be regarded as an element of national power. Pillar II provides a mechanism through which this objective can be realised. Its collaborative research programs encourage Australian participation in:

- Autonomous maritime systems;
- Quantum sensing;
- Trusted artificial intelligence;
- Cyber resilience;
- Advanced manufacturing;
- Robotics;
- Electronic warfare; and

- Secure communications.

These technologies possess obvious military applications. Equally importantly, many also bring economic benefits through advanced manufacturing, workforce development, scientific research and export opportunities. The boundary between national security policy and industry policy is therefore becoming increasingly porous.

Universities, science and the national innovation system

One significant opportunity presented by Pillar II lies in strengthening Australia's national innovation ecosystem. Australian universities possess internationally recognised strengths in across the spectrum of science technology, engineering and maths. DSTG similarly maintains world-leading expertise in several maritime related technologies. These include undersea acoustics, maritime surveillance, autonomous systems and operational analysis. Closer integration among universities, Defence, industry and allied research institutions should therefore be regarded as a strategic objective. The benefits of investment in postgraduate education, technical apprenticeships, engineering capability and scientific collaboration extend well beyond defence. Indeed, one of the most enduring legacies of AUKUS may prove to be the development of a larger, more sophisticated Australian science and technology workforce.

Pillar II and the undersea enterprise

This submission argues that AUKUS is the practical mechanism through which Australia develops Undersea Power. Pillar II has the potential to be a significant part of this proposition. Artificial intelligence enables more effective processing of maritime sensor data. Quantum technologies promise significant advances in navigation, sensing and secure communications. Autonomous underwater vehicles extend surveillance and persistence. Cyber capabilities protect critical maritime infrastructure. Advanced manufacturing supports sovereign sustainment. Viewed collectively, these technologies are the enabling architecture within which conventionally armed, nuclear-powered submarines will operate. The future of undersea competition will therefore depend not simply upon better submarines but upon better integration of multiple technologies into coherent operational systems.

What Pillar II should deliver

The success of Pillar II should not be measured solely by the number of research projects announced. Instead, government should assess outcomes such as:

- Australian intellectual property generated;
- Australian firms admitted to allied supply chains;
- Defence exports arising from collaborative innovation;
- Transition of research into operational capability;
- Workforce growth in advanced technology sectors;

- Increased sovereign manufacturing capacity; and
- Lasting university–industry–defence partnerships.

These measures more accurately capture the strategic purpose of the program.

Benefits of Pillar II

If Pillar I provides Australia with the operational core of future Undersea Power, Pillar II provides an intellectual, scientific and industrial foundation. Its greatest contribution may ultimately lie not in any single technology but in reshaping Australia's national innovation system around the requirements of long-term strategic competition. Properly implemented, Pillar II will leave Australia with stronger universities, more capable industry, deeper scientific expertise and greater sovereign capacity to develop advanced capability with military and civil applications. That outcome would be one of the most significant strategic dividends of AUKUS and one that extends well beyond submarines themselves.

Part 14: Measuring success: beyond the delivery of submarines

Rethinking success

Public discussion of AUKUS has tended to evaluate success through a relatively narrow set of measures: whether Virginia-class submarines are transferred on schedule; whether Australia commissions its first SSN-AUKUS submarine by the early 2040s; whether the project remains within budget; and whether sufficient crews can be trained to operate the new fleet.

These are important benchmarks. Governments have a responsibility to manage public resources prudently, major acquisition programs should be subject to rigorous parliamentary scrutiny, and delays or cost overruns deserve close examination. Yet these measures are ultimately insufficient because they assess AUKUS primarily as a procurement project.

This submission has advanced a different proposition. AUKUS is best understood as Australia's largest strategic capability-building enterprise since the Second World War. It follows that its success should be measured not merely by the delivery of military platforms but by the extent to which it strengthens Australia's long-term strategic agency. The central question therefore becomes: Will Australia in 2045 be more capable of shaping its own strategic environment than it would have been without AUKUS? If the answer is yes, the partnership should be regarded as a strategic success even if some acquisition milestones have been delayed or adjusted.

Strategic agency as the principal measure

Throughout this submission, strategic agency has been defined as Australia's capacity to make sovereign strategic decisions while possessing the military, industrial, technological and institutional capability necessary to implement those decisions effectively. Simple notions of strategic independence are at odds with this conception.

No advanced military power is entirely self-sufficient. Every sophisticated defence capability depends upon international research collaboration, specialised supply chains, technological exchange and trusted partners. The United States itself relies upon allied industrial capacity across multiple sectors, while European and Asian allies increasingly cooperate in advanced defence production. Australia's objective should therefore be resilient sovereignty within an interdependent alliance network, not strategic autarky.

Accordingly, AUKUS should be judged by whether it expands Australia's practical freedom of action. Indicators of increased strategic agency would include improved sovereign sustainment, stronger scientific capability, more resilient supply chains,

greater influence within alliance decision-making, enhanced deterrent credibility and an increased capacity to generate advanced military capability domestically.

Criterion one: Operational capability

The first measure of success remains military effectiveness. Australia should possess by the mid-2040s:

- Conventionally armed nuclear-powered submarine force capable of sustained operations around Australia, its exclusive economic zone, and where its interests lie across the Indo-Pacific;
- Integrated crewed and autonomous undersea systems;
- Substantially enhanced undersea intelligence, surveillance and reconnaissance;
- Improved anti-submarine warfare capability; and
- Greater capacity to protect Australia's maritime approaches and critical infrastructure.

The significance of these capabilities lies not simply in their existence but in their operational integration. Future maritime operations will increasingly depend upon networks of submarines, autonomous systems, seabed sensors, maritime patrol aircraft, cyber capabilities, space-based surveillance and artificial intelligence operating as a coherent undersea architecture. Success should therefore be measured by operational effect rather than platform numbers alone.

Criterion two: Industrial sovereignty

Perhaps the most enduring legacy of AUKUS should be the transformation of Australia's defence industrial base. Historically, Australian defence procurement has often involved purchasing completed platforms designed and manufactured elsewhere. AUKUS offers a unique opportunity to alter this pattern. The Australian Submarine Agency has a critical role to play in making sure this happens. Success should therefore be assessed through questions such as:

- Has Australia established sovereign submarine sustainment capability?
- Have Australian companies become trusted participants within allied defence supply chains?
- Has advanced manufacturing expanded beyond naval construction into broader national industry?
- Has Australia developed sovereign capability in critical technologies associated with the undersea domain?

The objective is not complete industrial self-sufficiency, which would be neither realistic nor economically efficient. Rather, it is to ensure that Australia possesses sufficient industrial depth to sustain critical capabilities during periods of strategic uncertainty.

Criterion three: Scientific and technological capability

The future of military competition will be determined by the capacity to innovate rather than merely to acquire. Accordingly, one of the most important indicators of AUKUS' success will be whether Australia emerges as a significant contributor to allied technological innovation. This should include:

- Internationally recognised research in quantum technologies;
- Advances in trusted artificial intelligence;
- Leadership in autonomous maritime systems;
- Expanded capability in underwater robotics;
- Improved cyber resilience;
- Strengthened DSTG research; and
- Greater collaboration between universities, defence and industry.

These capabilities possess substantial civil as well as military applications. Consequently, investments made through AUKUS should generate wider national economic benefits extending well beyond defence.

Criterion four: Human capital

Military capability ultimately depends upon people. The precise number of enduring Australian jobs attributable to AUKUS cannot yet be established with confidence; the more meaningful test is whether the program creates sustained Australian capability across shipbuilding, engineering, science, advanced manufacturing, sustainment and the wider defence industrial base. The development of a highly skilled workforce should therefore be regarded as one of AUKUS' principal strategic objectives. Anecdotal evidence suggests there is much work yet to be done to achieve this. Measures of success should include:

- Growth in Australia's nuclear-qualified engineering workforce;
- Expansion of technical apprenticeships;
- Increased postgraduate education in engineering, physics, cyber security and maritime systems;
- Stronger university-industry collaboration; and
- Enhanced opportunities for Australian scientists and engineers to work within allied research environments.

This represents a form of national capability that cannot be measured by defence procurement statistics. Highly skilled people are one of the most enduring strategic assets any nation can possess.

Criterion five: Alliance resilience

AUKUS should also strengthen the resilience of Australia's alliance relationships. This extends beyond formal treaty obligations. Australia should seek:

- Greater participation in allied research and development;
- Deeper integration within trusted defence industrial ecosystems;
- Increased interoperability across emerging technologies;
- Stronger institutional relationships among military, scientific and industrial organisations; and
- Enhanced influence within allied strategic planning.

Success should therefore be measured not simply by Australia's access to allied capabilities but by Australia's contribution to them. Progress on this front is happening, but further effort is required. The more capable Australia becomes, the more valuable it becomes as an alliance partner.

Criterion six: Regional confidence

The success of AUKUS should also be assessed from the perspective of Australia's regional relationships. Some neighbouring states have expressed concerns regarding nuclear stewardship, strategic stability and the potential for intensified great-power competition. These concerns deserve respectful engagement, and this has happened with a surge in diplomatic and defence initiatives since 2023 aimed to reassure and bolster tied with neighbours in Southeast Asia and the Pacific. Australia should continue to evaluate whether AUKUS contributes to:

- Increased regional confidence in Australia's strategic intentions;
- Continued support for the international non-proliferation regime;
- Stronger maritime security cooperation;
- Expanded humanitarian assistance and disaster relief capability; and
- Enhanced regional maritime domain awareness.

Strategic capability should reinforce regional stability rather than undermine it. Evidence to date would suggest growing confidence in Australia as a stable, reliable regional security partner in the Pacific and Southeast Asia. When AUKUS was first announced, several neighbours were understandably surprised and expressed concern. With the passage of time and considerable diplomatic effort, many of those concerns have eased. Correlation isn't causation, they say, but there is a significant correlation between a more muscular Australian defence posture associated with the advent of AUKUS and a surge of regional security partnerships – including with Indonesia, Papua New Guinea, Timor Leste, Fiji, Tuvalu, and beyond.

Criterion seven: National resilience

Perhaps the broadest measure of success concerns Australia's resilience as a nation. The undersea strategy developed in earlier parts recognises that future competition will encompass critical infrastructure, digital connectivity, offshore energy, cyber systems and advanced manufacturing. Accordingly, Australia should seek measurable improvements in:

- Protection of submarine communications cables;

- Resilience of offshore energy infrastructure;
- Sovereign cyber capability;
- Maritime logistics;
- Fuel security & strategic supply chains;
- Emergency repair capability; and
- National mobilisation planning.

The author has developed proposals for an incentivised but voluntary Australian Universal Scheme for Community and National Service – or AUSCANS. These proposed capabilities could benefit Australia regardless of whether military conflict occurs. They represent investments in national resilience rather than solely military power.

Criterion eight: Strategic influence

Thucydides in his magisterial *History of the Peloponnesian War*, distilled the causes of war down to three words: fear, honour and interests. They have resonance for Australia as it contemplates its regional engagement policies in the Pacific and Southeast Asia. Middle powers exercise influence not through scale alone but through respectful engagement, credibility, competence and trusted relationships. One of the less tangible but equally important outcomes of AUKUS should therefore be increased Australian influence within regional and allied strategic decision-making. Evidence of success might include:

- Greater Australian leadership in allied capability development;
- Expanded participation in multinational technology programs;
- Increased demand for Australian scientific expertise;
- Stronger defence diplomacy across the Indo-Pacific, with a view to influencing defence and security policy of neighbours; and
- Enhanced influence on alliance strategy.

Strategic influence is difficult to quantify – except in a crisis. In 1999, for instance, Australia had it, mustering a 22-nation coalition with a leading ASEAN partner nation, Thailand, providing the deputy force commander and a 1000-strong task force. Now is not the time to rest easy comfortable in the assumption that all is still well. In the face of mounting security challenges in Southeast Asia and the Pacific, history demonstrates that nations possessing advanced capabilities generally enjoy greater opportunities to shape international outcomes.

Criterion nine: Delivery capability

AUKUS success should also be measured by whether the three nations involved develop the collective ability to translate strategic intent into capability at the required pace. This includes integrated planning, realistic demand and capacity forecasting, effective trilateral governance, workforce mobility, security-clearance reciprocity,

resilient supply chains, and the ability to identify and resolve constraints across national boundaries.

National scorecard

To assist future governments, this submission proposes that the Commonwealth publish a regular AUKUS Strategic Capability Report alongside existing defence reporting. Rather than focusing solely upon expenditure and project milestones, this report should assess progress across these nine national indicators:

Indicator	Suggested Measure
1. Operational Capability	Availability, readiness and integration of undersea forces
2. Industrial Sovereignty	Australian sustainment, manufacturing and supply-chain participation
3. Science and Technology	Research outputs, intellectual property and innovation partnerships
4. Human Capital	Workforce growth, education and specialist skills
5. Alliance Resilience	Industrial, scientific and operational integration
6. Regional Confidence	Diplomatic engagement and regional cooperation
7. National Resilience	Critical infrastructure protection and supply-chain security
8. Strategic Influence	Australian leadership within allied capability development
9. Delivery Capability	Effective trilateral governance enabling capability delivery at pace

Such an approach would encourage governments to evaluate AUKUS as a long-term national enterprise rather than simply a defence acquisition project.

The benchmark that matters

History rarely judges major strategic decisions solely by whether they were delivered on time or within budget. The ANZUS Treaty is remembered not because of the administrative arrangements established in 1951 but because it reshaped Australia's strategic position for generations. Likewise, the establishment of the Five Eyes intelligence partnership is significant not because of the individual agreements that created it but because it fundamentally transformed Australia's access to intelligence and its role within the Western alliance. Similarly, the Collins class submarine journey involved significant challenges, but the result eventually was a highly capable submarine. AUKUS should be judged by a measure of an appropriate scale.

On balance, there remain critical vulnerabilities in relation to Australia's industrial sovereignty, science and technology capabilities as well as its human capital necessary for such a significant endeavour. Sound plans are needed to successfully deliver operational capability, and these are challenging to develop and resource appropriately. The policy around these concepts remains underdeveloped. That is

not surprising given the atrophy of Australia's industry in the years since the government stepped back from sheltering its car industry, among others.

If, by the middle of the 21st century, Australia possesses stronger sovereign capability, a more resilient industrial base, a highly skilled scientific workforce, greater technological sophistication, deeper alliance integration and enhanced capacity to shape its own strategic environment, AUKUS will have succeeded—even if aspects of implementation evolved differently from the pathway envisaged in 2023.

The delivery of conventionally armed, nuclear-powered submarines will undoubtedly remain a major milestone. It should not, however, be regarded as the sole measure of success. The more enduring legacy of AUKUS should be that it leaves Australia more capable, more resilient and better equipped to exercise strategic agency in an increasingly contested Indo-Pacific. That, rather than any single platform or procurement schedule, should be the benchmark by which this generation's strategic choices are ultimately assessed.

Part 15: Conclusion: AUKUS, Undersea Power and Australia's strategic future

More than procurement of submarines

The central argument advanced in this submission is straightforward. Australia should not assess AUKUS principally as a submarine acquisition program. It should assess it as a long-term national strategy for strengthening Australia's strategic agency in an increasingly contested Indo-Pacific. The distinction matters because it changes what should be measured, what should be resourced, and what should count as success.

If AUKUS is viewed solely through the lens of procurement, public debate becomes dominated by questions of cost, schedules, workforce shortages, industrial bottlenecks and the eventual delivery of conventionally armed, nuclear-powered submarines. These are all legitimate matters for parliamentary scrutiny and public accountability. Governments owe Australians careful stewardship of public resources, and major defence programs should be subjected to rigorous oversight. Yet these important questions should not obscure the larger strategic purpose.

Historical roots of AUKUS ties

Throughout Australia's history, the nation's most consequential strategic decisions have rarely been judged solely by their immediate administrative outcomes. The ANZUS Treaty, the Five Eyes intelligence partnership, the establishment of Pine Gap, the leadership of INTERFET, and Australia's successive investments in maritime security including the Collins submarine project, are remembered because they fundamentally strengthened Australia's capacity to influence its strategic environment over many decades. Their enduring significance lay not simply in the agreements that created them but in the national capabilities, institutional relationships and strategic opportunities they created. This submission argues that AUKUS belongs within that tradition.

It represents the latest stage in more than eighty years of deep Australia–United Kingdom–United States strategic cooperation. As demonstrated through the five waves of strategic integration developed in Part 2 of this submission, AUKUS did not emerge suddenly in response to contemporary geopolitical tensions. Rather, it reflects the cumulative evolution of wartime operational cooperation, Cold War intelligence integration, post-Cold War operational interoperability and now, industrial and technological collaboration. Each successive phase has extended the depth of trust among the three nations while simultaneously increasing Australia's capacity to contribute to collective security as a capable and respected partner.

Understanding this historical continuity is important because it explains why AUKUS is far more than an isolated procurement decision. It is better understood as the institutional expression of a much longer strategic trajectory. Australia's history

demonstrates that capable alliances can strengthen national sovereignty when they enhance rather than substitute for domestic capability. The Five Eyes partnership did not diminish Australia's independent intelligence assessment; it greatly expanded it. Similarly, close operational cooperation with allies has frequently increased Australia's capacity to lead regional operations, as demonstrated during INTERFET and numerous subsequent coalition activities. AUKUS should be understood in precisely these terms. Its purpose is not to make Australia more dependent upon allies. Its purpose is to enable Australia to become a more capable regional security partner and ally and, consequently, a more capable sovereign actor. That proposition also provides an appropriate response to many of the concerns raised by thoughtful critics of AUKUS.

Geography and technology

The submission has also argued that Australia confronts a strategic environment fundamentally shaped by geography. Technologies evolve, governments change and alliances adapt, but Australia's position as a maritime nation situated between the Indian and Pacific Oceans remains constant. Australia's prosperity, security and strategic influence continue to depend upon secure maritime approaches, resilient sea lines of communication and the maintenance of a favourable regional balance of power. In this context, the traditional debate over whether Australia requires nuclear-powered submarines is too narrow and unhelpful. The more important question is whether Australia is prepared for the emergence of the undersea domain as one of the principal arenas of 21st century strategic competition.

Undersea Power

This submission has therefore proposed a broader conceptual framework based upon Undersea Power. This extends beyond submarines. It encompasses intelligence collection, autonomous systems, seabed infrastructure, critical communications, offshore energy, scientific research, industrial capability, cyber resilience, workforce development and alliance cooperation. Conventionally armed, nuclear-powered submarines remain indispensable within this framework, but they are not its sole expression. They constitute the operational centrepiece of a much larger national enterprise.

This conceptual shift has important implications. It means that AUKUS should not be judged simply by whether submarines are delivered according to the timetable announced in 2023. Rather, it should be evaluated according to whether Australia emerges with stronger sovereign capability, a more sophisticated industrial base, deeper scientific expertise, greater technological innovation and enhanced strategic resilience.

Strategic agency

In other words, the ultimate measure of success is not whether Australia possesses more submarines. It is whether Australia possesses greater strategic agency.

Strategic agency has been the organising concept throughout this submission. The term has been used deliberately because it captures an important distinction often lost in Australian strategic debate. Strategic agency does not require strategic isolation. Nor is it synonymous with complete self-sufficiency. No advanced military power possesses absolute independence in an era characterised by complex supply chains, technological interdependence and collaborative innovation. Rather, strategic agency refers to Australia's capacity to make sovereign national decisions while possessing the military, industrial, scientific and institutional capabilities necessary to implement those decisions effectively. This conception provides an alternative to the often-polarised debate between alliance dependence and strategic autonomy. Coral Bell's *Dependent Ally* needs to be read alongside Shannon Tow's *Independent Ally.*

Responding to critiques

This submission has acknowledged that numerous commentators cited earlier raise important questions concerning affordability, implementation, alliance dependence, entrapment versus abandonment, industrial realism and parliamentary accountability. These critiques perform an important public service by challenging assumptions and encouraging rigorous scrutiny. However, the existence of implementation challenges does not invalidate the underlying strategic rationale. Indeed, many of these critiques reinforce one of the principal conclusions reached throughout this submission: that AUKUS will only succeed if Australia commits itself not merely to acquiring submarines (AUKUS Pillar I) but to developing Pillar II - the scientific, industrial, educational and technological foundations upon which enduring capability depends. The appropriate response to uncertainty is therefore not strategic retreat. It is bolstered deterrence through better implementation. It is greater transparency. It is stronger governance. It is sustained investment in Australian people, Australian industry and Australian innovation. In this respect, AUKUS should be regarded less as a procurement project than as an exercise in nation-building.

Broader and deeper engagement

Like previous periods of Australian industrial mobilisation, governments, universities, research organisations, industry, Defence and the broader community need to work together over many decades. Such efforts inevitably extend beyond electoral cycles. Their success, therefore, depends upon bipartisan political commitment, institutional continuity and sustained public confidence.

Implementation of the practical recommendations advanced throughout this submission will not only improve the delivery of submarines but also strengthen Australia's broader strategic foundations. Investment in advanced manufacturing, DSTG research, university partnerships, sovereign sustainment capability, autonomous systems, undersea infrastructure protection, workforce development and regional diplomacy should all be regarded as integral components of the same national enterprise.

Regional engagement

Equally important is the need to maintain Australia's engagement with the nations and international groupings in the Indo-Pacific region. AUKUS will ultimately be judged not only by Australians and their closest allies but also by its neighbours. Continued transparency regarding nuclear stewardship, adherence to non-proliferation obligations and sustained practical cooperation in maritime security, humanitarian assistance, disaster relief, regional capacity-building and recognition of the felt needs of Pacific islanders relating to climate change remain essential if AUKUS is to strengthen rather than unsettle regional confidence.

Australia's objective should not be to dominate the Indo-Pacific. That is more than a middle power like Australia can aim for. Nor should the objective be to narrowly contain another power. Rather, Australia's enduring interest lies in preserving a regional order in which all states can exercise their sovereignty free from coercion, where trade can continue to flow through secure maritime routes, where disputes are resolved peacefully and where international law remains respected. With all this in mind, Australia also seeks a region that remains well-disposed to its security, developmental, political, social and economic initiatives. A stronger Australian contribution to regional deterrence, undertaken in partnership with allies and regional partners, contributes directly to that objective.

Ultimately, history will not judge AUKUS by the number of parliamentary debates it generated, the complexity of its contractual arrangements, or the precise dates upon which individual submarines entered service. History will ask a simpler question: Did AUKUS leave Australia better prepared for the challenges of the more complex and contested strategic environment of the late 2020s and 2030s. Did it strengthen Australia's capacity to understand and operate within the undersea domain? Did it leave Australia with a larger and more highly skilled and capable workforce across science, engineering, technology and advanced manufacturing? Did it create a stronger industrial base? Did it deepen alliances and regional partnerships while preserving sovereign decision-making? Did it improve Australia's capacity to contribute to regional stability? Did it leave future generations with greater strategic freedom of action? Those are the questions that matter.

Affirmation of AUKUS' potential

This submission argues that AUKUS has the potential to answer each of the questions raised here in the affirmative. Realising that potential, however, will depend not upon the acquisition of submarines alone but upon the choices Australia makes over the coming decades. Success will require disciplined implementation, sustained political leadership, continued investment in national capability and an unwavering commitment to viewing AUKUS not simply as a defence project but as a long-term national endeavour.

The six questions posed by this Inquiry lead to a larger one: whether AUKUS leaves Australia more capable of protecting its interests, meeting its obligations and

exercising sovereign choice in the decades ahead. The central proposition of this submission may therefore be stated simply. Australia's future security will not be determined solely by what it buys. It will be determined by what it becomes.

If AUKUS succeeds in helping Australia become a more technologically sophisticated, scientifically capable, industrially resilient and strategically confident nation—one able to exercise greater agency in partnership with trusted allies while contributing constructively to a stable Indo-Pacific—then it will rightly be remembered as one of the most important strategic decisions made by any Australian government since the Second World War. That is the standard by which AUKUS should ultimately be judged.

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