



Australian Government
Department of Industry, Science,
Energy and Resources

Regulatory Impact Statement

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Offshore Electricity Infrastructure Regulatory Framework

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1 Summary

What technologies could the offshore electricity infrastructure legislative framework facilitate?

- Offshore electricity infrastructure includes offshore transmission infrastructure, wind, wave and tidal power, and emerging technologies such as ocean thermal energy. The framework would apply in Commonwealth waters beyond three nautical miles from the coast to the outer limit of Australia's Exclusive Economic Zone.

Why implement this legislation now?

- Offshore electricity infrastructure requires long-term planning: the time between pre-assessment and project commissioning may be in the order of 10 years.
- A relatively modest investment from government to develop the legislative framework may enable billions of dollars of new investment.
- If even one of the projects proposed below were to proceed, this would more than cover the relatively limited regulatory development costs for government, and on the basis of basic national cost-benefit assessment, create a strong case for this investment off-setting any costs to affected industries.

What projects could this legislation enable?

- The most high profile projects potentially enabled by this legislation are:
 - Marinus Link transmission infrastructure between Tasmania and Victoria, being managed by TasNetworks. It is estimated to cost in the order of \$3.5 billion to construct.
 - Marinus Link will provide the additional interconnection needed to export the electricity generated by the Battery of the Nation projects to the mainland. In doing so, it will unlock a pipeline of new renewable energy investment, including pumped hydro energy storage.
 - Marinus Link will enable the export of an additional 1,500 megawatts (MW) of capacity to the mainland.
 - The economic benefits of Marinus Link for Tasmania and Victoria are estimated at \$2.9 billion.
 - The installation of the Basslink interconnector was enabled under the *Sea Installation Act 1987*, though the permitting elements of that Act were repealed in 2014.
 - Star of the South offshore wind farm proposal by Copenhagen Infrastructure Partners, with development costs in the order of \$8-10 billion and an installed capacity of 2 gigawatts (GW).

- To date, the Australian Government has been approached with nine further large scale offshore wind proposals in locations around Australia, including the recently announced 1.1 GW offshore off Geraldton in Western Australia by Pilot Energy.
 - Due to commercial confidentiality, other projects cannot be publically identified at this stage.
- Without a regulatory framework in place, these transmission and generation proposals may only be possible with highly uncertain, protracted and complex bespoke licensing arrangements.

What has changed for the offshore electricity sector?

- A number of new subsea transmission links have been built or proposed to support improved reliability and access to generation. In Australia Marinus Link will help share reliable energy resources between Tasmania and the mainland so as to better manage the impact and rapid uptake of variable wind and solar technologies.
 - Marinus Link was identified by the Australian Energy Market Operator (AEMO) in its 2020 Integrated System Plan (ISP) as a critical part of addressing long-term cost, security and reliability issues within the National Electricity Market (NEM).
 - The Australian Government has committed to supporting early works for major transmission projects, including Marinus Link.
- There has been in recent years growing investment in offshore wind farms and undersea transmission links, including between different countries or energy markets.
- The International Energy Agency (IEA) 2019 Offshore Wind Outlook highlighted the rapidly changing nature of the offshore wind sector.
 - The report noted the sector is expected to grow “15 fold by 2040 into a USD 1 trillion business”.
 - This would see installed global capacity rise from around 25 GW in 2019 to 375 GW by 2040.
- There are positive cost implications for Australia, with much of the new growth expected to be in Asia. China is forecast to overtake the UK as holding the highest number of offshore wind installations.
 - Japan, India, Taiwan, and Korea are also developing local offshore wind sectors, which could further encourage the regional supply chain for components and logistics, creating a more competitive market, and potentially reduce local costs.
 - The United States is expecting the offshore wind sector to expand significantly by the end of the decade, with around 15 GW of capacity installed. This could also put price pressure on the cost of new offshore wind technologies and installation.

What benefits could offshore electricity infrastructure provide Australia?

- Greater NEM system security and reliability through the construction of the Marinus Link transmission interconnector between Tasmania and Victoria
- Further market competition for new generation capacity, creating downward pressure on wholesale prices
- Regional jobs
- Significant new investment
- Evolving technology providing greater, more cost effective opportunities over time
- Greater diversification in energy generation.

2 Background and context

2.1 Offshore Electricity Infrastructure - The Opportunity

Offshore electricity transmission infrastructure such as shore-to-shore cabling, substations, support platforms and transmission cables to support offshore generation are essential elements of the sector. Offshore electricity generation covers a range of technology types including offshore wind, wave and tidal generation, and the potential for new offshore electricity generation technologies in the longer term.

The development of the offshore electricity sector supports the government's objective to deliver a reliable, secure and affordable energy system by:

- facilitating the growth of new sources of energy supply;
- delivering reliability and improved grid security
- providing clean and efficient technology; and
- ensuring the energy sector is well regulated.

Offshore electricity transmission infrastructure that connects regions of the national electricity market, such as the Marinus Link interconnector between Tasmania and Victoria, offer a number of benefits:

- Better management of the impact and rapid uptake of variable wind and solar technologies by providing another source of dispatchable power between regions when needed.
- Enhancing competition between generators in the NEM.
- Unlocking additional renewable energy investments.
 - Combined with the Battery of the Nation projects, Marinus Link will provide dispatchable generation capacity to Victoria of up to 1500 MW. This will include allowing 400 MW of existing dispatchable generation to be transmitted to Victoria, which, due to limited Basslink capacity, is currently unavailable.

Broadly, offshore electricity generation can:

- offer large, year-round generation capacity;
- provide benefits to the electricity network;
- have less impact on the landscape than other onshore energy generation options;
- establish new employment opportunities; and
- attract significant investment in Australia's coastal economies.

Offshore wind is the most commercially prospective offshore electricity technology and has a range of specific benefits and opportunities:

- Diversity of sources of wind resources

- Offshore wind allows new wind resources to be exploited.
- Larger capacity factors than onshore wind.
- Less hourly variation and better alignment with demand.
- Utilisation of existing transmission infrastructure
 - Forecast transmission infrastructure capacity in the Latrobe Valley infrastructure could be utilised for offshore wind projects in the Gippsland region as well as the Marinus Link project.
- Evolving technology
 - Very large turbine capacity, currently up to 12 MW but expected to expand in coming decades. Offshore wind towers are not limited by the noise and transport limitations of onshore wind generation.
 - The potential for floating offshore wind to dramatically expand capacity as deeper water sites become accessible.
- Significant investment
 - This legislation could enable projects worth between \$3-20 billion by 2030.
- The offshore electricity infrastructure sector – transmission and generation - offers significant employment opportunities, particularly in our regions.
 - Currently, there are three projects that are adequately progressed to provide job estimates:
 - Marinus Link: In the construction phase there is the potential for 503 direct jobs and 2,283 indirect jobs (2,786 total). The vast majority of jobs would be in regional areas (Tasmania and Gippsland).
 - Star of the South wind farm: In the construction phase potentially 2,280 direct and 5,970 indirect jobs (8,250 total). Ongoing operations may create 300 direct and 880 indirect jobs (1,180 total). The vast majority of jobs would be located or deployed in regional areas (Gippsland).
 - Sun Cable: In the construction phase 1,500 direct Australian jobs could be created. Ongoing employment opportunities could create 350 direct and 12,000 indirect jobs (12,350 total) in Australia. The vast majority of jobs would be located or deployed in regional areas (Tennant Creek NT and Darwin).
 - In total these projects would enable 4,933 direct jobs and 21,133 indirect jobs, with a total of 26,066 construction jobs.

2.2 International context

Compared to many other countries, the Australian offshore electricity sector is at an early stage of development.

Offshore wind is relatively mature technology internationally, with around 150 projects underway world-wide and 29 GW of installed capacity at the end of 2019.¹ Much of this capacity is in Europe, particularly countries close to the North Sea, where high quality wind resources, shallow water depth and long term policy support has driven the sector. More recently, China has increased capacity significantly, with 6 GW now installed.

Recent reports have highlight the long term potential for the sector. The IEA's Offshore Wind Outlook 2019 estimated the sector is expected to grow 15 fold by 2040 and be worth USD 1 trillion.

Importantly for potential price reductions in the Australian market, much of the new growth will be in Asia, with China forecast to overtake the UK as holding the highest number of installations. Japan, India, Taiwan, and Korea are also developing local offshore wind sectors, which will further encourage regional supply chains for components and manufacturing, create a more competitive market and reduce local costs.

2.3 Australian Market

Marinus Link as a critical part of addressing long-term cost, security and reliability issues within the NEM. The project will facilitate greater energy transmission between Tasmania and Victoria, and has been identified as an Actionable Integrated System Plan (ISP) project by the Australian Energy Market Operator (AEMO). The economic benefits of Marinus Link for Tasmania and Victoria are estimated at \$2.9 billion, with 2,786 direct and indirect jobs.

In December 2020, the Australian and Tasmanian Governments signed the Commonwealth-Tasmania Bilateral Energy and Emissions Reduction Agreement, committing both to complete Marinus Link's Design and Approvals phase (early project works) by 2024.

There is currently no offshore wind generation in Australia. Australia has a range of commercially competitive onshore renewable energy technologies, as well as non-renewable energy sources that will compete with offshore renewable energy. The commerciality of offshore wind energy in Australia is not yet proven, although the costs are expected to fall dramatically by the end of the decade.

Beyond offshore wind, other offshore electricity generation technologies have received development support from government, and are still in the early stage development. For example, a number of wave and tidal based technologies have been developed to prototype stage (noting tidal energy typically occurs closer to shore and subsequently falls within State waters). Other emerging forms of offshore electricity technology, such as floating solar, would be enabled by the legislation even though they are currently less prospective in Australia.

2.4 Role of the Commonwealth

The Commonwealth's broad policy intent is to remove regulatory barriers to new entrants to the market. In the short term it is anticipated the sector would consist of strong commercial

¹ Global Wind Energy Council, Global Offshore Wind Report 2020. Source: <https://gwec.net/global-offshore-wind-report-2020/>

interest from a limited number of large scale offshore wind proposals and critical transmission projects. There are a similar number of smaller scale operators undertaking exploration focused activities or seeking to deploy experimental devices, and a comparable number of transmission focused projects.

The establishment of an offshore electricity sector in Australia could offer broader opportunities in the 'national interest', including employment, regional development, manufacturing and economic development of the offshore environment.

The Australian Government's interest in a regulatory framework relates to:

- Oversight of the offshore environment beyond three nautical miles.
- Management of existing rights and infrastructure in the maritime area, including shipping, fisheries, petroleum and the defence.
- Protection of the environment, workers health and safety, and construction and operation.

State and territory governments have permitted small scale offshore electricity infrastructure in state coastal waters (up to three nautical miles from the low water mark). Larger, commercial scale projects such as offshore wind farms or offshore transmission infrastructure will need significant areas of maritime waters that are not available in the coastal zone, or will extend beyond state coastal waters.

Enabling legislation for offshore electricity infrastructure projects in the Commonwealth waters beyond the three nautical mile zone is necessary to reduce the complexity and risk faced in the establishment of new large projects. That is, legislation will provide a consistent and transparent framework for offshore electricity infrastructure developers, and a process for acknowledging and working with existing approvals in place for other offshore electricity users.

State and territory governments are likely to be closely involved in approving and supporting large scale projects, including for coastal and onshore aspects of projects. This may also include developing legislation complementing Commonwealth legislation to support construction, operation and decommissioning of projects in state waters.

2.5 Stakeholders

Key parties involved in developing an offshore electricity infrastructure proposal include:

- *Electricity networks* and transmission operators.
- *Project proponents* encompassing a range of potential organisations to lead development of a project. This may include financiers, government agencies, infrastructure managers, academics, generation businesses or entrepreneurs exploring early stage technology.
- *Local communities* including those using marine areas recreationally and sites around project areas and transmission lines.
- *Non-government* environmental protection and nature conservation organisations.
- *Electricity sector workforce participants* both onshore in infrastructure manufacturing, and offshore working on electricity infrastructure facilities.

- *Existing offshore maritime sectors* such as shipping operators, fishers, defence, petroleum industries and environmental interests would have a range of existing approved and potential activities to consider in the offshore region.

2.6 Previous work

This Regulatory Impact Statement draws on related work undertaken when considering the development of a regulatory framework for offshore electricity infrastructure, including:

- The Offshore Clean Energy Framework Discussion Paper released in January 2020 as part of the initial phase of external consultation.
- Mr Stuart Smith's report "To identify leading global practice in offshore renewable regulation for adoption in Australia" as part of his Winston Churchill Memorial Trust Fellowship.

3 Problem definition

Australia's current regulatory environment does not provide a clear and secure setting to support an efficient and effective offshore electricity undertaking, throughout construction, operation and decommissioning.

- Commonwealth waters are the offshore area beyond coastal waters, between 3 and approximately 200 nautical miles from shore.

As a result, there are no defined approvals pathway or protections for proponents looking to establish offshore electricity infrastructure facilities in Commonwealth waters, leading to a number of risks:

- The loss of potential investment in offshore electricity infrastructure in Australia with corresponding impacts to broader economic opportunities, employment as well as energy diversity:
 - As highlighted in section 1, the government is aware of two large scale, offshore transmission infrastructure proposals, Marinus Link and Sun Cable, and the proposed offshore wind farm, Star of the South that would be enabled by this legislation.
 - Combined, these three proposals are conservatively estimated to be worth over \$10 billion and could create over 10,000 direct and indirect job opportunities during construction as well as ongoing employment in operation and maintenance of infrastructure.
 - The Department of Industry, Science, Energy and Resources is aware of nine further large scale offshore wind proposals being developed in Australia with a nominal target of beginning construction before 2030.
 - These proposals have not provided public costing or employment estimates, though Pilot Energy Limited's proposal off Geraldton in Western Australia has been announced as having a 1.1 GW capacity.
- Alternative approaches create a patchwork of inconsistent, ad hoc measures with potential safety and protection issues:
 - The existing regulatory environment does not cover the extent of protections needed to support development of an offshore infrastructure, which would need to be addressed on a case by case basis.
 - As outlined in section 3.1, the current regulatory approach has facilitated the issuance of a deed of licence, though this deed does not support development of an offshore infrastructure.

A legislated scheme would provide a defined, predictable and certain regime to allow investment to occur, as it would give clear legal protection for development and provide stakeholders with certainty over the approval process. For these reasons, conducting offshore infrastructure development without legislated approvals may be considered by proponents not to be commercially viable. Further, a legislated regime would provide a robust mechanism for allocating development licences between competing prospective proponents.

3.1 Current regulatory experience

The current regulatory environment does not provide a clear regulatory path to allow the construction, operation and decommissioning of offshore electricity infrastructure in Commonwealth waters.

Limited regulatory bespoke approaches may be possible. A highly bespoke, small-scale, short-term licence was issued to Carnegie Wave Energy for a project off the coast of Fremantle in 2016. This licence was a pilot project to test deployment of the CETO 6 wave energy technology.

The issuance of this licence required consultation, negotiation and an approval process across multiple Commonwealth agencies. This was both resource intensive and uncertain for government and industry.

A similar licencing approach was undertaken to provide an exploration licence to Star of the South to facilitate assessment of conditions for an offshore wind farm off the coast of Gippsland, Victoria. The government undertook broad consultation across the Commonwealth and the wider public to assess potential risks of the proposed activities and consider terms for a licence. Consultation was important due to the significant size of the licence area, which covered an area used by fishers, defence, petroleum operators, shipping operators, and the broader community. The environmental impacts of the exploration activities were also considered.

The exploration licence was issued to Star of the South in March 2019, for five years with a potential two year extension. Licence activities include assessing wind resources and sea bed conditions to inform a wind farm proposal. The licence area is located in Australian Commonwealth waters about 8 to 13 kilometres off the Gippsland coast in Victoria. The licence is valid for 5 years with the potential to extend for an additional 2 years.

The licence requires further approvals (including environmental approvals) and consultation with the community and industry before each exploration activity can commence. The licence does not override existing common law and statutory rights of third parties, or grant rights to construct or operate an offshore wind farm.

Assessing this proposal and developing the bespoke exploration licence took over two years. Aspects of this process were lengthier than might otherwise be expected, as an exploration licence of this nature for an offshore wind farm had never been undertaken previously in Australia. This process required extensive consultation across the Commonwealth to consider:

- Existing infrastructure such as communication cables;
- Licences in operation for fishing and petroleum related activities;
- Commonwealth on water activities such as defence;
- Shipping;
- Maritime safety;
- Environmental management considerations;
- Existing legislative arrangement such as Native Title; and

- The response from the broader public, industry and other developers through a public notice process.

Such a resource intensive one-off assessment is not a sustainable undertaking for government, or developers. It is uncertain and does not ultimately provide a commercial pathway for development.

Though not directly analogous, in contrast to the two year process outlined above, the assessment process for exploration licences under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* is between 3-4 months. This process is being revised to reduce this processing time further.

As already noted, beyond the Star of the South, Marinus Link and Sun Cable proposals, nine other proponents have approached government expressing interest in opportunities for large scale offshore electricity infrastructure developments in Australia. A number of leading international developers have also expressed interest in the Australian market, although they are waiting until a regulatory model is implemented, due to the risks associated with operating in an unregulated environment.

In aggregate these proposals represent billions of dollars in potentially lost investment and employment opportunities, noting not all proposals would proceed to development.

3.2 Uncertainties in this Regulatory Impact Statement

The offshore electricity sector is at an early stage of development in Australia and so there are a range of uncertainties in developing this Regulatory Impact Statement.

- *Limited experience of managing large scale offshore electricity infrastructure* - Australia does not have specific experience in managing offshore electricity infrastructure. There are regulatory regimes currently in place that allow management of large scale offshore energy infrastructure, chiefly the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, which provide a valuable model to draw on for the development of a new regime. Other international offshore electricity regimes are also useful models in designing elements of Australia's approach, although many aspects are not directly comparable (for example, environmental provisions).
- *Timeframes for analysis* - The analysis for this Regulatory Impact Statement takes place over the period 2020-2030. Applying a shorter period may not give due consideration to the full potential of the sector, especially considering the significant growth forecast by the IEA for global offshore wind markets out to 2040.
- *Future growth* - As the size of the sector in the short-term is difficult to determine, the timing of its potential growth and associated social and economic benefits are difficult to consider. International growth models for the sector do not necessarily reflect growth in the Australian market.
- *Flexible regulatory environment* - The regulatory approach for this emerging sector will inevitably adapt and evolve as the regulatory environment matures and technology evolves.

- *Future technologies* - In the longer term, the deployment of future technologies, including floating offshore wind farms, will affect the capacity of the Australian market by allowing exploitation of deeper water with different wind conditions. These considerations make forecasting beyond 2030 challenging, and while the floating offshore wind sector may be commercially prospective, this is beyond the timeframe chosen for this assessment.

3.3 Objective of government action

The objective of the government action is to enable the development of an offshore electricity industry in Australia that would:

- help facilitate investment and employment opportunities;
- provide cost competitive energy options; and
- make use of economic resources, including the marine environment.

The establishment of a regulatory model would provide certainty and reduce the investment risk for large scale offshore electricity infrastructure projects, making Australia a more attractive investment destination.

3.4 Principles guiding development of this regulatory framework

In keeping with existing government regulations and policy, any regulatory framework should aim to:

- Be technology neutral, allowing for research and demonstration projects, and commercial projects for wind and other offshore electricity generation technologies.
- Take a risk-based approach to regulation of activities, focussing on higher risk aspects of the industry without unnecessary regulation for low risk activities that have minimal impact on other users or the environment. This will keep implementation costs to a minimum.
- Uphold the existing principle of shared use of Commonwealth waters, and advance coexistence with other users, including safety of navigation and the fisheries.
- Ensure that all environmental impacts and risks are appropriately assessed and managed and that the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* are met.
- Ensure the protection of the offshore workforce and other users in Commonwealth waters, requiring specific consideration and management of safety risks in accordance with international leading practice.

The proposed policy framework would require licences to be awarded on a competitive basis, and costs incurred by the Australian Government recovered through appropriate fees and levies.

Any framework should also:

- be developed swiftly by government to provide appropriate investment signals to the evolving sector,
- be developed in conjunction with stakeholders to ensure framework is fit for purpose, and
- ensure long term flexibility to accommodate rapidly evolving technologies and the need to work within a maturing local market.

3.5 Stakeholder interests

Offshore electricity stakeholders have a range of differing needs to be considered when determining government action:

- Project developers seek an accessible, practical, commercial pathway to obtaining approval to undertake project development.
- Engineering and supply chain providers require long term regulatory certainty to establish a sector in a new market
- Electricity networks and transmission operators function in a highly regulated market and any new legislation will need to consider the existing market.
- States and territories will need to assess regulatory options to allow offshore electricity technology in offshore waters to intersect with coastal waters, particularly transmission infrastructure.
- Existing offshore maritime sectors will have ongoing and future commercial approvals that would be given appropriate standing, including for offshore oil and gas developers and licence holders, commercial fishers, shipping activities, managers of existing infrastructure such as Basslink and gas pipelines, and tourism interests.
- Non-government environmental protection and nature conservation organisations are strong advocates for clean energy and wildlife conservation measures.
- Local communities may be impacted by the visual amenity offshore electricity infrastructure or by restrictions to recreational marine sites.
- The offshore electricity workforce requires clear and effective safety regimes, supported by retraining where required.

3.6 The need for government intervention

The case for government intervention is driven by:

- Early certainty to enable long term planning and investment decisions,
- Opportunities for parties affected by proposed offshore electricity developments, including open consultation and appropriate standing for approvals, and
- A clear decision-making framework to ensure fairness, transparency and consistency throughout the life cycle of a project.

4 Policy options and likely net benefit

The purpose of this section is to present the options considered for the design of this regulatory framework, and discuss the key advantages and disadvantages of each option.

4.1 Summary of options

In assessing options for allowing the efficient and effective development of offshore electricity infrastructure projects, two clear options are presented:

- Option 1: No legislation and allow the continuation of the status quo. This would not support the construction, operation and decommissioning or ongoing management of projects, nor would this establish a framework for the long-term allocation of licences for prospective development.
- Option 2: Develop a legislative regulatory framework that would address issues outlined above, noting the significant variation possible in implementing such a framework.

4.2 Option 1: No regulatory framework introduced (current situation)

4.2.1 Description of the option

The first option is maintaining the status quo and not progressing regulatory reform.

Under this option, proponents would not be supported to initiate critical activities associated with developing offshore electricity projects – including construction, operation, or decommissioning – in Commonwealth marine areas.

If the status quo was maintained, exploration could take place without a deed of licence being issued, and exploration activities approved within existing regulatory powers available such as *Environmental Protection and Biodiversity Act 1999* and *Navigation Act 2012*.

This would allow environmental site surveys including the use of FLIDAR (floating light detection and ranging) devices to capture meteorological conditions, as well as geophysical and geotechnical studies to assess the technical viability of a project.

Current experience indicates this approach would not be taken up by developers as they desire a clear, legislated pathway toward investment on the site where surveys have been undertaken. Without this, the significant investment in site assessment, estimated to be in the order of \$20 - \$30 million, is too great a risk.

4.2.2 How it would work – advantages and disadvantages

As previously noted section 4.2.1, assuming developers wished to pursue projects without a regulated pathway to development, the ad hoc, unregulated environment would:

- Not create a commercial environment in which an offshore electricity industry could be fostered.
- Increase costs to project proponents through delays caused by uncertainty and a lack of clarity, in relation to environmental and safety conditions and interaction with parties with existing, regulated rights (such as fishers, shipping sector and offshore petroleum).
- Deter further investment in offshore electricity generation in Australia due to the uncertain environment.

In practical terms, that would see the projects outlined in section 1, not proceeding. That is, significantly limited or no further investment in exploration and development taking place as a minimum, or proposed projects not being constructed and operated (noting not all proposals would proceed to development even in a regulated environment).

Developers would need to independently negotiate a range of regulations and operations, including:

- Protection of existing infrastructure such as communication cables
- Licences in operation for fishing and petroleum related activities
- Commonwealth on water activities such as defence
- Shipping navigation routes
- Maritime safety
- Environmental management considerations and approval, including *Environmental Protection and Biodiversity Act 1999* approvals
- Existing legislative arrangements such as Native Title
- Offshore electricity workforce
- Local communities.

Furthermore, consultation with other maritime users would have less oversight from government than in a regulated environment.

4.3 Option 2: Implementation of an offshore electricity infrastructure regulatory framework

4.3.1 Description of the option

The second option is to introduce a regulatory framework for offshore electricity infrastructure.

Under this option, a core legislative package would be introduced to Parliament, with subordinate regulations, rules, and policy developed and introduced following the initial passage of head of powers legislation.

Introducing core legislation as soon as possible, followed by subordinate legislation later, would assist in providing investment certainty and provide additional time to develop detailed and considered regulations, rules and policy.

Licensing approach

Under Option 2, the regulatory framework proposes approvals to allow:

- *commercial licences* for larger scale, generation focused activities such as large scale offshore wind;
- *research and demonstration licences* for site testing and early stage technology assessment; and
- *transmission and other infrastructure licences* for offshore generation and shore-to-shore transmission as well as infrastructure used for transmission.

Before allowing any of the proposed licences to be offered, it is proposed the Minister for Energy would be required to consult over an area that may be potentially “declared” suitable for offshore electricity infrastructure development. This is designed to identify and mitigate potential conflicts in competing interests, and set conditions before any project could progress, such as identifying stakeholders and consultation requirements, constraints on types of activities, and other conditions the Minister for Energy considers appropriate. For example, the fishing sector may identify specific fishing activities, such as trawl fishing, that offshore electricity infrastructure developers need to consider in developing a proposal.

The Minister for Energy would also engage with other ministers with relevant policy authority, such as the ministers with responsibility for the environment, fisheries management, resources and infrastructure in considering a declaration.

Commercial activities are proposed to be subject to a two-step approvals pathway. Firstly, following a competitive process, a *Feasibility Licence* would be awarded over some or all of a declared area to provide the developer an exclusive opportunity to seek a Commercial Licence over the licence area, subject to any conditions and requirements. The Feasibility Licence provides the proponent a period of up to seven years to demonstrate their ability to manage safety and environmental risks and impacts, and to ensure that the interests of other users of the area are taken into account.

During this period a developer would be required to complete exploration activities, finalise project design, and undertake detailed consultation with other users and regulators. Where appropriate, developers would reach agreement in relation to plans for interaction with the environment and other users in managing the potential impacts of offshore electricity infrastructure.

If the Minister for Energy is satisfied that all conditions and requirements have been met – including the requirement to have a plan to manage risks accepted by the regulator – the proponent can apply for a Commercial Licence.

A *Commercial Licence* would provide rights to undertake a commercial offshore electricity activity for an initial term of up to 40 years and possible renewal for a further 40 years. The Commercial Licence entitles the holder to apply to the regulator to (a) construct, test and

commission, (b) operate, and (c) decommission the project. Recognising both international best practice for offshore electricity infrastructure and lessons from the Northern Endeavour floating production storage and offtake facility, the approval of a decommissioning management plan would be a critical element of project approval.

Research and Demonstration Licences would provide a lower-cost pathway to support pre-commercial seismic exploration or genuinely innovative offshore electricity demonstration projects (such as wave or tidal projects). This is to ensure that these activities are regulated for safety and environmental matters, and appropriately decommissioned once they cease. The term of a Research and Demonstration Licence is limited to 10 years and does not lead to a Commercial Licence.

A non-exclusive *Transmission and Infrastructure Licence* for construction and operation of transmission or other infrastructure (e.g. offshore electricity sub-stations) is proposed. The licence would typically be granted in conjunction with commercial or research and development licences. The Minister for Energy would also have the power to award a Transmission and Infrastructure Licence for the purpose of transmitting energy generated onshore through the offshore environment.

- Existing regulation in relation to offshore cable infrastructure is insufficient for the development of offshore electricity as, in the case of the *Telecommunication Act 1997*, it is principally intended to regulate communications infrastructure not energy transmission, or in the case of *Submarine Cables and Pipelines Protection Act 1963*, is aimed at protection of cables in international waters.
- Greater investor certainty is provided through providing a single licensing regime that is designed specifically for the offshore electricity sector.

Regulatory features

Where appropriate, the key features of the regulatory framework would be consistent with existing regulations in place for the development of offshore infrastructure in other industries, such as the offshore petroleum and telecommunication industries. This will minimise risks and deliver an effective regime by leveraging existing arrangements and utilising experienced regulators and administrators to provide regulatory oversight.

Legislative structure

The regulatory framework would provide high level powers in its Act, with the ability to create subordinate legislation and policy for detailed settings. This approach is designed to meet a changing industry profile, while provide business certainty for long term investment. The approach of providing for heads of power in the Act, and sufficient subordinate legislation and policy matters is consistent with current best practices for legislative structure.

Existing rights

Offshore electricity exploration is already being undertaken, and offshore transmission assets are being operated. These rights would be recognised and continue to operate under current arrangements. Any successive or new exploration or development activity or new transmission projects would be subject to the framework.

Co-existence and existing rights

The Australian Government promotes shared use of Commonwealth waters, balancing competing interests while pursuing the economically efficient use of the offshore area and its

resources. Consistent with this approach, the proposed regulatory framework would require comprehensive and detailed consultation throughout the regulatory process (from site identification through to decommissioning) for each development.

More specifically, consultation would include but not be limited to:

- Shipping industry and regulatory authorities
- Defence
- Fishers
- Managers of communications and transmission infrastructure
- Managers of Native Title matters
- State and territory governments
- General public
- Environmental managers and regulators
- Local community
- Offshore electricity workforce.

The framework would incentivise project design, consultation and operation of offshore electricity technology, to maximise commercial, co-existence and existing rights and interests. The multiple consultation points ahead of a commercial licence being issued aim to ensure potential conflicts can be addressed in the design or operation of the offshore electricity infrastructure. The effectiveness of consultation would be further assessed as part of management plan reviews.

For any rights conferred by a licence, the department proposes to include a requirement similar to section 280 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, which provides that activities under a licence must not interfere with other rights to a greater extent than is necessary for the reasonable exercise of the rights.

Asset protection, offences and penalties

This option would establish penalties to protect against interference with offshore electricity infrastructure, operations and works. Offshore electricity infrastructure licence holders would be able to apply to the regulator for safety zones to be established to protect infrastructure, workers and other assets during the construction phase, and easements for ongoing protection of assets where required.

Environmental approvals

Environmental approval would be undertaken through existing *Environment Protection and Biodiversity Conservation Act 1999* approvals and assessment processes. The regulator would monitor compliance with approvals under this Act and ensure that continuous improvement in environmental management performance is achieved through periodic revision of management plans to ensure impacts and risks are being managed to as low as reasonably practicable.

Work, health and Safety (WHS) and structural integrity

The design of the WHS component of the framework aims to address the range of WHS laws applying in the maritime region and any gaps of existing WHS laws. The proposed

regulatory framework would provide WHS coverage for vessels and other facilities conducting offshore electricity activities. WHS coverage would include constructing, installing, operating or decommissioning offshore electricity infrastructure or conducting operations and works in connection with those activities. WHS for all other vessel based activities would continue to be covered under the *Occupational Health and Safety (Maritime Industry) Act 1993* and other relevant legislation (e.g. *Navigation Act 2012*).

The regulatory regime would apply the Commonwealth *Work Health and Safety Act 2011* (WHS Act), to the greatest extent possible. As the existing WHS Act does not provide appropriate measures (e.g. structural integrity), the WHS Act provisions would be applied where possible and modifications or new provisions drafted within the regulatory framework as necessary. Regulations under the regulatory framework would lay out requirements in relation to management plans that would provide a framework for the management of hazards and risks including as they relate to WHS.

Providing WHS coverage under the framework would make the Minister for Energy the responsible minister for WHS matters. This is consistent with analogous regimes, such as the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*.

Regulatory oversight

It is proposed for National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and the National Offshore Petroleum Titles Administrator (NOPTA) to act as the regulator and registrar respectively. These agencies provide existing expertise in regulating offshore infrastructure and using them would avoid additional costs that would otherwise be involved in the establishment of new agencies.

The Regulator would be provided with sufficient powers and enforcement tools to effectively monitor and enforce compliance with the requirements of the offshore electricity infrastructure regulatory framework, including the ability to appoint inspectors. The inspectors would be given necessary powers to conduct inspections and investigations to determine whether licence holders are complying with requirements. The Regulator would also be provided with enforcement tools, including the power to issue notices, financial penalties and directions and to seek prosecutions for offences.

The Registrar would undertake a range of functions including advising and supporting the Minister for Energy in relation to licence administration; administering licences and maintaining a register of licences and collecting and managing data, reports and information in relation these licences.

4.3.2 How it would work – advantages and disadvantages

An advantage of option 2 is that it creates a legislative framework to allow investment to be made in offshore electricity, the associated advantages to the economy, employment and our energy sector. As outlined in section 1, these benefits include:

- Timely delivery of critical transmission infrastructure.
- Starting to implement a regulatory framework now allows industry time to develop projects for the Australian market, noting the long timeframe for developing large scale projects such as offshore transmission infrastructure and offshore wind farms.

- The framework is flexible to accommodate ongoing learning and refinement as the sector grows.
- Providing investor confidence.
- The management costs are met on a cost recovery basis once the framework is implemented.

Potential disadvantages and risks of this option include:

- An argument can be made that it may be preferable to delay or further stagger development of a regulatory framework until the sector is further matured in Australia. However, in the absence of an established framework, it may frustrate development of an offshore electricity infrastructure sector. Considering the enabling nature of this framework, the critical nature of projects like Marinus link the relatively low cost to develop, the need to provide investor confidence early, and the potential for significant delay costs, earlier action is needed to support an emerging industry.
- Estimating specific impacts to affected industries is uncertain, and while coexistence through consultation and negotiation is the intended outcome, some costs to affected parties may result. The pre-declaration processes can be calibrated to better consider site assessment and project assessment criteria consultation requirements during project development. Management plans can also be reviewed to ensure impacts on affected industries are as low as reasonably practical.

Alternative options considered

Within option 2, broad alternative design approaches were considered but early analysis indicated they were not sufficiently robust as long term options:

- Amendments to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*: As part of initial planning consideration was given to amending the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* to incorporate offshore electricity. However, as this could require amendments to a number of core elements of the Act such as definitions, this option was not practical. Establishing new, bespoke legislation was determined to be more cost effective for government and would pose less impact on existing operators.
- Staggered implementation of the legislative package: In order to develop industry confidence in the proposed framework, early consideration was given to introducing the legislation in stages such as an initial simple head of power bill to allow a declaration to be made, a second bill containing more technically complex matters, and later the rules and regulations. However, this approach does not provide value to developers as licences would not be able to be issued any earlier.

5 Impact analysis

This section details the expected impact of each policy option on stakeholders. New regulation can typically incur costs through compliance burdens, lost time, inconvenience and threats to competitiveness. In contrast, the current lack of regulation has inhibited the development of an offshore electricity industry, as relevant stakeholders have been unwilling to invest in an unregulated environment. Introducing a regulatory framework would encourage investment from offshore electricity project developers, providing critical commercial, environmental and safety assurance.

Organisations likely to be impacted by the regulation proposed under option 2 include:

- Commonwealth and state governments
- Offshore electricity project developers
- Other affected stakeholders and broader community.

5.1 Cost-benefit analysis (CBA)

Challenges in undertaking the CBA

There are significant challenges in undertaking a quantitative CBA of the offshore electricity sector at this time in Australia as previously outlined in section 3.2.

Estimates of the sector's growth are based on indicative, reasonable and transparent assessment of the opportunity.

Identifying the impacts

Noting the limitations outlined above, the department has attempted to describe costs and benefits across government, business and the broader community and economy.

Note: For the sake of consistency, labour costs have been assumed to be administrative costs. All non-labour costs such as consultancies or business impacts are captured as substantive compliance costs.

- Government
 - Cost of establishing laws: The cost of establishing law would include the costs attributable to establishing a policy team to design the regulatory framework, undertaken consultation and draft legislation.
 - Maintaining laws, including cost recovery processes for the new regulatory regime: Offshore regulators would have a greater scope of responsibility as the number of parties undertaking offshore electricity activities increase. For example, more parties are likely to require environmental approvals for exploration activities.
- Developers' costs can be grouped into administrative costs, including general compliance costs such as record keeping and reporting, and substantive costs that

are new costs to address the requirements of regulation. This could include new operational costs (such as fuel costs to circumnavigate offshore electricity infrastructure), training for employees to meet regulatory requirements (such as reporting) or the costs for professional services (such a legal or tax advice).

- Affected industry costs and benefits can be captured similarly to developers' costs above. While the regulatory framework prioritises consultation to mitigate potential impacts, existing industries would incur some costs through the operations of the new regulated sector, as well as broader administrative costs associated with consultation and education.
- The cost and benefits to the broader community and economy can be assessed at a higher level. For example, aggregated benefits including improved economic opportunities of the maritime environment, further foreign investment, consumer savings from energy and potential for broader environmental benefits.

5.2 Option 1: No regulatory framework introduced (current situation)

Under this option, the offshore electricity industry would be highly limited or curtailed altogether in Australia. It is challenging to quantitatively estimate the potential cost of an industry that does not currently exist in Australia as outlined in section 3.2, however a broad estimate of costs and benefits is provided below.

Government

Should the current situation be maintained, government costs are limited. This is largely because many existing proposals would not seek to undertake on-water exploration without a development pathway in place.

In the absence of the development of a regulated framework, ongoing government costs would be attributable to:

- Management of existing proposals, including the Star of the South proposal, or those parties interested in seeking exploration licences are currently undertaking a range of development activities in the absence of a regulatory framework.
- Other proponents outlined in section 1 would continue to consult with government to understand opportunities for progressing their proposals in the current operational environment.
- This consultation would be across government agencies at the Commonwealth and State level.

Additionally, not pursuing development of a regulatory framework means the costs of that development would not be incurred by government.

Developers

Developers' costs would include:

- The cost of undertaking initial, precompetitive work for developing a project proposal that may not proceed in the current regulatory environment. This would include costs

for legal interpretation of the regulatory environment, preparation of precompetitive technical reports and consultation with government and the community.

- Broader opportunity and business costs in not realising new business prospects.
- A range specialist service providers such as engineering, energy and technical consultants, environmental surveyors, and communications specialists would benefit from the current limited number of early stage development activities undertaken.
- Very early stage pre-competitive assessment could cost proponents in order of \$200,000-\$500,000 for project development.

Affected Industries

As noted above, potential affected industries include offshore oil and gas developers and licence holders, commercial fishers (including current licence holders), shipping activities, managers of existing infrastructure (such as Basslink and gas pipelines) and tourism interests.

The costs and benefits of industries potentially affected by the development of the offshore electricity sector are limited under this option, as the current activities are relatively discrete and limited to resource exploration which has limited impacts on current operators. Potential costs arise from limited demands on engagement from potential developers and government in considering the new sector, such as risks and planning, investment in education, consultation and assessment of proposals (such as formal submissions). Other costs may arise from the lack of government oversight, which may mean licenced, regulated sectors such as fishers, are not appropriately accommodated.

Affected industries may see benefits in the framework not proceeding as their current operations would not be as impacted by co-existence arrangements with a new sector. Benefits may include no requirements to curtail operations to consider the new sector, no impacts in negotiating such arrangements including on education, legal, communication and engagement costs.

Broader community and economy

The direct costs of the current approach to the broader economy are relatively minor due to the minor impacts of the actions.

However, the opportunity costs of even one proposal referred to in section 1 not proceeding due to the absence of a regulatory framework are significant; billions of dollars in lost investment, under-utilisation of the maritime sector, under engagement of new technologies, and thousands of regional jobs.

A very broad attempt to quantify the opportunity cost of lost investment can be estimated by reviewing the success of the industry in other countries that have introduced regulatory frameworks, and evaluating this as a proportion of the missed opportunity cost to Australia. Spending in offshore wind power reached \$20 billion globally in 2018. The International Energy Agency projects the cumulative investments in offshore wind to reach \$350 billion by 2030 and \$1.47 trillion by 2050.

While the scale of investment in Australia is difficult to quantify, by 2030 it is conceivable one large scale project could be developed. Three high profile projects at early stage development include:

- Marinus Link transmission infrastructure between Tasmania and Victoria being managed by TasNetworks. It is estimated to cost in the order of \$3.5 billion and could enable a further \$5.7 billion investment in generation in Tasmania.
 - AEMO's 2020 ISP modelling identifies that the economic benefits of Marinus Link for Tasmania and Victoria are estimated at \$2.9 billion.
- Star of the South offshore wind farm proposal development by Copenhagen Infrastructure Partners, valued in the order of \$8-10 billion with an installed capacity of 2 gigawatts.
- Sun Cable transmission infrastructure to allow export of renewable energy from Australia to Singapore has an anticipated value of \$20 billion.

It is possible that further projects of varying scale could be developed by the end of 2040. This could lead to a further \$5 - \$25 billion in additional investment. A similar investment profile could be expected to continue to 2050 and beyond.

Assessment of costs and benefits for option 1

The direct costs for option 1 are estimated not to be substantial, mainly arising for administrative costs for government and engagement costs for industry. However, opportunity costs have the potential to be very significant, in the magnitude billions of dollars and thousands of regional jobs, though the precise value is difficult to definitively assess.

The benefits are related to savings from government not investing in the development of the regulatory framework, less impacts to parties potentially affected by the development of the regulatory framework and business providing service to enable early stage project development. On this basis, the net costs significantly outweigh the potential benefits of not proceeding with a regulatory framework to enable investment.

5.3 Option 2: Introduction of regulatory framework

Under this approach, the development of the proposed regulatory framework would allow industry to commence planning and development of offshore electricity infrastructure in a timely manner. This would provide investment security, while also ensuring the development of protections and an effective management system to negotiate the multi-use nature of the Commonwealth marine environment.

The regulatory framework would be designed to mitigate any unnecessary or damaging intervention with industry, following a number of principles:

- Technology neutral, light touch regulation – avoiding prescription given the current industry uncertainty and rapid technology change, while also allowing research and demonstration projects, as well as commercial projects without unnecessary regulation for low risk or impact activities.
- Shared and efficient use of Commonwealth resources – upholding the existing principles of multi-use access to the marine environment.
- Protection of the marine environment – ensuring environmental protections are a central consideration for any project.

- Competitive access to renewable resources – ensuring commercial generation projects are subject to a thorough assessment process.
- Cost recovery – recovering costs associated with regulation from project developers.

5.3.1 Identifying impacts

Broader community and economy

Significant potential benefits of the proposed regulatory framework to the broader economy are through:

Employment, particularly regional employment

As noted in section 2.1, there are three projects that are adequately progressed to provide job estimates, noting these estimates are provided publicly by the proposed developers of these projects:

- **Marinus Link:** In the construction has potential for 2,786 jobs. The vast majority of jobs will be in regional areas (Tasmania and Gippsland).
- **Star of the South wind farm:** Potentially 8,250 jobs in total. Ongoing operations may and additional 1,180 total direct and indirect jobs. The vast majority of jobs will be located or deployed in regional areas Gippsland.
- **Sun Cable:** In the construction phase 1,500 direct Australian jobs could be created. Ongoing employment opportunities could create 12,350 direct and indirect jobs in Australia. The vast majority of jobs will be located or deployed in regional areas (Tennant Creek NT and Darwin).
- In total these projects could enable 4,933 direct jobs and 21,133 indirect jobs, with a total of 26,066 jobs.

These jobs will be distributed across a variety of sectors including engineering, transport and logistics and manufacturing.

Importantly, as noted in section 1, the department is aware of nine further proposals, which create additional employment opportunities, noting some of these projects could be in competition, and it is unlikely that all could proceed.

Greater energy market competition

Additional energy options for generation could create more competition for potential support, leading to lower prices.

Marinus Link will also enable expansion of Tasmania's hydro capacity and unlock additional renewable energy investment in Tasmania. To firm up the inherently variable nature of distributed and large-scale renewable generation, the NEM requires new flexible, dispatchable resources, including utility-scale pumped hydro.

Marinus Link will allow over 400 MW of existing dispatchable generation to be transmitted to Victoria, which, due to limited Basslink capacity, is currently unavailable. This would power up to 400,000 homes and help manage the impact of variable wind and solar, unplanned outages and extreme weather events. The economic benefits of Marinus Link for Tasmania and Victoria are estimated at \$2.9 billion.

Trade and foreign investment

Very large scale projects such as offshore wind or transmission infrastructure create significant new foreign investment opportunities. In the longer term, export opportunities could be created through utilising offshore wind to produce green hydrogen or green steel.

Greater utilisation of maritime environment

Enabling renewable energy generation in the offshore environment opens up a new, multi-billion dollar source of investment for this region of Australia.

Efficient utilisation of existing infrastructure

Offshore electricity infrastructure proposals can utilise existing transmission infrastructure as existing generation is phased out. Making use of existing infrastructure continues to place downward pressure on electricity prices and reduce developer costs. The Marinus Link interconnector and the Star of the South offshore wind farm proposal plans to connect to the existing transmission capacity in the La Trobe Valley.

Public health and safety effects

Key principles of the proposed regulatory framework's approach to WHS matters are to: ensure protection of workers where risks are present, continuous improvement in risk management practice over time and minimise regulatory burden and administrative complexity.

By applying an industry specific WHS scheme as proposed in section 4.3.1 to protect workers in the offshore electricity sector, a targeted, fit for purpose, objective based regulatory approach can be applied. This allows an appropriate level of control and flexibility in approaches, specific to individual projects and activities.

The proposed regulatory framework lends itself to objective based regulation due to the evolving nature of the industry and new technology practices. It is impractical, expensive and undesirable to set a 'step by step' prescriptive safety regime. Continuous improvement in WHS management can also be driven through this approach as well as integrating with industry specific structural integrity requirements.

Development of an industry specific regime which aligns with the provisions of the model WHS laws would provide a contemporary WHS framework for the sector.

Environment

Projects made possible under the regulatory framework would enable significant new sources of emissions reduction. For example, the Marinus Link and supporting transmission can enable 45 million tonnes of carbon dioxide emissions by 2050 through improved access to reliable pumped hydro.

Government

Should an offshore electricity infrastructure regulatory framework be developed, the costs for the Commonwealth government would include:

- The initial development of the legislative framework - This would be managed by a small team of policy advisors and legal advisors. Key tasks would include undertaking project management, policy work and required consultation. It is estimated this work will take in the order of eighteen months to develop primary

legislation. Subsequent development of subordinate regulations. Delivery of enabling regulations for offshore electricity infrastructure will require funding for legal services, and contractors to provide technical drafting and legal advice. Overlapping this process would be the development of guidance material and further policy advice to enable industry to apply for licences.

- Ongoing management over regulatory process, including establishment of the regulator and registrar, and maintaining compliance – Funds have been committed for NOPSEMA and NOPTA to develop their new roles, ensure suitable upskilling and provide separation from their existing cost-recovered functions. NOPSEMA is proposed to provide regulatory input into processes and providing technical experts for engagement activities and input into technical drafting or regulations, rules and policy. NOPTA is proposed to act as registrar and manage data and licence administration, as well as input into technical drafting or regulations, rules and policy.

The Australian Government has committed \$4.8 million dollars to assist in timely delivery of the regulatory framework and supporting regulations, policy, regulatory functions and initial licence application processes. In the long term there may be minimal impact on the budget if regulated activities are appropriately cost recovered.

Substantial cost savings would be found through the appointment of NOPTA and NOPSEMA in their respective roles as they can draw on their extensive existing experience and licensing management systems. As part of this work a cost recovery impact statement (CRIS) would be developed, with input from NOPTA and NOPSEMA.

States and territory governments may also need to introduce complementary legislation to allow infrastructure to be installed across state waters (such as transmission infrastructure).

Benefits for government would include facilitating further economic value from the maritime environment and a regime to coordinate and manage coexistence of the maritime sector to ensure minimise operational risks.

Developers

Developer costs would largely be through:

- Administrative costs:
 - The costs of making an application for a licences,
 - Processing times to meet associated with taxes, fees, charges and levies,
 - Notifying government that activities have started.
- Substantive costs would consist of:
 - Provision of training to employees to meet regulatory requirements of the new regulatory regime,
 - Providing information for third parties, affected by proposals as part of due diligence and consultation measures required by the proposed legislative framework,
 - Costs of professional services needed to meet regulatory requirements such as legal costs for interpreting the regulatory framework and tax implications.

Developers would potentially receive the greatest benefit from the development of the regulatory framework through the new business opportunities provided and the potential for

new investment opportunities, noting these benefits have broader flow-on impacts through the economy.

Affected Industries

The framework would recognise the multi-use nature of Commonwealth marine areas, and seek to balance competing interests while pursuing the most efficient use of these areas and marine resources. Similar to the existing expectations for oil and gas activities, regulated offshore electricity project developers would be required not to interfere with the rights of other users of the marine area to an extent that is greater than necessary.

Consideration of, and consultation with, other marine users would also be built in to relevant decision points. For example, consultation would be undertaken ahead of a site declaration being announced by a Minister, during the assessment of feasibility licence applications, and on an ongoing basis as described in a management plan. Developers working with other users of Commonwealth marine areas would be required to limit impacts to as low as practicable.

Noting this approach aims to limit potential costs for offshore electricity project developers, stakeholders and government alike, it does generate 'substantive' costs for existing marine operators including fisheries, shipping operators and petroleum developers:

- legal fees in interpreting regulatory environment such as safety zones and penalties,
- education for persons operating with new infrastructure such as offshore wind turbines and new navigation protocols,
- development of technical advice to engage with the new sector,
- consultation costs for engaging with government and the community as part of establishing the proposed regulatory framework or as part of licence conditions on developers,
- costs for limitations on access to maritime areas resulting from exploration activities, construction, operation or decommissioning of offshore electricity infrastructure. While it is expected that these costs would be minimised through careful negotiation, some level of impact would be inevitable. Such costs could include:
 - additional transport costs for shipping operators to navigate around a wind farm installation, noting effective wind farm design would minimise disruption to shipping activities, or
 - loss of fishing opportunities for fishing operators at stages of construction, such as where a safety zone is required and following installation of the offshore wind farm, changes to the types of fishing that can be undertaken or loss of fishing ground.

Administrative impacts incurred by affected parties are expected to be limited and may include reporting requirements sought by government on potential impacts such as maritime incidents.

Total costs and benefits for option 2

The benefits for option 2 indicate the potential significant, multi-billion economic returns from a relatively minor investment from government.

6 Consultation

The department undertook public consultation on concepts for a proposed regulatory framework between 3 January and 28 February 2020. The online consultation materials were complemented by face-to-face public information sessions in Perth and Melbourne.

Approximately 300 people attended the information sessions and 48 written submissions were received. Overall, submissions were supportive of the proposed framework.

Many of the submissions sought further detail relating to the operation of the proposed framework – much of this detail would be determined and consulted on through the process of developing regulations and guidelines in 2021. The following key themes raised through consultation were relevant to the overall structure of the framework and in some cases have led to re-shaping of the policy.

Decommissioning bonds

Policy presented: a bond equal to the cost for government to decommission infrastructure in the licence area must be held prior to installation activities commencing. Details of this approach will be outlined further during consultation on regulatory design.

Feedback: Several developers and a number of other organisations from industry and research sectors agree with the decommissioning bond principle.

A number of non-government organisations (NGOs) are concerned that a bond system could be seen as a disincentive noting that a similar financial expectation is not currently placed on offshore petroleum.

The department notes that recent issues in offshore petroleum have led to a review of decommissioning and financial assurance requirements and there may be additional requirements placed on petroleum titleholders in future.

Other developers believe that decommissioning bonds should not apply to Transmission and Infrastructure Permits.

The department notes that decommissioning bonds would be scalable depending on the mode of decommissioning accepted by the regulator. For example, some buried transmission infrastructure may be able to be left in place, with a very low decommissioning cost and associated bond.

Outcome: The department notes a need to engage closely with stakeholders as the department develops further public guidance around this issue in 2021. A decommissioning bond as regarded as best international practice.

Feasibility licence term

Policy presented: at the time of consultation, a feasibility licence was proposed as a five-year licence term in which a developer has an exclusive right to seek a Commercial Licence over the Feasibility Licence area. Before a Commercial Licence could be sought, the licence holder must be 'shovel-ready', with an accepted management plan, bond agreement and final investment decision in place.

Feedback: While there was some support for the five-year term, a number of submissions indicated that this timeframe could be too short, noting the expectation to undertake several significant tasks in order to be ready.

Outcomes: The department has amended the proposed term to seven years. To avoid inactivity in a licence area, holders of a feasibility licence would be expected to meet work program milestones at advertised points during the term of the licence. Failure to meet milestones may be grounds for cancellation of the licence.

Commercial licence term

Policy presented: at the time of consultation, a commercial licence was proposed as a 30-year licence term in which a developer can construct, operate and decommission offshore electricity infrastructure.

Feedback: A number of submissions advised that a 30-year term is too short to cover the complete lifecycle of construction, operation and decommissioning. Parties suggested 40-50-year term would be appropriate or an automatic licence renewal should be implemented.

Outcome: The department is now proposing that the standard commercial licence term be 40 years, with possible renewal of another 40 year term. The licence period for transmission infrastructure will be determined by the life of the assets.

The department does not intend to offer automatic renewal terms. Instead licence holders would be able to apply for a renewal well in advance of the licence expiry. The renewal decision would take into account the operation of the assets (i.e. in relation to contracts, maintenance schedules, equipment improvements and decommissioning plans). The Minister's decision to renew would provide an opportunity to consider the merit of continuing the operations and provide an opportunity to update licence conditions etc.

Pre-qualification

Policy presented: at the time of issuing the discussion paper, pre-qualification was expressed as a base threshold for participation in the regime and would include an assessment of a party's technical and financial capability as well as consideration of past performance.

Feedback: Submissions showed broad support for a pre-qualification process, however there were some concerns that pre-qualification thresholds if set too high, could limit participation of new or start-up companies and by doing so limit innovation.

Outcome: The department considers that this kind of threshold qualification process is most meaningful when a proponent's qualifications can be tested against the requirements of a particular project. For this reason this assessment would be best undertaken as part of the licence application process rather than as a standalone pre-qualification. In line with this, the working title for this assessment is now a suitability test, rather than pre-qualification.

The suitability test would also likely feature as part of the process to approve transfers of licences to ensure that entities taking over ongoing licences and/or operational assets have the required capabilities to maintain standards in line with the management plan.

The department is continuing to mature and finesse the policy around the fit-and-proper test and working with NOPTA to draw on their experience from the petroleum industry.

Work health safety (WHS)

Policy presented: As the discussion paper was silent on what WHS provisions would be applied, several stakeholders made assumptions that the provisions from the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) would apply.

Feedback: There was some support for extending the objective-based principles of the OPGGS Act to the regulation of health and safety for offshore electricity infrastructure activities in Australia.

Other parties suggested that it would be preferable to apply the model WHS legislation and provided detailed advice about the potential risks that can arise in this space, including in relation to disapplication of maritime safety legislation.

Outcome: The regulatory framework proposes developing an industry specific WHS regime drawing on the model WHS laws. Where the model WHS do not sufficiently cover an activity, modifications or new provisions would be drafted as required.

NOPSEMA as the offshore electricity regulator

Policy presented: The offshore electricity regulator would be responsible for overseeing health and safety, structural integrity and environmental management compliance for offshore electricity infrastructure activities. The discussion paper proposed that this role be fulfilled by NOPSEMA.

Feedback: Many stakeholders supported NOPSEMA as the regulator for offshore electricity sector, based on their technical expertise and experience in regulating activities in the offshore environment. A key benefit noted was the ability to undertake the work without the costs and time delay associated with establishing a new regulator with similar functions to an existing independent body.

Some stakeholders highlighted the need for specialist skills specific to the renewable energy sector and that the regulator will need to recognise and understand the differences between the offshore petroleum and offshore renewable energy industries.

Conversely, some stakeholders did not support NOPSEMA as the regulator based on a perceived conflict of interest in regulating competing industries as well as a misconception that NOPSEMA would have a role in regulating the broader electricity grid.

Outcome: No change. Noting there was a mix of views on this topic, the matters raised were generally not related to the competency of NOPSEMA as a regulator, but to specific issues around jurisdictional complexity, electrical regulation and the potential need for upskilling. The department maintains its view that installing NOPSEMA as the regulator is the most viable option and would avoid unnecessary duplication of functions and offer continuity in the regulation of offshore industries. The department notes that overseas, offshore petroleum regulators are also taking on the responsibility for regulating offshore wind farms.

Other matters raised

Application processes and assessment criteria

Many stakeholders highlighted the importance of having clear guidance around application processes and assessment criteria. There was a mix of ideas presented about competitive

assessment process and subsequent criteria, but there was broad support for a merit-based process that considers social, environmental and economic factors.

While high-level merit criteria and application pathways is proposed to be included in the bill, the detail around application assessment criteria is flexible and able to be set at the time of inviting applications.

The department intends to work with industry to scope reasonable application requirements and assessment criteria in 2021.

Data submission and release

Stakeholders expressed mixed perspectives on data. Some stakeholders suggested certain information such as environmental data should be made publicly available. Other stakeholders noted that commercially sensitive data could impact a project's competitive ability or desirability to be collected if shared publicly.

The bill would provide for heads of power to require and publish data in accordance with regulations. As data is such a sensitive issue, the department proposes to work with industry to develop the data regulations in 2021.

Electricity markets and grid connection issues

Several stakeholders sought information on how the framework would interact with legislation regulating the electricity and transmission markets.

Matters relating to connection to electricity markets and onshore transmission are outside of the scope of this framework and would be the responsibility of project proponents.

Strategic planning and incentives for investment

A number of stakeholders recommended that the Australian Government be proactive in identification of preferred clean energy sites and exclusion zones, noting that in other international jurisdictions, government has provided early stage investment in exploration, though this is often where there may be few other renewable investment opportunities.

The framework is intended to enable the development of the offshore electricity sector, rather than drive its establishment.

7 Preferred Option

The Australian Government considers that the more effective means for achieving a, competitive and well-functioning offshore electricity industry is by implementing Option 2 - Implementation of an offshore electricity infrastructure regulatory framework.

Broadly, this would be achieved through establishing a legislative framework that would allow a range of activities not currently provided for and limit impacts on other maritime users, offshore workers and the environment. Timely introduction of the regulatory framework would build investor confidence early, especially considering the long development time for large scale offshore electricity infrastructure.

Subsequent regulations and rules would be formulated either concurrently or following the initial introduction of core legislation, and further consultation would be undertaken on the regulations, rules and policy under the proposed framework.

As noted, the cost benefit assessment was challenging to quantify due to uncertainties in the current operational environment, challenges in forecasting the viability of proposals and the likely growth of the sector. On this basis, a highly qualitative cost-benefit assessment was undertaken.

Despite this context, the very significant opportunities presented by the proposed regulatory framework provide a strong case that option 2 provides the highest net benefit.

8 Implementation

Subject to the passage of the Offshore Electricity Infrastructure Bill, the implementation of the proposed legislation is subject to the challenges outlined below.

Implementation challenges

The development of the proposed legislative framework is a resource intensive process, involving significant engagement with agencies across the Commonwealth, external consultation, as well as new and complex technical matters for consideration. The Australian Government is proposing the new legislation be introduced as soon as practical, and be able to facilitated by mid-2021.

Prior to this, the department would continue to undertake a range of consultation with other Commonwealth agencies, engagement with relevant developers, and potentially affected stakeholders to ensure an effective implementation process.

Concurrent to this process, the department is starting operational matters to ensure developers are able to seek licences in a timely manner. This would include:

- Recruitment of additional staff within the department,
- Preparing NOPSEMA and NOPTA for their expanded scope of work following passage of the Act,
- Development of guideline material to further explain assessment processes, submission of expression of interest,
- Communication material clarification of policy matters on outstanding technical matters (for example the operation of the safety zone), and
- Initiating steps to undertake a declaration for a given area such as data collection, due diligence and stakeholder engagement.

The department would develop an implementation plan that would guide the program of work.

Implementation risks

Key implementation risks

<i>Risk and rating</i>	<i>Consequence</i>	<i>Management and mitigation</i>
<ul style="list-style-type: none">▪ <i>Delay in passage of legislation – possible</i>	Reduced investor confidence and potential loss of new and significant investment (noting any delays would expect to be limited)	Before implementation, the Bill will receive further oversight by the Senate Standing Committee on Regulations and Ordinances of Parliament which could impact on timeframes for implementation.

- *Stakeholders do not support legislation and it not fit for purpose – Low likelihood as stakeholders are supportive*
- Reputational damage to the department and the Australian government.*
- Delays in operationalising legislation*
- The drafting process has ensure wide, and open consultation with a broad range of stakeholders with feedback followed up as outlined in section 6.*
- The development of regulations would undergo further consultation.*

<ul style="list-style-type: none"> ▪ <i>Operational matters are not prepared in sufficient time – Low likelihood</i> 	<p>Delays in undertaking declaration processes, and the assessment and provision of licences</p>	<p>Lead times should be adequate, noting that operationalising the new legislative framework is a significant undertaking. There are many stakeholders, a large geographic coverage and the introduction of a new sector to Australia’s offshore region.</p>
<ul style="list-style-type: none"> ▪ <i>Impacts on affected users are greater than anticipated – Low likelihood</i> 	<p>Undue costs</p>	<p>Every consideration has been made to ensure a flexible, responsive regime that can accommodate the needs of the offshore maritime environment. As previously noted, should the regulatory framework require further refinement to respond to the needs of end users, further conditions and consideration can be included through the declaration, assessment, or within management plans approved as part of issuance of a licence.</p>

Transitional arrangements

Existing activities and rights underway at the time of commencement would be allowed to continue, specifically:

- the Basslink cable; and
- the Star of the South deed of licence

It is proposed the regulatory framework would not apply to existing activities conducted by the relevant entities in association with these projects. The framework would however, apply

to those entities where they undertake new offshore electricity infrastructure activities that are not already authorised. It is also intended that the framework should apply to activities associated with those entities' existing licences if property or licence rights are transferred to a third party.

Monitoring and evaluation of policy

The department has sought to ensure broad and ongoing monitoring and evaluation of the legislation through a variety of processes:

- The Offshore Electricity Infrastructure Interdepartmental Committee (IDC) have established a good level of awareness of the opportunities and potential impacts of the sector, and a robust network for ongoing engagement and feedback.
- As the most prospective region, the department has established a long standing engagement with relevant Victorian government agencies to inform roll out at the local level.
- The department has undertaken extensive external engagement with industry prior to development of the regulatory framework, as part of formal consultation and during drafting of the Bill.

Implementation may be further informed by assurance reviews, internal audits and quality reviews, to understand opportunities to improve implementation. More generally, monitoring would take place through existing communications channels with industry stakeholders.