Enabling Investment in Offshore Renewable Energy
Discussion Document

DECEMBER 2022

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Te Kāwanatanga o Aotearoa
New Zealand Government

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Ministry of Business, Innovation and Employment (MBIE) Hīkina Whakatutuki – Lifting to make successful

MBIE develops and delivers policy, services, advice and regulation to support economic growth and the prosperity and wellbeing of New Zealanders.

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Information, examples and answers to your questions about the topics covered here can be found on our website: **www.mbie.govt.nz.**

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DECEMBER 2022

Minister's Foreword

Clean, renewable energy generation will be critical to realising our vision for Aotearoa New Zealand's energy system to be highly renewable, sustainable and efficient by 2050. A strong renewable energy system will help us achieve our goals to have a low-emissions and high-wage economy, while we support international efforts to limit global temperature rises.

New Zealand is very lucky to have access to significant renewable energy sources, and we are well positioned to transition to 100 per cent renewable energy generation. Offshore renewable energy sources – like wind and tidal – have the potential to be a key part of our future energy mix.

This is why our first Emissions Reduction Plan commits to accelerating the development of new electricity generation technologies and ensuring that by 2024, we have regulatory settings in place to enable investment in offshore renewable energy.

The right regulatory environment can be a springboard for the kind of innovation and investment that will help deliver the offshore renewable infrastructure needed to help us get to net zero carbon emissions by 2050. We want to ensure that any regulatory settings are carefully considered to be in the best interests of New Zealanders now and in the future, while enabling targeted research and exploration as early as possible.

To allow for this consideration, the Government has agreed to consider the regulatory settings in two steps:

- The first step, this discussion document, focuses on the regulatory settings necessary to enable prospective developers to explore the feasibility of developing offshore energy infrastructure in our waters. Recognising that these exploratory studies can take several years, it is critical we establish these settings soon.

- The second step is further consultation in 2023, to focus on the broader regulatory settings for how infrastructure will be constructed, operated, and decommissioned.

I look forward to hearing the views of Māori, industry, and communities on these proposals and invite you to stay engaged in future consultations on this topic

Hon Dr Megan Woods

Minister of Energy and Resources

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Executive summary

Offshore renewable energy could contribute to Aotearoa New Zealand's net-zero emissions goals and economic development

The Government has committed to reaching net zero for long-lived gases by 2050, set a target that 50 per cent of total energy consumption will come from renewable sources by 2035, and has an aspirational target of 100 per cent renewable electricity by 2030. The New Zealand Energy Strategy, currently under development, will help set the direction for Aotearoa New Zealand's pathway away from fossil fuels and towards greater levels of renewable electricity and other low-emissions alternatives.[i]

Offshore renewable energy is one such alternative that could become a part of Aotearoa New Zealand's future energy mix. Surplus offshore renewable energy could also be used to grow energy-intensive activities such as the construction of data centres and the production of hydrogen or ammonia.

Offshore renewable energy covers many energy sources, such as wind, solar and ocean (wave and tidal), and several technologies that are at different stages of development. The most advanced technology is fixed foundation offshore wind, which is being deployed in large-scale commercial projects in Europe and the Asia-Pacific.[ii]

While this discussion document is concerned with all forms of offshore renewable energy, we use and refer to offshore wind as a specific example throughout, owing to its advanced nature.

Developers are currently exploring Aotearoa New Zealand's world-leading offshore wind resources

Aotearoa New Zealand's average wind speeds are higher than in most other places, meaning that our wind farms can produce more energy per unit than the global average. The least-windy sites in Aotearoa New Zealand have better wind energy potential than the windiest sites in Australia.[iii]

There is already significant interest from experienced developers in establishing offshore wind energy in New Zealand's territorial sea (up to 12 nautical miles) and exclusive economic zone (between 12 and 200 nautical miles), with initial feasibility assessments underway in Taranaki, Waikato, and Southland.

To harness this potential, the Government is consulting on an approach to manage feasibility activities

Internationally, many countries are moving at speed to leverage their low-emissions resources by reducing barriers to enable the significant investment needed for offshore renewable energy projects. One barrier is how the establishment of this infrastructure is regulated.

In May 2022, the Government's first Emissions Reduction Plan committed to developing regulatory settings by 2024, to enable investment in offshore renewable energy (such as offshore wind farms) and innovation.[iv]

The objectives of regulatory settings are to:

- enable selection of both the developer and the development to meet Aotearoa New Zealand's national interests, including appropriate safeguards and benefits for the environment
- enable Māori participation in offshore renewable energy development
- provide certainty for developers to invest in the short term, and
- ensure New Zealand remains competitive and can secure access to offshore renewable energy technology in a timely way.

Currently, existing regulatory regimes such as the Resource Management Act 1991 and Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 are insufficient to enable early feasibility activity by offshore renewables developers to proceed in a way that meets the above objectives. This discussion document consults on:

- implementing a permitting or collaborative approach to the production of feasibility assessments for offshore renewables developments in a way that meets the above objectives, and
- gathering more information about existing rights and uses in areas where offshore renewables may develop.

Next steps

Consultation on the proposals in this document will run from mid-December 2022 to April 2023. During this time, officials will meet with interested parties to discuss the proposals.

A second discussion document in 2023 is expected to canvas further elements of required regulatory settings such as how best to manage the construction, operation, and decommissioning phases of offshore renewable infrastructure.

Any regulatory changes would require either regulations made under an existing Act of Parliament, or a new Act. The Government remains committed to establishing fit for purpose regulatory settings by 2024. Where it is feasible and desirable to do so, the Government will implement these settings sooner.

Chapter 1: Purpose of this consultation

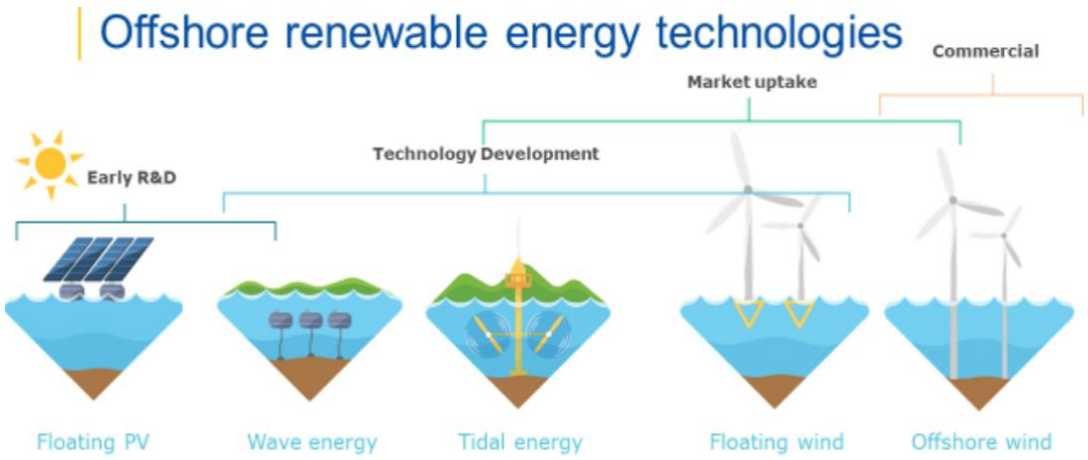
Why we are consulting?

Aotearoa New Zealand has considerable renewable energy potential within the territorial sea (up to 12 nautical miles) and exclusive economic zone (between 12 and 200 nautical miles).

What is offshore renewable energy?

Offshore renewable energy refers to any type of infrastructure placed in or on the sea, and that generates energy from wind, ocean currents, light or heat from the sun, rain, and geothermal heat. These sources are abundant, natural, and clean.

The technologies used to harness these sources of energy are at different stages of development.



Source: European Commission

Offshore renewable energy can involve large-scale, multi-year infrastructure projects. Offshore wind, for example, combines the scale of large hydro and the complexity of offshore petroleum extraction, making it different from onshore renewables. Developing an offshore renewable energy industry in a new market such as Aotearoa New Zealand therefore requires a careful approach that considers economic, cultural, environmental, and social criteria.

The Government's first Emissions Reduction Plan committed to developing regulatory settings by 2024 to enable investment in offshore renewable energy and innovation.[v]

The scope of this discussion document

Regulatory proposals are focused on the initial feasibility stage of development

There are generally four broad stages to offshore renewable energy infrastructure developments: feasibility, construction, operation and maintenance, and decommissioning.

The proposals in this document concern the early stage of exploring the feasibility of offshore renewable energy projects. The purpose of the feasibility stage for a developer is to determine the appropriate scale and location of infrastructure. Data gathered during this stage would inform the development of appropriate consents and any other permission to construct and operate.

While the proposals in this discussion document apply to all offshore renewable energy generation, we specifically use the example of offshore wind, since this technology is the most advanced, and because experienced developers have expressed interest in establishing offshore wind energy in Aotearoa New Zealand's waters.

Our engagement with Te Tiriti o Waitangi partners

To inform this discussion document, the Government has conducted preliminary engagement with iwi from the regions that offshore wind energy developers are currently exploring, namely Waikato, Taranaki and Southland. Chapter 5 reflects insights from these initial conversations.

This engagement will continue through the public consultation of this discussion document and will remain ongoing.

Have your say

You have an opportunity to tell us what you think of the proposals by providing feedback on the matters raised in this discussion document. You are welcome to make submissions on some or all of the discussion questions set out in this document, and/or to raise any other relevant points.

The Ministry of Business, Innovation and Employment (MBIE) invites written comments on the proposals in this document. Please provide relevant facts, figures, data, examples and documents where possible to support your views. Please also include your name and (if applicable) the name of your organisation in your submission.

You can make a submission by:

- emailing your submission to offshorerenewables@mbie.govt.nz
- mailing your submission to:

  Ministry of Business, Innovation and Employment
  15 Stout Street
  PO Box 1473, Wellington 6140
  Attention: Offshore Renewable Energy Submissions

A submission template has been provided to respond to the questions in this discussion document. You can find this template at: https://mbie.govt.nz/offshorerenewables.

Submissions are due on or before **14 April 2023**.

Use of information

The information provided in submissions will be used to inform MBIE's policy development process, and will inform advice to Ministers.

We may contact submitters directly if we require clarification of any matters in submissions.

MBIE will publish a summary of submissions

After submissions close, MBIE will publish a summary of submissions on our website at www.mbie.govt.nz. We will not be making any individual submissions public. Should any part of your submission be included in the summary of submissions, MBIE will seek your permission to publish your information, and ensure it does not refer to any names of individuals.

When businesses or organisations make a submission, MBIE will consider that you have consented to the content being included in the summary of submissions unless you clearly state otherwise.

If your submission contains any information that is confidential or you otherwise wish us not to publish, please:

- indicate this on the front of the submission, with any confidential information clearly marked within the text
- provide a separate version excluding the relevant information for publication on our website.

Submissions may be the subject of requests for information under the Official Information Act 1982 (OIA). Please set out clearly if you object to the release of any information in the submission, and in particular, which part (or parts) you consider should be withheld (with reference to the relevant section of the OIA). MBIE will take your views into account when responding to requests under the OIA. Any decision to withhold information requested under the OIA can be reviewed by the Ombudsman.

Privacy Act 2020 applies to all submissions and survey responses.

The Privacy Act 2020 applies to submissions and survey responses. Any personal information you supply to MBIE in the course of making a submission will only be used for the purpose of assisting in the development of policy advice in relation to this review.

Please clearly indicate in the cover letter or e-mail accompanying your submission if you do not wish your name, or any other personal information, to be included in any summary of submissions that MBIE may publish.

What happens next

MBIE will analyse all submissions received and then report back to the Minister of Energy and Resources on the feedback, with recommendations for her consideration. Your submission will help inform policy decisions to develop a responsible offshore renewable energy industry in Aotearoa New Zealand.

A second discussion document in 2023 is expected to canvas further elements of required regulatory settings such as how best to manage the construction, operation, and decommissioning phases of offshore renewable infrastructure.

Any regulatory changes would require either regulations made under an existing Act of Parliament, or a new Act. The Government remains committed to establishing fit for purpose regulatory settings by 2024. Where it is feasible and desirable to do so, the Government will implement these settings sooner.

Chapter 2: Context

Offshore renewables could contribute to our climate change goals

Aotearoa New Zealand needs a highly renewable, sustainable, and efficient energy system that is accessible and affordable, secure and reliable, and supports New Zealanders' wellbeing. The Government has committed to reaching net zero emissions for long-lived gases[1] by 2050, set a target that 50 per cent of total energy consumption will come from renewable sources by 2035, and has an aspirational target of 100 per cent renewable electricity by 2030.

The New Zealand Energy Strategy, currently in development and due to be completed by the end of 2024, will help set pathways to achieve our objectives and provide certainty for the sector, consumers, and industry. It will set the direction for New Zealand's pathway away from fossil fuels and towards greater levels of renewable electricity and other low emissions alternatives.[vi]

Reducing our reliance on fossil fuels and moving towards greater levels of renewable energy and other low-emissions alternatives will increase demand for electricity over the coming decades. The magnitude and timing of the increase is uncertain, but analysis by MBIE projects that electricity demand could grow between 18 and 78 per cent between 2018 and 2050 across five different scenarios assuming different levels of economic growth, technological progress and policy changes.[vii] Analysis by Transpower, the electricity grid operator, shows that demand could grow from ~43 TWh (terawatt hours) today to 70 TWh by 2050 primarily from electrifying transport and process heat.[viii] Recent Climate Change Commission (CCC) modelling to support its emissions budget advice also shows the potential for significant increases in demand for electricity out to 2050 as the number of electric vehicles (EVs) on the country's roads grows, and industrial demand electrifies.[ix]

Offshore renewables can contribute to this increased demand for electricity, providing a more stable source of renewable energy, for more constant and predictable generation.

There are other potential benefits from developing offshore renewable energy

Offshore renewable energy can provide for increased economic development

Developments can generate economic benefits by creating jobs to support the manufacture, construction, and operation of infrastructure. A localised supply chain can add value to an economy by providing a range of components and services that are required. For example, the development of a typical 500 MW offshore wind farm requires around 2.1 million person-days of work and there are synergies with offshore oil and gas, specifically in terms of skills and occupational groups.[x]

Surplus renewable energy, such as that provided from offshore sources could be used to grow energy-intensive activities. These potentially include the construction of data centres and the production of hydrogen or ammonia. Green hydrogen has potential as an alternative fuel source to decarbonise many hard-to-abate industries and applications. Green ammonia can be used to create urea, which is widely used in the agricultural sector both as a fertilizer and animal feed additive. Both the green

[1] Carbon dioxide, nitrous oxide, F-gases and non-biogenic methane. Subsequently referred to as 'carbon' for simplicity.

hydrogen itself, and its applications, such as green ammonia and urea could provide export opportunities for Aotearoa New Zealand.

Attracting these activities to Aotearoa New Zealand would reduce global greenhouse gas emissions and create sustainable high-wage jobs for New Zealanders. Suppliers with access to low-cost renewables will tip the scales when it comes to green hydrogen production.[xi]

There is an opportunity to enable technology innovation

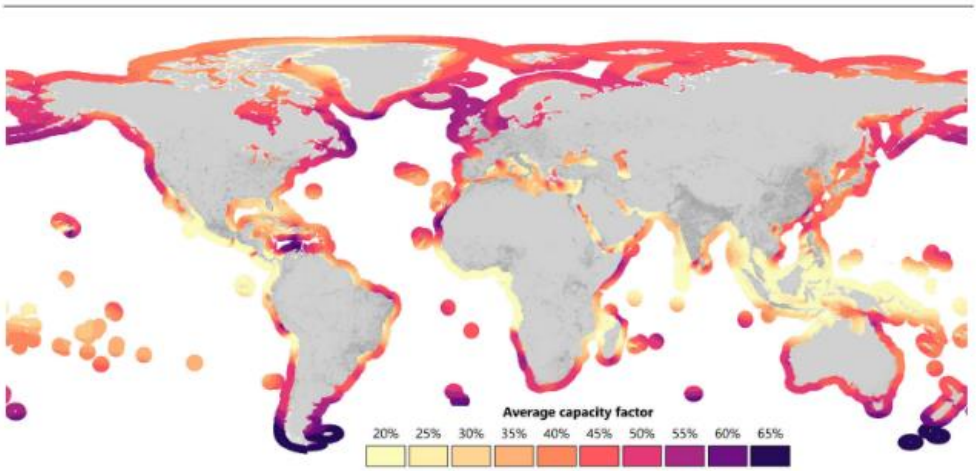
The technologies to exploit offshore renewable energy sources are at different stages of development. There is an opportunity to enable technology developments and innovation, as well as investment in renewable offshore energy beyond wind. There is interest from innovative energy organisations in testing, trialling, and developing other renewable marine technology, including current, wave and tidal renewable electricity generation. It will be important to de-risk investment in both innovation and testing technologies.

Offshore wind is the most mature technology

Offshore wind technology is the most mature of the offshore renewable energy technologies today, and it continues to develop at pace. Offshore wind installations have the potential to provide significant new renewable electricity generation capacity in the future. Offshore wind technology allows the exploitation of the generally higher and more consistent wind resources offshore, while achieving gigawatt-scale projects close to large load centres (eg the densely populated coastal areas prevalent in many parts of the world).[xii] Also, being at sea, offshore wind is less visible and less audible – key objections raised with regards to onshore wind developments in some communities.[xiii]

Aotearoa New Zealand has world-class offshore wind resources

According to the International Energy Agency, Aotearoa New Zealand is optimally located in an area of the world with quality wind resources. The average capacity factor (average performance over the course of a year) for wind projects in Aotearoa New Zealand is estimated between 50 to 65 per cent.[xiv] The least-windy sites in New Zealand have better wind energy potential than the windiest sites in Australia.[xv]



Average capacity factors reflect the quality of the wind resources available offshore around the world

Source: International Energy Agency analysis developed in collaboration with Imperial College London based on Renewables.ninja

Water depth is another important technical consideration. Turbines are now routinely being installed in water depths of up to 40 metres and as far as 80 kilometres from shore. These turbines, rooted in the seabed by monopile or jacket fixed-bottom foundations, are easier to access and currently restricted to waters less than 60 metres deep.[xvi]

Scaling up offshore wind markets requires offshore wind turbines to move into deeper waters with higher wind resources. Floating foundations offer this potential, as they allow access to sites with deeper water and further from shore. Significant and encouraging developments in floating foundations have been seen in recent years. For example, the Norwegian energy company Equinor will complete the world's largest floating wind installation by 2023. Located 140 kilometres offshore with water depths ranging between 260 metres and 300 metres, it will have a system capacity of 88 MW.[xvii]

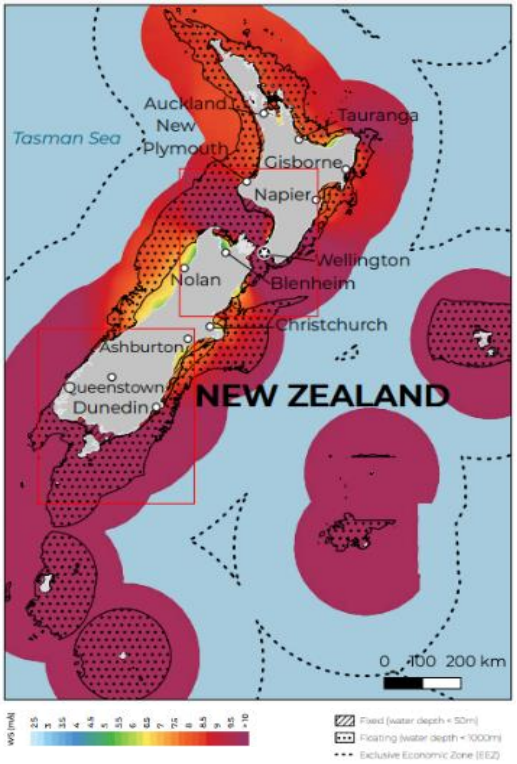
Floating offshore wind in deeper water is likely to become cost competitive with offshore wind on fixed foundations in shallower water by the early to mid-2030s, which will open up new markets with good wind resources close to population centres, but with deeper water.[xviii]

Offshore wind could be feasible in a number of locations in Aotearoa New Zealand

Based on wind quality and water depth alone, the technical potential for offshore wind in Aotearoa New Zealand is concentrated in a few different locations according to analysis by the Global Wind Energy Council in 2021.

Other technical factors will also influence the economic viability of an offshore wind project. These include distance from shore (near shore <60km or far from shore 60 – 300km), availability of grid connection, grid capacity, distance to port (for construction and maintenance), and proximity to consumers. These are generally the first order considerations that offshore wind developers will take into account when identifying potential locations for projects.

A 2019 study of Aotearoa New Zealand's offshore wind resource identified at least 7 GW of potential capacity from fixed foundation wind turbines in South Taranaki alone, with the potential for additional capacity from floating turbines, and in other locations.[xix]



Source: Global Wind Energy Council

In Aotearoa New Zealand, developers currently interested in offshore wind energy, both fixed and floating foundations, have identified the following potentially technically viable locations: Waikato, South Taranaki Bight, North Taranaki Bight, and Southland.

Annex 1 provides further information on the locations of developer interest.

The lifecycle of an offshore wind project

Offshore wind projects are long-term propositions. They can take a decade to establish and remain in operation for thirty years or longer. The four major stages in the lifecycle of an offshore wind project are feasibility, construction, operation and maintenance, and decommissioning.

Feasibility

The feasibility stage is an opportunity to determine the appropriate scale and location of offshore wind infrastructure. Determining this involves gathering all the information necessary to assess whether a project is technically, commercially, environmentally, culturally, and socially appropriate.

Feasibility activities can include geotechnical, geophysical, wind speed, and environmental and ecological impact surveys. They also include engineering and design studies, economic analysis, onshore and human impact studies (such as visual impact), as well as assessing options for connecting offshore energy infrastructure to an electrical grid or directly to users. Depending on their nature, some feasibility activities may need consenting.

The data gathered during the feasibility stage would be used to inform the preparation of necessary consents and other permissions to construct and operate.

Construction

Constructing offshore wind energy infrastructure can cost hundreds of millions of dollars and take several years. There are a series of activities that take place to prepare the site and manufacture the components needed.

Operation and maintenance

Offshore wind infrastructure can be in operation for decades. It needs frequent maintenance and inspections to check that components are working efficiently. Ongoing compliance with health, safety and environmental regulation will also be a large part of the activities in this stage.

Decommissioning

Components, such as the turbines, will come to the end of their design life and will need to be decommissioned. As the majority of offshore wind energy infrastructure has been constructed in the twenty-first century, there is little global experience in this area, but there are many similarities with offshore oil and gas, and lessons learned.

Chapter 3: Why does the government need to enable feasibility activity now?

Early developer interest needs to be managed in a way that benefits Aotearoa New Zealand

Offshore renewable energy infrastructure is long-lived and could become a critical part of our national electricity system. It is therefore important for the government to carefully select both the developer and the development to meet Aotearoa New Zealand's national interests. This includes examining a developer's technical and financial competence to deliver the project on time and meet Aotearoa New Zealand's renewable energy objectives; the potential environmental impacts from the development; and the range of benefits that may be realised for Aotearoa New Zealand, such as through job creation and skills development, supply chain development, and technology innovation.

On potential environmental impacts, the research undertaken during the feasibility stage will provide significant insight into Aotearoa New Zealand's marine environment and will assist with understanding and quantifying the potential for positive or adverse effects. Governments around the world are increasingly examining offshore wind projects at the feasibility stage to ensure that developers collect appropriate data and complete a detailed environmental impact assessment prior to seeking relevant consents to construct.

Under current regulatory settings, the most significant developer interaction with the resource management system occurs at construction when consents will be required under the Resource Management Act 1991 (RMA) and/or Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act).[2] Consent applications under these Acts are processed in the order in which they are received ie on a 'first-in, first-served' basis, and the focus is on promoting the sustainable management of natural resources.

There is currently no appropriate system for assessing the suitability of offshore renewable energy developers to operate in Aotearoa New Zealand, or for comparing proposed developments against each other. Despite this, developers are beginning initial activity now. Without a specific approach to enabling feasibility, there is a risk that developments will be assessed without adequate information and the ability for the government to judge the most appropriate development and developer.

Providing for Māori interests in the moana

The moana (ocean) around Aotearoa New Zealand is of significant cultural and economic value to Māori. As Te Tiriti partners and citizens of Aotearoa, Māori may have a broad range of interests in the development of an offshore renewable energy industry. We understand that recognising these interests is integral to assessing feasibility.

The moana has spiritual significance to Māori as it plays a critical role in informing whakapapa and turangawaewae (belonging). It provides ancestral connection to Māori from the rohe it embodies and, in te ao Māori, cannot be viewed purely as a commodity. It is important that developers understand

[2] There are currently limited regulatory requirements for developers undertaking feasibility activities. Activities can range from being 'permitted' to 'controlled' under the EEZ Act and relevant regional coastal plans.

the spiritual significance of the moana, and that it is often local marae who will have a deep understanding of the mātauranga and tikanga for that moana.

As kaitaki (guardians) of the moana in their rohe, certain iwi, hapū and whānau will have heightened interests in how offshore areas are used from an intergenerational perspective. As mana moana they have a responsibility to preserve and protect taonga in their rohe. Mana moana hold vast amounts of knowledge – mātauranga Māori - of the flora and fauna in their rohe. For example, the migratory patterns of Tītī (muttonbird) – a New Zealand native bird common to coastal New Zealand south of Banks Penninsula with economic, social and cultural importance in te ao Māori – have been studied by Ngāi Tahu for centuries. Development in this area could have an impact on such species and will therefore need to involve the participation of mana moana.

Māori also have legally recognised customary interests under the *Te Takutai Moana Act 2011* and *Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019* (takutai moana legislation), Treaty of Waitangi settlement legislation, and relevant case law which need to be preserved.

Equitable economic opportunities for development

Mana moana have continuously expressed a strong desire to work with developers to ensure their interests, knowledge and aspirations are appropriately considered and given effect. Māori want equitable opportunities to be involved in all aspects of the feasibility process and assurance that developers understand Te Tiriti o Waitangi, tikanga principles, mātauranga Māori and the interests of mana moana. Māori are also interested to explore the potential economic benefits to their communities from the construction and operation of offshore renewables.

Without a specific approach to feasibility, it is unlikely that the Government can ensure an appropriate level of involvement in the preparation of feasibility assessments, and identification of existing rights and interests.

To invest in feasibility activities, developers want certainty

Experienced offshore wind developers are seeking to support Aotearoa New Zealand's emissions reduction targets through a greater supply of renewable energy. As these developments can take a decade or longer, developers want to commence their feasibility activities now.

The data gathered during feasibility would assist a developer in the preparation of relevant consent applications and any other permissions that may be required to construct. As noted above, these applications are processed under the RMA and EEZ Act in the order in which they are received.

Feasibility activities can cost tens of millions of dollars, especially in a new market like Aotearoa New Zealand. Developers are seeking confidence to invest in the preparation of relevant consent applications without the potential for a different developer gaining priority over them through a first-in-time consent application over the same location.

Maintaining consistency with international obligations

New Zealand is party to a number of international treaties and conventions that impact how we use and manage the marine area. Key to the issues raised by offshore renewable energy development is the obligations under United Nations Convention on the Law of the Sea 1982. This convention stipulates rights and obligations on members states relating to territorial sovereignty, environmental protection and decommissioning infrastructure in the territorial sea and the Exclusive Economic Zone. A more detailed summary of the rights and obligations of members states under UNCLOS is provided in Annex 4.

Regulations need to be timely

Finally, internationally many countries are moving at speed to leverage their low-emissions resources and as a result, global demand for offshore renewable energy construction is significant and growing. If early feasibility activity is not enabled, Aotearoa New Zealand risks slower access to offshore renewable energy technology to support us to meet our climate ambitions.

The Government has prioritised developing fit-for-purpose regulatory settings for offshore renewable energy by July 2024 and may implement them sooner where it is feasible and desirable to do so.

Policy objectives and criteria

The policy objectives for enabling feasibility activities are to:

- enable selection of both the developer and the development to meet Aotearoa New Zealand's national interests, including appropriate safeguards and benefits for the environment
- enable Māori participation in offshore renewable energy development
- provide certainty for developers to invest in the short term, and
- ensure New Zealand remains competitive and can secure access to offshore renewable energy technology in a timely way.

Based on this, we will use the following criteria to assess the proposals outlined in this document:

- **Effectiveness:** Will the proposals effectively meet the policy objectives described above, especially around selecting developers and developments and enabling Māori participation?
- **Certainty:** Do the proposals provide sufficient certainty for developers to invest in Aotearoa New Zealand?
- **Timeliness:** Can the proposals be implemented in a timely manner so that Aotearoa New Zealand remains competitive internationally?

1. Do you agree with the proposed objectives outlined above? Why or why not?
2. Are there other objectives that we should consider that are not captured above? If so, what are they are why are they important?
3. Do you agree with the proposed criteria for assessing the proposals for regulating offshore renewable energy? Why or why not?
4. Are there other criteria that we should consider that are not captured above? If so, what are they are why are they important?
5. Do you agree that the criteria should be equally weighted? Why or why not?

Chapter 4: Proposals for managing feasibility activities

The proposals in this document only deal with the early stage of exploring the feasibility of offshore renewable energy projects. A second discussion document in 2023 is expected to canvas further elements of required regulatory settings such as how best to manage the construction, operation and maintenance, and decommissioning stages of offshore renewable energy infrastructure.

Together, the two discussion documents will contribute to establishing timely and fit-for-purpose regulatory settings by 2024.

Feasibility is the first step of development

The feasibility stage is an opportunity to determine the scale and location of renewable infrastructure through assessments and studies that could subsequently inform applications for relevant consents to construct. The purpose of the feasibility stage is to determine whether the construction of offshore renewable energy is technically, commercially, environmentally, culturally, and socially appropriate in a given location. This involves:

- gathering the necessary information, and
- balancing any competing uses, interests, and values in deciding whether to proceed with the development.

The government can have different degrees of involvement in the feasibility stage of an offshore renewable energy project. On one side of the spectrum, the government could prepare the information itself, involving significant time and cost to the Crown. On the other, this task can be assigned to developers who would absorb these costs themselves. In a new market like Aotearoa New Zealand, the data across the different categories of information may not be available, may be limited, or may be of variable quality. For example, although some offshore areas are specifically protected for their conservation value, significant habitats for species, and their migratory paths may lie outside of marine protected areas or marine mammal sanctuaries in both the territorial sea and the exclusive economic zone. Obtaining a better understanding of the importance of areas for marine species and ecosystems needs to be an integral part of the feasibility stage.

The availability of data could also vary by region. For example, in Taranaki where oil and gas exploration has been occurring for decades in the territorial sea and exclusive economic zone, much is known about the geotechnical and geophysical characteristics. This may not be the same in other regions such as Waikato and Southland.

In Aotearoa New Zealand, competing uses, interests and values would usually be balanced during the consenting process to construct offshore renewable energy developments. The feasibility process will be vital to gather information about these uses, interests, and values, particularly for local iwi, hapū, and whānau.

Internationally, governments have taken different approaches to gathering information and balancing uses, interests, and values

The Dutch tendering model is an example of the greatest role for government, in which the government identifies specific areas where renewable energy development could be feasible, having itself conducted significant feasibility work. This includes environmental and conservation

assessments and specific studies about wind, soil and water conditions to determine construction and operation conditions.

Scotland's marine sector plan for offshore wind energy is based on government-led environmental and socio-economic impact assessments to identify locations for offshore wind energy deployment. The assessments are designed to identify potential constraints to steer future investigations by developers.

Australia's "declared areas" policy is an example where the government identifies broad areas where renewable energy development could potentially be feasible, having identified and undertaken some consideration of potential conflicts with other users, interests, and values.

The Danish "open door" policy is an example where government plays a limited role by inviting developers to conduct comprehensive studies and assessments to identify areas where renewable energy development could be feasible.

Annex 3 includes detailed information on several other jurisdictions' approaches to offshore wind regulation.

We propose a developer-led approach to feasibility

From overseas experience it is clear that information can be gathered by the government, a developer, or a combination of both. However, balancing competing uses, interests, and values is always performed by a government and the choice is about when it occurs – prior to feasibility or when the developer is ready to construct. The choice of timing is influenced by how much baseline information is available to confidently balance other uses, interests, and values.

The potential advantages of greater and earlier government involvement in feasibility are:

- increased investor confidence through government balancing competing uses, interests, and values up front (rather than at construction) and allocating space for renewable energy generation
- wider dissemination of environmental and other information to all interested parties, and
- data standardisation.

On the other hand, the potential advantages of a developer-led approach are:

- greater opportunity for developers to identify optimal areas for development, with the lowest levelized cost of energy generation
- more timely development where developers are incentivised to conduct feasibility analysis, and
- fewer costs for government.

Timing is a key consideration in choosing an approach for Aotearoa New Zealand. In the short-to-medium term, progressing a government-led approach to gathering feasibility information could mean materially slowing down the development of offshore renewable energy development in New Zealand. As outlined in Chapter 2, offshore renewable energy has potential to contribute to our emissions reduction goals. Adding the time for a potential government-led sectoral planning exercise to existing offshore development timelines (ten years plus) would delay and possibly undermine the ability of offshore renewable energy to contribute to these important goals.

There are also a number of offshore renewable energy developers, specifically offshore wind developers, exploring Aotearoa New Zealand right now. They are operating in an environment in which international demand for offshore wind is growing rapidly, with opportunities in many countries. Therefore, even once some form of government-led assessment, such as a marine spatial plan, has been completed, it cannot safely be assumed that developers will be ready and waiting to resume activity. This could result in even further delays to activity or an absence of activity altogether.

Below we discuss two options for implementing a developer-led approach to improve our understanding of where offshore renewable energy development could occur in New Zealand.

More government involvement may be suitable and possible in the medium-to-long term

Internationally, there is a trend towards using government-led processes, though this often reflects the result of a gradual maturing of the market. In the Netherlands, for example, prior to its adoption of a "one-stop-shop" in 2013, developers were responsible for initiating site selection and verification.

More and earlier government involvement in the medium-to-long term would align with proposed reforms of our resource management system that will gradually introduce regional spatial strategies that will identify areas for specific uses, including in the territorial sea. However, no equivalent planning process is proposed for the exclusive economic zone right now, where most offshore renewable energy development is likely to occur. Annex 2 describes the proposed replacement of the Resource Management Act 1991.

6. What role do you think government should have in gathering feasibility information for offshore renewable energy development?

7. Do you agree that, at least in the short-to-medium term, a developer-led approach to gathering feasibility information is appropriate for Aotearoa New Zealand? Why or why not?

8. Is there another approach not considered above that may be more suitable?

Implementing a developer-led approach

We propose a developer-led approach to gathering feasibility information that could be used in the preparation of relevant consent and other permissions to construct and operate. As this will involve a significant investment, developers are seeking the confidence to invest without the potential for a different developer gaining priority over them through a first-in-time consent application over the same location.

To address this, we compare two options below:

- **Option 1:** establish a permit for feasibility activities that would provide a sole right to apply for later permissions to construct and operate, or
- **Option 2:** enable a collaborative approach among developers, government and iwi, hapū, and whānau.

Option 1: Establish a feasibility permit with rights to apply

Under this approach, the government would grant permits over specific offshore areas (with limits on size) for the purpose of conducting feasibility activities. The permit would offer the holder a sole right to apply for subsequent permissions to construct and operate offshore renewable energy infrastructure, but would not guarantee these permissions.

Permit holders would remain responsible for complying with all relevant legislation when carrying out their feasibility activities, including relevant requirements under the RMA and EEZ Act.

We note that other general research and activity in a given area would not be prohibited. The permit would only apply to feasibility activities undertaken for the purpose of seeking later rights to construct and operate renewable energy generation.

The advantages of a feasibility permit are:

- **The ability to select the developer and development**: The government needs to consider whether the developer and development is appropriate for New Zealand's national interests.

A permitting approach enables the government to assess initial proposals against defined criteria in a competitive manner.

- **Improved investor confidence**: With a permit providing a sole right to apply for construction and operation, a developer could be assured that their investment in feasibility will be justified as they will have an advantage compared with other developers. This will reduce investment uncertainty for offshore renewable energy developers.
- **Provide for participation by mana moana**: A permitting approach enables government to set specific and enforceable criteria to ensure that Māori participate in the feasibility process.
- **Timely and efficient**: Permitting is a familiar model in New Zealand (in the Crown minerals regime) and internationally, with clear roles and responsibilities. This experience would make a permitting approach more straightforward to establish and administer.

There are a range of considerations in establishing a feasibility permit, which we examine below.

Option 2: Enabling collaboration among developers

As an alternative to granting exclusive feasibility permits, the Government could enable an approach whereby interested developers, the Crown and Māori collaborate to conduct feasibility activities. Technical studies and environmental assessments are an obvious area for collaboration, while more commercially sensitive assessments may not be suitable.

A collaborative approach need not be formally regulated, but a formal agreement would be needed between all parties, including cost-sharing arrangements.

These participating developers would effectively have an exclusive opportunity to apply for subsequent permissions to construct and operate, since other non-participating developers would lack the detailed site information necessary to seek these permissions.

Following the feasibility assessment, developers would individually choose whether to seek permissions to construct and operate, and over what sites that were identified through the collaborative feasibility assessment process.

The advantages of a collaborative approach are:

- The possibility of **lower costs and efficiencies** through pooling resources and skills.
- The possibility of **more, better-quality data**. The collaborative approach may allow a greater quantity and quality of data to be gathered through pooling of resources, skill sets, and cooperation.
- **Developers and developments would be selected later** in the project lifecycle. The government could take a decision on the competitiveness of a developer in meeting criteria based on a greater degree of information.

The drawbacks of a collaborative approach are:

- **Lower investment confidence:** This approach is unlikely to provide sufficient investment certainty to developers, which would risk developments proceeding, and therefore not achieve the objectives set out in this document.
- **Higher administrative costs:** There may be higher administrative costs for all parties in negotiating to set up a collaborative approach, which may also take significant amounts of time.

We see a strong case for a permitting approach, but seek your views on the viability of the collaborative model

International experience and the observations of developers active in Aotearoa New Zealand suggest that reducing investor risk is a prerequisite to greater investment in feasibility analysis. An exclusive feasibility permit could make a significant contribution to reducing investor uncertainty, while helping

to mitigate the first-in-time features of the current resource management system. A collaborative model could be preferable if it is viable. We seek views on the viability of the collaborative model, including how it could function in practice.

9. Do you agree with the two shortlisted options (permitting and collaborative) that we have identified? If not, what other viable options might we be looking at?
10. Assuming a developer-led process to propose sites and assess feasibility, do you think the permitting approach or the collaborative approach would deliver a better outcome for Aotearoa New Zealand and why?
11. How could a collaborative approach be designed to enable the objectives set out above, and what could the government do to support collaboration?
12. Have we captured a complete list of trade-offs between the two shortlisted options? What else, if anything, should we be considering?

Chapter 5: Māori involvement in the assessment of feasibility

Regardless of the approach chosen by Government to manage feasibility activities, sufficient involvement of local iwi, hapū, or whānau will be required to determine feasibility and understand the potential environmental and cultural impacts.

Above, we noted the various interests and information that iwi, hapū, and whānau have, which will be critical to inform any future decisions on a development. As we prefer to take a permitting approach, this section focuses on the requirements that developers might be required to meet to involve iwi, hapū, or whānau both before and during any feasibility assessments. Appropriate involvement would, however, also need to be provided for if a non-permitting approach was used.

In seeking to apply for a feasibility permit, developers could be required to:

- demonstrate a sufficient level of initial discussion with relevant iwi, hapū, or whānau about the potential development prior to applying for a permit
- demonstrate an understanding of Te Tiriti o Waitangi, mātauranga Māori, tikanga principles and the aspirations or interests of the mana moana of the area in which feasibility activities are being proposed
- demonstrate initial understanding of those areas where a development may impact existing rights or tikanga, and how information will be gathered to further understand these impacts, and
- provide a plan for how the feasibility assessment process will meaningfully involve iwi, hapū, or whānau throughout, including which tikanga and environmental issues that will need to be assessed in more detail with the involvement of iwi, hapū, or whānau.

Throughout the duration of the permit, developers could be required to:

- identify impacts of the proposed development on any legal rights, on tikanga and taonga species
- incorporate mātauranga Māori in identification of the potential impacts
- identify relevant economic interests in the construction and operation of the development, and a plan for implementing these if the development proceeds, and
- show how the plan for iwi, hapū, or whānau involvement is being met.

Some enforcement mechanism is likely to be required to ensure that iwi involvement occurs throughout the preparation of feasibility activities. This could occur through a regular reporting mechanism, and/or penalties for non-compliance.

We acknowledge that greater participation, which involves and empowers mana moana to play a more active role, will have significant impacts on time, resources and capability of both developers and mana moana.

As has been the case for other permitting regimes, guidelines could be prepared for developers. There will also be a continuing role for the Crown to provide support and advice, which we are considering in assessing the proposals in this document.

13. What broad opportunities do you see for iwi, hapū, and/or whānau to be involved in the feasibility stage of development (both before and during feasibility activities)?
14. Are the above requirements sufficient to achieve this? How can the requirements be implemented to reduce undue burden on mana moana or developers?
15. What information/mātauranga Māori and process/tikanga will be important for developers to incorporate into their feasibility plans, and how should iwi, hapū, and/or whānau be involved in gathering this information?
16. What mechanisms for monitoring and enforcing these requirements are appropriate (regular reporting by developers that is reviewed by iwi etc)?
17. How should the adequacy of iwi involvement be assessed? What does good faith and meaningful participation look like?

Chapter 6: Considerations for a permitting framework

If establishing feasibility permits is the preferred option, there are a number of further considerations in the design of the process and the permit.

Criteria to obtain permits

Feasibility permits would be granted to the applicant with the strongest qualifications to complete the feasibility assessment. As the feasibility permit-holder would have a right to apply for subsequent permission to construct and operate, the criteria would need to make an initial consideration the developer's potential capability for these later stages. Further consideration would also be done based on the feasibility information once prepared, in order to seek any consents or other permissions to construct and operate.

Internationally, criteria for assessing the capability of developers to deliver projects on time typically include technical and economic feasibility of proposed project design, technical and management experience, and capability to provide or raise finance.[xx]

We are considering the following criteria:

- technical, financial and commercial capability of the developer, and
- whether the proposed development is not contrary to Aotearoa New Zealand's national interest.

Technical, financial and commercial capability

Offshore energy generation is technically complex. By requiring evidence of capability to install, operate, maintain, and decommission energy infrastructure, the government would have assurance that applicants had the necessary technical capability.

We propose to assess the following information to determine technical capability:

- a track record of successfully managing similar projects
- clear project plans, including accurate identification of critical planning and obtaining relevant consents in the project schedule
- an assessment of the complexity of the project, and appropriate risk mitigations
- the technical advice that will be available to the applicant, and
- relevant information on the applicants' ability to comply with relevant legislation (including health and safety).

Offshore energy generation is a high cost and commercially complex operation. By requiring evidence of sufficient financial means, commercial sophistication, and business planning capability, the government would have assurance that applicants had the necessary revenue and commercial expertise.

We propose to use the following criteria in assessing financial and commercial capability:

- evidence of a strong financial position
- satisfactory initial financing arrangements
- an indicative business plan for a subsequent commercial development phase (construction, operation, and decommissioning)

- evidence that key project risks have been identified
- the intended route-to-market for the project, and
- the estimated commercial return to the developer.

National interest considerations

Offshore renewable energy infrastructure could be a significant part of Aotearoa New Zealand's electricity system. Therefore, we consider that a feasibility permit should be granted only if the prospective development is not contrary to Aotearoa New Zealand's national interest.

To ease administrative burden and maintain legislative coherence, we propose to align these criteria with the Overseas Investment Act 2005. Under this Act the bar for requiring mitigation action or prohibiting a transaction is high and the presumption is that overseas investment is in New Zealand's national interest.[xxi]

Core interests that could be considered include:

- national security, public order, and international relations
- competition, market influence, and the economy
- economic and social impact
- alignment with New Zealand's values and interests (consideration is given to broader issues – for example, environmental policy, and giving better effect to Te Tiriti o Waitangi), and
- the character of the investors.

Permit holders would need to continue to meet the qualification criteria

Given the potentially long duration of a permit and the scale of investment, ensuring permit holders continue to meet the criteria for obtaining a permit is highly desirable.

Most commonly, ownership structures of permit holders may change over time (eg changes in directorships, acquisitions or mergers). Permit holders may also wish to sell or share their interests (ie a transfer of ownership).

These changes can make a material difference to the suitability of a permit holder to continue feasibility activities and carry out further development activities in the future. To ensure a permit holder continues to meet the criteria to hold a permit, we propose regulations could:

- empower a regulator to review the suitability of a permit holder when there is a material change to ownership, with the ability to revoke permits, and
- require permit holders to seek approval to transfer any interests in a permit.

Having the ability to impose conditions or review permits allows any risks around timely development to be effectively managed. In particular, effective review mechanisms would enable ongoing consideration of national interests and financial capabilities which are likely to change over time.

Similar mechanisms are included in the Crown Minerals Act 1991 to ensure permit holders continue to meet the legislative requirements for obtaining minerals permits.

Duration of a permit

International experience suggests that the time to complete feasibility activities for an offshore wind farm – the most mature form of offshore renewable energy generation – can take from three to five years. In Scotland, Option Agreements (an equivalent to permits) are valid for up to 10 years. In Australia, feasibility licences are valid for up to seven years. The Crown minerals permitting regime in Aotearoa New Zealand awards minerals exploration permits for 10 years.

Since the process for obtaining feasibility rights would be robust, it is likely that only committed developers would obtain them. However, there is still a risk that some developers would seek

feasibility permits simply to obtain the option of conducting feasibility activities. This type of 'land-banking' activity would stall the industry's development.

A shorter duration for permits, such as five years, and/or 'use-it or lose-it' provisions could mitigate this risk, by requiring permit holders to begin feasibility work in earnest within a set time-period. While any time-period will be arbitrary, a 12-month period within which feasibility work must begin appears reasonable. Where feasibility work does not begin within this period, permits could become invalid.

We therefore propose:

- feasibility permits to be awarded for a period of five years, with an option to extend durations for up to two years for unavoidable delays, and
- a 12-month period in which activities must commence for permits to remain valid.

It could be difficult to identify clear tests for whether a project has commenced, and hence whether 'use it or lose it' provisions would be triggered. These tests could be linked the feasibility project's planned milestones.

In any case, it could be useful for permit-holders to provide annual reports on the progress of their feasibility activities.

Managing overlapping applications

The offshore areas where energy generation is feasible are finite. It is very likely that developers will seek feasibility rights for overlapping areas. Overlaps could be large or small.

The government will assess applications for permits based on which developer best meets the criteria. It may however be beneficial to amend the size of the area applied for in cases of overlap, so that two developers can assess feasibility side by side. This could be achieved by a mechanism allowing two applicants to negotiate or amend their proposals, or for the government to make a decision on an amended application based on who best meets the criteria.

Criteria for permits

18. Do you agree that developers should be required to meet prequalification criteria to be eligible for exclusive feasibility rights?
19. Are our proposed criteria appropriate? Are they complete? If not, what are we missing?

Change in status

20. How should we consider material changes to permit holders' status and capability? Do you think mechanisms to review permit criteria would be appropriate?

Duration of permits

21. Do you agree that a feasibility licence should last for five years with an option to extend for a further two years?
22. Do you agree that a feasibility licence should be subject to 'use-it or lose-it' provisions, with permits not exercised within 12-months lapsing? What circumstances would trigger the use it or lose it provisions?

Managing overlapping applications

23. How should government best deal with the issue of overlapping applications?

Administrative arrangements for permitting

A single national entity would manage the offer and application process

As the development of offshore renewable energy infrastructure is a nationally significant activity it is desirable to provide a nationally consistent approach to inviting and assessing applications for permits and managing permits. This suggests a single national entity should hold these responsibilities, with opportunities for iwi, hapū, and whānau and the community to inform the allocation of permits, and to participate in the conduct of feasibility activities.

This single national entity could be an independent Crown entity, or an existing government department or ministry. The Ministry of Business, Innovation, and Employment could be a natural choice given its policy responsibilities in the energy portfolio, and existing regulatory role for Crown minerals. The Ministry may require additional resources to develop the necessary capability for this role.

Final decisions on applications could sit with the single national entity, or the Minister of Energy and Resources, acting on advice from officials.

Public submissions could be sought on permit applications

There will be widespread public interest in proposals and preparations to conduct feasibility activities towards establishing offshore energy generation.

Developers have, to date, publicised their intentions, including areas of interest to them. Resource management consent processes may also involve public notification. The process for assessing applications could involve a period of public consultation.

Monitoring compliance through ongoing reporting

Ensuring permit holders continue to comply with any obligations or conditions relating to their permit will require ongoing monitoring and disclosure requirements.

The Government could prescribe standards for reporting which set out the information that needs to be disclosed, the quality of this information, and by when. This could also include public disclosure requirements or notification requirements to ensure Māori and local communities have access to the information. Alternatively, the information provided could be held by government if the information is considered to be commercially sensitive.

Information that we consider should be reported on includes:

- feasibility activities being conducted and next steps (akin to a project update)
- data or other information gathered from feasibility activities
- participation of mana moana
- engagement with local communities
- financial statements, and
- ownership structures of interest holders

While ongoing reporting adds an administrative burden, regular reporting is critical to maintaining productivity (ie permit holders are conducting feasibility activities and progress is being made), compliance with permit criteria, and any conditions that apply to a permit.

Compliance measures could be needed

To facilitate compliance, the government would apply the VADE model. VADE stands for voluntary, assisted, directed and enforced. The VADE model is commonly used by regulatory agencies across the New Zealand government. The government's first preference will be to ensure compliance through dialogue. Instances of non-compliance could lead to infringement notices, compliance orders, or (as a last resort) the loss of rights to conduct feasibility activities.[3]

Managing and funding the offer and application process

24. Do you agree that a single national entity should hold responsibility for inviting and assessing applications?
25. Do you agree that the Minister of Energy and Resources, acting on advice from officials, should make the final decision on applications for permits?
26. Do you agree with charging fees sufficient to recover the costs of inviting, and assessing feasibility permit applications, and monitoring permit holders?
27. What other steps would ensure that processes are transparent and fair for developers?

Ensuring wider consultation

28. Do you think that public submissions should be sought on permit applications? What other steps would ensure sufficient opportunity for iwi , hapū, whānau, and stakeholders to inform decision-making?

Ongoing reporting obligations

29. Do you agree that permit-holders should regularly report on the progress of their feasibility activities? How frequently should the reporting be?
30. What reporting standards should the Government set to make the disclosures meaningful?
31. Who should have access to this information? How should it be shared?

Ensuring compliance

32. Do you agree that developers not complying with obligations could face compliance actions, with risk loss of rights to conduct feasibility activities as a last resort? What sorts of non-compliance could lead to the loss of these rights?

[3] https://www.nzpam.govt.nz/how-we-regulate/our-regulatory-operating-model/

Chapter 7: Information on existing uses, interests, and values

Aotearoa New Zealand's territorial sea (up to 12 nautical miles) and exclusive economic zone (between 12 and 200 nautical miles) are home to a number of cultural, recreational, environmental and economic uses, interests, and values. Any offshore renewable energy developments could either co-exist or come into conflict with these uses, interests, and values. It is important that we identify the ones that may come into conflict early on. In the future, it will also be important to consider how any offshore renewable energy developments and other uses could co-exist (or be co-located) in the same space. While it may not be realistic to map broad and intangible interests, such as those pertaining to Tikanga Māori, (including kaitiakitanga and whanaungatanga) these remain important to considering the feasibility of establishing offshore renewable energy.

The range of uses, interests, and values in Aotearoa New Zealand's territorial sea and exclusive economic zone would include:

- **Iwi, hapū, whānau / Māori , Te Tiriti o Waitangi**
    - Takutai moana legislation decisions and application areas
    - Treaty of Waitangi (Fisheries Claims) Settlement Act 1992
    - Māori Commercial Aquaculture Claims Settlement Act 2004
    - Customary fishing areas,
    - individual historic treaty settlements, and
    - food gathering or landing place of ancestral canoes considered to be wahi tapu.
- **Economic**
    - commercial fisheries
    - tourism activities, and
    - aquaculture.
- **Environmental**
    - closed seamounts
    - benthic protected areas
    - marine protected areas under the marine management Acts
    - marine reserves, and
    - marine mammal sanctuaries.
- **Safety**
    - high-traffic shipping routes
    - cable and pipeline protection zones
    - New Zealand Defence Force firing practice, exercise and submarine safe bottoming areas, and
    - safety zones around existing petroleum and minerals mining infrastructure.
- **Social**
    - recreational fishing.

Where data is available, we have mapped a non-exhaustive range of identified existing uses, interests and values in the three regions currently being explored for offshore renewable energy potential. Annex 5 provides full size versions of these maps.

33. Are there other uses, interests, and values not covered above that can be readily mapped? What are they?
34. Of the uses, interests, and values identified above, which ones do you consider should be prohibitive, ie the existence of those uses, interests, and values in a given area should exclude an area from consideration for offshore renewable energy generation? Why?
35. What opportunities do you envisage for offshore renewable energy developments and other uses, interests and values to co-exist, or be co-located in the same space?
36. How could conflicts with existing uses, interests and values be managed?
37. What uses, interests and values cannot readily be mapped? How should these be taken into account when considering the feasibility of establishing offshore wind farms?

Annex 1: Location of interest maps

Waikato

Figure 1 shows the highest level of potential wind capacity to be near shore, however beyond the 60m depth contour (indicated by the outer limit of the light blue line) there is a relatively broad shelf of less than 200 m water depth and mean wind speed at 100m elevation in the order of 8.2 m/s within 60 km of the shore. The majority of the area is within 100 km of Transpower high voltage infrastructure with nearby significant major energy consumers.

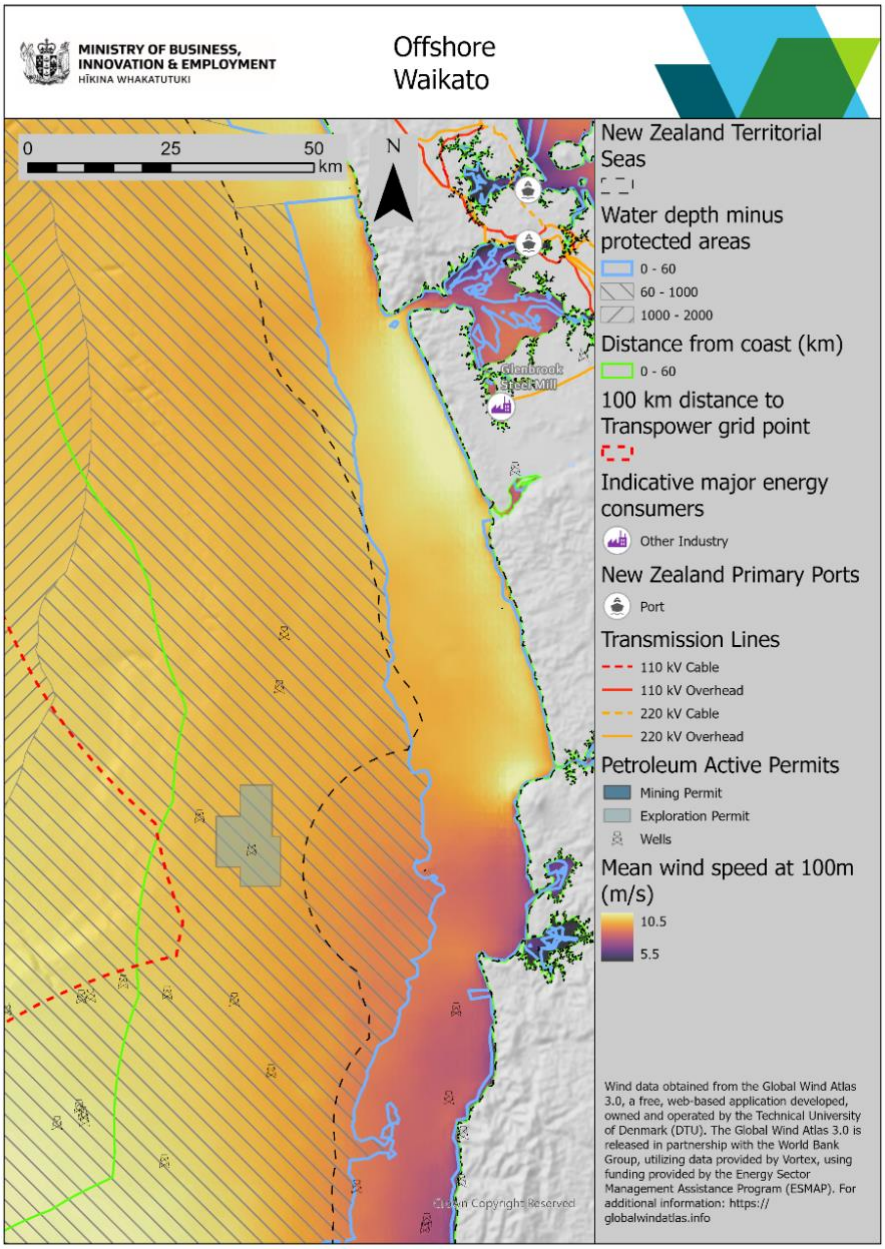


Figure 1. Wind potential and high-level constraints for development in Waikato

Taranaki

Figure 2 shows the highest level of potential wind capacity in the South Taranaki Bight, generally in water depths of less than 100 m. Mean wind speeds at 100m elevation are predominantly in the range of 8 – 11 m/s within 60 km of the shore. The majority of the central and northern area is within 100 km of Transpower high voltage infrastructure with nearby significant major energy consumers. It should be noted that there are relatively high levels of constraints due to existing oil and gas industry infrastructure (petroleum platforms and wells, and three pipeline protection corridors) and minerals and petroleum permits, and New Zealand Defence Force areas.

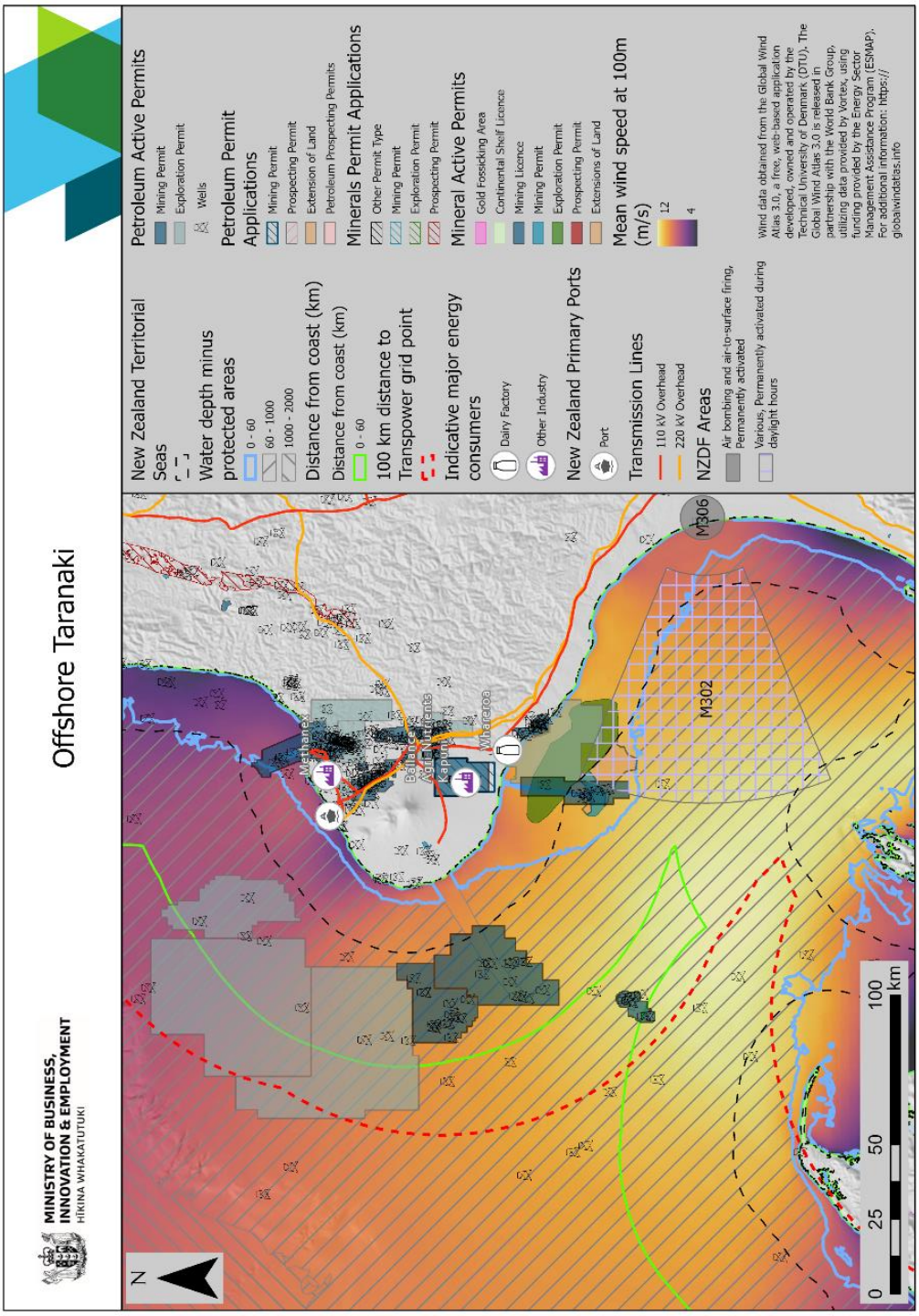


Figure 2: Wind potential and high-level constraints for development in Taranaki

Southland

Figure 3 shows the highest level of potential wind capacity to towards the south and west of the area, however this is constrained by water depth and distance to shore connection. Of the eastern areas within 60 km from shore, water depth is predominately less than 100 m, with mean wind speeds at 100m elevation in the order of 10 m/s. Of the area within 100 m water depth, the majority is within 100 km of Transpower high voltage infrastructure with nearby significant major energy consumers. There are relatively high levels of commercial fishing in and around Foveaux Strait.

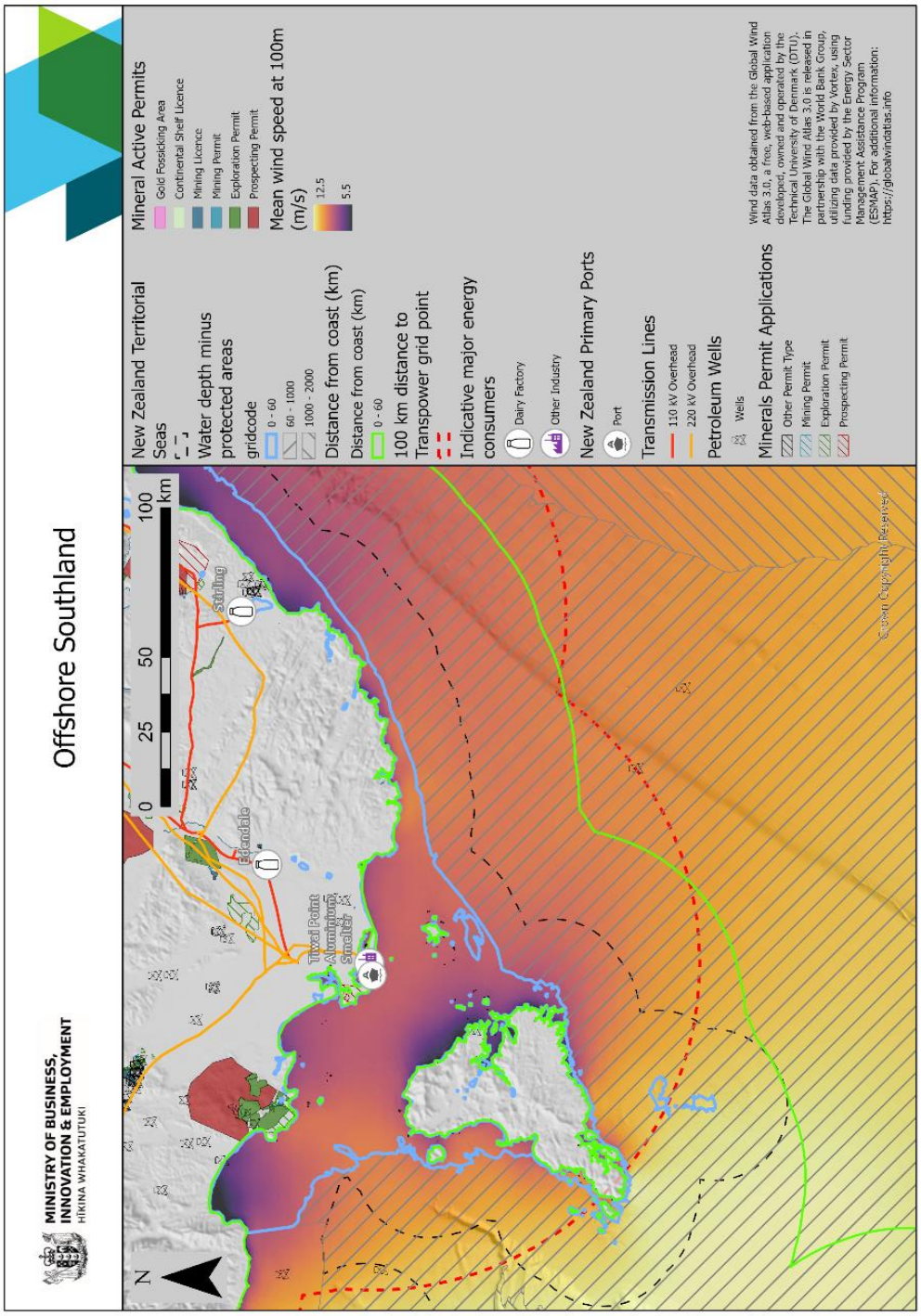


Figure 3. Wind potential and high-level constraints for development in Southland

Annex 2: Proposed resource management reforms

A proposed new resource management (RM) system will be delivered through two Acts: the Spatial Planning Act (SPA) and the Natural and Built Environments Act (NBA). The SPA and NBA will cover the onshore environment, and the territorial sea.

The system is being designed to help drive desirable outcomes, not just prevent unacceptable effects.

The SPA requires that there be a regional spatial strategy (RSS) for each region. Each RSS will set out the major changes desired in the region, including major new urban development, major shifts in regional economic development, changes in land use to deal with expected natural hazards, major shifts in how coastal space and water are used, landscape scale restoration programmes for biodiversity, landscape scale restoration of degraded land, etc.

The RSS will be developed by a committee that includes central government, local government, and iwi, hapū, and whānau representatives.

The RSS work will have to be consistent with the National Planning Framework (NPF) – a single set of national direction delivered under the NBA. That will incorporate what is currently in national policy statements such as the New Zealand Coastal Policy Statement, and National Environmental Standards. It can set both high-level policy direction, and detailed rules that apply to specific activities or environments.

The committee creating the RSS will also have to have particular regard to specified government policy statements, such as the Government Policy Statement on Transport. These will be listed in a schedule.

The RSS will be binding on NBA plans, but also on regional land transport plans and Local Government Act 2002 investment decisions. There will be an implementation plan to identify who will be delivering the desired outcomes, and there can also be detailed implementation agreements to ensure joined-up effort. For example, an implementation plan for improving port capacity by developing an inland port might involve the Port Company, KiwiRail, and a council.

One NBA plan per region will replace existing regional and district plans. These will be able to incorporate clear allocation processes for use of coastal space. NBA plans must be consistent with the RSS and give effect to the NPF. The plans will be prepared by the same committee that prepared the RSS (the Regional Planning Committee).

Annex 3: International models for offshore renewable energy regulation

Internationally, governments have adopted different approaches for regulating offshore renewable energy, in particular wind energy. There are key choices as to the role of government in conducting feasibility activities, and when to grant exclusivity to developers. Governments have taken different approaches to these choices and have evolved their approaches over time.

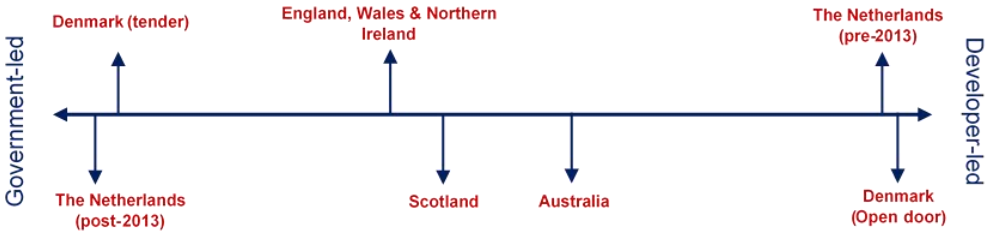


Figure 4. Continuum of international approaches to assessing feasibility for offshore renewable energy

In the early stages of an industry's development, a key question is how to identify potential areas for development and what role government should play in this. The degree of government involvement also tends to inform the point in the development cycle at which developers are granted exclusivity. This is either done at the feasibility stage or prior to construction and operation.

Usually when developers take-up responsibility for feasibility assessments, and incur the associated costs, they also seek site exclusivity. Exclusivity is the agreement that only one developer can conduct feasibility assessment in a given site, and (potentially) proceed to construction and operation. Exclusivity can be granted through instruments such as leases, options, permits, or licences.

The regimes operating in the Netherlands, Australia, Denmark, and the United Kingdom show how countries have taken different approaches to these questions.

The Dutch model

Although today the Netherlands is a leader in cost-efficient offshore wind development and installation, only a few offshore wind farms were built in the Dutch Economic Zone of the North Sea until 2017. This is often attributed to the fact that project developers were responsible for site selection and investigation, as well as having to go through the permitting process for projects with no guarantee projects would be approved – facing high costs and risks. However, in 2013, amidst accelerated climate ambitions and the start of the Dutch energy transition, the Government changed their approach and committed to assigning and developing offshore wind zones in the Dutch sector of the North Sea.[xxii]

Since 2013, the Dutch Government has used a National Water Plan to designate areas for offshore wind energy deployment. In a more proactive approach than before, the government selects locations in these areas, and specifies conditions of construction and operation. Environmental and conservation assessments are performed. The government also performs specific studies about wind, soil and water conditions in order to determine construction and operation conditions. Based on the outcomes of these assessments and studies, a private developer is selected by a tender process to

construct and operate the project.[xxiii] The government can recover the costs of these assessments and studies from the party who is granted the permit.

The Australian model

Australia has followed a similar process to Scotland, except it does not have a marine spatial plan. Instead, Australia's Offshore Electricity Infrastructure Act 2021 provides for the Minister for Climate Change and Energy to declare areas that are suitable for offshore renewable electricity infrastructure.[xxiv] In deciding whether an area is suitable for offshore renewable energy infrastructure, the Minister must have regard to the potential impacts of the construction, installation, commissioning, operation, maintenance or decommissioning of offshore renewable energy infrastructure in the area on other marine users and interests. The Minister must also have regard to any submissions received as part of the mandatory consultation process on proposed declared areas; Australia's international obligations in relation to the area; and any other relevant matters.

The Government of Australia has recently proposed an area in the Commonwealth waters off Gippsland, Victoria for offshore renewable energy projects.[xxv] Consultation on the proposed area included a non-exhaustive list of identified users and interests to facilitate conversations about the suitability of the area.[xxvi] These included:

- Native title – developers need to understand their obligations if land-based transmission infrastructure is proposed.
- Commercial and recreational fishing – developers will need to undertake consultation with the local community and demonstrate how they will share the area with other users and will also need to have a plan for gathering and responding to ongoing feedback from stakeholders throughout the life of the project.
- Natural environment – matters of National Environmental Significance, such as the Orange Bellied Parrot, Pygmy Blue Whale, and threatened Albatross species are identified. Developers need to seek relevant environmental approvals to proceed.
- Existing oil and gas titles and infrastructure – developers need to undertake consultation and demonstrate how they will share the area with other uses and have a plan for gathering and responding to ongoing feedback from stakeholders throughout the life of the project.
- Tourism – developers need to assess how projects could affect participation in tourism and recreation.
- Defence – consultation with the Department of Defence is required in relation to Defence Practice Areas.
- Vessel traffic – high volume shipping channels, including traffic separation schemes, are excluded from the area.
- Weather radars – developers need to work with the Bureau of Meteorology to mitigate any service impacts.

Developers select the boundary and size of specific sites and apply for feasibility licences, which can be granted for a period up to 7 years.

Figure 5. Australian offshore renewable energy infrastructure development process, Source: Australian Government: Department of Climate Change, Energy, the Environment and Water

The United Kingdom model

The United Kingdom, which has the largest installed offshore wind generation globally, operates a four-stage leasing process to grant exclusive leases for exploration and feasibility assessments.

Seabed leasing for existing offshore wind farms has been managed by The Crown Estate through several leasing rounds that began in 2000. In 2017, a new body, Crown Estate Scotland, was formed to own and manage the seabed in Scottish Territorial Waters and adjacent areas of the United Kingdom Exclusive Economic Zone. The Crown Estate retains responsibility for the seabed in England, Northern Ireland and Wales.

Before the consenting process can begin, the developer must secure a seabed lease from The Crown Estate or Crown Estate Scotland. Leases are granted through a competitive tender process following the identification of broad areas for development.

The exact process for obtaining for leases and consents varies across the United Kingdom. In England, a Development Consent Order is granted under the Planning Act 2008 which incorporates a number of consents, including a marine licence and onshore consents. Whereas in Scotland, Marine Scotland examines applications for the offshore works and Scottish Ministers grant or refuse consent. However, the general process for seabed leases remains the same across the United Kingdom (as described below).[xxvii]

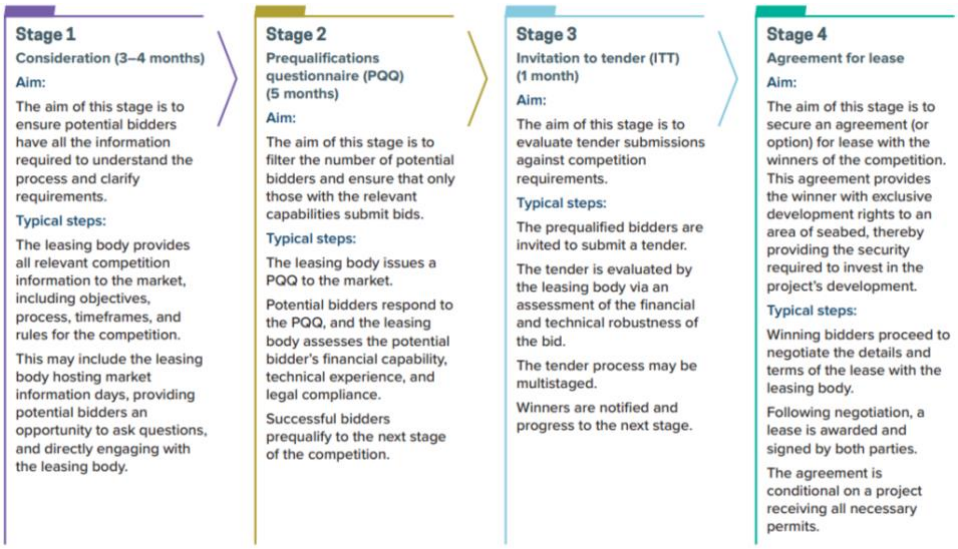


Figure 6. Offshore renewable energy infrastructure development process in the United Kingdom, Source: World Bank Group

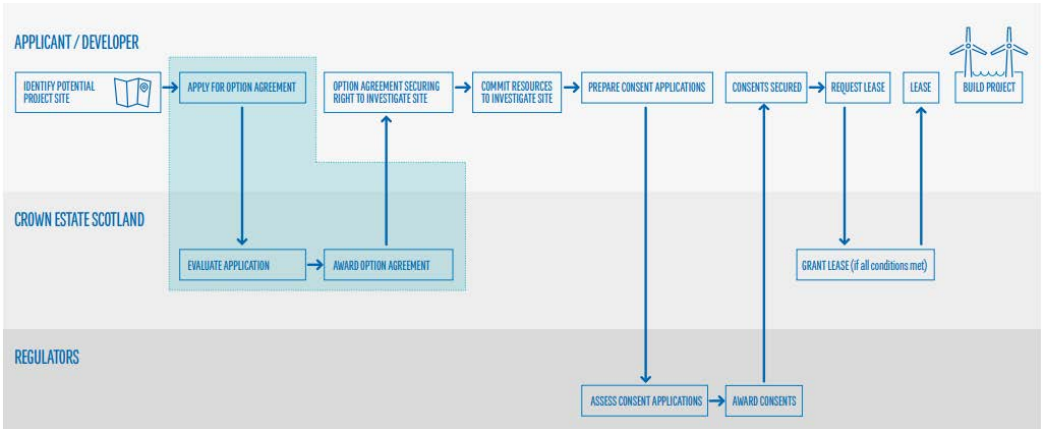


Figure 7. Offshore renewable energy infrastructure development process for Scotland, Source: Scottish Government, Marine Scotland Directorate

The Danish model

In Denmark, the establishment of offshore wind turbines can follow a tender procedure run by the Danish Energy Agency or an open-door-procedure. Most new offshore wind farms in Denmark are established after a tendering procedure. The Danish Energy Agency will operate a site-specific tender for an offshore wind farm, of a specific size, eg 200 MW. The site is awarded on the basis of the price the developer offers for producing electricity.

In the open-door procedure, the project developer takes the initiative to establish an offshore wind farm. The project developer submits an unsolicited application for a license to carry out preliminary investigations in the given area. The application must, as a minimum, include a description of the project, the anticipated scope of the preliminary investigations, the size and number of turbines, and the limits of the project's geographical siting. In an open-door project, the developer pays for the grid connection to land.

The Danish Energy Agency initiates a hearing of other government bodies to identify whether there are other major public interests that could block the implementation of the project before the Danish Energy Agency processes the application. Based on the result of the hearing, the Danish Energy Agency decides whether the area in the application can be developed, and in the event of a positive decision it issues an approval for the applicant to carry out preliminary investigations. If the results of the preliminary investigations show that the project can be approved, the project developer can obtain a licence to establish the project.

Annex 4: Aotearoa New Zealand's international obligations

Aotearoa New Zealand is party to the United Nations Convention on the Law of the Sea 1982 (UNCLOS) which provides the definitive legal order for the oceans under international law. UNCLOS enshrines freedoms of navigation and overflight, establishes maritime zones delimiting States' jurisdiction (including resource rights), and provides for protection and preservation of the marine environment, including living and non-living resources.

Aotearoa New Zealand has full sovereignty over its territorial sea, as well as the airspace and seabed and subsoil below. Within its exclusive economic zone (EEZ) Aotearoa New Zealand has rights to explore, exploit, conserve and manage the natural resources in that zone, including the production of energy from the water, currents and winds. Aotearoa New Zealand also has rights related to the construction and use of installations and structures in its EEZ and on its continental shelf, and has jurisdiction over submarine cables and pipelines constructed in connection with the use of natural resources. These rights are balanced against the rights of other states in Aotearoa New Zealand's EEZ, such as states' rights to lay cables/pipelines and freedoms of navigation and overflight.

Aotearoa New Zealand also has a number of obligations under UNCLOS related to protecting and preserving the marine environment. This includes taking all measures to ensure activities under its jurisdiction do not cause pollution to the environment of other States, and adopting (and enforcing) laws and regulations to prevent, reduce and control pollution from installations and structures within its jurisdiction.

UNCLOS also contains obligations relating to the decommissioning of infrastructure, including to consider any generally accepted international standards such as those established by the International Maritime Organisation. Aotearoa New Zealand is also a party to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters 1972 and its 1996 Protocol (the London Protocol) which stress the need to protect the marine environment from all sources of pollution, and prohibit dumping of waste at sea unless expressly permitted.

Annex 5: Mapping uses, interests, and values

Uses, interests and values of relevance in Waikato

Figure 8 shows the areas of customary rights and applications. As there is considerable overlap of areas, particularly within the Territorial Sea, readers are advised to consult individual information sources such as Te Kete Kōrero a Te Takutai Moana Information Hub[4] and the Ministry for Primary Industries NABIS web map[5]. Rohe Moana areas are labelled in italics starting with TK and generally extend seaward from the coast, however some extend onshore.

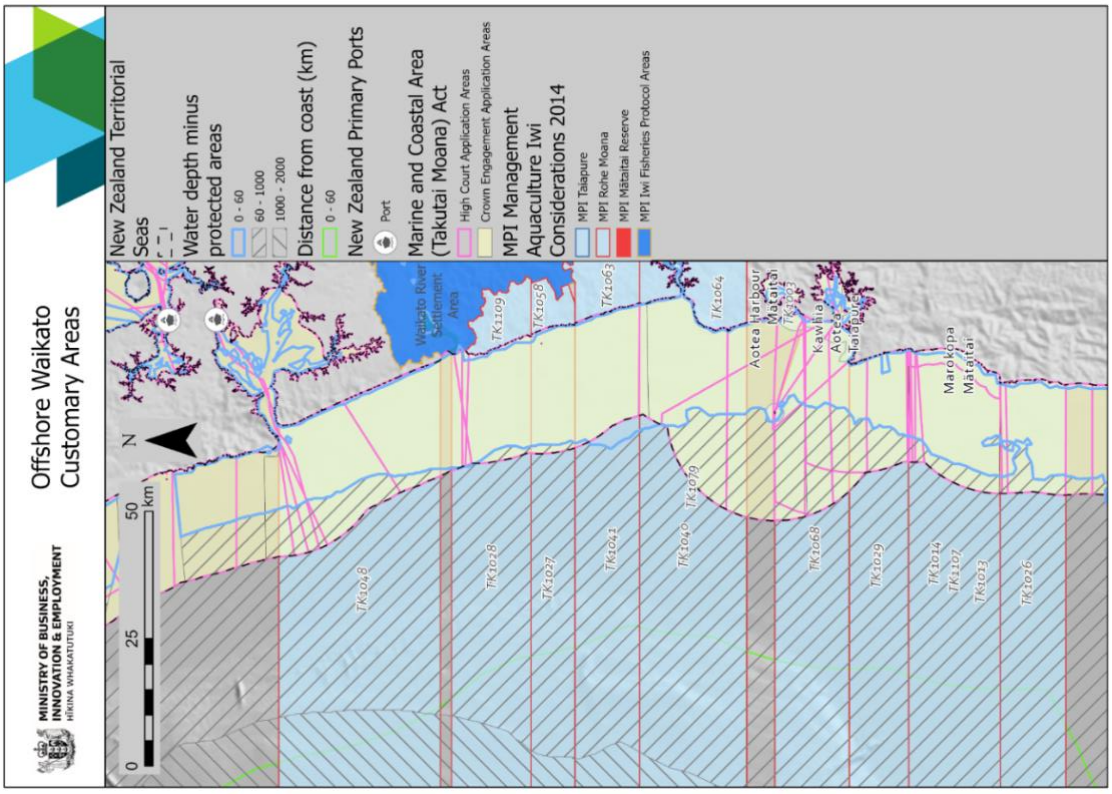


Figure 8

[4] https://maca-nds.maps.arcgis.com/apps/MapSeries/index.html?appid=1ed9665a8d2c4d38b4f9ddcb2d186f1b
[5] https://maps.mpi.govt.nz/templates/MPIViewer/?appid=96f54e1918554ebbaf17f965f0d961e1

Figure 9 shows the fishing intensity annually averaged commercial catch (kg/ha) from all fishing methods (except freshwater fishing) reported to the Ministry for Primary Industries (MPI) from 2007 – 2019.[xxviii] It can be seen that the highest levels of activity are along the continental shelf edge and slope, in water depths greater than 100 m. It should be noted that there are two submarine cable and pipeline protection zones on the map: a large zone to the north of the area and a small near shore zone just south of the Albatross Point headland.

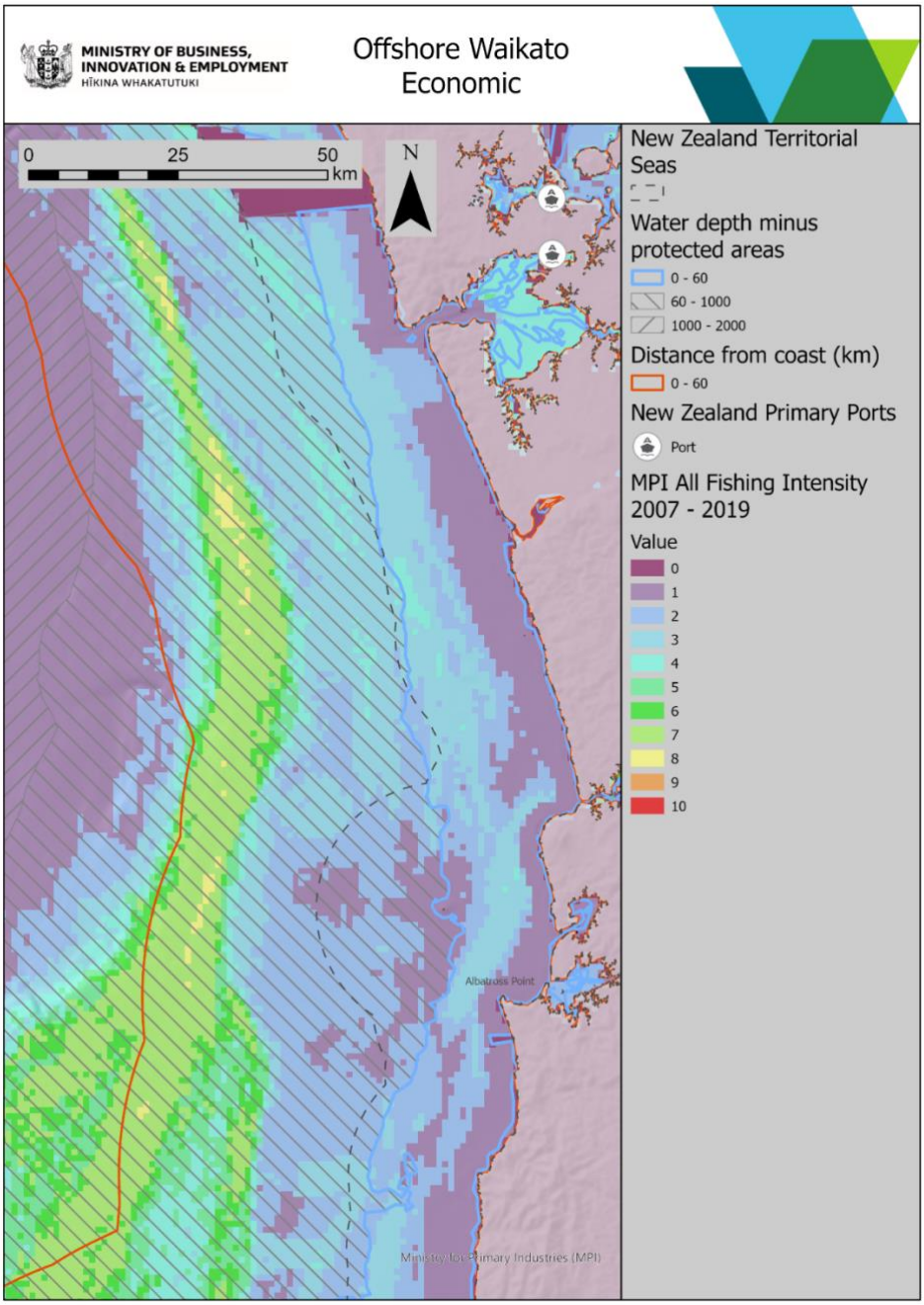


Figure 9

Figure 10 shows the extent of the Marine Mammal Sanctuary, which in this area is congruent with the Territorial Sea boundary (12 nautical mile). Within the extent of the map, Marine Reserves are limited to the inner Waitematā Harbour.

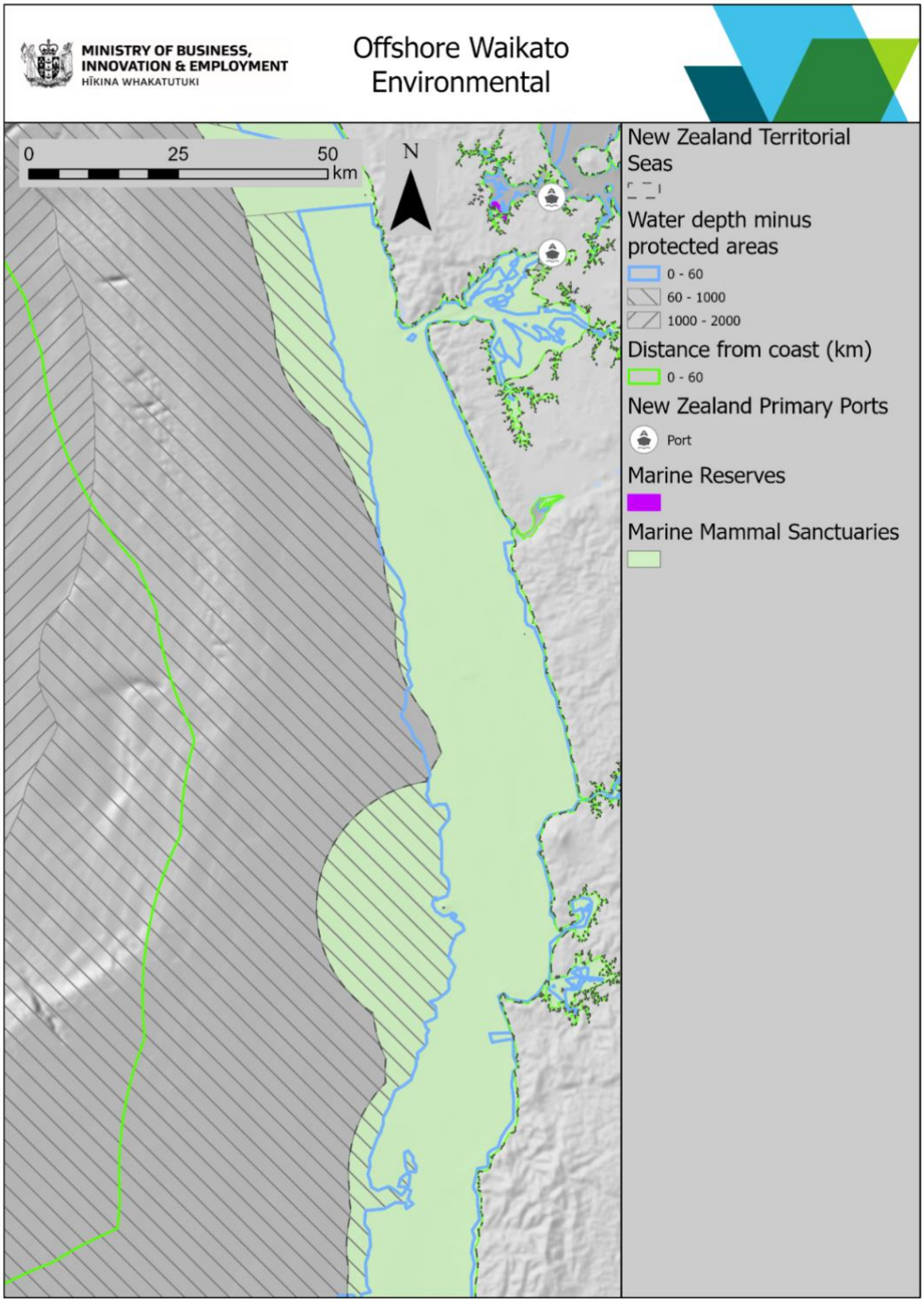


Figure 10

Figure 11 shows the reported position of vessels (of types noted in legend) operating an Automated Identification System (AIS) transponder for the year 2019. Higher density of vessel tracks indicates frequently used shipping "lanes". [xxix]

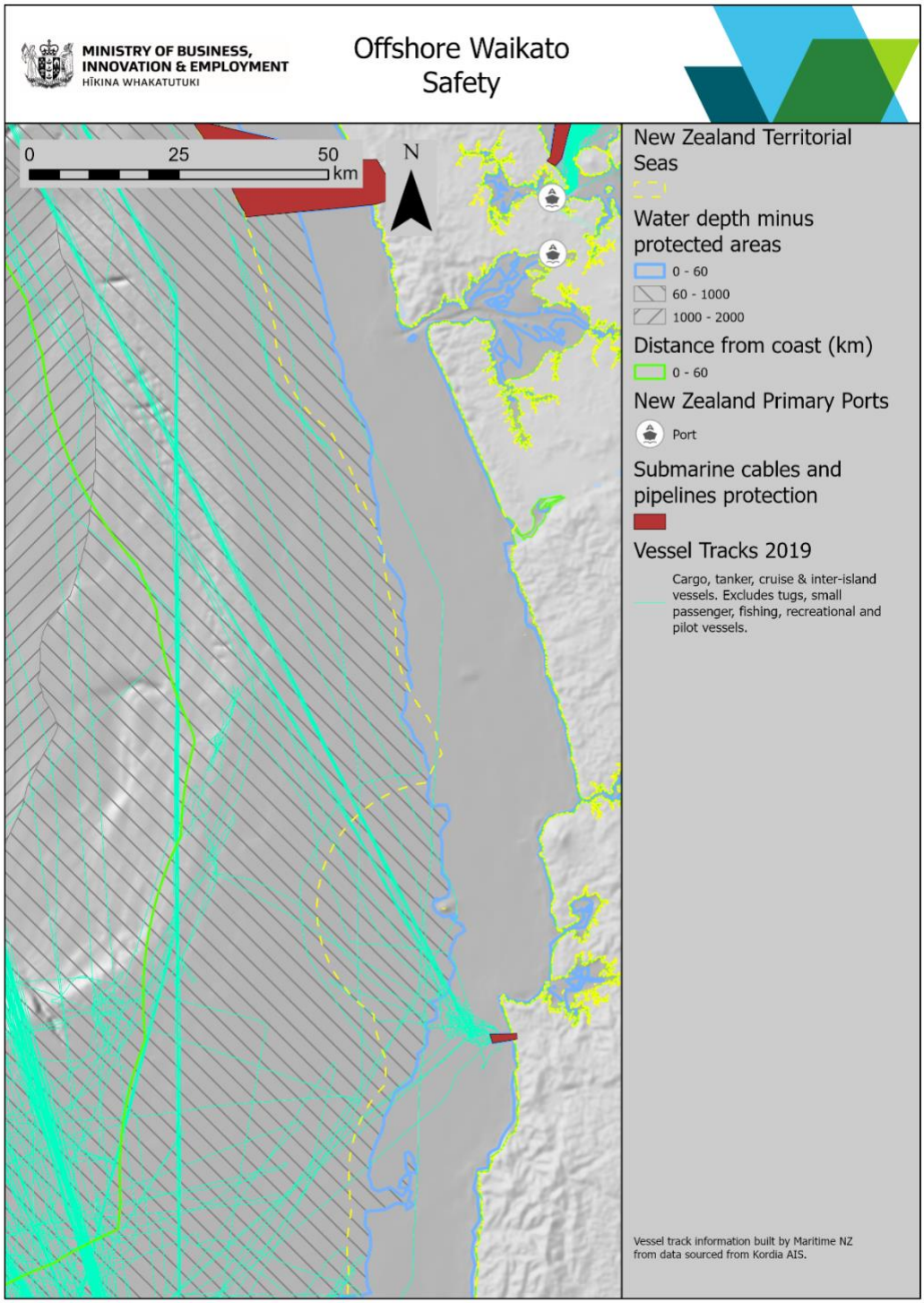


Figure 11

Figure 12 shows the distribution of recreational fishing activity, based on the aerial survey conducted by the Ministry for Primary Industries. Activity is effectively fully contained within the Territorial Sea (12 nautical mile) limits.

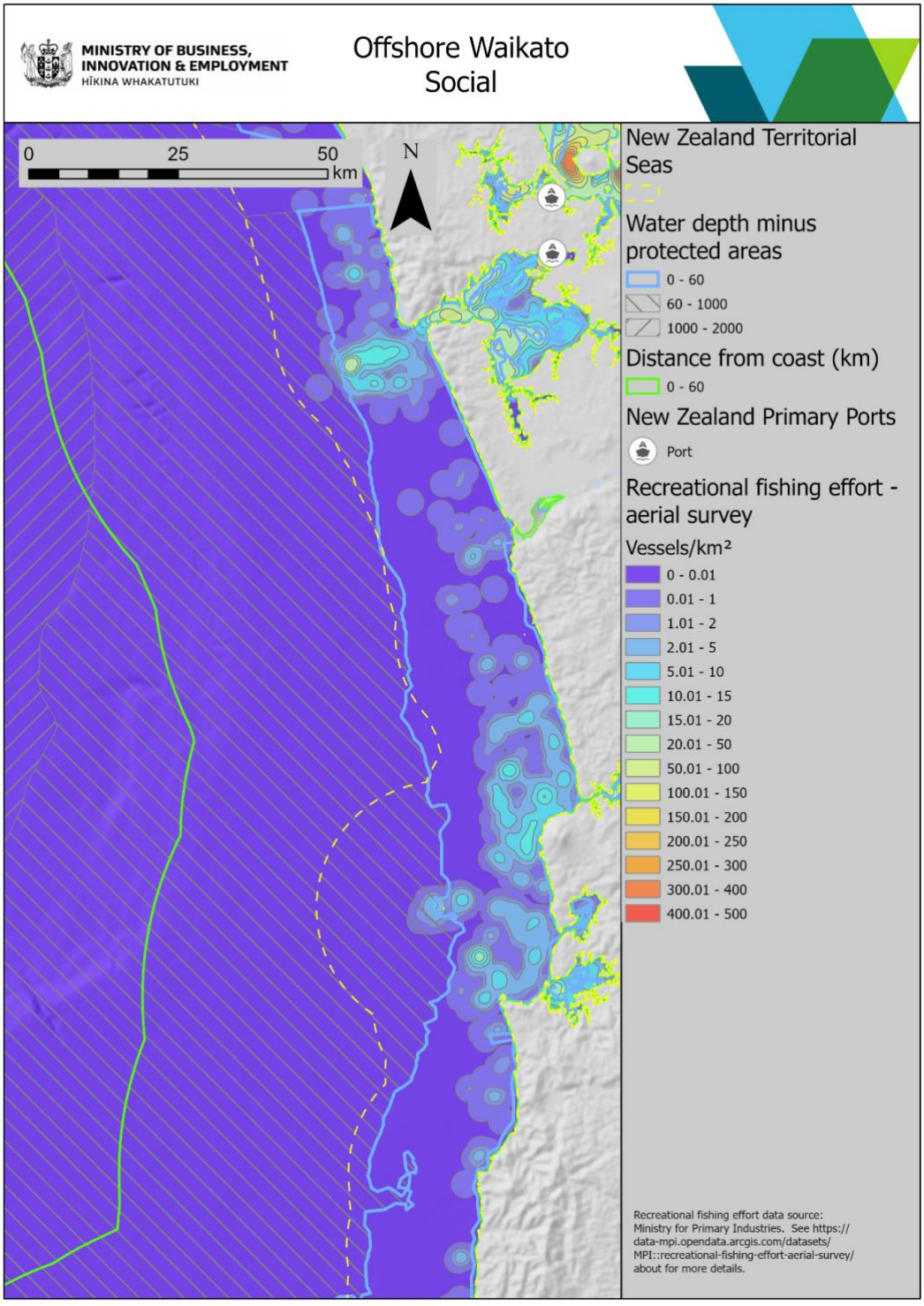


Figure 12

Uses, interests and values of relevance in Taranaki

Figure 13 shows the areas of customary rights and applications. As there is considerable overlap of areas, particularly within the Territorial Sea, readers are advised to consult individual information sources such as Te Kete Kōrero a Te Takutai Moana Information Hub and the Ministry for Primary Industries NABIS web map. Rohe Moana areas from Kaimoana Customary Fishing Notices are labelled in italics starting with TK and generally extend seaward from the coast, however some extend onshore. Rohe Moana areas from Notification of Tāngata Kaitiaki/Tiaki for Area/Rohe Moana of Te Tai Hauāuru labelled in bold red font.

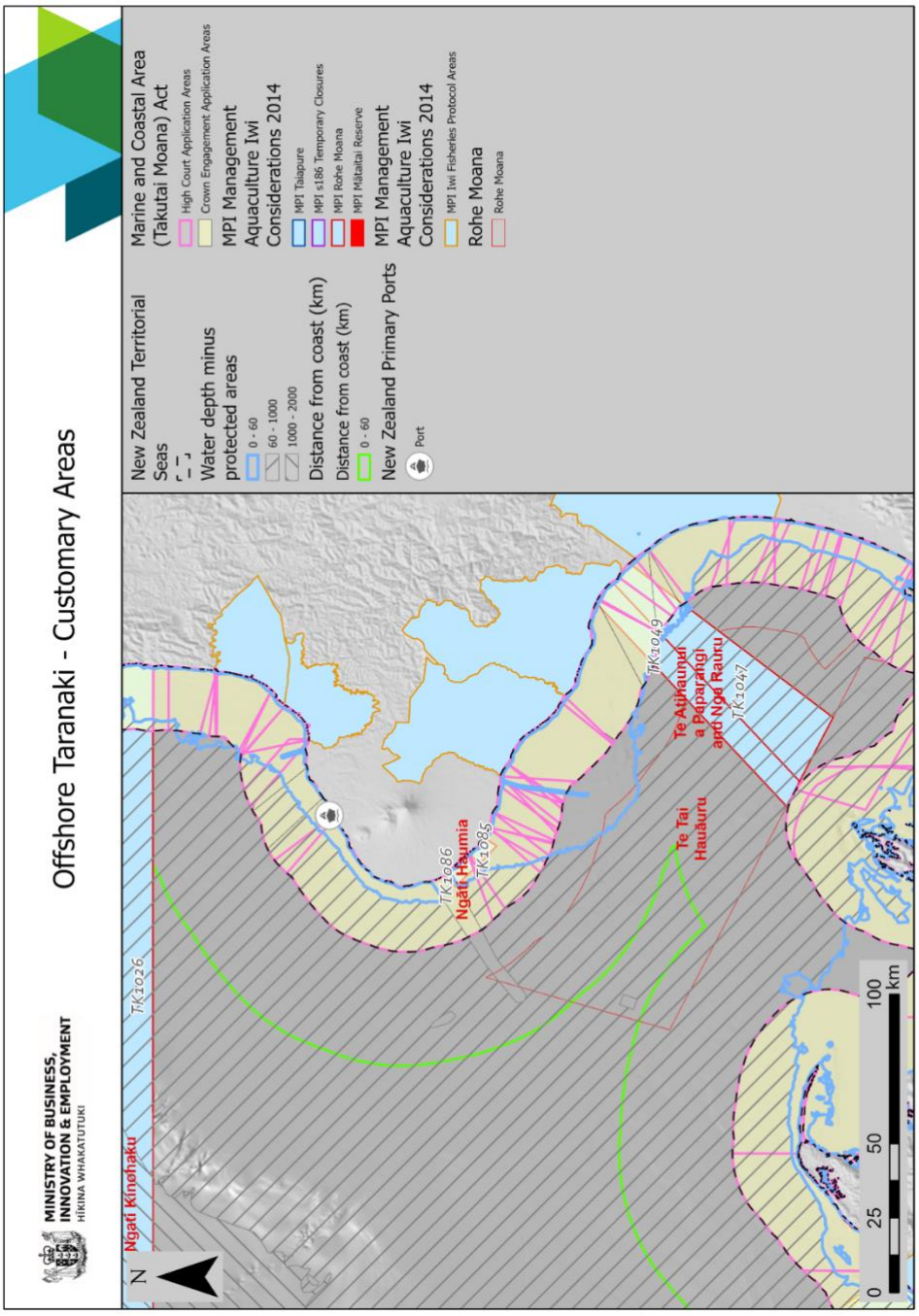


Figure 13

Figure 14 shows the fishing intensity annually averaged commercial catch (kg/ha) from all fishing methods (except freshwater fishing) reported to the Ministry for Primary Industries (MPI) from 2007 – 2019.[xxx] It can be seen that the highest levels of activity are on the continental shelf of the South Taranaki Bight, generally in water depths greater than 90 m.

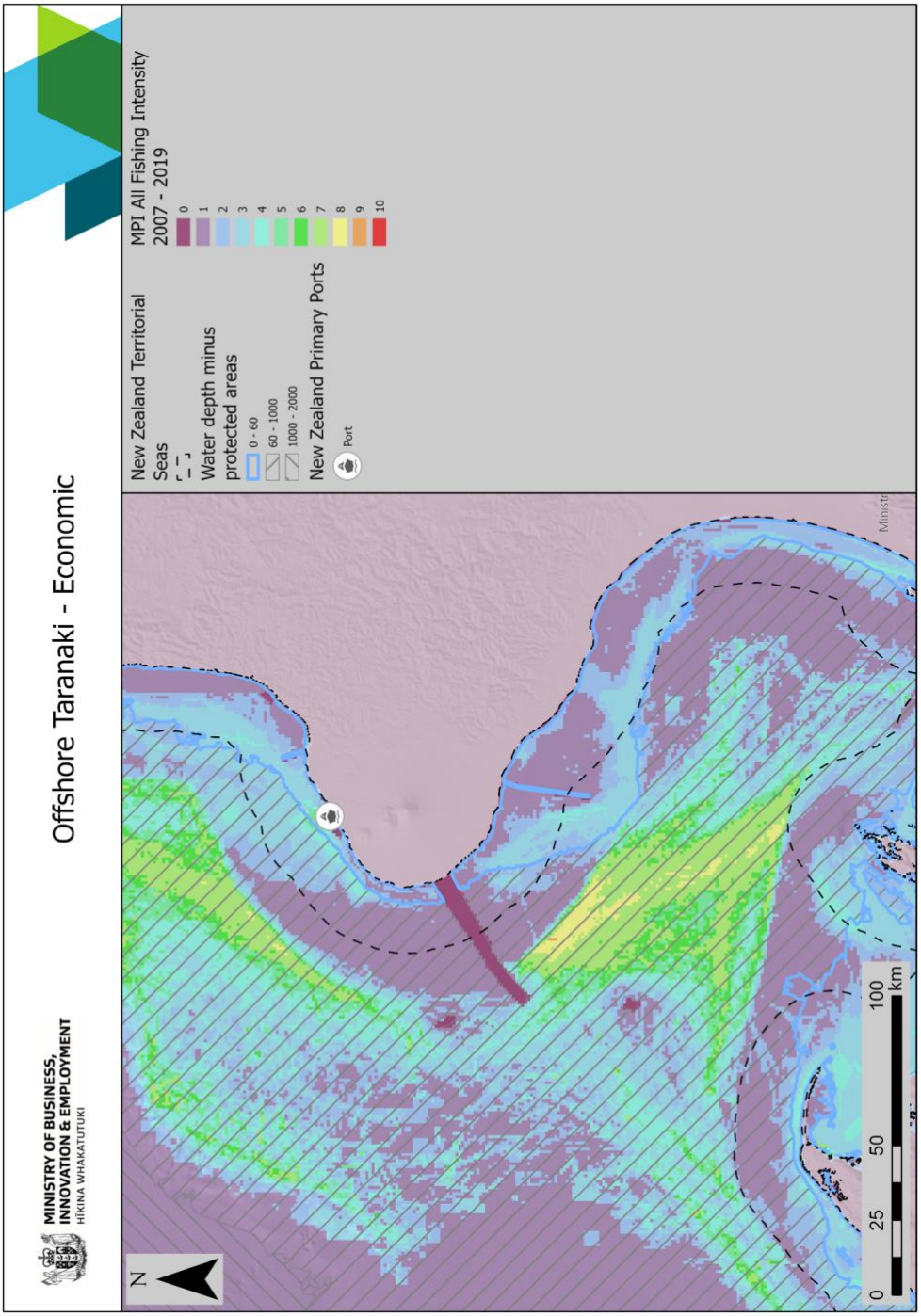


Figure 14

Figure 15 shows the extent of the Marine Mammal Sanctuary, which in this area is congruent with the Territorial Sea (12 nautical mile). Within the extent of the map, Marine Reserves are limited to the northern Taranaki coast and top of the South Island.

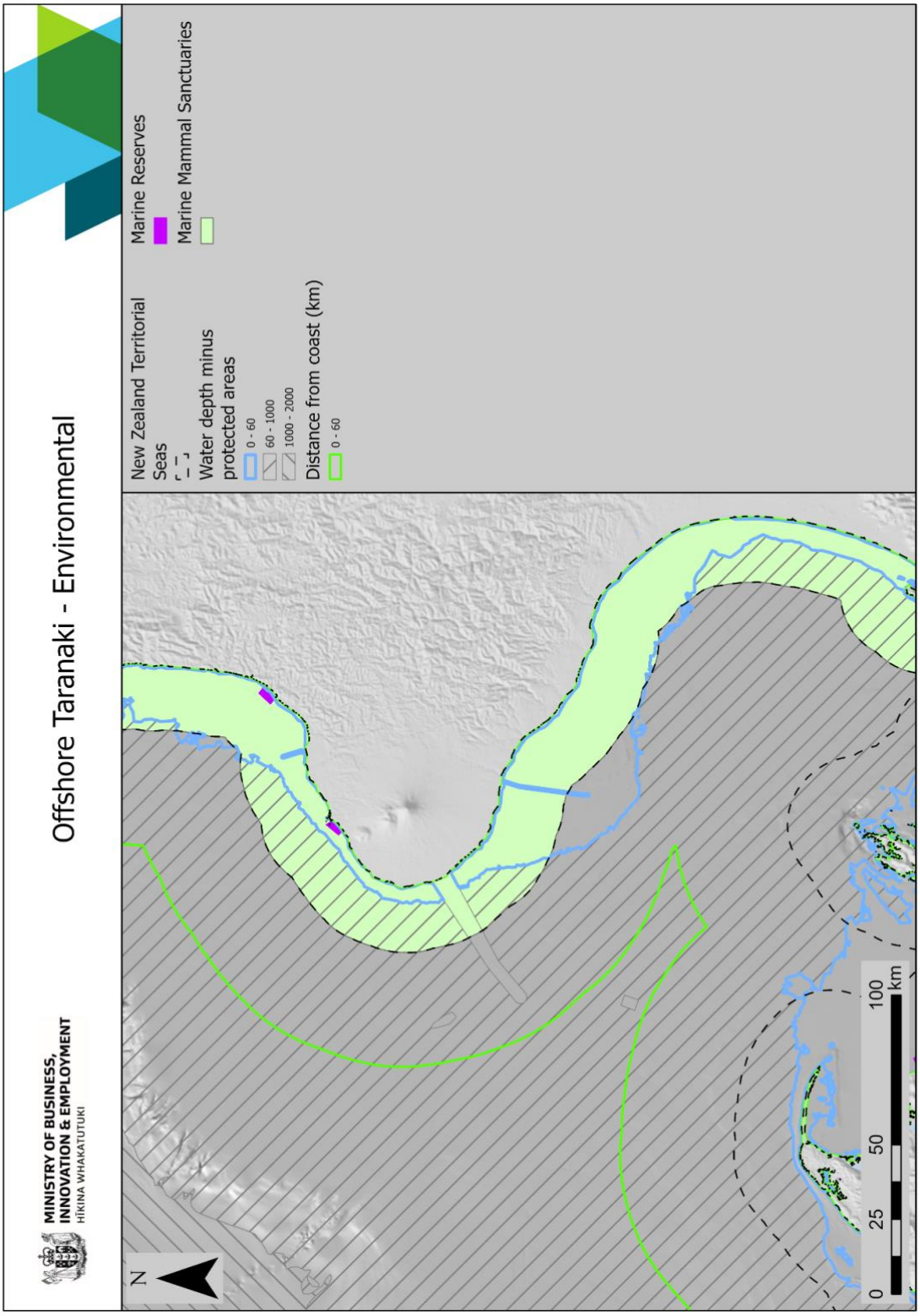


Figure 15

Figure 16 shows the reported position of vessels (of types noted in legend) operating an Automated Identification System (AIS) transponder for the year 2019. Higher density of vessel tracks indicates frequently used shipping "lanes". Note the correlation between vessel density and fishing activity shown in Figure 10. [xxxi]

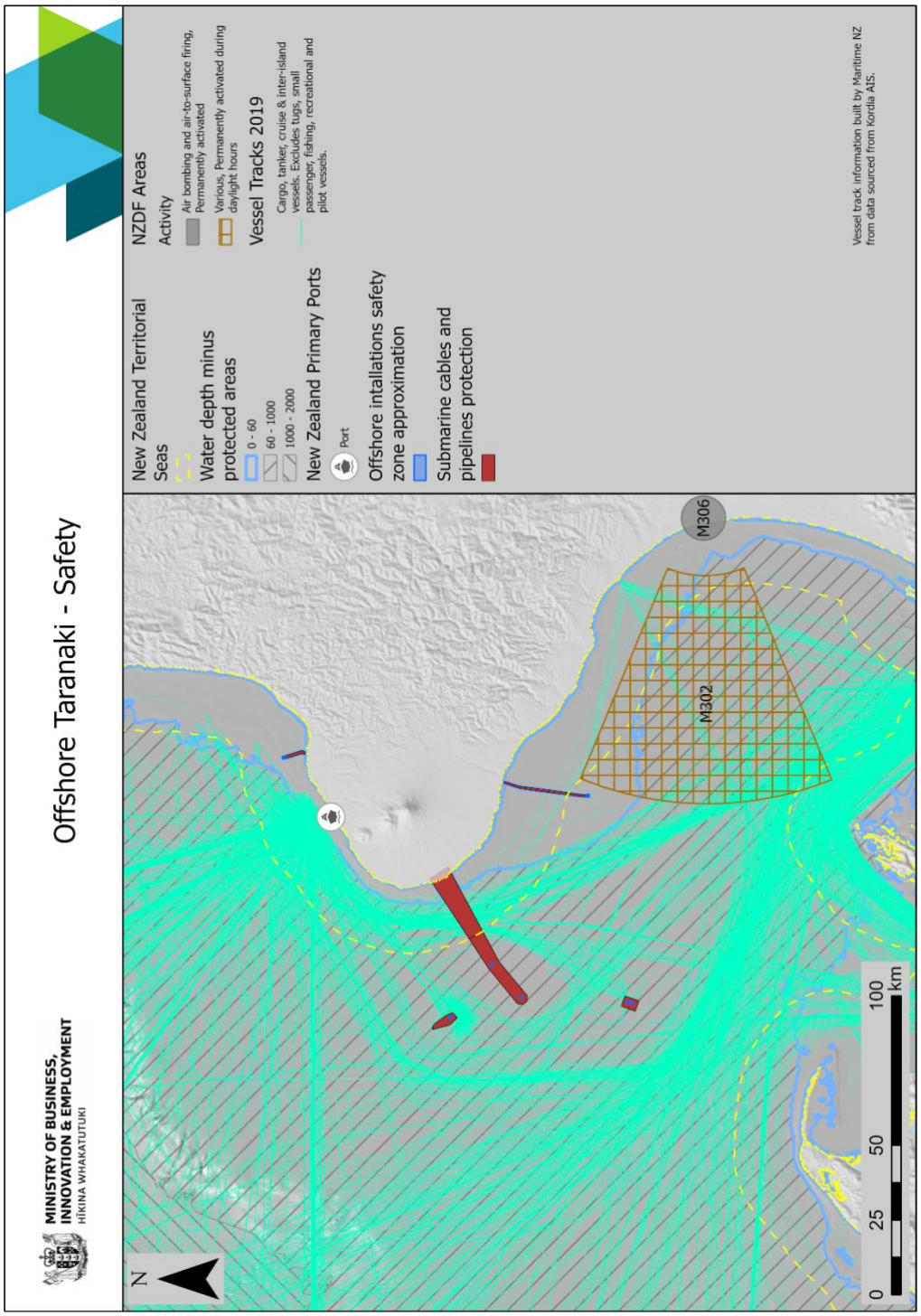


Figure 16

Figure 17 shows the distribution of recreational fishing activity, based on the aerial survey conducted by the Ministry for Primary Industries. Activity is effectively fully contained within the Territorial Sea (12 nautical mile) limits.

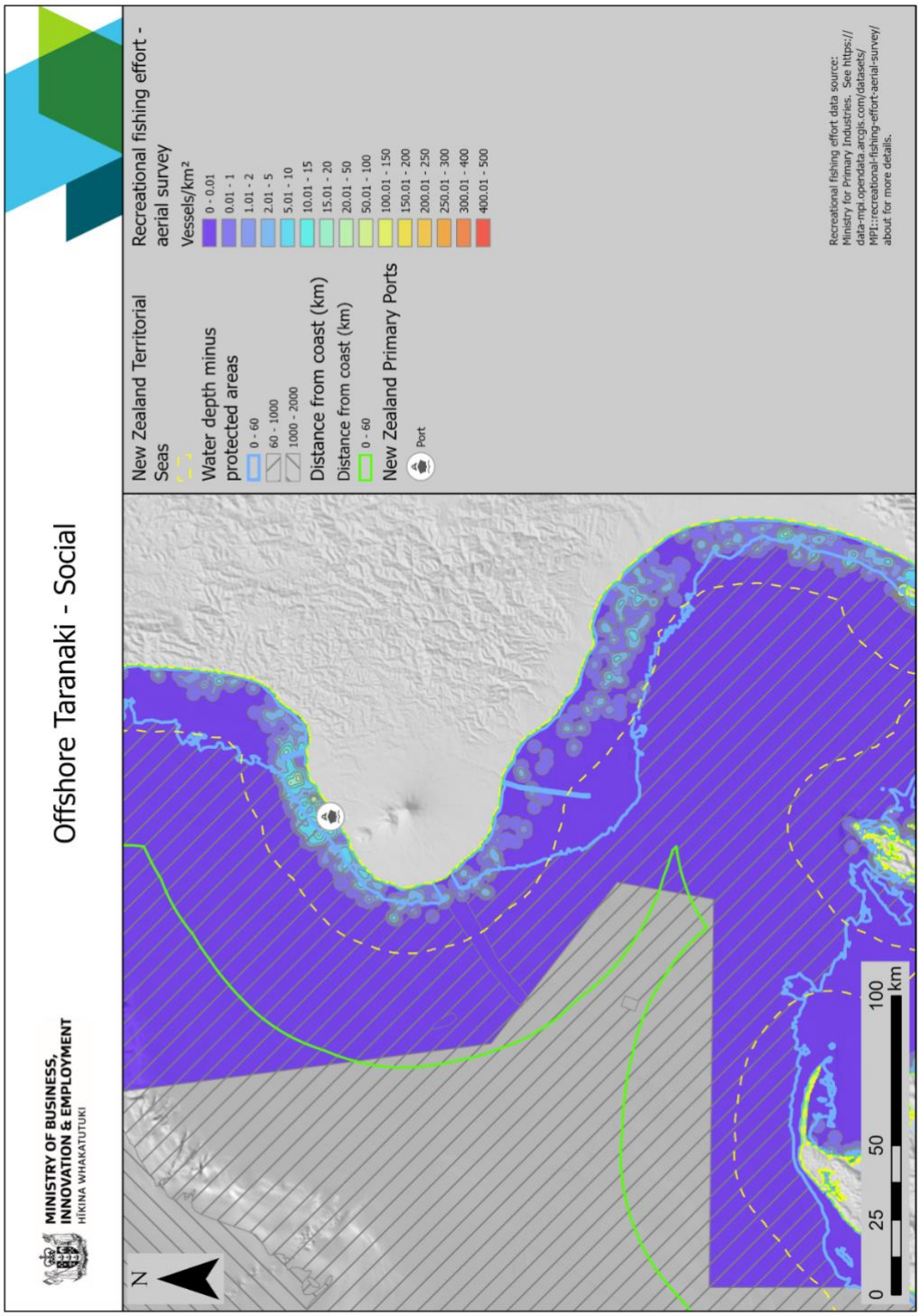


Figure 17

Uses, interests and values of relevance in Southland

Figure 18 shows the areas of customary rights and applications. As there is considerable overlap of areas, particularly within the Territorial Sea, readers are advised to consult individual information sources such as Te Kete Kōrero a Te Takutai Moana Information Hub and the Ministry for Primary Industries NABIS web map.[xxxii]

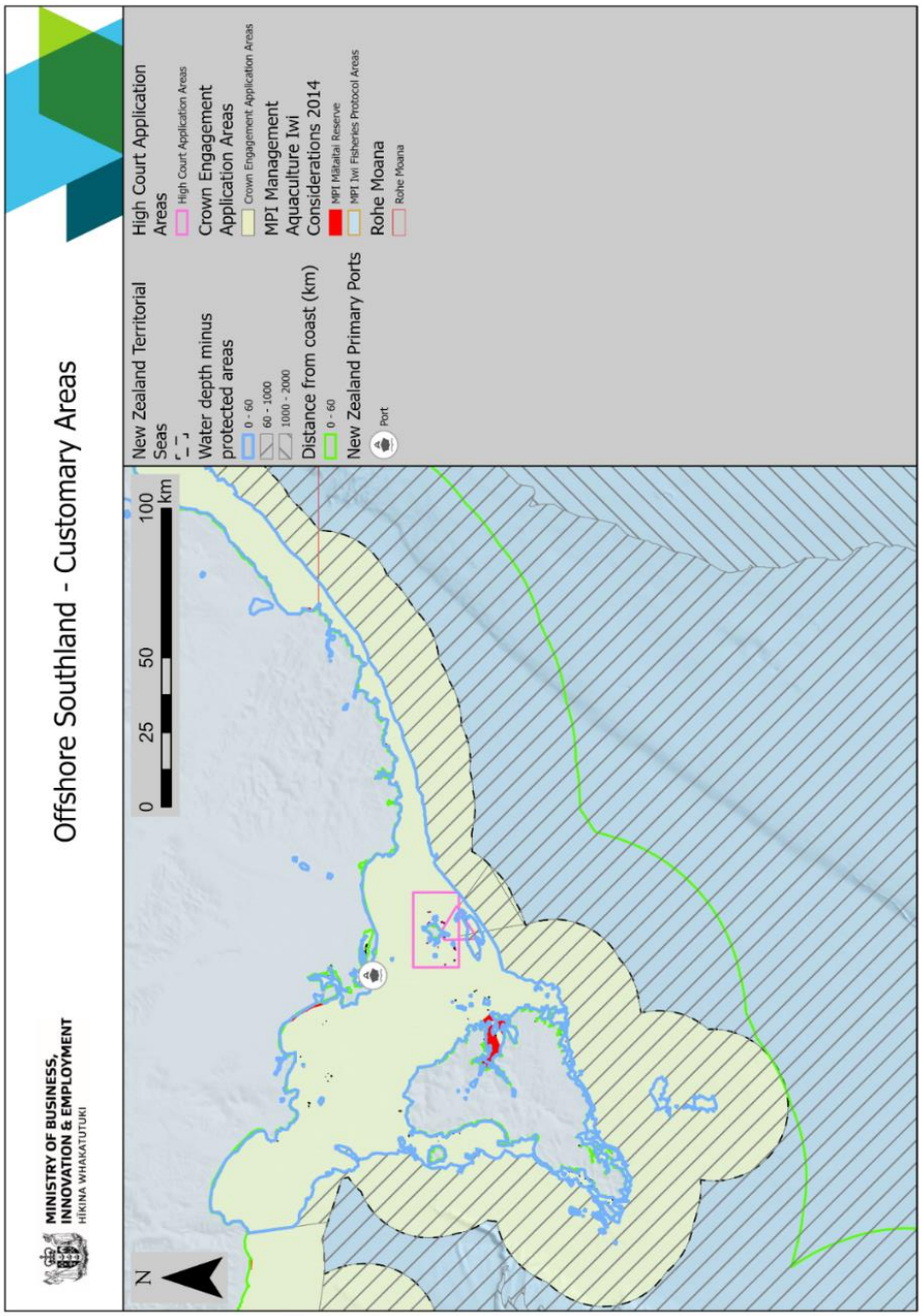


Figure 18

Figure 19 shows the fishing intensity annually averaged commercial catch (kg/ha) from all fishing methods (except freshwater fishing) reported to the Ministry for Primary Industries (MPI) from 2007 – 2019.[xxxiii] It can be seen that the highest levels of activity are within Foveaux Strait, just outside the territorial sea boundary and along the outer continental shelf and slope. Marine farms are predominantly contained within Big Glory Bay on Rakiura / Stewart Island, and Bluff Harbour.

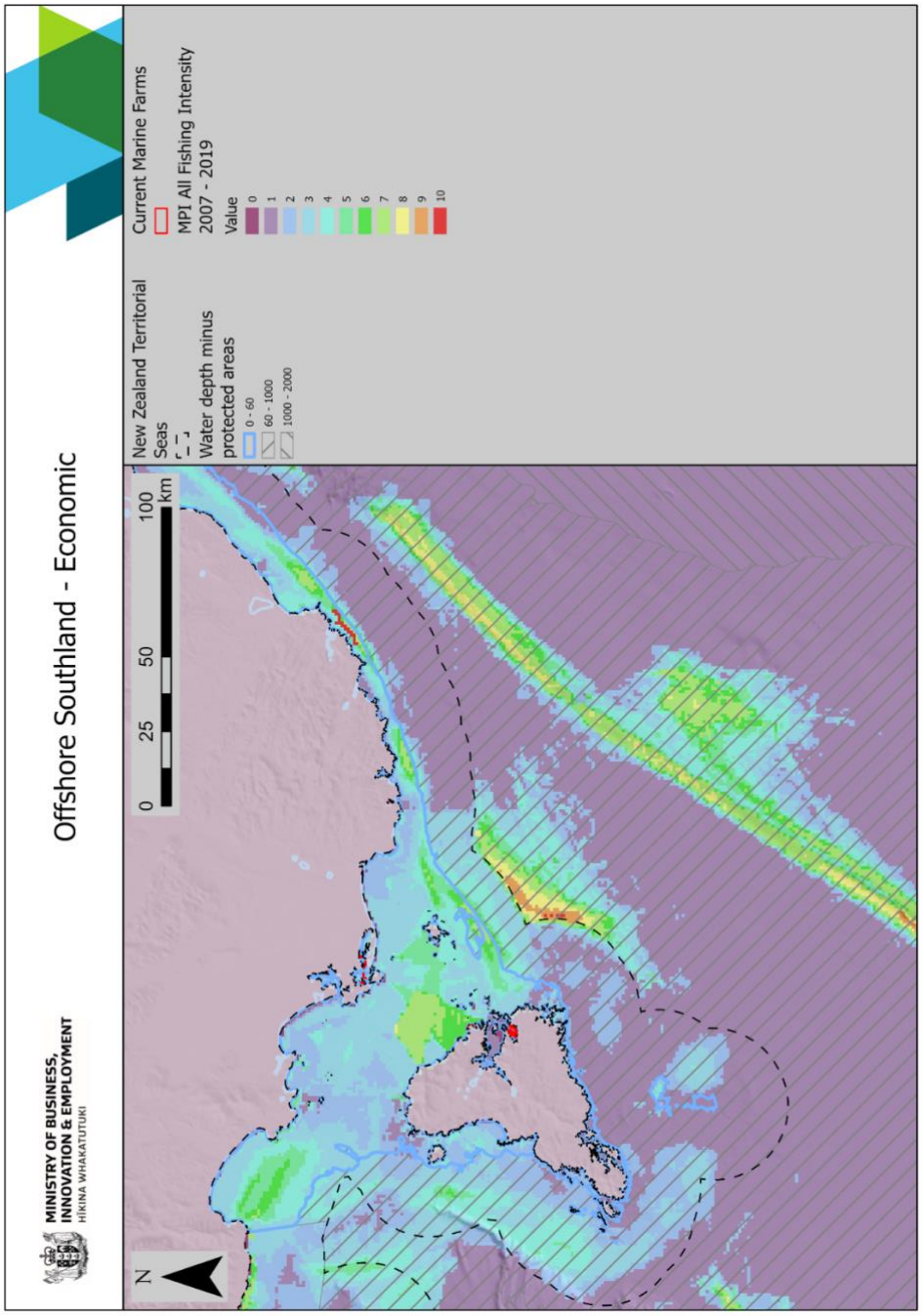


Figure 19

Figure 20 shows the extent of Marine Mammal Sanctuaries. Within the extent of the map, Marine Reserves are limited to Te Whaka a Te Were / Peterson Inlet.

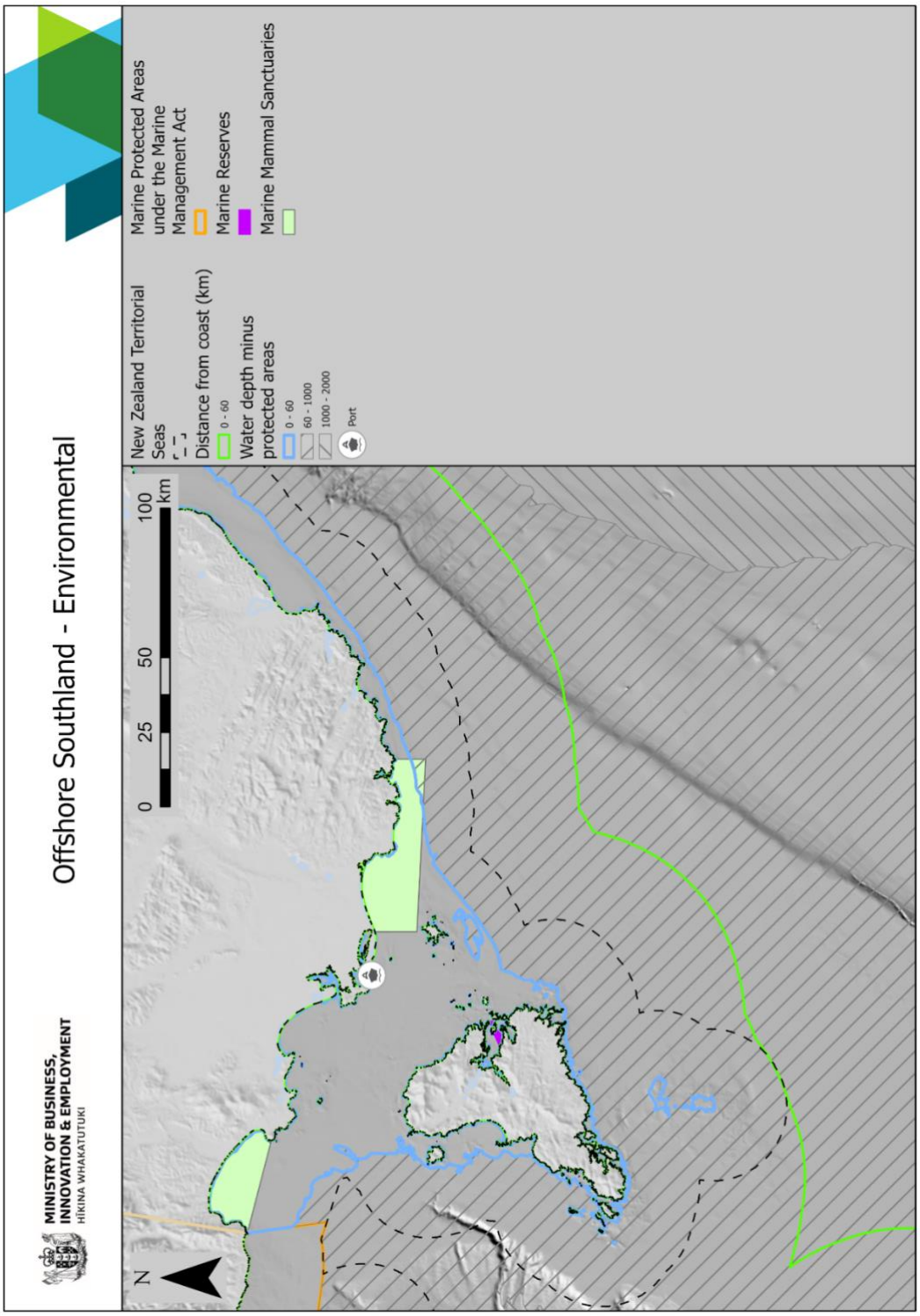


Figure 20

Figure 21 shows the reported position of vessels (of types noted in legend) operating an Automated Identification System (AIS) transponder for the year 2019. Higher density of vessel tracks indicates frequently used shipping "lanes".[xxxiv]

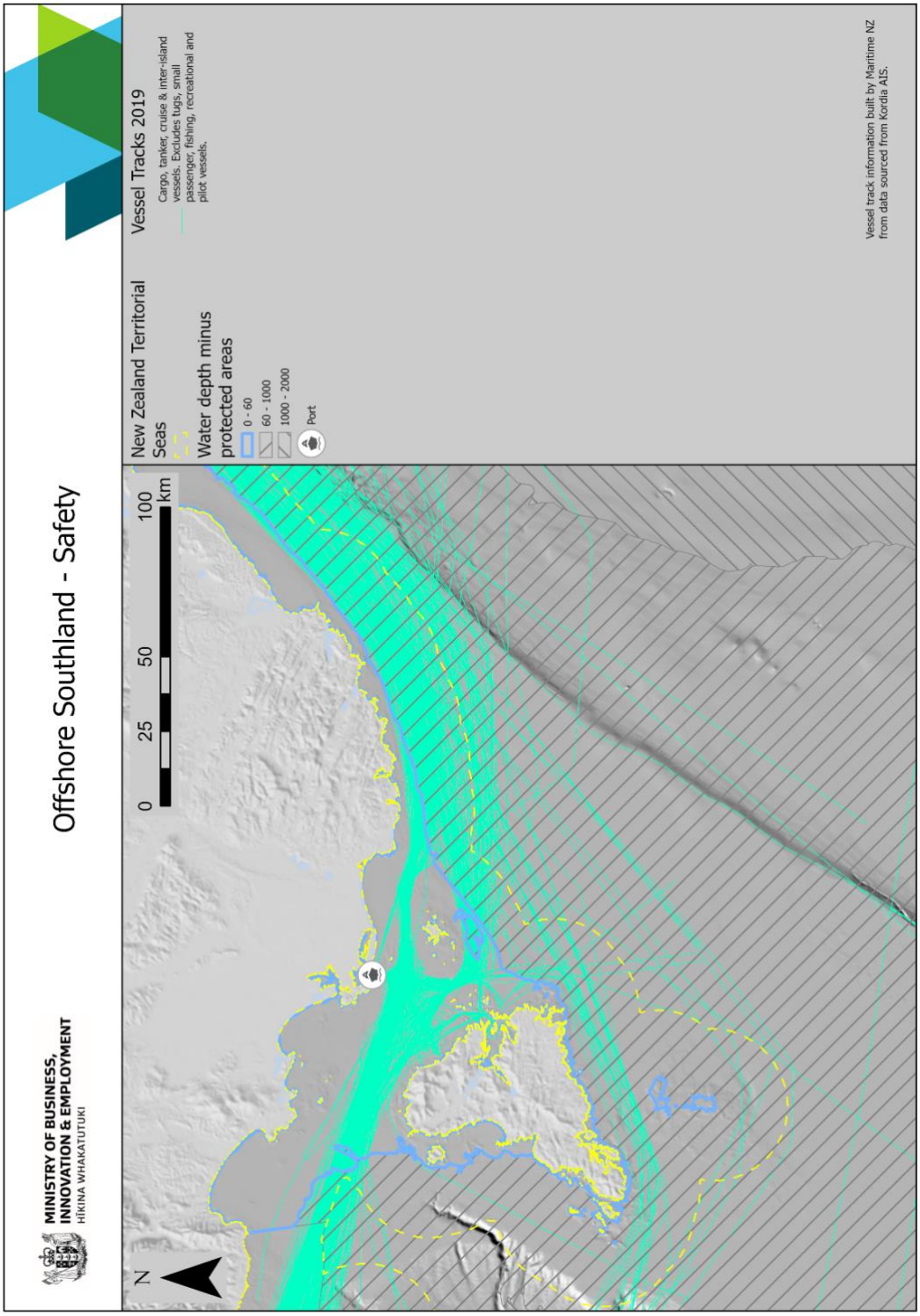


Figure 21

The recreational fishing activity survey conducted by the Ministry for Primary Industries does not extend to the Southland region. Figure 22 is included for completeness only.

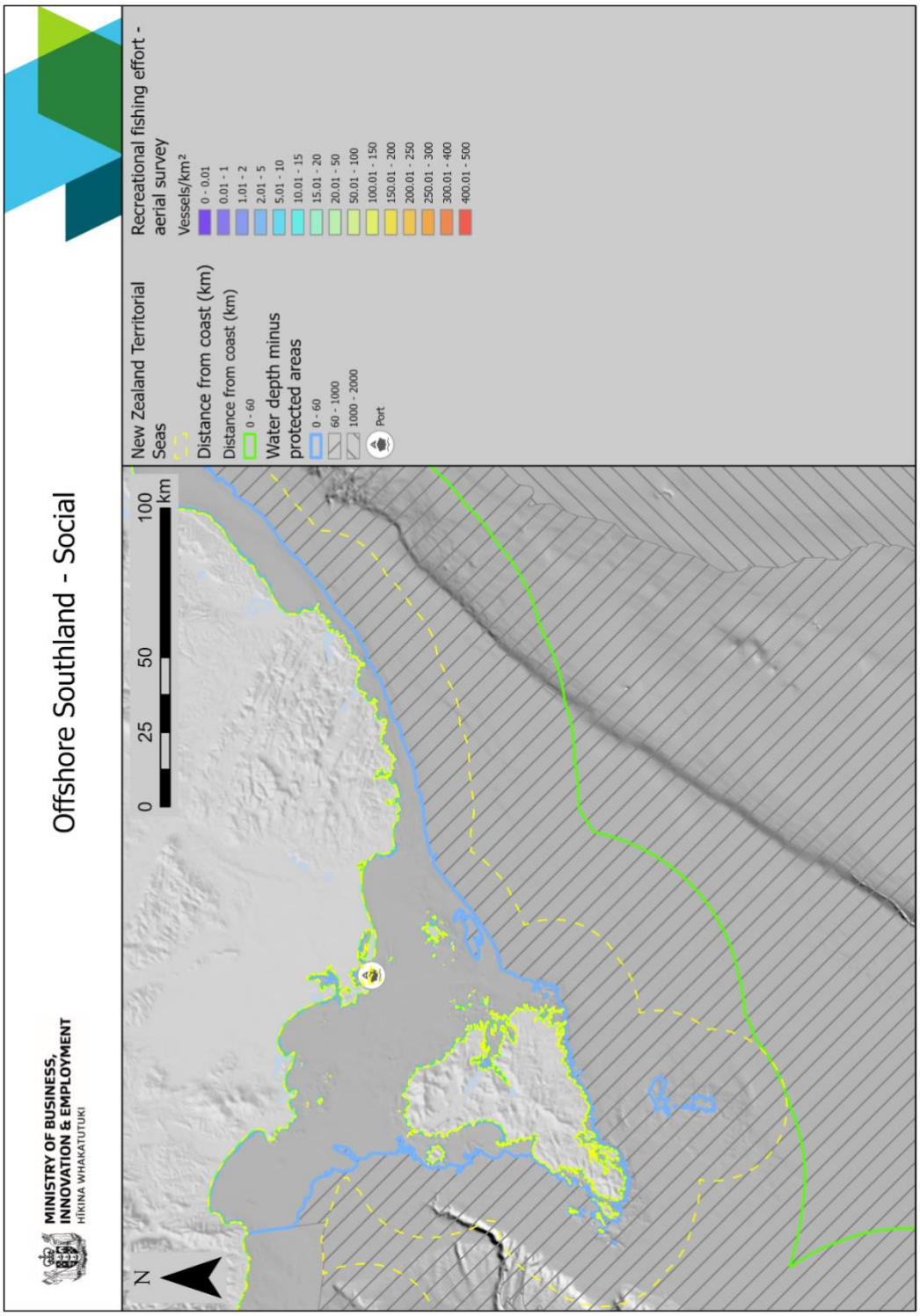


Figure 22

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[xxx] For more information see https://data-mpi.opendata.arcgis.com/maps/mpi-all-fishing-intensity-2007-2019/about
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[xxxiv] See https://www.imo.org/en/OurWork/Safety/Pages/AIS.aspx for more details on AIS.

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