

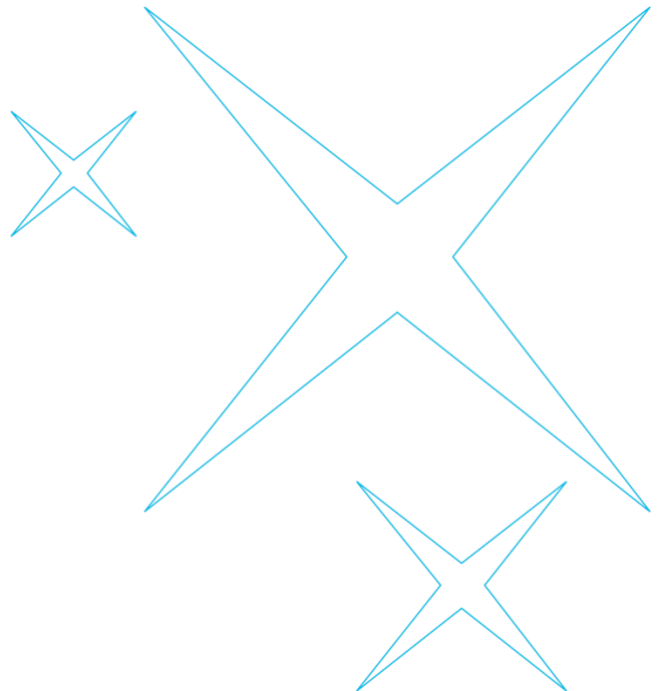
June 2026

Aotearoa New Zealand Sustainable Finance Taxonomy

Energy sector

*Climate change mitigation, adaptation and resilience
Technical Screening Criteria (TSC)*

Draft for public consultation





Acknowledgements

CSF sincerely thank everyone who has given time and consideration to the development of the first draft of the Energy sector criteria for the Aotearoa New Zealand Sustainable Finance Taxonomy (NZ Taxonomy).

This draft for consultation has been developed primarily by two working groups:

1. **Technical Experts Group (TEG):** This group is overseeing the development of the entire NZ Taxonomy (all sectors), with a focus on usability, interoperability and ensuring the NZ Taxonomy delivers on its intended purpose.
2. **Energy Technical Advisory Group (TAG):** This sector-specific group has provided technical inputs to develop the climate change mitigation Substantial Contribution (SC) criteria, the Whitelist of climate change adaptation and resilience measures, as well as the activity-specific Do No Significant Harm (DNSH) criteria for the Energy sector.

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To support this work, CSF engaged the **Climate Bonds Initiative** (CBI) as the technical partners for the NZ Taxonomy development. CBI is an international organisation working to mobilise global capital for climate action. Their mission is to help drive down the cost of capital for large-scale climate and infrastructure projects and to support governments seeking increased access to capital markets to meet climate and GHG emission reduction goals. CBI has contributed to the development of almost every sustainable finance taxonomy globally, including to the EU, Singapore, Brazil and Australian taxonomies. We thank them for their expertise and guidance.

The Centre for Sustainable Finance: Toitū Tahua (CSF) provides coordination and secretariat functions for the development of the NZ Taxonomy. CSF works across the financial system to align financial markets' settings and initiatives with long-term resilience and prosperity. It is an independently governed charitable trust.

Ngā mihi nui.



Introduction

The Aotearoa New Zealand Sustainable Finance Taxonomy (NZ Taxonomy) is a framework to support the country's long-term environmental sustainability and resilience. This document includes Version 1 of the Technical Screening Criteria (TSC) for climate change mitigation, adaptation and resilience for the Energy sector.

A sustainable finance taxonomy defines economic activities that contribute to an environmental objective, and criteria to assess the performance of those activities.

By providing clear, credible and consistent criteria for identifying and classifying environmentally sustainable activities, the NZ Taxonomy is intended to enable financial market participants to more easily identify environmentally sustainable investment opportunities, mitigate greenwashing risks, reduce friction and cost, and support capital allocation decisions that can enable New Zealand's sustainable future.

A well-designed NZ Taxonomy is also intended to support New Zealand businesses in attracting capital, demonstrating alignment with global customer expectations, demonstrating sustainability performance, and enabling efficient access to global markets.

As a small and optional market in a global competition for capital, it is important that New Zealand aligns to international frameworks. Sustainable finance taxonomies are in development in more than 50 global jurisdictions. The NZ Taxonomy has been designed to be highly interoperable with benchmark taxonomies, including the European Union, Australia and Singapore.

The NZ Taxonomy is one tool that can be used to support Aotearoa New Zealand's transition to a lower-emissions, resilient economy. It is not intended to determine or prescribe the future economic mix or provide sectoral transition pathways, but rather, to outline activities that can serve as stepping stones on the path to a resilient and environmentally sustainable future.

Background and purpose

The purpose of the NZ Taxonomy is to enable market participants to mobilise and direct capital flows towards:

- Building a low-emissions, Paris-aligned future;
- Restoring nature; and
- Upholding the rights and interests of Indigenous Peoples of the land.

Development of a sustainable finance taxonomy for Aotearoa New Zealand was identified by the Sustainable Finance Forum as a key recommendation in its [2030 Roadmap for Action](#).

The NZ Taxonomy project commenced in February 2024, in partnership with the New Zealand Government, when the Centre for Sustainable Finance: Toitū Tahua (CSF) convened an Independent Technical Advisory Group (ITAG) of financial market and other relevant participants to provide [recommendations](#) for the design of the NZ Taxonomy to the Minister of Climate Change.

In line with these recommendations, the Minister directed the development of climate change mitigation, adaptation and resilience TSC for Agriculture and Forestry sector which began in October 2024. These criteria were published for voluntary use by the market in early 2026 (access them [here](#)).

In September 2025, the development of climate change mitigation criteria and climate change adaptation and resilience criteria for the Energy sector and the Construction and Buildings sector were directed, and work commenced in late 2025.

Governance

The NZ Taxonomy has been developed through a robust process that has been established in alignment with leading international efforts in designing local taxonomies.

This process involves a diverse range of expertise, strong governance, regulatory oversight, transparency, opportunity for public input and safeguards against undue political or industry interference.

The Ministry for the Environment (MfE) has provided government oversight for the development of the NZ Taxonomy. A Government quality assurance function, consisting of Financial Markets Authority (FMA), MfE, Reserve Bank of New Zealand (RBNZ) and the Treasury – New Zealand, reviews the development process at key milestones, before it is signed off by a Council of Financial Regulators (CoFR) representative.

The Technical Experts Group (TEG), whose membership was endorsed by MfE, has provided strategic direction, input and endorsement for all NZ Taxonomy methodology and criteria prior to public consultation(s) and publication.

A sector-specific Technical Advisory Group (TAG) has provided technical input and feedback on the draft activity selection, the Substantial Contribution (SC) criteria to assess the performance of those activities, and activity-specific Do No Significant Harm (DNSH) criteria, prior to endorsement by the TEG.

The draft TSC for Energy are now open for a period of public consultation.



Key concepts and methodology

For an introduction to taxonomies and the New Zealand project, please review the materials available on the CSF website. Particularly:

1. [Introduction videos](#)
2. [Energy sector engagement pack](#)
3. [Public webinar – preparing for consultation](#)

You will find a number of supporting papers covering the methodological approach, key component development approaches and design recommendations at sustainablefinance.nz/nz-taxonomy.

Key concepts regarding the NZ Taxonomy design and underpinning methodology are also outlined below for ease.

Environmental objectives and criteria

Sustainable finance taxonomies classify and provide common definitions for activities and measures that **substantially contribute to an environmental objective**.

The NZ Taxonomy environmental objectives were defined based on New Zealand’s environmental priorities and are aligned with the objectives of other international taxonomies, including those of the EU, Australia and Singapore.

The NZ Taxonomy’s six environmental objectives are:

- Climate change mitigation
- Climate change adaptation and resilience
- Sustainable use and protection of water resources and marine resources
- Protection and restoration of biodiversity and ecosystem
- Pollution prevention and control
- Transition to a circular economy

In this phase, the NZ Taxonomy prioritises the development of criteria for activities that pursue the climate change mitigation and climate change adaptation and resilience objectives.

The prioritisation of the climate change mitigation goals reflects the urgent market need for credible and usable guidance to identify activities that are aligned with, or make a substantial contribution towards, achieving the Paris Agreement temperature goals. It also supports interoperability with international taxonomies and consistency with sustainability-related disclosure frameworks, which have similarly prioritised climate change mitigation to date.

The climate change adaptation and resilience criteria provide further options for NZ Taxonomy alignment and are intended to support investment in activities and measures that help New Zealand businesses to increase their adaptive capacity and build resilience in a changing climate.

Environmental focus in the context of the Energy ‘trilemma’

New Zealand needs an energy system that provides secure, affordable, sustainable and resilient energy for the long-term.

With focus on the six environmental objectives, the NZ Taxonomy is not the appropriate tool to consider system-level security, system-level transition, or energy affordability. These remain the remit of national-level strategy, planning and policy, along with action by the market.

Acknowledging the importance of all three issues however, the technical groups have considered security and affordability through a 'do-no harm' approach in the TSC and have worked to develop guidance related to investing in entities supporting system security and transition. This guidance is available for feedback in this consultation.

Classifying economic activities

Taxonomies create definitions and criteria at the level of an economic activity.

This allows for granular, consistent assessments and can account for a range of activities that any one business may be undertaking.

The most common use of a taxonomy is to screen for eligible (Green or Transition) investments and expenditures, in order to facilitate the issuance of sovereign, sub-sovereign and corporate Green- or Transition-labelled debt by both the public and private sectors.

Taxonomies can also be used as a tool to demonstrate alignment of an entity with key environmental objectives (e.g., climate change mitigation) in a credible way that is useful to capital markets. Entities could demonstrate alignment in a number of ways, including percentage of taxonomy-aligned revenues, or taxonomy-aligned total capital (CapEx) or operational (OpEx) expenditures.

The NZ Taxonomy includes both activities and measures.

- **Activities** are the underlying economic activities, such as electricity generation, transmission and distribution of electricity/renewable and low-carbon gases, or storage of energy.
- **Measures** are practices, actions or investments that can be applied to an economic activity included in the NZ Taxonomy, but which don't change the underlying activity. For example, improved evacuation routes in existing assets to support safe evacuation during climate hazard events.

Activity inclusion

The process below has been followed to determine which activities have been included for the Energy sector:

1. Establishment of a methodology to screen and classify activities for inclusion (see a summary of this methodology below), and agreeing on sector boundaries for possible activities.
2. Identification of activities, practices and measures in the Energy sector that support climate change mitigation, adaptation and resilience, based on relevant global and New Zealand-specific frameworks and sources.
3. Evaluation of the resulting list against the methodology, and for their suitability in the New Zealand context and adjusting as necessary to improve relevance and impact.

After determining the eligible activities, the technical groups then developed the TSC to establish the performance requirements for those activities.

As far as possible, an evidence-based approach has been used to assess whether an activity or measure should be included, how it would be classified, and in the development of associated performance criteria.

Green and Transition classifications

The NZ Taxonomy classifies both Green and Transition activities.

Green activities are those already aligned with a low-emissions, resilient future. The Transition category is intended to support the emissions reduction for industries which are hard to abate currently but are significant for social and economic wellbeing and are able to make substantial progress on emissions reduction.

The full methodology for defining these classifications can be read in detail [here](#).

Environmental objective	Classifications	
	Green	Transition
Climate change mitigation	Low- or zero-emissions activities that already operate at very low Scope 1, 2 and 3 emissions, including activities that directly reduce emissions through their substitution for emissions-intensive alternatives.	Activities that currently still operate at substantial emissions but are a necessary part of the economy and societal wellbeing at present, have no low-emissions commercially available alternatives, and are: <ul style="list-style-type: none"> • Moving rapidly towards a Green classification; or • Encouraging substantial GHG emissions reductions in the short term.
Climate change adaptation and resilience	All activities and measures which meet the TSC can be classified as Green.	N/A – all activities and measures which meet the TSC can be classified as Green.

All activities that meet the TSC for adaptation and resilience are classified as Green.

Green activities for climate change mitigation are those that already operate at very low Scope 1, 2 and 3 emissions, including activities that directly reduce emissions through their substitution for emissions-intensive alternatives and meet the associated TSC.

The climate change mitigation criteria also include a Transition classification in some sectors, in order to support emissions reductions in industries which are hard to abate currently, but are significant for social and economic wellbeing. The Transition classification is available for activities where all the following conditions are present:

1. The activity is significant for social and economic wellbeing.
2. The activity's Scope 1, 2 and 3 emissions are able to be substantially reduced.
3. There are currently no commercially available low-/zero-emissions alternatives.
4. Investment in the activity/measure does not risk locking in emissions-intensive assets.

Under the climate change mitigation criteria for Energy, no activities are deemed to meet the criteria to be classified as in Transition, primarily due to the availability of commercially available low-/zero-emissions alternatives in this sector.

Aligning with the NZ Taxonomy

The NZ Taxonomy is a voluntary framework.

The NZ Taxonomy provides decision-useful information by setting clear criteria for what effective climate change mitigation, adaptation and resilience activities look like. It is at the discretion of any business owner whether they undertake any of the activities/measures outlined in the criteria or whether they seek NZ Taxonomy alignment. Likewise, it is at the discretion of any financial institution or investor whether they use this framework.

The NZ Taxonomy is made up of three sets of criteria, which together are the 'Technical Screening Criteria' (TSC):

1. **Substantial Contribution (SC) criteria:** The activity/measure demonstrates that it makes a substantial contribution to the particular environmental objective (i.e., climate change mitigation or adaptation and resilience).
2. **Do No Significant Harm (DNSH) criteria:** The activity making this substantial contribution does not cause significant negative impacts on other environmental objectives.
3. **Minimum Social Safeguards (MSS):** Entities must meet minimum standards for social responsibility, including labour rights, governance rights and Indigenous rights.

The currently published NZ Taxonomy Version 1 for Agriculture and Forestry can be utilised in any of the following three ways:

- Demonstrating alignment with the SC criteria for climate change mitigation or climate change adaptation and resilience, and alignment with *all* applicable DNSH and MSS criteria.
- Demonstrating alignment with the SC criteria for climate change mitigation or climate change adaptation and resilience, and *partial* alignment with the applicable DNSH and/or MSS criteria.
- Demonstrating alignment with the SC criteria for climate change mitigation or climate change adaptation and resilience *only*.

Users making claims of alignment with the NZ Taxonomy Version 1 are responsible for disclosing the parts of the NZ Taxonomy to which they are aligning (and those to which they are not), and ensuring that the impression conveyed by those claims is not misleading or deceptive.

All Version 1 users are encouraged to give consideration to relevant aspects of the DNSH and MSS frameworks. In future versions of the NZ Taxonomy, it is intended that the DNSH and MSS frameworks will become a requirement for claims of NZ Taxonomy alignment, i.e., there will be no partial alignment options, only alignment or no alignment.

Consideration of a timeline and process for phasing the implementation, as well proportional application of, the DNSH and MSS criteria are areas still under consideration and feedback is welcome in this consultation.

Summary of NZ Taxonomy criteria

Objectives	Criteria	Purpose	Format	Application
Climate change mitigation	SC criteria	Detail the performance requirements that an activity/measure must meet to demonstrate that it makes a substantial contribution to the climate change mitigation environmental objective.	A list of activities/measures that are classified as Green (or Transition), with associated performance criteria, as well as any eligible practices, monitoring requirements, and exclusions.	Sector-specific
Climate change adaptation and resilience	SC criteria – process-based approach	Detail the process that must be followed when identifying, designing and undertaking an activity, to demonstrate that it makes a substantial contribution to the climate change adaptation and resilience environmental objective.	Guidance on the process, including minimum requirements, for users to identify and design activities that increase adaptive capacity or resilience. All activities that substantially contribute to climate change adaptation and resilience are classified as Green.	Pan-sector
	SC criteria – sector-specific whitelist	Pre-approved low-risk measures that are deemed to achieve a substantial contribution to the climate change adaptation and resilience environmental objective.	List of pre-approved measures and applications.	Sector-specific
All six environmental objectives	DNSH criteria – generic	Ensure that the activity making substantial contribution to one environmental objective does not cause significant negative impacts on other environmental objectives. Address broad protections for each objective.	List of minimum requirements per environmental objective.	Pan-sector
	DNSH criteria – activity-specific	Ensure that the activity making substantial contribution to one environmental objective does not cause significant negative impacts on other environmental objectives. Addresses risks specific to the activity.	List of detailed requirements related to the performance of a specific activity.	Sector-specific
Social protections	MSS	Ensure that entities meet minimum standards for social responsibility.	List of minimum requirements for an entity seeking NZ Taxonomy alignment.	Pan-sector

About this consultation

This consultation pertains to the draft criteria for:

- SC criteria for the climate change mitigation goal in the Energy sector;
- The sector-specific Whitelist for the climate change adaptation and resilience goal in the Energy sector;
- Activity-specific DNSH criteria, for the Energy sector; and
- Additional investment guidance that gives consideration to firming activities
- There are also additional questions related to the next steps for the NZ Taxonomy development.

You may respond to any or all components, or a combination of them.

Submissions can be made through the online consultation form ([here](#)), or by emailing a document to taxonomy@sustainablefinance.nz. Submissions which answer the consultation questions will be prioritised. You can download the full set of questions [here](#).

The consultation is open from Monday 8 June to Friday 10 July 2026.

Please contact taxonomy@sustainablefinance.nz for any questions or assistance.

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Energy sector Substantial Contribution criteria for climate change mitigation – draft for public consult

This section presents the draft Substantial Contribution (SC) criteria for climate change mitigation, as they apply to the Energy sector for the NZ Taxonomy.

The SC criteria define the thresholds and requirements that an economic activity or measure must meet to be considered as making a substantial contribution to an environmental objective – in this case, climate change mitigation.

These criteria are grounded in robust technical and scientific evidence and are designed to ensure that activities go beyond business-as-usual and meaningfully advance emissions reduction towards alignment with the Paris Agreement.

The SC criteria are the core component of the framework specifically designed to drive positive outcomes for one of the Taxonomy's environmental objectives.

The Energy sector climate change mitigation SC criteria are available for feedback in this consult.

Sector context

Globally, energy-related greenhouse gas (GHG) emissions need to fall around 50% by 2035 compared to 2024 levels to support the objectives of the Paris Agreement goal of limiting global warming as close as possible to 1.5°C. Emissions from the power sector, which currently account for 40% of global energy-related emissions, will also need to decline particularly fast and drop to around 25% of today's levels by 2035. Under the International Energy Agency (IEA) Net Zero Emissions by 2050 (NZE) Scenario, low-emissions sources provide nearly all electricity generation by 2040, while electricity increases its share in total final consumption to around 40% by 2040 and 55% by 2050.¹

Meanwhile, New Zealand's energy story is shaped by renewables, with the country's energy system ranked 9th globally and 1st in Asia by the World Energy Council (WEC) for its combined affordability, security and sustainability. Renewable generation, primarily from hydropower, geothermal, and wind, has increased to nearly 90% of the total electricity supply, well above the Organisation for Economic Co-operation and Development (OECD) average of 30%. Further growth in renewable generation is also expected to increase the share of renewable electricity supply to 95% by 2027 and 98% by 2030. Given the highly renewable electricity mix, the New Zealand Government has also identified the electrification of other sectors of the economy as the country's greatest decarbonisation lever moving forward. Overall, energy-related emissions are targeted to continue falling by 26% by 2040 compared to 2022 levels.^{2,3,4}

Methodology

In general, the Energy sector of the NZ Taxonomy is scoped around five main sub-sectoral categories: Electricity generation; production of heating and cooling; transmission and distribution networks; storage systems; and research and development. A specific focus on electricity has been identified, as the electricity system plays a critical role in supporting other sectors to reduce emissions and economy-wide decarbonisation. Correspondingly, as the share of renewable electricity grows, grid upgrades and modernisation, along with energy storage systems, are necessary to minimise intermittent supply disruptions. Lastly, heating and cooling is also of significance, notably for buildings and in industry, and in line with government efforts to increase the use of renewables.⁵ On the other hand, upstream energy production activities such as the production of hydrogen, biofuels, and other low-carbon fuels would be considered under a manufacturing-related sector of the economy.

¹ International Energy Agency (2025), World energy outlook 2025. Available at: <https://www.iea.org/reports/world-energy-outlook-2025>

² Boston Consulting Group (2025), Energy to grow: Securing New Zealand's future. Available at: <https://www.bcg.com/publications/2025/energy-to-grow-securing-new-zealands-future>

³ New Zealand Government (2025), Submission under the Paris Agreement: New Zealand's second Nationally Determined Contribution. Available at : <https://unfccc.int/sites/default/files/2025-01/New%20Zealand%27s%20second%20Nationally%20Determined%20Contribution.pdf>

⁴ Climate Change Commission (2024), Advice on Aotearoa New Zealand's fourth emissions budget. Available at: <https://www.climatecommission.govt.nz/assets/Advice-to-govt-docs/Target-and-budgets-final-reports/Climate-Change-Commission-EB4-Final-Advice-1.1.pdf>

⁵ International Energy Agency (2023), New Zealand 2023 energy policy review. Available at: https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/04/new-zealand-2023-energy-policy-review_5c598db8/d99c3085-en.pdf

The specific scope of economic activities selected in the energy sector has been guided by the NZ Taxonomy's core principles of credibility, usability, interoperability and prioritisation for impact. Activities have been selected based on their substantial contribution to the climate change mitigation objective, in line with the NZ Taxonomy's Transition methodology. Zero and low-emissions technologies included as Green activities in the Energy sector are readily deployable and identified as the key decarbonisation levers to prioritise for impact. The NZ Taxonomy also includes a research and development activity to support the commercialisation of innovative Energy-related solutions, processes, technologies, business models and other products that support emissions reductions. The table below provides an overview of activity selection and classification in the NZ Taxonomy. The NZ Taxonomy considers renewable energy activities as necessary to achieve a Paris-aligned future. During intermittent renewable supply, increased seasonal demand, and dry years however, there may be a need for thermal (fossil fuel-powered) firming capacity in the short to medium term, alongside energy storage and demand flexibility solutions, to ensure security of electricity supply. Therefore, in addition to criteria for eligible activities, the NZ Taxonomy offers a voluntary framework to define how back-up flexible gas firming capacity may be recognised and assessed within a credibly transitioning portfolio of generation and storage assets (see [here](#)).

Emissions intensity thresholds

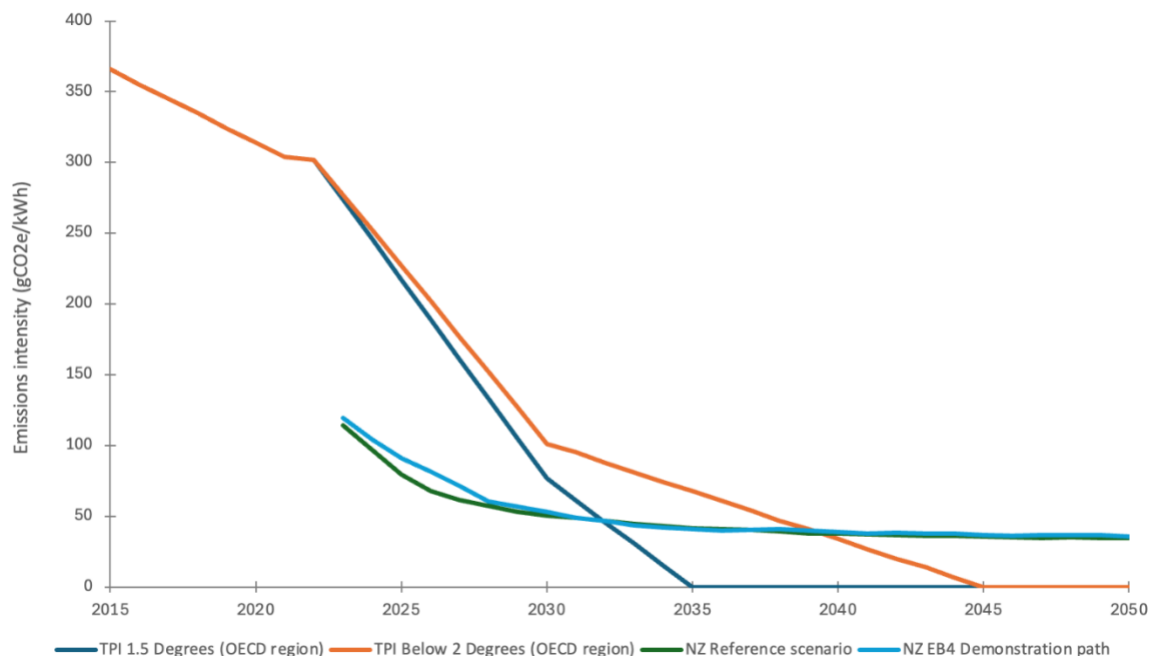
The emissions intensity thresholds form the basis of the Energy sector criteria and have been developed through alignment with global and domestic decarbonisation scenarios for the electricity system. Specifically, they refer to Transition Pathway Initiative 1.5 and below 2 degrees scenarios for the OECD region, as well as New Zealand's electricity market modelling for the draft advice on the fourth emissions budget (EB4).⁶⁷ The primary, standardised metric for measuring emissions of the Energy sector is gCO₂/kWh.

In New Zealand, the current average Scope 1 (direct) emissions from the electricity system are well below global values, as reflected in Figure 1. Under the EB4 demonstration path, direct emissions intensity in 2025 starts at 91gCO₂e/kWh, before further falling to 53gCO₂e/kWh in 2030, 39gCO₂e/kWh in 2040, and 36gCO₂e/kWh in 2050.

⁶ Transition Pathway Initiative electricity utilities online tool. Available at: <https://www.transitionpathwayinitiative.org/sectors/electricity-utilities>

⁷ Climate Change Commission (2024), Modelling and data: Consultation on emissions reduction target and emissions budgets. Available at: <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/preparing-advice-on-emissions-budgets/advice-on-the-fourth-emissions-budget/modelling-and-data-consultation-on-emissions-reduction-target-and-emissions-budgets>. Refer to the 'Electricity market modelling' section for the decarbonisation trajectories, and the 'Energy and emissions in New Zealand (ENZ) model' section for an assumptions log.

Figure 1. Average Scope 1 (direct) emissions intensity of electrical utilities – global and New Zealand decarbonisation pathway



As consistent with global taxonomies, the calculated emissions intensity thresholds are proposed on a lifecycle assessment (LCA) basis to consider emissions throughout the value chain of the energy production process.⁸ This includes Scope 1 (direct) emissions as well as upstream emissions related to production considerations. LCA measurements and calculations follow the ISO 14067:2018 or 14064-1:2018 standards.

The Green lifecycle emissions intensity threshold is set at 100gCO₂e/kWh⁹ until 2030. This reflects New Zealand’s relatively decarbonised electricity sector, while also taking care to not inadvertently exclude renewable energy technologies as newer frontiers are explored – for example, carbon capture and reinjection associated with geothermal plants. After 2030, this threshold will be reviewed, which will be further defined in the next version of the NZ Taxonomy. Projects that reach a final investment decision before 2030 will remain eligible, and the updated thresholds will apply to projects that reach final investment decision after 2030.

To aid usability and minimise compliance burdens, direct eligibility is available for certain types of renewable energy technologies which are well recognised to have lifecycle emissions intensity below the 100gCO₂e/kWh threshold. Such activities are considered indisputably Green across taxonomies and need not conduct an LCA to demonstrate alignment with the criteria and receive taxonomy-aligned financing.

⁸ Lifecycle emissions calculations should not factor in the use of offsets.

⁹ For avoidance of doubt, this metric refers to emissions per kilowatt-hour of electrical energy whenever referring to electricity generation, and emissions per kilowatt-hour of thermal energy whenever referring to the production of heating or cooling.

List of eligible activities, and their categorisation, at a glance

Activities	Classification
1. Electricity generation, including cogeneration of heating/cooling and power, from solar PV, CSP, and PVT systems	Green Activity
2. Electricity generation from onshore and offshore wind	Green Activity
3. Electricity generation from ocean energy	Green Activity
4. Electricity generation from hydropower	Green Activity
5. Electricity generation, including cogeneration of heating/cooling and power, from geothermal energy	Green Activity
6. Electricity generation, including cogeneration of heating/cooling and power, from bioenergy	Green Activity
7. District heating and cooling systems	Green Activity
8. Installation and operation of heat pumps	Green Activity
9. Production of heating or cooling from waste heat	Green Activity
10. Production of heating or cooling from solar thermal heating	Green Activity
11. Production of heating or cooling from geothermal energy	Green Activity
12. Production of heating or cooling from bioenergy	Green Activity
13. Transmission and distribution of electricity	Green Activity
14. Transmission and distribution of renewable and low-carbon gases	Green Activity
15. Remote and micro-grid systems	Green Activity
16. Storage of energy	Green Activity
17. Research, development and innovation of energy technologies	Green Activity

Climate change mitigation Substantial Contribution criteria for Aotearoa New Zealand’s Energy sector

1. Electricity generation, including cogeneration of heating/cooling and power, from solar photovoltaic (PV), concentrated solar power (CSP), and photovoltaic-thermal (PVT) systems

Activity description	Construction or operation of facilities that produce electricity using solar PV technology or solar thermal power.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2619 Other electricity generation • 3109 Other heavy and civil engineering construction • 3231 Plumbing services • 3232 Electrical services • 3233 Air conditioning and heating services
Green	Until 2030, all electricity generation activities from solar PV and solar CSP are directly eligible.
Specific ineligible cases	<ul style="list-style-type: none"> A. Power plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities). B. Projects that result in degradation of land with high carbon stock.¹⁰

2. Electricity generation from onshore and offshore wind

Activity description	Construction or operation of facilities that produce electricity from wind power, including offshore wind power.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2619 Other electricity generation • 3109 Other heavy and civil engineering construction
Green	Until 2030, all electricity generation activities from onshore and offshore wind power plants are directly eligible.
Specific ineligible cases	<ul style="list-style-type: none"> A. Power plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities). B. Projects that result in degradation of land with high carbon stock.

¹⁰ Land that currently has any one the following statuses, or had such a status in the base year of 2008:

1. Wetland, i.e., land that includes permanently or intermittently wet areas, as well as shallow-water and land-water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.
2. Land of continuously natural forest areas spanning more than one hectare with trees higher than 5 metres and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ, to ensure resilience and biodiversity outcomes.
3. Drained peatland, unless measures are undertaken to re-wet this land alongside the energy project.

3. Electricity generation from ocean energy

Activity description	Construction or operation of facilities that produce electricity from ocean energy.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2619 Other electricity generation • 3109 Other heavy and civil engineering construction
Green	Until 2030, all electricity generation activities from ocean energy are directly eligible.
Specific ineligible cases	<ul style="list-style-type: none"> A. Power plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities). B. Projects that result in degradation of land with high carbon stock.

4. Electricity generation from hydropower

Activity description	Construction or operation of facilities that produce electricity from hydropower.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2612 Hydro-electricity generation • 3109 Other heavy and civil engineering construction
Green	<p>The activity complies with <u>one</u> of the following criteria:</p> <ul style="list-style-type: none"> A. The electricity generation facility is a run-of-river plant and does not have an artificial reservoir. B. Until 2030, the power density of the electricity generation facility is above 5W/m².¹¹ C. Until 2030, the lifecycle emissions intensity of the generation of electricity from hydropower is lower than 100gCO_{2e}/kWh.
Specific ineligible cases	Power plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities).

¹¹ For avoidance of doubt, power density refers to the installed capacity of the power plant divided by the total surface area of the reservoir.

5. Electricity generation, including cogeneration of heating/cooling and power, from geothermal energy

Activity description	Construction or operation of facilities that produce electricity, including cogeneration of heating/cooling and power, from geothermal energy.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2619 Other electricity generation • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	<p>Until 2030, the lifecycle emission intensity of the generation of electricity, including cogeneration of heating/cooling and power, from geothermal energy is less than 100gCO₂e/kWh.</p> <p>If the activity utilises carbon reinjection technology, it must comply with requirements set out in Appendix 1. Energy emissions related to CCU/CCS must be included in the GHG accounting.</p>
Specific ineligible cases	<ul style="list-style-type: none"> A. Power plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities). B. The use of hydraulic fracturing to create Enhanced Geothermal Systems.

6. Electricity generation, including cogeneration of heating/cooling and power, from bioenergy

Activity description	Construction or operation of facilities that produce electricity from bioenergy.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2619 Other electricity generation • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	<p>Bioenergy power generation must comply with <u>all</u> of the following criteria:</p> <ul style="list-style-type: none"> A. Until 2030, the lifecycle emissions intensity of the generation of electricity from bioenergy is less than 100gCO₂e/kWh. B. Feedstock fulfills either of the following sets of criteria B1 or B2. <ul style="list-style-type: none"> B1. Bioenergy produced from waste and residues. Examples include: <ul style="list-style-type: none"> ○ Byproducts or waste from agricultural crops and residues (e.g., maize, wheat, straw, animal manure), forestry (e.g., logs, stumps, leaves and branches). ○ Wood-processing industries (bark, off-cuts, wood chips, sawdust). ○ Organic waste (e.g., municipal solid waste and sewage sludge).

	<p>B2. Feedstock used for the generation of bioenergy which complies with one of the following standards:</p> <ul style="list-style-type: none"> ○ Forest Stewardship Council (FSC) ○ Biomass Biofuels voluntary scheme (2BSvs) ○ Bonsucro (Better Sugarcane Initiative) ○ Roundtable of Sustainable Biomaterials (RSB) ○ Round Table on Responsible Soy (RTRS) ○ International Sustainability and Carbon Certification (ISCC and/or ISCC plus) ○ Agricultural biomass used in the activity complies with the criteria in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 (the so called RED II Directive) ○ Forest biomass used in the activity complies with the criteria in Article 29, paragraphs 6 and 7, of Directive (EU) 2018/2001 (the so called RED II Directive) <p>C. Leak detection and repair mechanisms and a plan to avoid and minimise gas leakages must be presented.</p> <p>D. If the activity utilises carbon capture and storage (CCS) or carbon capture and utilisation (CCU) technology, it must comply with requirements set out in Appendix 1. Energy emissions related to CCU/CCS must be included in the GHG accounting.</p>
Specific ineligible cases	<p>A. Power plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities).</p> <p>B. Power plants using native forest biomass as a feedstock.</p>
Notes	<p>This activity covers biogenic waste. Note the activity "waste to energy" related to treatment and disposal of non-hazardous waste is not in scope of this taxonomy as it is classified within the Waste sector.</p>

7. District heating and cooling systems

Activity description	<p>Construction, refurbishment, or operation of pipelines and associated infrastructure for distribution of heating and cooling, ending at the sub-station or heat exchanger.</p>
Associated ANZSIC codes	<ul style="list-style-type: none"> ● 3233 Air conditioning and heating services ● 3109 Other heavy and civil engineering construction ● 3231 Plumbing services ● 3232 Electrical services ● 5021 Pipeline transport

Green	All activities related to renewables-based district heating and cooling ¹² are eligible.
Specific ineligible cases	The following are ineligible: <ul style="list-style-type: none"> A. Activities with GWP₁₀₀ >10 refrigerants. B. Activities that introduce or extend the life of existing hydrofluorocarbons (HFC) refrigerants or blends or hydrochlorofluorocarbons (HCFC)-charged equipment.

8. Installation and operation of heat pumps

Activity description	Installation and operation of electric heat pumps, as well as thermal heat pumps using non-fossil sources of heat.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	Heat pumps use refrigerants that comply with all of the following requirements: <ul style="list-style-type: none"> A. Refrigerants are not chlorofluorocarbons (CFCs), HCFCs, HFCs, or blends. B. Refrigerants do not have a GWP₁₀₀ >10.

9. Production of heating or cooling from waste heat

Activity description	Construction or operation of facilities that produce heat/cool using waste heat.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	All activities related to the production of heating or cooling from waste heat from non-fossil fuel operations are eligible.

10. Production of heating or cooling from solar thermal heating

Activity description	Construction or operation of facilities that produce heat/cool from solar thermal heating technology.
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¹² Refer to Activities #9-#12 of the Energy component of the NZ Taxonomy as relevant.

Associated ANZSIC codes	<ul style="list-style-type: none"> • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	Until 2030, all production of heating/cooling activities from solar thermal heating are directly eligible.
Specific ineligible cases	<ul style="list-style-type: none"> A. Production of heating/cooling plants dedicated to support fossil fuel infrastructure (e.g., operations of fossil fuel activities). B. Projects that result in degradation of land with high carbon stock.

11. Production of heating or cooling from geothermal energy

Activity description	Construction or operation of facilities that produce heat/cool from geothermal energy.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	Until 2030, the lifecycle emission intensity of the production of heating/cooling from geothermal energy is less than 100gCO _{2e} /kWh. If the activity utilises carbon reinjection technology, it must comply with requirements set out in Appendix 1 . Energy emissions related to CCU/CCS must be included in the GHG accounting.
Specific ineligible cases	<ul style="list-style-type: none"> A. Production of heating/cooling plants dedicated to support fossil fuel infrastructure (e.g., operations of fossil fuel activities). B. The use of hydraulic fracturing to create Enhanced Geothermal Systems.

12. Production of heating or cooling from bioenergy

Activity description	Construction or operation of facilities that produce heat/cool from bioenergy.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 3109 Other heavy and civil engineering construction • 3233 Air conditioning and heating services
Green	Bioenergy power generation must comply with <u>all</u> of the following criteria:

	<p>A. Until 2030, the lifecycle emissions intensity of the generation of electricity from bioenergy is less than 100gCO₂e/kWh.</p> <p>B. Feedstock fulfills either of the following sets of criteria B1 or B2.</p> <p>B1. Bioenergy produced from waste and residues. Examples include:</p> <ul style="list-style-type: none"> ○ Byproducts or waste from agricultural crops and residues (e.g., maize, wheat, straw, animal manure), forestry (e.g., logs, stumps, leaves and branches). ○ Wood-processing industries (bark, off-cuts, wood chips, sawdust). ○ Organic waste (e.g., municipal solid waste and sewage sludge). <p>B2. Feedstock used for the generation of bioenergy, which complies with one of the following standards:</p> <ul style="list-style-type: none"> ○ Forest Stewardship Council (FSC) ○ Biomass Biofuels voluntary scheme (2BSVs) ○ Bonsucro (Better Sugarcane Initiative) ○ Roundtable of Sustainable Biomaterials (RSB) ○ Round Table on Responsible Soy (RTRS) ○ International Sustainability and Carbon Certification (ISCC and/or ISCC plus) ○ Agricultural biomass used in the activity complies with the criteria in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 (the so called RED II Directive) ○ Forest biomass used in the activity complies with the criteria in Article 29, paragraphs 6 and 7, of Directive (EU) 2018/2001 (the so called RED II Directive) <p>C. Leak detection and repair mechanisms and a plan to avoid and minimise gas leakages must be presented.</p> <p>D. If the activity utilises carbon capture and storage (CCS) or carbon capture and utilisation (CCU) technology, it must comply with requirements set out in Appendix 1. Energy emissions related to CCU/CCS must be included in the GHG accounting.</p>
Specific ineligible cases	<p>A. Production of heating/cooling plants dedicated to supporting fossil fuel infrastructure (e.g., operations of fossil fuel activities).</p> <p>B. Production of heating/cooling plants using native forest biomass as a feedstock.</p>
Notes	<p>This activity covers biogenic waste. Note the activity "waste to energy" related to treatment and disposal of non-hazardous waste is not in scope of this taxonomy as it is classified within the Waste sector.</p>

13. Transmission and distribution of electricity

Activity description	Construction, retrofitting, or operation of transmission and distribution networks for electricity. Demand-side flexibility solutions involving energy management systems and virtual power plants are within scope.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2620 Electricity transmission • 2630 Electricity distribution
Green	<p>The activity must comply with <u>one</u> of the following criteria:</p> <ul style="list-style-type: none"> A. Transmission and distribution infrastructure dedicated to a direct connection or an expansion of connection between power plants that all meet the electricity generation criteria defined in the NZ Taxonomy. B. Transmission and distribution infrastructure dedicated to an inter-country/region direct or grid connection to access existing or new power plants that meet the criteria for electricity generation defined in the NZ Taxonomy. C. Transmission and distribution infrastructure where until 2030, the average system grid emissions factor on a lifecycle basis is less than 100gCO_{2e}/kWh over a five-year rolling period.¹³ D. All enabling ICT systems and smart management systems and those required to procure electricity that meet the Green criteria¹⁴ as well as support demand-side flexibility are eligible.
Specific ineligible cases	Transmission and distribution infrastructure dedicated to connecting fossil fuel plants to the grid.

14. Transmission and distribution of renewable and low-carbon gases

Activity description	Construction, retrofitting, or operation of transmission and distribution networks for renewable and low-carbon gases. Renewable and low-carbon gases refer to non-fossil gases, including biogas, biomethane, hydrogen, and ammonia.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2700 Gas supply • 3109 Other heavy and civil engineering construction • 5021 Pipeline transport
Green	The activity must comply with <u>all</u> of the following:

¹³ The system grid emissions factor is calculated as the total annual emissions from power generation connected to the system, divided by the total annual net electricity production in that system.

¹⁴ Refer to Activities #1-#6 of the Energy component of the NZ Taxonomy as relevant.

	<p>A. The activity consists of one of the following:</p> <ul style="list-style-type: none"> a. Construction or operation of new transmission and distribution networks dedicated to 100% hydrogen and/or other low-carbon gases.¹⁵ b. Conversion/repurposing of existing networks to 100% hydrogen.¹⁶ c. Retrofit of gas transmission and distribution networks to enable the integration of eligible low-carbon gases which cannot technologically be injected into existing pipelines. <p>B. The low-carbon gas is biogas, biomethane, low-carbon hydrogen and/or ammonia, which complies with the criteria for manufacturing of the corresponding gas specified in the NZ Taxonomy (to be developed).</p> <p>C. Leak detection and repair mechanisms and a plan to avoid and minimise gas leakages must be presented.</p>
Specific ineligible cases	Pipelines directly connecting fossil methane gas extraction or processing facilities.

15. Remote and micro-grid systems

Activity description	Construction, retrofitting, or operation of remote, standalone, and islanded micro-grid systems for electricity.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2619 Other electricity generation
Green	<p>The activity must comply with <u>all</u> of the following:</p> <p>A. Meet all of the following qualifying criteria:</p> <ul style="list-style-type: none"> a. The system has no permanent connection to the grid. b. The system is less than 5MW in size. c. The system can be permanently or temporarily operated when it is not physically connected to the grid. <p>B. The system operates on 95% or more renewable energy, comprising any/all of the eligible Energy activities scoped under the New Zealand Taxonomy, with associated activity criteria fulfilled.</p> <p>C. Evidence that fossil fuel back up is designed only to be used for:</p> <ul style="list-style-type: none"> a. Back up purposes – i.e., operate only when renewable electricity resources are unavailable.

¹⁵ For avoidance of doubt, minor amounts (for example, up to 2%) of trace gases, impurities, and non-fossil gases for reducing pipe embrittlement are allowed.

¹⁶ As above.

	<ul style="list-style-type: none"> b. Restart purposes. D. The use of fossil fuels without a planned and/or actual replacement with low-emissions fuels in back-up generators, and/or deployment of battery storage is only eligible until 2030.
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16. Storage of energy

Activity description	Construction or operation of facilities that store energy and return it at a later time in the form of electricity, thermal energy, and/or hydrogen. Demand-side flexibility solutions involving vehicle-to-grid (V2G) technologies are within scope. They include supporting infrastructure and software for fleet aggregation models, such as bi-directional chargers, telematics and IoT connectivity in vehicles, cloud-based control platforms for optimisation. They also include repurposed second life EV batteries for stationary energy storage. However, note that electric vehicles in their entirety are excluded.
Associated ANZSIC codes	<ul style="list-style-type: none"> • 2640 On selling electricity and electricity market operation • 3109 Other heavy and civil engineering construction • 3232 Electrical services
Green	<p>The activity is the construction and operation of energy storage, including:</p> <ul style="list-style-type: none"> A. Mechanical energy storage systems. B. Thermal energy storage systems. C. Pumped hydropower storage. D. Chemical energy storage systems, including: <ul style="list-style-type: none"> a. Electrochemical storage systems, including batteries and V2G technologies. b. Low-emissions fuels, including hydrogen or ammonia, which complies with the criteria for manufacturing of the corresponding product specified in the NZ Taxonomy (<i>to be developed</i>).

17. Research, development and innovation of energy technologies

Activity description	Research, applied research and experimental development of Energy-related solutions, processes, technologies, business models and other products dedicated to the reduction, avoidance or removal of GHG emissions. The ability to reduce, remove or avoid GHG emissions in the target economic activities has at least been demonstrated in a relevant environment, corresponding to at least Technology Readiness Level (TRL) 5.
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Associated ANZSIC codes	<ul style="list-style-type: none"> • 6910 Scientific research services • 6950 Market research and statistical services
Green	<p>The activity fulfils <u>all</u> of the following criteria:</p> <ul style="list-style-type: none"> A. The activity researches, develops or provides innovation for technologies, products or other solutions that are dedicated to either: <ul style="list-style-type: none"> a. One or more economic activities for which the technical screening criteria have been set out in the Energy sector of the New Zealand Taxonomy; or b. An Energy sector activity that is not yet included in the NZ Taxonomy, but which substantially contributes to climate change mitigation and until 2030 has a lifecycle emissions intensity lower than 100gCO₂e/kWh. B. The results of the research, development and innovation enable one or more of those economic activities to meet the respective criteria for substantial contribution to climate change mitigation, while respecting Do No Significant Harm (DNSH) criteria.¹⁷ C. The activity aims to bring to market a solution that is either not yet in the market or that improves an existing market solution, fulfilling either one of the following requirements: <ul style="list-style-type: none"> a. The solution is expected to have a lifecycle GHG emissions performance that is better than the best commercially available technology with the same application and/or comparable technologies, based on public or market information. The implementation of the technologies, products or other solutions being researched results in overall net GHG emissions reductions over their lifecycle. b. The solution is expected to have a lifecycle GHG emissions performance that is at least in line with the best commercially available technology with the same application and/or comparable technologies. It should also provide new significant advantages, such as lower cost. D. Where the researched, developed or innovated technology, product or other solution is at TRL 5 to 7, lifecycle GHG emissions are evaluated in simplified form by the entity carrying out the research. The entity demonstrates one of the following, where applicable:

¹⁷ For avoidance of doubt, research, development and innovation (RD&I) activities that come under criteria A(a) above should refer to their respective activity criteria for substantial contribution and DNSH. Activities that come under criteria A(b) should, until 2030, meet a maximum 100gCO₂e/kWh lifecycle emissions intensity threshold, while fulfilling the generic DNSH criteria. Compliance with DNSH criteria for both types of RD&I activities will be phased in at a later stage and is voluntary for this Taxonomy iteration.

- a. A patent not older than 10 years associated with the technology, product or other solution, where information on its GHG emission reduction potential has been provided;
 - b. A permit obtained from a competent authority for operating the demonstration site associated with the innovative technology, product or other solution for the duration of the demonstration project, where information on its GHG emission reduction potential has been provided;
or
 - c. Lifecycle GHG emissions calculated using ISO 14067:2018 or ISO 14064-1:2018 and verified by an independent third party.
- E. Where the researched, developed or innovated technology, product or other solution is at TRL 8 or higher, lifecycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018 and are verified by an independent third party.



Energy sector-specific Whitelist for climate change adaptation and resilience – draft for public consult

This section presents the draft sector-specific Whitelist for climate change adaptation and resilience as they apply to the Energy sector for the NZ Taxonomy.

The Whitelist is part of the Substantial Contribution criteria for this sector. SC criteria define the requirements that an economic activity or measure must meet to be considered as making a substantial contribution to an environmental objective – in this case, climate change adaptation and resilience.

The development of the climate change adaptation and resilience criteria is intended to accelerate investment to support businesses to anticipate, prepare for and respond effectively to the impacts of climate change and/or strengthen long-term resilience in a changing climate.

The climate change adaptation and resilience SC criteria provide two options for assessing the performance of activities:

1. a cross-sectoral Process-Based Approach (PBA); and
2. a sector-specific Whitelist.

In an earlier phase, the NZ Taxonomy has developed a cross-sectoral PBA for climate change adaptation and resilience. You can review this [here](#). The PBA reflects the highly contextual nature of appropriate activities/measures to build adaptive capacity and resilience and outlines the steps that must be taken for development of a robust adaptation and resilience activity. If a business has followed the process, any resulting adaptation and resilience activity can be considered NZ Taxonomy-aligned.

The sector-specific Whitelist provides a list of low-risk, pre-approved adaptation and resilience measures that can be applied to an activity to substantially increase adaptive capacity and resiliency.

The activities /measures on the Whitelist are automatically deemed eligible for NZ Taxonomy-alignment and do not require a full assessment against the PBA criteria.

All adaptation and resilience activities are classified as Green.

The Technical Experts Group (TEG) have sought to maximise the application of these adaptation and resilience criteria to a broad range of potential investments, while maintaining credibility. Activities and measures under the Energy-specific Whitelist may also provide additional benefits to users beyond building adaptive capacity and resilience. This does not exclude NZ Taxonomy alignment, provided all applicable criteria are met.

The Energy sector Whitelist is available for feedback in this consult.

Whitelist of climate change adaptation and resilience measures for Aotearoa New Zealand’s Energy sector

Investment (i.e., measure)	Investment type	Sub-sector(s)	Main climate hazard(s)
1. Designing and integrating evacuation routes in existing assets to ensure safe evacuation under climate hazard conditions	Energy infrastructure	Renewable energy/electricity generation	Flood damage Storm damage Mass movement damage
2. Installing safety and emergency systems to energy infrastructure to ensure continued supply of energy during flood/storm damage	Energy infrastructure	Renewable energy/electricity generation Electricity transmission & distribution	Flood damage Storm damage
3. Managing vegetation around the perimeter of the transmission and distribution lines/electricity generation assets to limit exposure to climate hazards (note: the measure may not be applied on high-carbon stock land or areas of high biodiversity)	Energy infrastructure	Renewable energy/electricity generation Electricity transmission & distribution	Storm damage Wildfire damage
4. Reinforcement/relocation/retrofitting of energy infrastructure assets, such as poles or solar panels, to reduce exposure to climate risks	Energy infrastructure	Renewable energy/electricity generation Electricity transmission & distribution	Flood damage Storm damage Mass movement damage
5. Hardening and upgrading access infrastructure for renewable energy and T&D assets to ensure operational continuity and maintenance during or after climate hazards events	Energy infrastructure	Renewable energy/electricity generation Electricity transmission & distribution	Flood damage Storm damage Mass movement damage Wildfire damage

6. Installing and operating off-grid or distributed renewable energy (e.g., solar panels, batteries), to provide autonomous back-up power for critical energy systems during extreme weather events (e.g., storms, heavy rainfall, flooding, landslides)	Energy infrastructure	Renewable energy/electricity generation Energy storage Demand response	Flood damage Storm damage Mass movement damage
7. Implementation of firebreaks and T&D asset corridors in/around non-native forests to manage storm- and wildfire-related risks	Energy infrastructure	Electricity transmission & distribution	Storm damage Wildfire damage
8. Installing underground electricity lines for renewable energy (excluding in areas subject to coastal erosion/landslip risks) to make power transmission and distribution more resilient to flood, storm, and wildfire damage	Energy infrastructure	Electricity transmission & distribution	Flood damage Storm damage Wildfire damage
9. Installing automated grid controls/smart grids to build resilience to storm damage	Energy infrastructure	Electricity transmission & distribution Demand response	Storm damage
10. Development and deployment of wind speed and duration forecasting analytics for renewable energy plants to build system resilience to storm damage	ICT infrastructure (Energy-specific)	Data & information services Renewable energy/electricity generation	Storm damage
11. Integration of real-time wind speed monitoring data with risk assessment platforms to improve the resilience of renewable energy plants to storm damage	ICT infrastructure (Energy-specific)	Data and information services Renewable energy/electricity generation	Storm damage
12. Installing and operating daily precipitation information software in vulnerable networks for improved climate risk management	ICT infrastructure (Energy-specific)	Data & information services Electricity transmission & distribution	Flood damage Storm damage
13. Implementation of energy use/demand monitoring, forecasting, and modelling systems to make power	ICT infrastructure (Energy-specific)	Data & information services	Flood damage Storm damage

transmission and distribution more resilient to climate impacts		Electricity transmission & distribution Demand response	Heat stress
14. Creation, development, installation, integration and/or use of drought risk data with long-term water resource planning, prediction software and management to improve resilience to water stress	ICT infrastructure (general)	Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution	Water stress
15. Development and integration of heatwave-specific early action protocols in existing disaster management frameworks	ICT infrastructure (general)	Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution	Heat stress
16. Development of high-resolution wildfire risk and fuel load maps using remote sensing data or behaviour modelling tools to improve resilience to wildfires	ICT infrastructure (general)	Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution	Wildfire damage
17. Creation, development, installation and/or use of erosion data measurement systems/tools to build resilience to climate-induced coastal and river erosion, as well as mass movement risks	ICT infrastructure (general)	Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution	Coastal and river erosion Mass movement damage

<p>18. Creation, development, installation and/or use of distributed sensing technology for ground-truthed moisture measurement or lake-/catchment-level monitoring and forecasting for improved flood/storm risk management</p>	<p>ICT infrastructure (general)</p>	<p>Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution</p>	<p>Flood damage Storm damage</p>
<p>19. Creation, development, installation and/or use of sophisticated data-driven storm models, forecasting, and real time or satellite-based monitoring tools to improve resilience to flood/storm damage and water stress</p>	<p>ICT infrastructure (general)</p>	<p>Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution</p>	<p>Flood damage Storm damage Water stress</p>
<p>20. Creation, development, installation and/or use of real time weather data analytics, maps, high-resolution topographic and bathymetric data, as well as visualisation tools to improve resilience to flood damage, storm damage, drought, heat stress and wildfire risks</p>	<p>ICT infrastructure (general)</p>	<p>Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution</p>	<p>Flood damage Storm damage Water stress Heat stress Wildfire damage</p>
<p>21. Creation, development, installation and/or use of data-driven early warning systems software for extreme weather and climate hazards (including precipitation, lightning, heat stress, and wildfire risks) to improve climate risk management</p>	<p>ICT infrastructure (general)</p>	<p>Data & information services; should be used for: – Renewable energy/electricity generation; or – Electricity transmission & distribution</p>	<p>Flood damage Storm damage Water stress Heat stress Wildfire damage</p>

Energy sector Do No Significant Harm criteria – draft for public consult

Aotearoa New Zealand Sustainable Finance Taxonomy (NZ Taxonomy) Do No Significant Harm (DNSH) criteria ensure an economic activity that makes a substantial contribution to one of the NZ Taxonomy’s environmental objectives – such as climate change mitigation – does not cause significant harm to any of the NZ Taxonomy’s other environmental objectives.

They function as a risk management tool, ensuring activities aligned with the NZ Taxonomy do not create unintended or adverse environmental consequences. While Substantial Contribution (SC) criteria aim to achieve positive environmental outcomes, DNSH criteria are not intended to deliver net-positive impacts – their role is to prevent harm.

The DNSH sit alongside Minimum Social Safeguard (MSS) criteria, which similarly ensure that an economic activity that makes a substantial contribution to one of the NZ Taxonomy’s environmental objectives – such as climate change mitigation – does not cause significant harm to social outcomes. The MSS are a cross-sectoral criteria that have been established in a previous phase and can be read [here](#).

Together, these two sets of criteria provide a core safeguard.

The NZ Taxonomy adopts a dual approach, consistent with international best practice (e.g., EU, Australia):

- Generic DNSH criteria: Applied across all Taxonomy environmental objectives and sectors. These criteria are related to each of the other environmental objectives. You can review the cross-sectoral generic DNSH [here](#).
- Activity-specific DNSH criteria: Tailored for individual activities and their material impacts.

This approach ensures the criteria remains both practical to implement and effective at managing specific risks across different sectors/economic activities.

It is intended that proponents will demonstrate alignment with one environmental objective’s SC criteria (i.e., the activity is making a “substantial contribution” to one environmental objective) and demonstrate DNSH compliance for the remaining five environmental objectives.

For example, activities seeking alignment under the climate change mitigation objective are assessed against the climate change mitigation SC and assessed the other five environmental objective’s DNSH criteria, but not the climate change mitigation DNSH criteria.

Objective	Activities that make a substantial contribution to climate change mitigation are assessed against the DNSH for:	Activities that make a substantial contribution to climate change adaptation and resilience are assessed against the DNSH for:
Climate change mitigation	No	Yes
Climate change adaptation and resilience	Yes	No
Protection and restoration of biodiversity and ecosystem	Yes	Yes
Sustainable use and protection of water resources and marine resources	Yes	Yes
Pollution prevention and control	Yes	Yes
Transition to a circular economy	Yes	Yes

While this is the intended final use of these criteria, the technical groups are supportive of a phased and proportional approach for requiring the assessment of DNSH and MSS for alignment claims. Please refer to the DNSH/MSS approach paper, [here](#), for more information about the approach and design of these criteria.

The Energy sector activity-specific DNSH is available for feedback in this consult.

Activity-specific Do No Significant Harm criteria for Aotearoa New Zealand's Energy sector

1. Electricity generation, including cogeneration of heating/cooling and power, from solar photovoltaic (PV), concentrated solar power (CSP), and photovoltaic-thermal (PVT) systems

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria. In addition, where relevant: <ul style="list-style-type: none"> Potential negative impacts of the cooling system on water resources are avoided.
Transition to a circular economy	Apply generic criteria.

2. Electricity generation from onshore and offshore wind

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria. In addition, for offshore wind:

	<ul style="list-style-type: none"> Any required mitigation measures are in place to avoid or reduce underwater noise generated by the installation of offshore wind turbines. Measures are in place to minimise the toxicity of anti-fouling paint and biocides as per international standards and guidelines (e.g., International Convention on the Control of Harmful Anti-fouling Systems on Ships; ISO 13073).
Transition to a circular economy	Apply generic criteria.

3. Electricity generation from ocean energy

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> Any required mitigation measures are in place to avoid or reduce underwater noise created by the generation of electricity. Measures are in place to minimise the toxicity of anti-fouling paint and biocides as per international standards and guidelines (e.g., International Convention on the Control of Harmful Anti-fouling Systems on Ships; ISO 13073).
Transition to a circular economy	Apply generic criteria.

4. Electricity generation from hydropower

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific emissions threshold – below 150gCO₂e/kWh lifecycle emissions OR specific power density threshold – above 3.5W/m².
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Construction of new hydropower should not increase river fragmentation. Otherwise, compensatory measures are implemented prior to the project execution to restore continuity within the same river basin district to an extent that compensates the disruption of continuity. Consequently, refurbishment of existing hydropower plants and rehabilitation of existing barriers should be prioritised. • All necessary mitigation measures should be implemented to reach good ecological status or potential, in particular regarding ecological continuity and ecological flow. Priority should be given to Nature-based Solutions.
Pollution prevention and control	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Discharges to water bodies during hydropower construction are avoided. • The plant is maintained for high reliability to reduce potential loss of containment and minimise pollution.
Transition to a circular economy	Apply generic criteria.

5. Electricity generation, including cogeneration of heating/cooling and power, from geothermal energy

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific emissions threshold – below 150gCO₂e/kWh lifecycle emissions.
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Discharges to water bodies should comply with individual license conditions for specific operations, where applicable, and/or national threshold values in line with the international standards and guidelines. • The operations of high-enthalpy geothermal energy systems ensures that adequate abatement systems are in place to comply with international standards and guidelines (e.g., IFC’s Environmental, Health, and Safety Guidelines for Geothermal Power Generation; ISO 14001:2015 Environmental management systems – Requirements with guidance for use). • Thermal anomalies associated with the discharge of waste heat should not exceed 3°K for groundwater environments or 1.5°K for surface water environments, respectively.
Transition to a circular economy	Apply generic criteria.

6. Electricity generation, including cogeneration of heating/cooling and power, from bioenergy

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific emissions threshold – below 150gCO₂e/kWh lifecycle emissions.
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Feedstocks used to produce modern bioenergy comply with one of the following standards: <ul style="list-style-type: none"> ○ Forest Stewardship Council (FSC) ○ Biomass Biofuels voluntary scheme (2BSvs) ○ Bonsucro (Better Sugarcane Initiative) ○ Roundtable of Sustainable Biomaterials (RSB) ○ Round Table on Responsible Soy (RTRS) ○ International Sustainability and Carbon Certification (ISCC and/or ISCC PLUS)
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Plant emissions to air and water are within national and international guidelines (e.g., IFC EHS Guidelines: Air emissions and ambient air quality; ISO 14001:2015 Environmental management systems – Requirements with guidance for use; Strategic Approach to International Chemicals Management (SAICM); ISO 11014:2009(en) Safety data sheet for chemical products). • For anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in national standards on fertilisers or soil improvers for agricultural use. • Measures are in place to ensure no significant cross-media effects occur.
Transition to a circular economy	Apply generic criteria.

7. District heating and cooling systems

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria.
Transition to a circular economy	Apply generic criteria.

8. Installation and operation of electric heat pumps

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria.
Transition to a circular economy	Apply generic criteria.

9. Production of heating or cooling from waste heat

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria.
Transition to a circular economy	Apply generic criteria.

10. Production of heating or cooling from solar thermal heating

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria. In addition, where relevant: <ul style="list-style-type: none"> Potential negative impacts of the cooling system on water resources are avoided.
Transition to a circular economy	Apply generic criteria.

11. Production of heating or cooling from geothermal energy

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific emissions threshold – below 150gCO₂e/kWh lifecycle emissions.
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Discharges to water bodies should comply with individual license conditions for specific operations, where applicable, and/or national threshold values in line with the international standards and guidelines. • The operations of high-enthalpy geothermal energy systems ensures that adequate abatement systems are in place to comply with international standards and guidelines (e.g., IFC’s Environmental, Health, and Safety Guidelines for Geothermal Power Generation; ISO 14001:2015 Environmental management systems – Requirements with guidance for use). • Thermal anomalies associated with the discharge of waste heat should not exceed 3°K for groundwater environments or 1.5°K for surface water environments, respectively.
Transition to a circular economy	Apply generic criteria.

12. Production of heating or cooling from bioenergy

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific emissions threshold – below 150gCO₂e/kWh lifecycle emissions.
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Feedstocks used to produce modern bioenergy comply with one of the following standards: <ul style="list-style-type: none"> ○ Forest Stewardship Council (FSC) ○ Biomass Biofuels voluntary scheme (2BSvs) ○ Bonsucro (Better Sugarcane Initiative) ○ Roundtable of Sustainable Biomaterials (RSB) ○ Round Table on Responsible Soy (RTRS) ○ International Sustainability and Carbon Certification (ISCC and/or ISCC PLUS)
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	<p>Apply generic criteria. In addition:</p> <ul style="list-style-type: none"> • Plant emissions to air and water are within national and international guidelines (e.g., IFC EHS Guidelines: Air emissions and ambient air quality; ISO 14001:2015 Environmental management systems – Requirements with guidance for use; Strategic Approach to International Chemicals Management (SAICM); ISO 11014:2009(en) Safety data sheet for chemical products). • For anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in national standards on fertilisers or soil improvers for agricultural use. • Measures are in place to ensure no significant cross-media effects occur.
Transition to a circular economy	Apply generic criteria.

13. Transmission and distribution of electricity

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific threshold – propose that ‘The infrastructure is not dedicated to creating a direct connection, or expanding an existing direct connection to a power production plant where the lifecycle GHG emissions exceed 150gCO₂e/kWh threshold’.
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria. In addition, for underline powerlines: <ul style="list-style-type: none"> • Avoid routings that would have a significant impact on marine and terrestrial ecosystems.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria. In addition, for overhead high-voltage lines: <ul style="list-style-type: none"> • Respect applicable norms and regulations to limit impact of electromagnetic radiation on human health (e.g., 1998 ICNIRP (International Commission on Non-Ionizing Radiation Protection)). • Do not use Polychlorinated Biphenyls (PCBs).
Transition to a circular economy	Apply generic criteria.

14. Transmission and distribution of renewable and low-carbon gases

Objective	Criteria
Climate change mitigation	<p>The conversion, repurposing, or retrofit does not result in any of the following:</p> <ul style="list-style-type: none"> • Increase gas transmission and distribution capacity. • Extend the lifespan of the networks beyond their projected lifespan before the conversion, repurposing or retrofit, unless the network is dedicated to renewable and low-carbon gases.
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria.
Transition to a circular economy	Apply generic criteria.

15. Remote and micro-grid systems

Objective	Criteria
Climate change mitigation	<ol style="list-style-type: none"> 1. Apply generic criteria – i.e., conduct lifecycle GHG inventory or carbon footprint assessment and mitigation measures; and 2. Apply specific threshold – propose that ‘The infrastructure is not dedicated to creating a direct connection, or expanding an existing direct connection to a power production plant where the lifecycle GHG emissions exceed 150gCO₂e/kWh threshold. Exceptions apply to fossil fuel back up, which should make up less than 10% of the grid’.
Climate change adaptation and resilience	Apply generic criteria.

Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria.
Pollution prevention and control	Apply generic criteria. In addition: <ul style="list-style-type: none"> • Potential negative impacts of the cooling system on water resources are avoided.
Transition to a circular economy	Apply generic criteria.

16. Storage of energy

Objective	Criteria
Climate change mitigation	N/A
Climate change adaptation and resilience	Apply generic criteria.
Protection and restoration of biodiversity and ecosystem	Apply generic criteria.
Sustainable use and protection of water resources and marine resources	Apply generic criteria. In addition, for pumped hydropower storage connected to a river body: <ul style="list-style-type: none"> • The activity also complies with the specific DNSH criteria for electricity generation from hydropower.
Pollution prevention and control	Apply generic criteria. In addition: <ul style="list-style-type: none"> • The activity complies with international standards, particularly if the storage is above five tonnes (e.g., ISO 19884 Gaseous Hydrogen – Cylinders and tubes for stationary storage; IEC 63341-2 Railway applications – Rolling stock – Fuel cell systems for propulsion – Part 2: Hydrogen storage system; ISO 16111 Transportable Gas Storage Devices – Hydrogen Absorbed in Reversible Metal Hydrides).
Transition to a circular economy	Apply generic criteria.

17. Research, development and innovation of energy technologies

Objective	Criteria
Climate change mitigation	Apply specific emissions threshold – the project lifecycle emissions from the researched technology, product or other solution is below 150gCO ₂ e/kWh.
Climate change adaptation and resilience	Any potentially material climate- and natural hazard-related physical risks from the researched technology, product or other solution are evaluated and addressed.
Protection and restoration of biodiversity and ecosystem	Any potentially material biodiversity- and ecosystem-related risks from the researched technology, product or other solution are evaluated and addressed.
Sustainable use and protection of water resources and marine resources	Any potentially material water-related risks from the researched technology, product or other solution are evaluated and addressed.
Pollution prevention and control	Any potentially material sources of pollution from the researched technology, product or other solution are evaluated and addressed.
Transition to a circular economy	Any potentially material resource use and waste from the researched technology, product or other solution are evaluated and addressed.



Guidance on the role of fossil gas generation activities in a credibly transitioning portfolio – draft for public consult

The Aotearoa New Zealand Sustainable Finance Taxonomy (NZ Taxonomy) identifies Energy activities that can substantially contribute towards a Paris Agreement-aligned future. It also acknowledges that New Zealand’s highly renewable electricity system will continue to rely on firming and peaking generation options to ensure security and continuity of supply. Some of these firming and peaking options may continue to be powered by fossil fuels in the short to medium term, with a view to transitioning the whole system to low carbon, renewable sources.

This section provides guidance on the role of fossil gas in the context of a credibly transitioning Energy portfolio. It outlines the key considerations in including fossil gas for firming (rather than baseload) purposes in a primarily renewable portfolio. While it does not form part of the Taxonomy criteria, i.e., gas firming should not be treated as Taxonomy-aligned, it can support assessments of an entity’s transition plan by its investors, lenders and other stakeholders. This section is not intended to penalise entities that continue to have fossil gas-powered generation in their portfolios, and not meeting this guidance does not preclude entities from receiving Taxonomy-aligned sustainable financing, subject to fulfilling the respective activity criteria.

The guidance is available for feedback in this consult.

Guidance on the role of fossil gas generation activities in a credibly transitioning portfolio

Gas as back-up firming in the NZ Taxonomy

The role of gas for electricity generation

The electricity system in New Zealand has moved significantly away from fossil gas and towards a fully renewable system. The country is projected to reach 98% renewable generation if the electricity industry continues to build renewables at the current pace. Likewise, to achieve New Zealand's fourth emissions budget (EB4), fossil gas consumption is substantially reduced, making up only a small amount averaging about 2% of total generation during the EB4 period (2036-2040). On the ground, decreases in existing gas field production and downgrades in gas field reserves have also reduced the availability of forecasted gas. All of which point to a diminishing role for gas in baseload generation, in line with industry expectations and respondents to the Gas Transition Plan Issues Paper by the Ministry of Business, Innovation & Employment (MBIE).

The role of gas in firming renewable electricity generation

The electricity mix of New Zealand is dominated by hydropower, geothermal, and wind, making up 54%, 20%, and 9% of total generation respectively in 2024. Meanwhile, the renewable supply pipeline largely comprises intermittent generation, with wind and solar projects forming 85% of the unconsented pipeline.

Consequently, the need for firming capacity to ensure security in electricity supply during intermittent renewable supply, winter, and dry years is increasingly pertinent. Per the Climate Change Commission's advice, a combination of renewable overbuild, demand response, batteries, and flexible thermal generation would be necessary. Dispatchable low carbon generation, such as hydropower and geothermal and bioenergy, may also play an increasingly firming role as intermittent renewable (wind and solar) capacity scales up further as baseload.

In particular, national assessments have identified a shift in the role of fossil gas in electricity generation from baseload generation to firming and peaking. The Security of Supply Assessment 2025 by Transpower concluded that with existing and committed pipelines, the North Island Winter Capacity Margin (NI-WCM) could drop below the Electricity Authority's lower security standard of 630MW as early as 2028, under a low gas supply sensitivity. The decommissioning of all Rankines, CCGTs and gas peakers would lead to insufficient potential renewable supply projects to provide additional capacity in maintaining the NI-WCM at the lower security standard in 2034. Along with scaling up batteries and demand responses, the assessment highlights the need for sufficient gas supply for gas-fired peaking generation over peak load periods.

Can back-up gas firming be included as an activity in the taxonomy?

The New Zealand Taxonomy focuses on economic activities that make a substantial contribution to climate change mitigation. As an activity, gas-powered generation has a declining role in line with this objective and has readily deployable alternatives already employed by the country.

As an activity-level tool, the Taxonomy is unable to account for the inherent system-level uncertainties around when and whether the back-up function provided will be required, and generally focuses on avoiding carbon lock-in through the emissions performance of the whole activity, subject to the activity meeting the other methodological filters (see methodological design features report [here](#)).

This is consistent with the International Capital Market Association's guidance that green enabling activities should not lead to locking-in high emitting activities relative to other technologically feasible and/or commercially viable solutions (ICMA, 2024).

Instead, the NZ Taxonomy offers a framework to define how back-up gas firming capacity may be recognised and assessed within a credibly transitioning portfolio of generation and storage assets. Note that the inclusion of gas firming guidance under the taxonomy is not intended to undermine the pursuit of other firming alternatives such as dispatchable low carbon generation, storage, and demand responses, which should instead be prioritised.

For activities in other sectors where gas is required to facilitate the transition of certain hard-to-abate industrial sectors, it can be used to meet the Taxonomy criteria, particularly for high heat processes while electrification and low-carbon hydrogen technologies continue to mature.

Advice for addressing firming and back-up generation activities in a credibly transitioning portfolio

To respond to variable peak demand needs and provide back-up support to the highly renewable electricity system, on an intraday and particularly on an interseasonal basis, the Taxonomy includes a framework to define how such functions, and their overarching activities, can be articulated, recognised and assessed in a credibly transitioning portfolio of assets.

This advice extends beyond the boundaries of the activity-focused New Zealand Taxonomy and provides a framework to evaluate the credibility of portfolios that include activities that provide gas firming activities.

It will aim to cover the following key issues:

- How may utilities and project developers demonstrate to financial institutions their progress toward credibly transitioning their power generation and storage asset mix?
- How can investment in assets that provide back-up support be recognised within a credibly transitioning portfolio of assets?
- What requirements/checks are needed of the system and how can these be applied to an entity?

Transition plans: A tool to assess the credibility of a transitioning portfolio

Taxonomies are classification systems that identify and quantify the contribution of individual economic activities to key sustainability objectives. Accordingly, taxonomies are not equipped to make portfolio or system-level assessments. Transition plans enable assessments of the credibility of transition progress at the portfolio level.

Generic frameworks, guidelines, and sector specific requirements have been developed by a variety of institutions. Each specify detailed expectations regarding the following components of the transition planning process:

- Targets: quantitative goals to measure the progress and success of the implementation of an entity’s transition plan.
- Delivery strategy: how the entity will align business activities and operations with its climate objectives and priorities.
- Accountability mechanisms: how the entity is structured to provide oversight, incentivise, and support the implementation of the transition plan.

This guidance focuses solely on identification of key requirements to assess a transition plan of a portfolio that may include firming assets.

Notably, this advice has been developed to support the consideration of firming in transition plans. This has not been explicitly covered in best-practice guidance to date. However, given the importance of firming – including shallow, medium and deep storage, and gas firming as back-up support – to support New Zealand’s renewable electricity system, this advice aims to provide an introductory framework.

Entity and system-level considerations – transition plans

Linkage between the entity and the system in transition plans

As noted by GFANZ, “the disclosure of transition plans, including the detailed assumptions and data that underpins these, enables the effective engagement and capital allocation across the financial ecosystem”. The disclosure of assumptions that will govern an entity’s business and financial decisions – i.e., the transition plan’s delivery strategy – over the time horizon of decarbonisation process, will enable financial institutions to better understand factors on which the success of the transition plan will ultimately depend.

These factors are predominantly external to the company and their disclosure allows entities to demonstrate how they expect the system in which they operate to change, and their operations to evolve in line with this. From the perspective of evaluating the credibility of portfolios which include fossil fuel-based firming, assumptions regarding aspects such as: technological developments (e.g., non fossil fuel-based firming); security of supply, demand projections, and cost competitiveness are, among others, especially important.

Out of the frameworks recommending disclosure of assumptions, GFANZ and TPT require the greatest level of granularity, with best practice being sensitivity analysis. TPT recommends that “an entity should assess the sensitivity of its plan to changes in key assumptions and external factors on which it depends, and should seek to mitigate delivery risks where possible”. The sensitivity analysis enables better assessment of how resilient the plan is to changes in the external factors and provides evidence that the entity has thought through the consequences of instances in which the selected assumptions fail to materialise in reality.

GFANZ	Transition Plan Taskforce
Describe the key assumptions underlying the company’s transition-related business, financial, and operational plans, such as:	Disclose the nature of the key assumptions that it uses and external factors on which it depends, and their implications for the achievement of the Strategic

<ul style="list-style-type: none"> • Activities or technologies that the company is not currently performing at scale (e.g., CCS and DAC). • Actions of the company’s supply chain. • Development and implementation of policies and regulations. • Significant shifts in demand for products or services. • Other external actions (e.g., level of grid decarbonization, action/subsidies for governments). 	<p>Ambition of its transition plan, these may relate to matters such as:</p> <ul style="list-style-type: none"> • Policy and regulatory change. • The decarbonisation trajectory of the global economy, relevant geographies, and/or sectors. • Macroeconomic trends (e.g., labour availability, cost of borrowing etc.). • Microeconomic and financial factors (e.g., availability of finance, relative prices). • Technological developments. • Access to counterparty data and reliability of data. • Shifts in client and consumer demand. • The levels of warming over the short-, medium-, and long-term. • The physical impacts of the changing climate, and the regional and spatial implications of these. • The effectiveness of adaptation efforts and possible limits to adaptation, and the regional and spatial implications of these.
<p>Disclose how these assumptions are reflected in the company’s financial statements and audit reports.</p>	<p>Disclose the timeframes over which any key assumptions and external factors are expected to occur.</p>
<p>Articulate the impact on the transition plan if certain assumptions prove incorrect.</p>	<p>Disclose whether and how the key assumptions are reflected in the entity’s financial statements.</p>

Key considerations for gas firming in transition plans

Targets

Cover the whole entity, consider the full range of levers that the entity has available, and cover short, medium and long-term emissions.

Key considerations		Purpose
<p>For the transition plan</p>	<ul style="list-style-type: none"> • Emissions targets cover the short-, medium- and long-term. • Emissions targets do not exclude substantial portions of emissions. 	<p>To verify if the entity’s transition:</p> <ul style="list-style-type: none"> • Is aligned with science-based benchmarks, rather

	<ul style="list-style-type: none"> Emissions targets are benchmarked against scientific sectoral pathways/ benchmarks. 	<p>than subjectively designed pathways.</p> <ul style="list-style-type: none"> Comprehensively evaluates the climate impact of all of its actions, rather than its selected areas of economic activity. Takes into account all material direct and indirect emissions.
For firming	<ul style="list-style-type: none"> Does the entity's long-term emissions goals, and its emissions reduction trajectory to achieve them, align with the goals of the Paris Agreement – specifically, limiting warming to as close as possible to 1.5°C? How aligned is the average CO₂ intensity of the entity with the decarbonisation pathway set by targets? Does the entity's goal include upstream Scope 3 emissions? 	

Delivery strategy

Connected to the entity's business and operations planning and financial accounts, and underpinned by assumptions and an analysis of dependencies and uncertainties.

Key considerations			Purpose
For the transition plan	<ul style="list-style-type: none"> Action plans are comprehensive and consistent with the emissions targets. Key assumptions and external factors on which the transition plan depends are identified. 		<p>The purpose of these requirements is to assess the connection between the targets and the entity's ability to achieve them. Without an assessment of the overarching plans, targets may sit in isolation and not be achieved.</p>
For firming	Existing capacity	Renewables	<ul style="list-style-type: none"> What is the current share of renewable generation? Is this growing? <p>The purpose of this consideration is to place the firming capacity in context – i.e., if fossil-based capacity is increasing but the share of renewables remains static or declining, this can signal that the portfolio is not</p>

				transitioning according to a credible pathway.
		Firming	<ul style="list-style-type: none"> • Is there a plan to decarbonise firming capacity? • Does the company distinguish between fossil and non-fossil firming? • How is firming capacity enabling the increase of renewables penetration and how is this demonstrated? • What are key system level assumptions validating maintenance of transitional capacity – firming power plants? • Is the evidence base underpinning assumptions credible? • How is the entity considering the use of other non-fossil firming alternatives? 	<p>The purpose of this consideration is to understand the extent to which the entity is using firming capacity to enable further renewable energy penetration. There should also be evidence to support this claim provided.</p> <p>It is also to assess how reliant on fossil-based firming capacity the entity is for the foreseeable future.</p> <p>The majority of firming will need to be decarbonised under pathways aligned as close as possible to 1.5°C. An aligned portfolio should be assessing and testing alternatives and their viability.</p> <p>Entities that do not distinguish between fossil and non-fossil firming capacity in their targets impede the ability for lenders and investors to understand how the entity is also investing in non-fossil capacity as required by 1.5°C scenarios.</p>
		Transitioning away	<ul style="list-style-type: none"> • Does the transition plan address decarbonisation/transition away from fossil 	A credible transition will be underpinned by the scaling of renewable capacity and the phase

			fuels/phase out as a decarbonisation lever?	down of fossil-based capacity. Transition plans should address both of these levers.
	New capacity	Renewables	<ul style="list-style-type: none"> Is the percentage of renewable capacity as a proportion of portfolio increasing? 	To follow the decarbonisation pathway and thus to bring down emissions of the entity, new investments should focus on scaling up zero-emission technologies to replace assets that are being phased-out.
		Firming	<ul style="list-style-type: none"> Is new firming capacity enabling a further increase in renewable energy penetration? To what extent is additional firming capacity required for this? What are key system level assumptions validating development of new firming capacity? Is the evidence base underpinning assumptions credible? How is the entity considering the development of other non-fossil firming alternatives? 	System level assumptions are important for validating the fit of the firming capacity within a credible system. If the system-level assumptions are not in line with pathways that limit warming to as close as possible to 1.5°C, then the firming capacity assumptions would also not be aligned.

Accountability mechanisms

Key considerations		Purpose
For the transition plan	<ul style="list-style-type: none"> Sufficient disclosure around the transition plan, and specifically all emissions and non-emissions targets. 	The credibility of transition, and associated assumptions, have to be underpinned by objective, independent, science-based sources.

	<ul style="list-style-type: none"> • Independent evaluation of the transition plan. 	These need to be disclosed to ensure transparency.
For firming	<ul style="list-style-type: none"> • Has the entity disclosed and is using credible data/scenarios to assess above? • Is there third-party verification to assess credibility of scenarios and assumptions? 	Third party verification helps to bring legitimacy of the choices made to select sources and methodologies for assessment.

Appendices

Appendix 1: Carbon capture and storage (CCS)/carbon capture and utilisation (CCU) cross-cutting requirements

While the carbon capture rates may differ for each manufacturing activity and are specified under the relevant sections and activity cards, this appendix provides standardised criteria for the treatment of the captured CO₂ – including its transportation, storage, and utilisation.

The following transportation criteria (A) have to be adhered to in all cases, in addition to underground permanent geological storage criteria (B) for carbon reinjection or CCS technologies, and utilisation criteria (C) for CCU technologies.

(A) Criteria for the transportation of captured CO₂

To be eligible, all the following criteria have to be fulfilled:

- A. The CO₂ transported from the installation where it is captured to the injection point does not lead to CO₂ leakages above 0.5% of the mass of CO₂ transported.
- B. Appropriate leakage detection systems are applied and a monitoring plan is in place, with the report verified by an independent third party.

(B) Criteria for the underground permanent geological storage of captured CO₂

To be eligible, all the following criteria have to be fulfilled:

- A. Characterisation and assessment of the potential storage complex and surrounding area, or exploration¹⁸ is carried out in order to establish whether the geological formation is suitable for use as a CO₂ storage site.
- B. For operation of underground geological CO₂ storage sites, including closure and post-closure obligations:
 - a. Appropriate leakage detection systems are implemented to prevent release during operation.
 - b. A monitoring plan of the injection facilities, the storage complex, and, where appropriate, the surrounding environment is in place, with the regular reports checked by the competent national authority.
- C. For the exploration and operation of storage sites, the activity complies with ISO 27914:2017/22526 for geological storage of CO₂.

¹⁸ "Exploration" means the assessment of potential storage complexes for the purposes of geologically storing CO₂ by means of activities intruding into the subsurface such as drilling to obtain geological information about strata in the potential storage complex and, as appropriate, carrying out injection tests in order to characterise the storage site.

(C) Criteria for the utilisation of captured CO₂

To be eligible, all the following criteria have to be fulfilled:

- A. CO₂ must be used for the manufacture of durable products (e.g., polymers, construction materials stored in buildings).
- B. CO₂ is not used for products that release the CO₂ immediately when the products are used (such as in urea, carbonated beverages, chemicals, and fuels).
- C. CO₂ is not used for enhanced oil recovery, and the production of other forms of fossil energy sources.



The consultation is open from Monday 8 June – Friday 10 July 2026.
Please contact taxonomy@sustainablefinance.nz for any questions or assistance.