



# Renewable Energy Reporting: Challenges and opportunities in New Zealand

Implications of international and  
domestic trends on renewable energy  
reporting

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As climate-related transition plans become mandatory for many New Zealand businesses, companies are investigating cost-efficient ways to reduce their greenhouse gas (GHG) emissions. Organisations considering the procurement of renewable energy through the use of market-based instruments, such as Renewable Energy Certificates (RECs) within New Zealand need to be aware of the evolving domestic and international context for the use of these products. Used appropriately, these contracts can provide material financial support for decarbonisation efforts. However, the high percentage of renewable electricity already available on New Zealand's power market means that careful due diligence is needed about any climate-related claims made with the use of these products.

### What is a REC?

A Renewable Energy Certificate (REC) is a market-based instrument that represents the property rights to the environmental attributes of renewable electricity generation. One REC is typically equivalent to one megawatt-hour (MWh) of electricity generated from a renewable energy resource.

When renewable energy is generated, it produces environmental benefits, such as the reduction of greenhouse gases and other pollutants compared to conventional fossil fuel-based electricity. RECs embody these environmental attributes and can be sold to organisations that want to claim these outcomes as their own. This means that developers of renewable power plants can often access two separate revenue streams: for the power that they physically deliver, as well as for the volume of RECs that they generate.

### Scope of this note:

RECs are one example of the market-based instruments that The Greenhouse Gas Protocol collectively calls 'energy attribute certificates'. Energy attribute certificates can be known as Guarantee of Origins (GOs), Power Purchase Agreements (PPAs) or RECs. For simplicity, this note focusses on the situation for REC usage in New Zealand but the logic can be extended to the use of other market-based instruments, such as PPAs, where similar renewable energy attributions are defined within the contract. This note does not relate to the use of GOs, PPAs or RECs in other markets.

We use the term "REC" throughout this note to reflect its commonly understood meaning in New Zealand, which is for the low- or zero-emissions attributes of each MWh generated from renewable power plants.

## Introduction

The purpose of this note is to set out the considerations that organisations in New Zealand should make when evaluating their potential use of renewable energy, through the use of market-based instruments, such as RECs. The introduction of mandatory climate disclosures in New Zealand is encouraging a wider range of organisations to think about the options they have available to help them reduce their emissions footprint. These discussions are bringing the use of RECs into sharper focus for New Zealand organisations.

There are nearly 200 Climate Reporting Entities (CREs) that have mandatory reporting obligations under the New Zealand Climate Standards (NZ CS). In 2025 all of them will be required to publish their 'transition plans'.

The NZ CS offers CREs the ability to delay the publication of their transition plans by one year and it is likely many organisations will make use of this flexibility. This means at the time of this note's publication (June 2024), a range of organisations are likely to be in the process of forming their first transition plans. Transition plans should describe the physical and transition risks identified by each CRE and explain how they will be addressed. It is likely that an important part of these transition plans will be setting out plans for GHG emissions reductions over time. This increased focus on GHG emissions reduction that the transition plans are bringing is a welcome development.

While there is no single data source where information about all the REC usage in New Zealand is available, the data that has been published indicates the use of these products is growing strongly.

Used appropriately, RECs can be powerful products that help to channel new sources of financing into critical energy technologies. For example, RECs can allow organisations which might not have the ability to install renewable energy technologies at their facilities, to do so by contracting with an electricity supplier. These contracts then provide partial financing to the supplier, who may be better placed to undertake renewable energy development. RECs can help to bring economies of scale to renewable energy development by directing capital to those market participants with access to the most cost-effective renewable energy options, allowing more renewable energy to be delivered for every dollar invested.

While the opportunities from REC usage are clear, particular care needs to be taken by organisations in New Zealand when evaluating their potential use of these products. This is because over 80% of New Zealand's power is already generated from renewable power sources which could be linked to market-based instruments, such as RECs, without requiring any new renewable energy development (a concept known as "low additionality" in carbon offsetting standards).

Motivated by this risk of low additionality, the landscape for the use of RECs is changing internationally to ensure that claims made regarding the impacts of RECs are transparent and appropriate.

## Renewable energy in New Zealand

To understand the foundations of the REC market in New Zealand, it is useful to first describe some important contextual features of the New Zealand energy market:

1. New Zealand has highly renewable power (electricity) generation, but only one third of its overall energy usage is from renewable sources
2. Not all renewable power generation is zero-carbon
3. Most renewable power in New Zealand comes from power stations that are more than several decades old

New Zealand has a highly renewable power market, with 87% of power generated in 2022 coming from either hydro, wind, geothermal or solar energy<sup>1</sup>. This means 87% of electricity consumption could potentially be covered by a REC without any additional renewable generation being added to the grid.

However, while a large volume of renewable electricity is produced, the share of renewable energy in New Zealand's final energy consumption is much smaller, at only 30% in 2022<sup>2</sup>. The proportion of renewable energy is much lower than for renewable electricity, and this is mostly because of the use of fossil fuels for transportation and industry.

The distinction between 'energy' and 'electricity' is important to understand because most RECs sold in New Zealand are described as renewable energy products when they might be more specifically labelled as renewable electricity products.

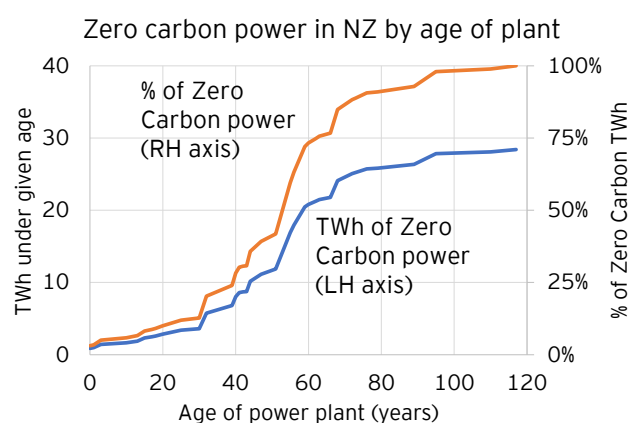
The low penetration of renewable energy suggests that, in addition to the use of RECs within New Zealand's power market, there should be a wide range of opportunities for RECs focussed outside of the electricity market. For example, RECs could become important sources of financing for low-emission gas or transportation fuels. These contracts could allow companies that burn fossil fuels but don't have physical access to low-emissions alternatives, to pay for low-emissions fuels to be supplied to other consumers.

It is also important to understand that not all renewable power generation is zero carbon. Many geothermal power stations have 'fugitive emissions' from GHGs that are brought to the surface within the steam. Some geothermal plants are however, able to capture these fugitive emissions and direct them back underground, reducing their emissions either to zero, or very close to zero.

An even stricter interpretation of the emissions output of renewable plants can also be taken where their life cycle emissions are considered. Hydro dams, wind turbines and solar panels all produce GHG emissions during their manufacture and installation. So, while the day-to-day operation of these plants is zero-carbon, this lifecycle emissions perspective would increase their

emissions intensity slightly above zero. However, after accounting for these life cycle emissions, these types of renewable power still have very low emissions intensity, even in comparison to the overall grid emissions intensity in New Zealand.

New Zealand's generation of renewable electricity is dominated by supply from plants that were built over the previous century. For example, in 2022, 60% of the renewable electricity was generated from hydropower plants. The earliest of the operating hydro plants was commissioned in 1907 and the youngest of them started operating in 1994, 30 years ago. 50% of the zero-carbon renewable electricity in New Zealand comes from power plants that first started operating more than 50 years ago.



Source: EY analysis, Electricity Authority data

As was described previously, because of New Zealand's high percentage of renewable power, 87% of electricity consumption could potentially be covered by RECs. However, in terms of impact, the age of the renewable generation plant is an important consideration for organisations as they make decisions about the ability for RECs to play an important role in their transition plans. Transition plans should speak to the actions an organisation will take to reduce their GHG emissions from a baseline year. From the climate's perspective and to meet the GHG emission reduction targets set by organisations and countries, the only impactful use of RECs would be where they incentivised 'additional' renewable power plant development from a baseline year.

While RECs can often allow you to reduce an organisation's market-based scope 2 emissions by a volume equivalent to a carbon offset, they are not carbon offsets, unless the renewable energy is additional and displacing non-renewable energy. Both of these products rely heavily on this principle of "additionality" in order to establish their environmental credentials.

As is explained in later sections of this note, there is an active discussion internationally about the relationship between REC usage and additionality for this reason.

<sup>1</sup> <https://www.mbie.govt.nz/dmsdocument/27344-energy-in-new-zealand-2023-pdf>

<sup>2</sup> <https://www.mbie.govt.nz/dmsdocument/27344-energy-in-new-zealand-2023-pdf>

## International convergence on GHG inventory reporting

The pace of development for reporting and standard-setting around climate and energy markets is moving at an incredible speed internationally. Over the past decade, these developments have been driven by the voluntary commitments that organisations have taken to measure and reduce their climate change impacts.

However, this drive is now increasingly coming from mandatory obligations that are being placed on firms around the world by their governments or regulators. While New Zealand is one of the first countries in the world to put mandatory climate reporting in place for large firms, every month more countries are making announcements about putting these obligations in place.

This shift towards mandatory reporting obligations brings with it a reduction in the flexibility which organisations have historically had around their reporting of climate metrics and more focus on “greenwashing” risks. There is also a convergence of reporting standards globally as a wide range of voluntary reporting standards have historically been used. This convergence is a welcome development for readers of climate and sustainability reports, who may often struggle to understand technical differences.

For GHG emissions accounting, there is an international convergence around the use of the GHG Protocol as the dominant reporting standard for compliance reporting regimes.

Some examples of this convergence include:

- ▶ The International Sustainability Standards Board, which is leading the convergence of international sustainability reporting, has mandated the use of the GHG Protocol<sup>3</sup> to measure an entity's GHG emissions, except where a jurisdiction has mandated another standard.
- ▶ The European Sustainability Reporting Standard has mandated consideration of the GHG Protocol in reporting<sup>4</sup>, but allows organisations to include considerations from ISO14064.
- ▶ The draft Australian Sustainability Reporting Standards (ASRS) propose to mandate the use of domestic reporting requirements (in accordance with the National Greenhouse and Energy Reporting Scheme legislation) for scope 1 and 2 emissions. However, the ASRS requires reporting organisations to use the GHG Protocol for scope 3 emissions to the extent it is not practicable to apply methodologies set out in the NGER Scheme legislation.
- ▶ The US Securities and Exchange Commission based its reporting requirements<sup>5</sup> around the approaches

set out in the GHG Protocol, without prescribing the use of this standard.

In New Zealand, CREs have the flexibility to use either the GHG Protocol, ISO14064 or any other emissions measurement standard. Many organisations in New Zealand have historically reported under ISO14064 and may choose to continue to do so in the future.

This note considers the use of RECs using the GHG Protocol. It doesn't consider how RECs are treated under the ISO14064 standard or other carbon-neutral standards.

## What is market-based accounting and why is it important for RECs?

The GHG Protocol allows for two different approaches to scope 2 emissions inventory accounting.

- ▶ **Location-based reporting** calculates the carbon footprint of an organisation by considering the average emissions intensity of the grid(s) on which its energy consumption occurs, reflecting the mix of energy sources used in the geographical location of the energy consumption.
- ▶ **Market-based reporting** takes into account the specific energy procurement choices of the organisation, such as renewable energy certificates or direct power purchase agreements, to reflect the emissions associated with the electricity the company has purposefully chosen or influenced in its supply chain.

Market-based accounting is important for organisations seeking to use RECs, as it is through this reporting approach that recognition of the impact of contractual instruments like RECs can be included in their GHG inventory.

The NZ CS require CREs to report their location-based emissions and, starting in 2025, to have these emissions independently assured. However, many organisations may choose to include a scope 2 market-based GHG emissions value in addition to the location-based number.

Organisations are also free to use market-based accounting for setting and delivering on the GHG emissions reduction targets used in the development of transition plans and disclosed under NZ CS.

## What is the GHG Protocol saying about RECs within market-based accounting?

Currently the GHG Protocol allows scope 2 market-based GHG emissions to be reduced by the amount of electricity (and therefore resulting GHG emissions) covered by RECs. Practically this means companies purchasing all of their electricity using RECs from zero-carbon generation plant could report zero scope 2

<sup>3</sup> The requirements in the GHG Protocol apply only to the extent that they don't conflict with IFRS S2

<sup>4</sup><https://www.efrag.org/Assets/Download?assetUri=%2Fsites%2Fweb-publishing%2Fsiteassets%2F08%2520Draft%2520ESRS%2520E1%2520Climate%2520Change%2520November%25202022.pdf>

<sup>5</sup> <https://www.sec.gov/files/rules/final/2024/33-11275.pdf>

emissions from electricity under this methodology. This is similar to the type of GHG emissions accounting allowed when carbon offsets are used. This accounting approach is allowed regardless of whether the REC has resulted in any new renewable energy within the grid.

To address this “additionality” issue, the GHG Protocol notes that RECs have key contractual elements which help describe the actual impacts of these contracts and that these key elements should be reported. The most relevant key contractual elements listed in the GHG Protocol for the New Zealand landscape are the type, location and age of the renewable energy facility each REC is linked to.

Between November 2022 and March 2023, the GHG Protocol invited interested stakeholders to provide feedback via four surveys on the Corporate Standard, the Scope 2 Guidance, the Scope 3 Standard, and market-based accounting approaches. The results from each of these surveys has been compiled into summary reports<sup>6</sup>.

A summary of the proposals for changes to scope 2 emissions reporting was published in December 2023<sup>7</sup>. One of the recommendations that is described in this document is to “improve the market-based method by requiring additionality for market-based scope 2 claims”.

The objectives of this recommendation are to:

- ▶ Require the existence of some causal relationship between a reporting organisation and the emission rate counted by that reporting organisation toward making a market-based method claim on emissions associated with electricity consumption.
- ▶ Achieve this by considering a variety of approaches for what might constitute additionality, including limiting sources to those which did not exist prior to the claim being made, restricting certain kinds of sources like unbundled electricity products, or otherwise demonstrating emission reductions more closely tied to a reporting organisation’s scope 2 market-based method claims.

The rationale for these suggestions is to:

- ▶ Better ensure claimed reductions in scope 2 market-based method inventories reflect real-world decarbonisation of the electricity grid.
- ▶ Reduce instances of perceived greenwashing in corporate inventories.

The GHG Protocol secretariat said in its summary document that their next steps will be to begin the formal stakeholder consultation process by reviewing the technical basis for these improvements and assessing their application and integration into a GHG emissions report.

It is worth pointing out that a process for embedding additionality criteria into market-based inventory accounting is likely to be a very technical and time-

consuming process. Debates about additionality have been at the core of discussions about the role and value of the voluntary carbon offset market since its formation several decades ago.

Additionality is a critical feature for offsetting claims but there is no single global rule or approach which can be adopted and there are strong temporal elements to any assessment. For example, within voluntary carbon offset market we see the focus changing globally from “avoided emissions” technologies that help prevent GHG from being emitted to the atmosphere, to “removal” technologies which actually take GHG gases out of the atmosphere. This means that the standards used to judge the validity of carbon offset claims are changing over time and focuses buyers on more recent vintages. RECs face the same underlying considerations and this often makes RECs that have been more recently produced, or RECs from newer renewable plants, more attractive to buyers.

#### Example - RE100's tightening restrictions on RECs

An approach which goes some way towards establishing additionality related to REC claims has already been adopted by RE100. RE100 is a global corporate renewable energy initiative bringing together hundreds of large and ambitious businesses committed to 100% renewable electricity. Since January 2024, the initiative has limited the use of RECs to power plants no older than 15 years, with only a few exemptions.

While this approach cannot by itself guarantee additionality, it is one pragmatic step to reduce greenwashing concerns and help channel the funds generated from the sale of RECs towards new renewable electricity projects.

Any new REC contracts signed after 1 January 2024 must conform to this asset age rule to qualify for RE100's approval.

<sup>6</sup> <https://ghgprotocol.org/survey-need-ghg-protocol-corporate-standards-and-guidance-updates>

<sup>7</sup> <https://ghgprotocol.org/sites/default/files/2023-12/scope-2-proposal-summary.pdf>

## What do these international REC developments mean for New Zealand organisations?

We suggest organisations should keep track of the evolving treatment of RECs and consider the following actions:

1. Within your public GHG emissions inventory, describe the key contractual elements relating to any RECs used
2. Educate your internal stakeholders about considerations related to REC usage in New Zealand
3. Consider carefully the role you might see RECs playing within your organisation's transition plan and how this role is described in your reporting
4. Thoroughly investigate the characteristics of any RECs you may be thinking about using and understand the impact they make on the emissions that the climate experiences
5. Analyse and understand any price difference between REC products and domestic carbon units (NZUs) (which could be considered a proxy for the cost of domestic mitigation)
6. Consider whether RECs should be used within carbon neutrality claims and whether you have sufficient supporting evidence to substantiate these claims
7. Evaluate how alternative financial products, such as on-site and off-site Power Purchase Agreements (PPAs) and/or direct renewable investment may optimise energy costs and provide additionality

### How can EY help?

EY has significant expertise across power markets, climate reporting and market-based instruments. This provides our teams with the capability to help your organisation:

- ▶ Provide advice on decarbonisation and transition strategies that focus on your strategic opportunities
- ▶ Determine the role that RECs might play in your climate transition strategy
- ▶ Assess the range of REC products available to you across environmental, technical, economic and reporting criteria
- ▶ Assess whether the impacts of these products are appropriately disclosed within your external reporting
- ▶ Assess the feasibility of on-site and off-site renewables investment and Power Purchase Agreement (PPA) suitability.



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