

New Zealand's Second Emissions  
Reduction Plan Consultation

**Submission by  
New Zealand Green Investment  
Finance**

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### **Second Emissions Reduction Plan (ERP) – NZGIF Submission**

Thank you for the opportunity to submit on the ERP.

New Zealand Green Investment Finance Limited (NZGIF) was established with the purpose of accelerating and facilitating investment into New Zealand’s decarbonisation and is a company listed in Schedule 4A of the Public Finance Act.

We note the Minister for Climate Change’s opening statement in the ERP consultation document that the Government is committed to an approach to emissions reductions that “will maximise the emissions reduction value of every dollar we spend”. This aligns with NZGIF’s objectives and purpose.

As a profitable Crown-owned company focused on decarbonisation, the investments we make represent maximum value for money for the Crown for its decarbonisation investment. Each dollar we invest in decarbonisation makes a commercial return and increases the value of the Crown’s equity invested in NZGIF.

NZGIF is an important part of the climate finance ecosystem. Capital recycled from our investments is invested in other decarbonisation initiatives to multiply the effect of every Crown dollar invested in us. To date NZGIF has total commitments of \$476m and has attracted \$815m of co-investment from on and off-shore sources at a ratio of 1.7 :1.

At 30 June 2024, the lifetime cost to the Crown of every tonne of CO<sub>2</sub>e that NZGIF has abated since its establishment was \$31.52 and trending down (in FY24 that figure was \$10.90 per tonne of CO<sub>2</sub>e). Consequently, NZGIF’s view is that the most effective use of the Crown’s capital for decarbonisation is to invest to catalyse private sector investment into decarbonisation. That approach aligns directly with maximising value for the Crown’s capital outlay.

We also note that, in respect of three of the Government’s priorities for the ERP, we have been active in contributing to initiatives in those sectors. Specifically, we have:

- funded up to 240 MW of renewable generation;
- funded electric buses in New Zealand for New Zealand’s public transport operators, and provided debt and equity for light vehicle fleet electrification;
- made numerous investments that target on farm emissions; and
- funded the development of a biogenic methane inhibitor.

NZGIF notes the Government’s intention to strengthen the New Zealand Emissions Trading Scheme (ETS) as an important outcome to provide ETS market credibility and ensure that the ETS continues to help New Zealand meet its targets and stay within budgets.

Alongside this, it is critical that New Zealand’s low-emission finance market continues to grow and mature to ensure sufficient private capital is available to enable New Zealand to meet its targets at the lowest possible cost to businesses, consumers and the Crown. NZGIF exists to ensure this happens.

Given NZGIF’s role in the low emissions market, we have limited our response to this consultation document on aspects of the document that relate to climate and low emissions finance, specifically in the following chapters:

- Chapter 4 (how we fund and finance climate mitigation); and
- Chapters 5 (Energy), 6 (Transport), and 7 (Agriculture) as priority sectors for NZGIF in which we have specific market knowledge.

#### ***4.1 – Do current measures work well to unlock private investment in climate mitigation***

NZGIF continues to observe broad market failure in the low emissions investment market and remains the only solely climate focused financiers with the ability to address New Zealand’s decarbonisation market needs at scale.

NZGIF’s growth has driven significant change in the market in the last 5-years:

- Total NZGIF cumulative commitments as at 31 July 2024: **\$476m**
- **31** transactions
- Total co-investment as at 31 July 2024: **\$815m** (at a ratio of 1.7 : 1)
- Weighted average effective interest rate on debt as at 30 June 2024: **10.25%** against the benchmark return of 6.7%.
- Total estimated lifetime emissions reductions as at 30 June 2024 (provisional): **1,173 – 1,428ktCO<sub>2</sub>e**

There have been a number of developments in the wider domestic low-emissions investment landscape over the past 5 years. These include:

- The formation of the Centre for Sustainable Finance: Toitū Tahua and the publication of the Sustainable Finance Roadmap with finance sector partner input.
- Increasing participation across commercial banks in sustainable finance (approx. \$16bn of primarily green bonds and corporate sustainability-linked loans). In addition, commercial banks have increasingly begun to offer retail sustainable finance loans, though these are limited by size, capacity and terms.

- The emergence of two specialist climate-focused investors focused on VC and early-stage equity.

There has been growth in ‘green’ capital, but it remains relatively modest in the market. Bank investment in low-emissions finance represents less than 0.05% of total bank assets and only 12% of NZX issuances are green bonds. Both target only limited parts of the market. The low carbon venture capital market represents less than \$100m of investment capital. The market failures continue to persist across sectors, making NZGIF a critical and necessary participant in the market.

While there is increased participation by commercial banks in sustainable loan offerings, these are often limited in scope. For example, they are typically only available to existing banking clients (i.e. “already bankable”), for a limited tenor and size, thus limiting their effect on decarbonisation broadly for NZ and not addressing the sources market failure, whether missing markets or imperfect information<sup>1</sup>. Much of the available climate-focused financing is also directed at banks’ retail customers as loss leading initiatives to increase customer retention.

As another example, institutional investors tend to devote the bulk of their investment to listed markets, often offshore, limiting the impact of investment for New Zealand’s decarbonisation. Further, smaller companies offering decarbonising services have indicated to us the limited appetite of both banks and venture funds to support growth, which led NZGIF to

#### **Case study 1: Green Finance Accelerator supports Thundergrid’s growth**

NZGIF launched Green Finance Accelerator in late 2022, on the back of feedback from small companies saying they needed early stage, non-dilutive debt in order to grow, debt that was not forthcoming from banks.

In January 2023, NZGIF provided \$1m in venture debt from its Green Finance Accelerator programme to Thundergrid, a small and growing company that supplies EV charging stations and manages charging networks for corporate customers.

The working capital facility supported Thundergrid to provide EV services to a pipeline of committed customers and enabled Thundergrid to accelerate revenue growth.

Partly on the back of this growth, Thundergrid was purchased by global tech company Landis+Gyr in October 2023 and NZGIF’s lending repaid, to be recycled into other venture debt opportunities.

create the Green Finance Accelerator offering working capital and asset finance to that cohort.

<sup>1</sup> Missing markets are characterised by a low volume of transactions, small transaction sizes and/or high transaction costs that result in a lack of development in a market. The market may also be constrained where investors are not willing to make capital available to match the payback periods of low emissions projects and where secondary markets are underdeveloped, thus increasing exit risk. Imperfect information typically occurs where technology is unfamiliar and where there is limited data, information and skill available to investors to assess commercial viability and risk. This can lead to investors overlooking commercially viable opportunities because there are simpler and better understood options available to them.

NZGIF sees several enduring gaps in the low-emissions investment market, which relate to the general market failures which NZGIF addresses. They include:

- Early-stage debt and equity for small companies hoping to grow (NZGIF has invested in this space, for example, in lending venture debt to Hot Lime Labs and Thundergrid and equity investment in small companies such as Kayasand, Neocrete, and Ruminant BioTech). These gaps are caused by risk appetite/imperfect information and missing markets.
- Fixed rate, long dated debt to finance PPAs. NZGIF has addressed this, for example through NZGIF Solar Finance, on-farm solar installations (Rural Energy, Lightyears Solar).
- Large projects not bankable under traditional bank credit metrics, for example, electricity grid assets (NZGIF has invested here through loans to Eastland and Lodestone).
- New underlying asset classes not familiar to banks or traditional finance companies, for example, the EV market (NZGIF has catalysed this market through Zenobe and Sustainable Fleet Finance).
- Projects that require bespoke structuring (an example of NZGIF's work in this area is its NZ Post transaction to supply contractors with EVs).
- Financing green buildings (NZGIF has invested here through Neocrete and Kayasand which produce lower emissions concrete).

NZGIF's finance plays an important role in accelerating decarbonisation investment. Bank credit criteria and lending terms can be conservative and limited, which counterparties regularly cite to us as an inhibitor to their growth. There is no meaningful private credit market in New Zealand as an alternative to commercial bank lending, and none focused on decarbonisation.

NZGIF's investments enable decarbonisation transactions to happen more quickly than they otherwise would by supporting capital to be provided to them (either at all, or in greater quantum than would otherwise be available).

***5.1 – What three main barriers/challenges that are not addressed in this chapter do businesses face related to investing in renewable electricity supply (generation and network infrastructure)?; and***

We acknowledge the intention of the ERP to stimulate renewable generation by removing the consenting barriers to developments and note that financing solutions are also needed to accelerate those developments.

Challenges faced by businesses include:

- Unlike other jurisdictions, New Zealand does not currently have a well-established project finance market focused on decarbonisation.
- Bank lending criteria can restrict the amount of debt that can be provided to renewable energy developments, especially in the early stages of development.
- A lack of available debt capital means renewable energy projects often rely on equity sponsors to apply more of their own capital to the development.
- The need to raise equity to fund renewable energy slows the pace at which renewable generation projects are deployed.
- Lack of access to capital with sufficiently long tenor and certainty through fixed rate lending.

**Case Study 2: Accelerating renewable generation through pre-development funding**

In 2023 a major renewables developer (Lodestone) was unable to raise capital to fund the pre-development activity for new solar farms. While demand existed for the electricity that would be generated by the new development, the gap in available financing through traditional lenders meant the development could not proceed as quickly as it might otherwise. To fill this gap, NZGIF developed a financial product to provide additional leverage in the form of a working capital facility to enable Lodestone to begin the pre-final investment decision development of a number of new solar farms. This investment enabled the development of up to 114MW of renewable generation.

**Case Study 3: Connection assets – bring renewables to the grid**

NZGIF has developed an innovative financing solution to fund connection asset infrastructure while providing a form of credit support to the banks project financing the generation facility itself. In addition to attracting co-investment at scale, these facilities also address market failure, by lowering the equity intensity required by businesses and accelerate the availability of funding for connection assets. They also accelerate renewable generation by freeing up sponsor equity to invest in the development of new projects, rather than tying it up in project finance structures.

***5.3 – What three main barriers/challenges do businesses and households face related to electrifying or improving energy efficiency, in addition to those already covered in the discussion document?***

Delivering solutions at scale is important for New Zealand to gain access to low-emissions technologies that will help New Zealand households and businesses electrify and improved energy efficiency. Financing gaps for these technologies still exist, and include:

- Access to appropriate capital, including project finance, remains a significant barrier to electrification and improved energy efficiency.
- There is a lack of finance to enable asset aggregation and deployment at scale.
- Green finance offerings can also be limited by split incentives, where the homeowner is a landlord but the tenants reap the cost savings and other benefits from household energy efficiency and solar energy systems.

NZGIF works to address these financing gaps by developing innovative financial products and programmes that attract foreign and domestic private finance to enable delivery of low emissions technologies at scale. Examples of NZGIF addressing financing gaps to achieve impact at scale are provide in Case Study 2 and Case Study 3.

NZGIF sees additional opportunities to aggregate asset classes to attract private capital and accelerate the transition to energy efficient and electrification technologies.

#### **Case Study 4: Stimulating a more resilient, renewable solar sector**

As more grid-scale renewable projects begin to be developed, the role of domestic distributed solar - on the roofs of homes and supported with batteries - is also increasingly important. NZGIF has helped stimulate an innovative domestic solar industry that is helping households cut their energy costs and reduce emissions, while at the same time strengthening the electricity system.

One of the challenges for small, innovative clean-tech companies lies in accessing non-dilutive investment capital over a sufficiently long term. Traditional lenders can be slow to support new entrant technologies with innovative, flexible capital funding arrangements.

NZGIF has developed a pioneering financing solution – NZGIF Solar Finance - to provide investment capital on a commercial basis to distributed solar energy developers. The commercial structure allows approved solar developers to switch short-term floating debt with long-term fixed rate funding more suitable for long-lived energy assets. Providing longer-term debt funding lowers capital costs and ultimately benefits the end consumer.

Revenues from the energy output from the individual domestic solar installations (via power purchase agreements (PPAs)) are then bundled into a long-term commercial security that is on-sold to long-term yield investors.

NZGIF has contributed \$145 million of investment capital – its biggest investment yet – to create NZGIF Solar Finance alongside \$220, of private funding from offshore investors to enable a scalable funding structure for large-scale expansion of domestic rooftop solar installations.

SolarZero, a domestic solar installer that charges households a monthly fee for their panels and batteries rather than an upfront capital cost, was the first participant to qualify for debt funding through NZGIF Solar Finance. This has rapidly become a case study in how leadership in new funding arrangements can catalyse a sector and attract major international private investment. These investments will see solar added to the roofs of more than 20,000 New Zealand homes. SolarZero’s proprietary technology also enabled it to make 30MW of electricity available to the national grid during the May 2024 grid emergency.

Backed by NZGIF, SolarZero was successful in accelerating its growth and impact. Ultimately the world’s largest fund manager, BlackRock, bought the rapidly growing business outright in 2022. The initial issuance under NZGIF Solar Finance was the first of its kind by a New Zealand-based financial institution to secure Climate Bonds Initiative certification. The programme can be scaled to provide commercial, profitable finance solutions to other developers to maximise domestic solar deployment throughout New Zealand.

NZGIF Solar Finance is an example as to how innovating and thinking outside the square is critical to finding new ways to solve our energy, climate and resilience challenges. It shows the power of leadership and how rapidly commercial interests can come to the market as a result of the right interventions and financial leadership.



### **Case Study 5: Electrification of the vehicle fleet**

NZGIF's investment in Sustainable Fleet Finance has helped accelerate the transition to electric vehicles (EVs) in corporate fleets. Expanding the EV corporate fleet is an important driver of the second-hand EV market, which will make EVs more accessible to more Kiwis.

Another example of the work we have done in this space is through our partnership with NZ Post to electrify its contractor delivery vehicle fleet. By designing a programme to transition many contractors to EVs and other low-emissions vehicles, we are able to secure what was, at the time, the largest global order of Mercedes e-Vito vans into New Zealand. That technology would not have arrived in this country so quickly without the benefit of a scale order like we were able to facilitate.

#### **6.1 – Do you support the proposed actions to enable EV charging infrastructure?**

NZGIF notes the proposed actions to enable EV charging, and notes that significant private finance will be required to deliver widespread uptake of the technology. The most notable gaps are:

- Challenges for the economics of deploying a public charging network across the country that caters effectively to long range driving distances.
- Disaggregated (and therefore slow) uptake of EV vehicles across the corporate and public sector fleets.
- Lack of available financing solutions to aggregate assets and attract private capital.
- Costs associated with grid upgrades required to support EV charging network.

We see the opportunity set in EV uptake to be two-fold, but interconnected:

- Encouraging the uptake of EV vehicles by 'packaging up' procurement and diffusion of EV technology, including in the secondhand market, will improve the economics of EV charging infrastructure; and
- The economics of EV charging is challenged by the need to finance not just EV charging equipment but also the associated grid/network upgrades. NZGIF has previously developed connection asset financing structures that could assist with this funding gap and is well placed to develop funding structures for the EV charger roll-out more generally.

### **7.1 – What are the three main barriers or challenges to farmer uptake of emissions-reduction technology?**

Agriculture sector emissions can be divided into:

- Agricultural emissions (including biogenic methane and nitrogen oxide released by nitrogen based fertiliser).
- On-farm emissions (including emissions caused by transport, refrigeration and electricity generation and use).

The main barriers for reducing agricultural emissions are:

- A lack of technologies of sufficient maturity to enable widespread uptake in the sector.
- A lack of early-stage capital to enable growth of companies with promising technologies with significant emissions reductions.

The main finance barriers for reducing on farm emissions are similar to those observed in other areas of the economy and include:

- Access to capital, including project finance.
- Lending terms and tenor.
- Insufficient flexibility in traditional bank metrics.

NZGIF invests in early-stage companies with significant emissions reductions potential, by providing equity to support company growth and technology maturity and provides tailored debt solutions to companies with mature technologies that can be widely disseminated to reduce on-farm emissions. See case studies 6 and 7 for further information.

Innovation to reduce on-farm and agricultural emissions will require R&D and support of early-stage companies developing the relevant technology. In this regard, the AgriZero partnership between industry and the government is a promising initiative that NZGIF supports in general and as a co-investor for individual opportunities.

### **Case Study 6: Coolsense – tackling on-farm emissions**

An on-farm emissions reduction programme delivering lower carbon emissions from milk production, supported by Fonterra. The programme provides farmers with high-quality, low emission milk refrigerant equipment, with significantly lower operating costs than older conventional cooling equipment.

Farmers fund the new assets through operating expenses in a 'Pay as you Save' model; there is no capex required.

Coolsense struggled to secure bank finance at adequate tenor – the assets have a seven-year contract supporting repayment over this period.

NZGIF and Coolsense developed a ring-fenced finance structure to fund the assets over the required seven-year tenor with contracted cashflows. Minimised credit risk and capital costs with NZGIF's finance structure reduces operating costs for farmers and lowers emissions.

Purpose Capital equity investors then joined Coolsense, providing \$3m additional equity capital to scale the initiative. Coolsense is a good example of a scalable opportunity with strong potential for bundling and selling securities to institutional investors.

### **Case study 7: Ruminant BioTech – early-stage equity to solve an enduring issue**

Methane emissions from animals are the most stubborn emissions from the agriculture sector. Methane is a short-lived but high greenhouse intensity gas that requires breakthrough technology solutions.

NZGIF was an early equity investor in Ruminant BioTech, a technology solution with the potential to reduce bovine methane emissions by 70 per cent.

NZGIF has continually backed Ruminant BioTech as more government and private investment has also flowed into it. The transformational potential of this technology is very high, with strong export potential globally.

Ruminant BioTech reports that NZGIF's shareholding supports credibility with strategic investors and offshore expansion in highly regulated milk and meat markets.

We would welcome the opportunity to discuss this submission in more detail.

Nāku, nā

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke.

Sarah Minhinnick  
Chief Executive Officer  
**New Zealand Green Investment Finance Limited**