Outlook

Farmgen Solar Submission – EA Consultation on Peak-Export Rebate Eligibility

From Matt Luscombe | [redacted]
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To TaskForce <TaskForce@ea.govt.nz>
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1 attachment (87 KB)
Farmgen_FULL_EA_Submission_FINAL.pdf;

[redacted]

Kia ora,

Please find attached Farmgen Solar's full submission on the Electricity Authority's consultation **"Requirement for distributors to pay a rebate – definition of small business."**

Farmgen strongly supports the intent of the proposed framework and agrees that incentives for small-scale exporters are essential to reducing peak demand, deferring network upgrades, and improving long-run outcomes for consumers. However, our analysis across more than 100 dairy, horticulture, and irrigation sites shows that the proposed 45 kVA and 45 kW thresholds unintentionally exclude the rural customers who can deliver the greatest peak-reduction and system-benefit potential.

In our submission, we outline why rural dairy farms and irrigation operations are mass-market customers by bargaining power, despite having higher operational loads, and why raising both eligibility thresholds is essential for achieving the EA's objectives. Rural solar and battery systems have significantly stronger economics and grid benefits than residential systems, and that these customers face disproportionate cost-to-serve and the highest network charges.

We appreciate the opportunity to contribute to this consultation and would welcome further discussion with the Authority or distribution businesses on how best to align incentives with future network-investment need.

Nga mihi

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FARMGEN
POWER TO THE FARMERS

Electricity Authority Consultation: Requirement for distributors to pay a rebate – definition of small business

24 November 2025

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Executive Summary

Farmgen Solar supports the Electricity Authority's (EA) intention to ensure small-scale exporters receive appropriate rebates and that the policy incentivises investment in solar and battery systems to reduce peak demand. However, the current thresholds—45 kVA connection capacity and 45 kW DG limit—exclude the very customers who can deliver the greatest benefit to the electricity system: dairy farms and irrigation operators.

These rural consumers:
• contribute ~300 MW (≈15% of national peak demand) from dairy alone,
• face the highest cost-to-serve in New Zealand,
• have solar + battery paybacks roughly twice as good as residential,
• have zero ability to negotiate bespoke pricing with EDBs,
• operate in highly predictable peak cycles that align perfectly with system peaks,
• create the majority of rural upgrade triggers, especially irrigation (80–250 kW loads).

To achieve its policy intent, the EA must revise thresholds to include rural New Zealand. Farmgen recommends:
1. Raising the connection threshold from 45 kVA → 69–100 kVA.
2. Raising the DG export threshold from 45 kW → at least 100 kW.
3. Allowing export-limited arrays up to 150–250 kWp.
4. Recognising rural customers as mass-market by bargaining power—not by kVA size.

Background and Context

The EA is correct that distribution network investment is projected to place upwards pressure on electricity prices, and that distributed energy resources (DER) can mitigate this pressure. However, to unlock this value, the customers most capable of providing peak reduction must be included.

Farmgen analyses over 100 operating farms annually and deploys ground-mount solar + battery infrastructure across dairy, horticulture, rural SMEs, and irrigation. These customers have the highest cost of supply, the strongest DER business cases, and the most shiftable peak loads.

Why Rural Dairy Farms Must Be Included

1. Dairy farms produce the largest mass-market coincident peak load

Across Farmgen's dataset (>100 farms):

- Morning peak: 20–50 kW (5–9 am)
- Evening peak: 20–50 kW (3–8 pm)
- Load shape is consistent year-round and aligns perfectly with national system peaks.

With ~11,000 dairy farms, this represents ~300 MW of coincident mass-market peak load—around 15% of New Zealand's total system peak. No other mass-market customer group contributes a larger or more consistent peak load.

2. Rural loads are 10–20× domestic loads, giving ~2× stronger solar economics

Key economic drivers:

- 50–75% solar self-consumption without batteries.
- 80–100% self-consumption with moderate batteries (100–215 kWh).
- Payback periods of 3.5–6 years vs 10–15 years for residential.
- Long operating hours and tight alignment with solar output.

Rural businesses also have superior access to green capital (4–6% sustainability-linked loans), making rural DER the cheapest form of electrification in New Zealand.

3. Farm-scale DG naturally falls in the 50 kW–100 kW band

Farmgen's sales data shows:

- 50 kW systems outsell 25 kW systems by approx. 10:1.

This reflects real technical practice: a standard 50 kW inverter paired with 75-90 kWp of solar and 100–215 kWh of storage. The proposed 45 kW DG limit excludes the natural rural configuration by an arbitrary 5 kW.

4. Dairy farms have no bargaining power with EDBs

Despite higher consumption, dairy farmers:

- pay standard tariffs,
- have no bespoke pricing pathways,
- have no commercial negotiation ability,
- depend on monopoly EDBs for service,
- bear high network charges without recourse.

Across over 100 fam assessment and many EDB's Farmgen has never seen a bespoke connection

agreement. Many farmers do not understand the roles that retailers, EDB, and Transpower play or their respective cost input into their power bill.

By the EA's own interpretation—mass-market = low bargaining power—dairy farms are unequivocally mass-market customers.

Why Irrigation Must Be Included

1. Irrigation loads often exceed 100–200 kW and trigger rural upgrades

Medium irrigation systems draw 80–150 kW; large pivots draw 150–250 kW. These loads are the primary cause of rural feeder upgrades, voltage issues, transformer overloading, and protection changes.

2. Irrigation customers pay the highest lines charges in New Zealand

Farmgen engagements show irrigation customers often pay 40–60% of their electricity bill in lines charges—due to long feeders, low density, and heavy summer peaks. They represent the highest avoided-cost potential.

3. Irrigation is highly shiftable and aligns with solar generation

Irrigation cycles are:

- seasonal,
- block-based rather than continuous,
- discretionary within day-time windows,
- strongly aligned with mid-day high solar output.

Farmgen has not observed a single site running continuously 24/7 for an entire month. With solar + BESS, irrigation can avoid morning/evening peaks and reduce feeder load by 50–200 kW.

4. Irrigation DG requires ≥100 kW DG allowance

Typical irrigation DG systems involve 50–200 kW DG capacity and solar arrays of 100–250 kWp with export limiting. A 45 kW DG cap effectively prohibits irrigation from participating.

Farmgen Recommendations

Farmgen recommends the EA adopt the following to ensure its policy objectives are met:

1. Raise the connection threshold from 45 kVA → 69–100 kVA.
2. Raise the DG limit from 45 kW → at least 100 kW.
3. Allow export-limited systems above 100 kWp (to 150–250 kWp).
4. Define mass-market based on bargaining power, not connection size.
5. Recognise dairy and irrigation as priority segments for network-upgrade deferral.

Responses to EA Consultation Questions

Q1 — Do you agree with the issues identified?

Farmgen agrees the current <40 MWh small-business definition is inappropriate. However, the issues identified by the EA do not adequately capture rural peak-load dynamics or rural cost-to-serve as key drivers of network investment. Rural dairy and irrigation must be included for the EA's objectives to be achieved.

Q2 — Is using both connection capacity and DG capacity appropriate?

Yes. A dual-limit framework is logical. However, the thresholds must reflect real-world rural load profiles, DG economics, and the EA's aims. Current thresholds do not do so.

Q3 — Are both limits required?

Yes, but both limits must be materially higher. The proposed levels inadvertently exclude the highest-value rural participants.

Q4 — Do you agree with the 45 kVA connection threshold?

No. This threshold is too low and excludes dairy (often 63–100 kVA) and irrigation (100–200 kVA). These customers have zero negotiating power and represent the greatest opportunity for peak reduction and upgrade deferral. Farmgen recommends 69–100 kVA or a rural-class exemption.

Q5 — Do you agree with the 45 kW DG limit?

No. The DG limit should be raised to at least 100 kW. Farmgen's dataset shows 50 kW systems outsell 25 kW systems by 10:1. Irrigation also requires 50–200 kW systems with export limiting. A 45 kW cap prevents meaningful rural participation.

Q6 — Do you agree with the objectives of the amendment?

Yes. But they are not achievable if rural dairy and irrigation customers are excluded from eligibility.

Q7 — Do the benefits of the proposal outweigh the costs?

Only if rural customers are included. Excluding dairy and irrigation removes the majority of potential peak-reduction and network deferral value.

Q8 — Do you agree with the EA's assessment of alternatives?

Partially. The analysis does not fully capture rural upgrade drivers, especially irrigation peaks, nor the superior economics of dairy-scale solar + BESS.

Q9 — Are there better options?

Yes. Farmgen recommends:

- Raising connection threshold to 69–100 kVA,
- Raising DG limit to ≥100 kW,
- Permitting export-limited systems above 100 kWp,
- Establishing a rural mass-market classification.

Q10 — Is the proposed amendment preferable to the alternatives?

Not with current thresholds. The dual-limit structure is appropriate but must be paired with thresholds that reflect rural load realities for the policy to function as intended.

Final Statement

Dairy and irrigation customers offer the greatest potential for peak-demand reduction and network investment deferral. They face the highest supply costs, the strongest solar economics, and have zero ability to negotiate preferential pricing. To fulfil its objectives, the EA must revise its thresholds to include rural New Zealand.