Cross-Submission: Reforming DG Pricing to Promote Efficient Investment

Submitted to the Electricity Authority
1 June 2026
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https://www.ea.govt.nz/projects/all/distributed-generation-pricing-principles-reform/consultation/reforming-distributed-generation-pricing-to-promote-efficient-investment/

Introduction

I support the Electricity Authority's objective of reforming distributed generation (DG) pricing to promote efficient investment and improve outcomes for consumers and the electricity system.

This submission builds on themes emerging from recent industry discussions regarding non-network solutions, flexibility, distributed energy resources (DER), network visibility and consumer participation.

The central proposition of this submission is that distributed generation pricing should evolve beyond generic export tariffs and instead become a mechanism for signalling where distributed energy resources can deliver the greatest value to the electricity system.

Future pricing arrangements should not simply compensate exported energy. They should help guide investment toward locations where distributed generation, storage and flexible demand can defer network investment, improve asset utilisation, support electrification and reduce long-term consumer costs.

The Challenge

Current distributed generation pricing structures typically provide little information regarding the value of exports at different locations on the network. As a result:

1. Consumers cannot easily identify where investment in solar, batteries or flexibility delivers the greatest network benefit.
2. Distributors have limited mechanisms to encourage DER deployment in constrained areas.
3. Export incentives are often disconnected from actual network needs.
4. Consumers frequently perceive export pricing as arbitrary or opaque.

At the same time, electricity distribution businesses routinely identify constrained feeders, transformers, substations and growth areas many years before reinforcement becomes necessary.

This information represents a valuable planning signal that could be used to encourage efficient distributed investment.

Distributed Generation as a Network Resource

Distributed generation should increasingly be viewed as a network resource rather than solely as a source of exported energy. The value of distributed generation may include:

1. Energy production.
2. Peak demand reduction.
3. Deferred network investment.

4. Reduced network losses.
5. Voltage support.
6. Increased resilience.
7. Improved utilisation of existing assets.

The value of these services varies by location and time. Pricing arrangements should increasingly reflect these differences.

Flexibility Development Zones

The Authority should consider enabling distributors to establish Flexibility Development Zones in areas where future network constraints have already been identified. Within these zones, distributors would publish:

1. The network constraint.
2. The expected timing of the constraint.
3. The estimated reinforcement cost.
4. The distributed resources required to defer or avoid reinforcement.
5. Available pricing incentives.
6. Progress toward deployment targets.

For example: Flexibility Development Zone. Network Need 2 MW peak demand reduction by 2032. Alternative Reinforcement - $14 million network upgrade. Desired Resources:

1. 1 MW rooftop solar
2. 3 MWh battery storage
3. 2 MW flexible demand capability

Pricing Incentives:

1. Enhanced export credits
2. Capacity support payments
3. Peak support payments
4. Reduced fixed charges
5. Flexible connection options

Progress Dashboard:

1. Solar installed
2. Storage installed
3. Flexible demand enrolled
4. Estimated reinforcement deferred

This approach transforms network constraints into visible investment opportunities.

Locational Value Signals

The Authority should support greater use of locational pricing signals where they can be demonstrated to improve investment efficiency. An export into a constrained area can provide significantly greater value than an export into an unconstrained area. Likewise, a battery discharging during a local network peak may provide more value than energy exported at another location or time. Pricing frameworks should therefore allow distributors to recognise:

a. Location.
b. Timing.
c. Constraint relief.
d. Flexibility capability.
e. Capacity value.

This does not require immediate implementation of fully dynamic pricing systems.

A practical pathway can begin with targeted incentives in known constrained areas and evolve over time as network visibility and market capability improve.

Making Benefits Visible

Consumers are more likely to invest when benefits are visible and understandable. Current billing arrangements often fail to show consumers the value they provide to the network. Future arrangements should encourage transparent reporting of distributed energy benefits. For example, Monthly DER Statement:

1. Energy Export Earnings: $42
2. Peak Support Payment: $18
3. Local Network Support: $23
4. Voltage Support: $7
5. Total DER Earnings: $90

Network Outcome:

“Your system helped reduce 5 kW peak loading on the local feeder and contributed to avoiding future network costs.”

Such reporting would improve transparency, encourage participation and strengthen consumer engagement.

Role of Distributors

The future role of distributors should increasingly focus on:

a. Publishing network information.
b. Publishing hosting capacity.
c. Publishing future network needs.
d. Publishing incentive schedules.
e. Verifying performance.
f. Maintaining network security.

Rather than solely responding to emerging constraints through conventional reinforcement, distributors should actively encourage deployment of distributed resources where they can provide the greatest value.

This represents an evolution toward Distribution System Operator capabilities while remaining consistent with existing regulatory frameworks.

Commercial and Industrial Participation

Commercial and industrial consumers should play an important role in early deployment. These customers often possess:

a. Larger controllable loads.
b. Existing control systems.
c. Greater operational flexibility.
d. Faster deployment capability.
e. Generation located at source of load.

Flexibility Development Zones should therefore encourage participation by:

1. Commercial customers.
2. Industrial customers.
3. Community organisations.
4. Landlords.
5. Residential consumers.

A broad participant base will improve competition and reduce reliance on any single technology or provider.

Transition Pathway

A staged approach is suggested.

Stage 1

a. Publish network constraints.
b. Publish hosting capacity.
c. Publish DER targets.
d. Introduce targeted incentives.
e. Measure participation.

Stage 2

a. Introduce Dynamic Operating Envelopes.
b. Enable flexibility products.
c. Increase visibility of network value.
d. Support automated response technologies.

Stage 3

a. Enable more granular locational pricing.
b. Integrate flexibility markets.
c. Expand DSO capabilities.
d. Support increasingly autonomous network optimisation.

This staged approach allows learning while maintaining network reliability and regulatory certainty.

Conclusion

Distributed generation pricing should not simply compensate exported electricity. It should help guide investment toward locations and technologies that deliver the greatest value to consumers and the electricity system.

The Authority has an opportunity to support this transition by enabling greater visibility of network needs, more targeted locational incentives, and stronger links between distributed energy investment and network outcomes.

Flexibility Development Zones provide a practical mechanism for achieving these objectives within existing regulatory frameworks. They create a clear connection between network needs, consumer investment, and pricing incentives while supporting efficient network utilisation, deferred capital expenditure and long-term affordability.

The ultimate objective should be a system where consumers can clearly see where distributed energy resources are needed, understand the value they provide, and participate directly in delivering efficient outcomes for themselves and the wider electricity system.