

19 May 2026

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Tēnā koutou,

***Reforming network pricing for distributed generation to promote efficient investment - Vector Response to Consultation Paper***

Vector welcomes the opportunity to provide feedback to the Electricity Authority on its consultation paper *Reforming network pricing for distributed generation to promote efficient investment*. This submission is not confidential and may be published in full on the Authority's website.

As Aotearoa's largest electricity distributor, Vector is directly engaged in managing the impacts of electrification, increasing distributed energy resources, and changing two-way power flows on the distribution network. Efficient, cost-reflective pricing, together with practical visibility tools and workable connection settings, is important to support a lower-cost, reliable energy transition for consumers.

Vector considers reform of the distributed generation pricing principles (DGPPs) to be part of the broader evolution toward price-led coordination of two-way distribution networks. Efficient injection pricing is not simply a cost-recovery issue. It is also a coordination mechanism that can reveal where injection imposes costs, where it provides network benefits, and where operating envelopes, flexible connection terms or targeted flexibility arrangements may be required. This framing is consistent with the Authority's statutory objective of promoting efficient investment in generation, batteries and network capacity.

**Vector's Symphony ambition is aligned with policy direction**

Our corporate Symphony strategy is shaping a cleaner, smarter, more reliable energy future, with our customers at the heart. A core component of Symphony is making optimal use of demand flexibility to minimise network investment and ongoing costs during the energy transition thereby maximising affordability for consumers.

**Our overall position**

Vector supports reform of the DGPPs, particularly the Authority's proposal to move from incremental cost as a hard cap to incremental cost as a reasonable estimate and pricing anchor.

However, the amended principles and supporting guidance should follow a more collaborative process with industry before setting an implementation timeline. This will allow the sector to work

through practical examples, uncover unintended consequences, assess the system changes and agree on realistic implementation timelines. A focus on the guidance behind the principles is necessary to expose the unintended consequences before Code changes are put in place with implementation timelines. This will avoid mid-stream changes to guidance that may materially change implementation approaches and will result in a better implementation process for all parties.

- The current principles were developed for a materially different market environment and do not allow the flexibility needed to equitably support growing electrification, increasing distributed generation and storage, and account for two-way power flows.
- Vector supports retaining regulated injection pricing and believes that the guidance should be clear that consumers should be responsible for their share of their use of shared network resources. Costs created by incremental and cumulative distributed generation should be capable of being allocated to and recovered from those producers through pricing so there is less risk that consumers without DG are subsidising others' use of the network.
- Vector supports a framework that recognises both the costs and benefits of injection. Injection that uses scarce export capacity, contributes to export congestion, requires additional network management capability, or affects power quality should be able to face cost-reflective charges. Conversely, controllable injection that relieves local offtake constraints or defers investment should be capable of receiving cost-reflective benefits.
- Vector supports changing the incremental cost definition so that costs can be allocated based on reasonable estimates rather than a hard cap. The Code and any supporting guidance should be co-developed with industry.
- Vector does not support the extension of the pioneer scheme arrangements to injection connections at this stage.
- Vector does support a non-discrimination pricing principle.

A distribution network provides electricity lines services by making a point of connection available and by delivering the shared network capacity needed for electricity to flow to and from that site. This service is not limited to offtake as it is the same network capacity that enables injection when a customer exports onto the network.

Prices for electricity distribution services should reflect the service provided and the impact of network use on economic costs, while shared and sunk costs should be recovered in a way that minimises distortions. Vector is not suggesting that injection should fund residual network costs unrelated to the service provided. Rather, where injection uses or reserves network capacity, contributes to export congestion, requires additional visibility, control or power-quality management, or affects hosting capacity, pricing should be able to recover the efficient costs reasonably attributable to enabling that injection service. This includes network injection capacity costs that are reasonably attributable to a connection or class of connections under the amended principles.

We are available to discuss this submission and contribute to further consultation and implementation work. Please find our response to the consultation questions below.

Ngā mihi,

**Matt Smith**  
**Policy Advisor**



## Responses to specific questions posed

### **Q1. Do you agree with the background and context summary above? Why? Is there additional background, evidence, or context relevant to the proposals in this paper?**

Additional relevant context is the growing operational changes necessary to monitor and manage export congestion and local network constraints. Vector has previously stated that a significant quantity of similarly behaving DG on low-voltage networks will lead to export congestion and constraints in some places at some times. It will never be efficient, nor in consumers' interests, to build our physical networks to alleviate all potential constraints from DG export, therefore EDBs will need to invest in other tools to plan for and manage those constraints.

Over time, Vector expects DG pricing to evolve into a more dynamic, locational and service-based framework. In that future state, injection prices, export rewards, flexible connection terms, operating envelopes and targeted flexibility contracts should operate as a coherent toolkit. The objective should be to support efficient DG investment, make better use of existing network capacity, protect consumers from inefficient cross-subsidies, and preserve distributors' ability to manage safety, reliability and power quality.

Pricing reform should therefore be developed alongside physical orchestration mechanisms, such as operating envelope arrangements. In many locations, the efficient response to export congestion will not be unrestricted reinforcement or blunt curtailment, but a combination of transparent export limits, dynamic or flexible operating envelopes, and prices that signal when injection is valuable or costly. Prices provide the economic signal; operating envelopes preserve physical and power-quality limits.

Our role is to provide electricity lines services, which consists of making capacity for power to flow to and from a connection point while managing power quality for all consumers connected to the network. If an injection connection requires network capacity to provide value to others, it is reasonable that these connections are responsible for a proportionate share of the costs for networks making capacity available at that location. While offtake is responsible for a significant share of the residual network costs, enabling injection is considered part of the electricity lines service and we should ensure that the principles allow this to be recovered, which may include network injection capacity costs.

Additionally, policy development is ongoing, including connection pricing, processes, flexibility service market frameworks, congestion pricing and access arrangements, and transmission pricing reform. These are interacting policy settings and there is a risk of unintended consequences if we proceed too quickly. In particular, pricing signals for load, generation, and flexibility services may become misaligned; congestion management costs and benefits may be allocated inefficiently; and short-term pricing responses may lock in investment or operational behaviours that become inefficient as congestion frameworks mature. This risk is heightened if DG pricing principles remain connection-focused and become too prescriptive.

**Q2. Do you agree there are workability challenges with defining incremental costs under the current DGPPs? Why, why not? Are there any additional challenges not discussed above?**

Yes, the current incremental-cost concept is limited and doesn't easily enable the network to account for effects that are cumulative, locational, and often only visible over time.

In a high-DG future, there are network effects that are cumulative and location-specific rather than neatly attributable to a single connection. Vector has previously noted that significant volumes of similarly behaving DG on low-voltage networks can create export congestion and constraints, and that EDBs will need additional tools to plan for and manage those constraints. This makes a narrow, connection-by-connection concept of incremental cost harder to apply in practice and these proposed principles focus on incremental cost rather than a more flexible approach that enables costs to be allocated across injection, offtake, and combined connections.

Vector particularly supports the Authority's recognition that the relevant costs and benefits are not always attributable connection-by-connection. In high-DG areas, material impacts may be cumulative and programmatic: additional LV visibility, modelling, operational systems, hosting-capacity analysis, power-quality management, congestion management, and capacity allocation capability. These costs are real even where no single connection triggers a discrete upgrade. The amended principles should clearly enable distributors to allocate such costs using reasonable, transparent methodologies and allocators.

**Q3. Do you agree the current DGPPs cause costs and benefits to be under-allocated to injection connections, which can cause the issues listed above? Why?**

Yes. The current DGPPs can result in under-allocation of costs and benefits to injection connections. The current "must not exceed incremental cost" framing encourages conservative estimates and can result in producers paying less than the efficient costs reasonably attributable to their connection or class of connections. This risks inefficiently subsidising producers through charges recovered from consumers.

The problem is particularly acute where costs are cumulative, programmatic or capacity-related. Export congestion, power-quality management, visibility requirements and operational systems may be driven by the aggregate effect of many injection connections, rather than by one connection alone. A more workable framework should allow those costs and benefits to be allocated transparently and proportionately.

**Q4. Do you consider it remains appropriate to regulate injection pricing methodologies? Why?**

Principles-based regulation is appropriate, provided the framework is not so prescriptive that it rules out efficient solutions that are in the best interests of all consumers.

Vector supports the use of clear guidance co-developed with industry, transparent methodologies, and practical implementation rather than rigid one-size-fits-all rules.

**Q5. Do you consider that consumers should remain residual payers? Why? Are there any additional economic concepts that should be considered in our reform of the DGPPs?**

A focus solely on incremental pricing for DG connections loses sight of the shared use of network assets which should not fall exclusively to existing customers.

We think the distinction between residual costs and identifiable incremental costs is critical. While offtake consumers currently use a larger share of the residual assets, this will likely change going forward as the cumulative impacts of DG become more significant with each incremental connection. DG pricing principles must evolve to ensure that incremental costs and benefits are estimated broadly and pragmatically, including cumulative, programmatic and capacity-related impacts, while retaining the principle that residual costs not reasonably attributable to injection remain with consumers.

**Q6. Do you consider that reframing the incremental cost rule to a requirement that charges 'must reflect a reasonable estimate of' rather than 'must not exceed' incremental costs is appropriate? Why?**

Yes, but the Authority must jointly work with industry to further develop guidance on the application of the principles before setting an aggressive timeline for implementation.

Vector supports changing the incremental cost rule from a hard cap to a reasonable-estimate standard. Network costs are forward-looking, uncertain, cumulative and often probabilistic. A hard cap encourages under-pricing where costs cannot be proven with precision at the time of connection. A reasonable-estimate standard is more compatible with efficient pricing, provided it is supported by transparent methodologies, worked examples and stable guidance.

**Q7. Do you consider that the proposed amendments to language and framing would support more efficient pricing? Why?**

The amendments are a step in the right direction. They should improve the ability for prices to reflect real network costs and benefits, provided the guidance is clear on how distributors may:

- recover ongoing incremental costs associated with injection;
- reward injection where it reduces network costs or frees up offtake capacity;
- apply capacity and congestion pricing where export capacity is scarce; and
- avoid double counting where the same behaviour is already incentivised through another price signal, flexible access arrangement or flexibility payment.

**Q8. Do you consider that a non-prescriptive, enabling approach to capacity pricing is appropriate at this stage? Why?**

The appropriate pricing approach on a network may depend on a range of factors that vary by location and connection. Such as the existing hosting capacity, forecast demand and generation, operational constraints, and planned reinforcement.

A non-prescriptive, enabling approach allows EDBs to manage this complexity and apply capacity charges where they are efficient and proportionate.

Vector also considers flexible connection arrangements to be a key part of the future injection pricing and access toolkit. Some customers may prefer a lower-cost connection with defined export limits or dynamic operating envelopes, rather than paying for firm, 24/7 export capacity that may be expensive or unnecessary. This supports customer choice and reduces the risk of

over-investment in shared network capacity, particularly where future capacity requirements are uncertain.

**Q9. Do you consider that the proposed extension of the pioneer scheme for load connections would help address position-in-queue issues for injection connections? Why?**

Pioneer schemes for injection connections at the distribution level will not always be relevant. EDBs are still developing a connection queue management policy in collaboration with the Authority, this document seems like a more appropriate document to address concerns with queue management than making changes to the Code.

Vector does not oppose the objective of reducing first-mover disadvantage for injection connections. However, we are not yet convinced that extending the existing pioneer scheme framework is the best or only mechanism for distribution-level injection capacity. Capacity pricing, localised cost recovery mechanisms, congestion pricing and flexible access arrangements may in some cases provide simpler or more efficient solutions. The Authority should work with industry on worked examples before mandating a specific pioneer scheme approach.

**Q10. Do you consider that pioneer schemes should also cover network injection capacity? Why?**

Pioneer schemes will not always be relevant for injection connections; therefore, we do not think that the extension of pioneer schemes to DG should be mandatory at this time. Pioneer schemes may be appropriate in some injection contexts, particularly where a clearly identifiable investment creates additional capacity that later parties use. However, they will not always be the right tool for distribution-level injection capacity. Vector recommends that the Authority develop practical worked examples with distributors and producers before requiring pioneer schemes to apply to network injection capacity.

**Q11. Do you consider that the proposed non-discriminatory pricing requirements would improve confidence that investors are safeguarded from discriminatory pricing? Why?**

We agree in a non-discrimination pricing principle for determining network connections.

**Q12. Do you agree with the proposed application provisions, in particular with regard to opting out, retrospectivity and secondary networks? Why?**

Yes. Providing more flexibility within the principles based approach is supported. We do not support a mandate to retrospectively apply the principles in all cases, given those with existing custom connection arrangements may experience financial impacts and additional contractual costs to resolve those. The scope for implementing bespoke or negotiated arrangements should be enabled within the principles when that improves efficiency. The treatment of secondary networks should be clarified with more worked examples and guidance before considering an implementation timeline.

**Q13. Do you agree with the proposed commencement provisions above? Why?**

The proposed implementation timelines appear challenging given the interaction with connection pricing, queue management, potential congestion pricing, reporting systems and annual pricing consultation processes.

Vector recommends a staged implementation plan with worked examples, stable guidance and clear milestones before distributors are required to make material system or methodology changes. This would reduce implementation risk and avoid inefficient rework.

**Q14. Do you have any suggestions for how we can most effectively support successful implementation?**

We support the ENA and IEGA joint recommendation for industry-developed guidance to support the implementation of the regulation. The Authority should allow sufficient time in the implementation process for this collaboration.

This includes time to develop the practical worked examples, published guidance, and stable decision settings and have those in place with enough lead time for design and implementation of the systems and methodology changes. We have experienced significant challenges within the Authority's recent connection pricing and process workstreams due to delays or changes to the guidance and methodologies close to implementation dates.

**Q15. Do you have any suggestions for effective monitoring and reporting, including proposed changes to charge reconciliation requirements?**

Implementing connection charge reconciliation should be considered alongside the rollout of posted network charges for distributed generation across network tiers.

The reconciliation workbook and associated reporting requirements have only recently been applied to load connections, and their workability is still being tested. These issues should be resolved before extending similar reporting requirements to DGPPs. Any reporting framework should be proportionate, aligned with pricing methodology disclosures, and designed with sufficient lead time for system changes.

We remind the Authority that the timelines for recent connection pricing reforms were insufficient for its own processes, let alone the EDBs. Reporting requirements were only finalized by the Authority one month prior to implementation, allowing insufficient time for EDBs to develop and update systems in a timely and efficient manner. We would like to see lessons learned from the connection pricing experience for a more reasoned and thought through project management plan being applied to DG changes. We are happy to work with the Authority to create a realistic workback plan, with clear milestones for all affected parties.

**Q16. Do you agree it is appropriate to give distributors relatively wide discretion as to how they implement capacity charges for injection connections? Why?**

Discretion on pricing should be left to distributors, because there are differences across networks physical designs as well as the locations, prevalence, and types of injection connections.

A non-prescriptive, enabling approach allows EDBs to manage this complexity and apply capacity charges where they are efficient and proportionate.

The Authority indicates that they are anticipating further reform and guidance on allocating capacity costs, and using congestion charging, which suggests that some discretion now will help inform the future direction in this space.

**Q17. Do you agree that for larger connections a more bespoke approach that accounts for dependability and mitigates risks such as over-injection or inefficient payments is more appropriate than the prescriptive broad-based approach used for residential and small business consumers? What do you consider such an approach should look like?**

Yes, larger connections are more complex and should be managed through a more bespoke framework that recognises dependability, controllability, operating envelopes, and the risk of over-compensation.

In Vector's view, such an approach should look like:

- charges and rebates based on agreed service characteristics rather than broad averages,
- explicit recognition of controllability and dependability,
- agreed operating envelopes or other technical limits where appropriate, and
- protections against over-compensation where a party is already receiving value through avoided network charges, export rewards, flexible connection discounts, operating envelope arrangements, or separate flexibility payments.

**Q18. Is there any specific guidance that would be particularly helpful for distributors implementing capacity charges for injection?**

The most useful guidance would be on capacity-cost allocation methods, congestion charging, large/hybrid worked examples, and how to reflect controllability and dependability without double counting.

Specific guidance that would be useful here would include:

- worked examples for larger injection and hybrid connections,
- how to treat controllable versus non-controllable injection,
- how to deal with over-injection and dependence on operating envelopes, and
- how to structure reconciliation so capacity charges can be traced and audited.

Guidance should also clarify how distributors should avoid paying twice for the same network benefit. For example, where controllable injection is already rewarded through a price signal, flexible access arrangement or export incentive, any additional payment for a network support service should reflect only the incremental value of certainty, availability or performance beyond the response already incentivised.

**Q19. Do you consider that inconsistent treatment of transmission connection charges for large generation projects may distort investment? Why?**

Yes, inconsistent treatment can distort investment, and the Authority has already flagged this risk by identifying a transmission bypass incentive as a potential further reform issue.

That concern is also consistent with Vector's own recent submission on competition and non-network alternatives. Vector's response to the Competition Taskforce's Open Letter noted that transmission charges generally do not signal future upgrade costs at all, let alone by location, and that this "missing signal" weakens the business case for alternatives by encouraging over-reliance on build solutions and under-rewarding flexibility. While that submission is framed more broadly than just large generation projects, the same logic applies: if transmission-related costs are treated inconsistently or not signalled coherently, investment will not occur on the most efficient basis.

**Q20. Do you have a view on the best option to address the connection charge distortion issue? Please explain your rationale.**

Grid-scale generation can avoid contribution to shared transmission charges by embedding within a network and under the proposed principles pay only incremental distribution network costs. The preferred solution should ensure that grid-scale generation faces transmission-related cost signals that are economically equivalent whether it connects directly to the grid or embeds within a distribution network.

This could be achieved either by allowing EDBs to allocate relevant transmission connection or capacity-related costs to embedded grid-scale DG in a manner consistent with the TPM, or by amending the TPM so equivalent projects face equivalent transmission-related cost exposure. The key objective should be to remove inefficient bypass incentives and support lowest whole-of-system cost investment.

**Q21. Do you consider that the restriction on recognising transmission benefits should be reconsidered if the other proposed Code amendments are made? Why?**

The justification for removing consideration of transmission benefits with the changes to transmission pricing from April 2023 are still relevant. Once the broader DGPP reforms are in place, the Authority could consider revisiting transmission benefits during future stages of reform rather than rush them into this package.

**Q22. Are there any other matters that you consider important for us to take into account in our reform of the DGPPs?**

The reforms the Authority has recently made to Part 6 are not occurring consistently, with some updates coming through Code Omnibus, some through the urgent Code change pathway, and some through the typical consultation process.

The underlying systems that support these applications, processes and reporting requirements are often the same. When the overlapping implementation and reporting timelines don't appear to be well coordinated, and changes occur part-way through the implementation period, it creates confusion and resource constraints as we try to update the systems.

**Q23. Do you have any comments on the consumer impact analysis methodology or findings?**

Appendix A – Impact assessment, does include illustrative impact scenarios and quantitative analysis, but the detailed methodology behind that quantitative analysis was not clear so it is difficult to comment on. This would be an area where better guidance would enable the impact analysis to identify or quantify the cumulative and programmatic costs or network benefits; and be clear about how to consider the expected growth in distributed generation.

**Q24. Do you agree with the objectives of the proposed amendment? If not, why not?**

The objectives are sound but should also be read through the lens of practical implementation and coherence with other pricing reforms. The Authority itself has said this is a complex topic and that further reform may be needed over time. In our view, the objective should not just be to improve cost allocation in theory, but to do so in a way that remains workable, transparent, and aligned with how transmission and distribution pricing operate together.

**Q25. Do you agree the benefits of the proposed amendments would outweigh the costs?**

The proposals are expected to unlock more capacity on networks for distributed generation, encourage more efficient use of electricity supplied by DG, help new DG to be built in places where it brings the greatest benefit, and keep costs as low as possible for New Zealanders in the long run. That points toward a positive net benefit from undertaking the reform relative to the status quo.

The benefits are likely to outweigh the costs if implementation is flexible enough to accommodate a changing environment, well-supported and the final framework avoids administrative burden and ambiguity.

**Q26. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Electricity Industry Act 2010.**

The Authority's earlier DGPP issues paper said it was considering options ranging from retaining the status quo, to limited modification, to removing the DGPPs entirely, to a more comprehensive overhaul, and stated that its preferred direction was a more comprehensive overhaul with less prescriptive settings and greater flexibility.

The current consultation presents a specific reform package focused on under-allocation, cost and benefit scope, first-mover disadvantage, and non-discrimination.

The reform package is preferable to removing regulation entirely, however the incremental cost pricing principle needs to be continually evaluated for fitness. Vector's preferred option is a staged, principles-based reform.

**Q27. Do you agree the Authority's proposed amendment complies with section 32(1) of the Act?**

The proposals appear consistent with the Authority's statutory, because the reform is presented as aiming to promote efficient investment, efficient network use, and lower long-run costs for consumers.

**Q28. Do you consider that the Authority's preferred high-level settings for injection pricing are consistent with the distribution pricing principles? Why?**

The preferred settings align with subsidy-free pricing, reflecting network use, and encouraging efficient alternatives, although implementation detail will determine how well that alignment is achieved in practice. Consistency at the high level does not guarantee consistency in practice. That will depend on how the settings are translated into methodologies, charge structures, and guidance over time.

**Q29. Do you consider that consolidating distribution pricing methodology requirements into Part 6B would improve clarity and consistency? If not, why?**

Consolidation could improve clarity and consistency, but only if the drafting avoids collapsing the genuinely different contexts into overly generic provisions. Some of these requirements sit in different operational contexts, with different parties, different charging structures, and different practical risks. Consolidation would be worthwhile if it genuinely improves usability, reduces duplication, and preserves enough specificity for injection, offtake, and hybrid cases to remain workable.

**Q30. Do you have any comments on the drafting of the proposed amendment?**

The Authority should collaborate with industry to develop more worked examples and guidance alongside the Code amendments. More comprehensive worked examples expose Code drafting ambiguities and help avoid late-stage corrections while implementation is underway. We support developing these worked examples through organisations like the ENA and IEGA.