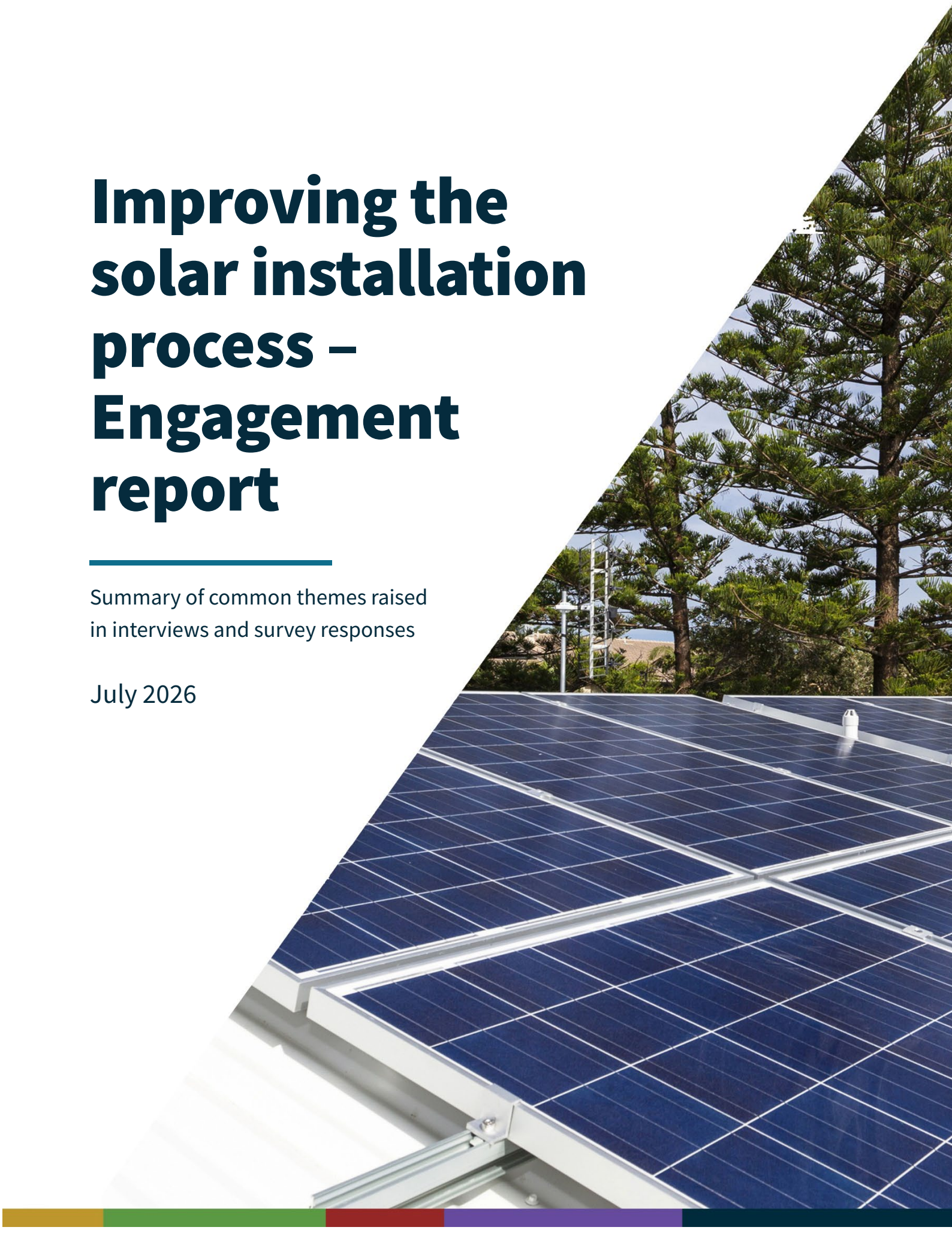
Improving the solar installation process – Engagement report

Summary of common themes raised in interviews and survey responses

July 2026



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Use of Artificial Intelligence

The Ministry has used Artificial Intelligence (AI) tools to support this review, in line with the Government Chief Digital Officer's Responsible AI Guidance for the Public Service: GenAI. AI was used to support submissions analysis and some aspects of the preparation of this report. The review team have reviewed all content developed using AI tools to ensure it is accurate.

Contents

Introduction

1. This report summarises feedback gathered as part of the Solar Installation Regulatory Review. The review focussed on regulations affecting the process of installing small and medium scale solar installations.
2. The purpose of the review was to understand what is working well, and where improvements are needed. It considered the full installation process, from initial enquiry through to connection and export. It also considered the roles of different parties across the system, including installers, distributors, retailers, and other providers. The scope included rooftop and ground mounted systems for homes, farms, and businesses.
3. This engagement report brings together views from across the sector and from consumers. It identifies key themes, common issues, and practical suggestions for improvement. These insights have informed the findings and recommendations in the review.

Methodology

4. This report is based on two main sources of information: an online survey and targeted stakeholder interviews.
    - **Online survey**: The survey was open for two weeks and received around 200 responses. Respondents included consumers, installers, and other industry participants. The survey asked what is working well, what issues exist, and what could be improved.
    - **Stakeholder interviews**: We conducted interviews with around 15 businesses and organisations from across the sector, with a similar set of questions to those used in the online survey. Interviewees included:
        - consumer/advocacy organisations
        - installers
        - electricity distribution businesses
        - electricity retailers
        - a metering provider
        - organisations that represent sector participants.

Building Act

What we heard:

- **Rooftop solar exemption is generally working well** – strong support and clear benefits for cost, time, and uptake
- **Complexity remains in practice** – unclear rules and overlap create confusion, especially for new builds
- **Inconsistent council interpretation** – varying approaches and limited familiarity cause delays
- **Clear direction and wider exemptions needed** – suggestions to improve guidance and simplify rules for small, low-risk systems

Exemption from building consent requirements is working well and widely valued

5. Across both survey responses and interviews, there is consistent support for the current settings that generally exempt standard rooftop solar installations from building consent requirements. Survey respondents emphasise that this significantly reduces administrative burden, cost, and delays for homeowners. This aligns strongly with interview evidence, where industry participants cautioned against introducing additional consent requirements and highlighted the importance of keeping councils out of routine rooftop installations.
6. Survey evidence suggests that the exemption is functioning largely as intended for rooftop installations on existing houses.

- "Exemption from Building Consents: The Government's directive that standard residential solar installations do not require building consents has significantly reduced unnecessary administrative hurdles and upfront costs for homeowners looking to transition to clean energy." **Consumer**
- "Well... I mean, the fact that most rooftop solar doesn't require any council consent is a good thing. So don't change that. Don't require any form of additional consents to get something done." **Installer**

Building consent and code requirements still create complexity and uncertainty

7. Despite the general exemption, survey responses highlight that Building Act requirements remain a source of complexity in practice. Respondents noted that Building Code rules, overlapping regulatory frameworks, and unclear requirements can create confusion, particularly when combined with electrical and network requirements.
8. Interview evidence reinforces this, particularly in relation to inconsistent interpretation by councils and building inspectors. Stakeholders reported that some councils and inspectors are uncertain about how solar fits within existing building processes, especially for new builds. This results in inconsistent application of rules and, in some cases, reluctance to sign off installations.
9. Overall, the evidence suggests that while the policy intent is clear, implementation is uneven, with uncertainty arising at the interfaces between building compliance, electrical regulation, and other approval processes.

- "Building consents definitely are an issue in terms of some councils still – it becomes a problem if the customer is putting solar on their new build. Some councils get completely lost in terms of whether that should be part of the code compliance certificate and therefore their responsibility or not. So that's not clear. (…) Some building inspectors are not happy to sign off a building consent [for a new build] with solar on it because they don't understand the solar bit. So there really needs to be some clarification on that." **Installer**

Lack of clarity and consistency across councils is a key friction point

10. A prominent theme across both data sources is inconsistency in how building-related requirements are interpreted and applied across councils. Survey responses point to confusion caused by multiple overlapping regulatory regimes, while interviews provide concrete examples of variability in council practices.
11. Interview participants described uncertainty around whether solar should be included within building consent processes on new builds, and inconsistent expectations among councils regarding code compliance and sign-off. In some cases, councils or inspectors were described as lacking familiarity with solar systems, contributing to delays or additional requirements.

Targeted exemptions and clearer guidance are the main improvement pathways

12. Survey respondents strongly support expanding or clarifying exemptions for small or standard systems, with many suggesting that Building Consent (or equivalent engineering review) should not be required for installations that meet certain criteria. There is also a call for clearer guidance on building code requirements, particularly regarding structural loading and responsibility for assessment.
13. This aligns with interview evidence that points to confusion among councils and inspectors, suggesting that clearer national direction or guidance could reduce variability and improve confidence in decision-making. The overall direction of feedback is toward simplifying requirements for low-risk installations while maintaining appropriate safeguards for larger or more complex systems.

New builds and ground-mounted solar installations

- [Suggestions] "Not having to get building consent on residential new builds and small ground arrays in the rural sector. Waste of everyone's time. Understand it's needed for larger systems" **Installer**
- "Also, building consent (or CPEng peer review) should be exempt for all roof mounts less than 100kW." **Installer**
- "All credible mounting structure manufacturers provide a PS1 [Producer Statement – Design] and installation requirements/restrictions to comply with this PS1. Allowing us to sign our own PS3 [Producer Statement – Construction] when installed to these guidelines without having to get a site-specific PS1 made up for every site. Commercial installs we pay to get this done, but if this becomes a requirement for residential it's going to be adding $2k to every install for no reason." **Installer**

Roof loading

- "Better education on solar impact on the building roughly 15 kg per m2 and who wears the risk of this assessment." **Installer**
- "Lack of clarity on rules for roof loading and engineering certifications (this was on a new build that had been intentionally overspecced to ensure it could carry 20 panels)." **Consumer**
- "Getting information on building construction and ability to support the weight of the systems takes a while." **Installer**

Carports

- "Consenting for commercial carports has been a massive headache and adding unnecessary cost to what is supposedly a government/council supported initiative. (…) EI-R30 rule was encountered on a system consent for a carport structure needing

building consent. The council took into account energy generated as part of the building consent which has no logic as it was already approved by the EDB. Not only this but the council was not able to accurately interpret the data which proved that we were working within this rule so requested we change the system. Had this been installed on a roof the council would not have had any say on what was being generated as it fell outside of needing consent. This had impacts on delays and also project viability as the only way to appease the council's incorrect understanding of the data was to zero the export from this system." **Installer**

Resource Management Act

What we heard:

- **Consenting adds cost and delay for non-standard installations** – while only a subset of installations will need to get resource consent, for those that do, it can be a significant burden - ground-mounted, rural, and larger systems face disproportionate requirements, increasing time, cost, and complexity
- **Strong support to exempt small and low-impact solar from consent** – expand permitted activity status through clearer national direction to reduce unnecessary barriers
- **Inconsistent council approaches create uncertainty** – variation in rules and interpretation across councils drives risk, confusion, and additional effort for developers
- **Current framework works for rooftop solar but not for edge cases** – maintain enabling settings for standard systems while developing streamlined pathways for emerging and larger use cases

Consenting requirements add cost and delay for non-standard systems

14. Survey responses consistently identify resource consent requirements as adding cost, complexity, and delay—particularly for ground-mounted systems, farm installations, and emerging use cases like commercial carports. These respondents often view consenting as disproportionate to the actual environmental impact of these systems.
15. Interview evidence supports this, although it suggests that such issues are concentrated in specific cases rather than being universal across all solar installations. Stakeholders noted that consenting can sometimes be slow or burdensome, but in many cases the issue is overshadowed by other process bottlenecks.

- "Consenting requirements for dairy farm ground mounted systems and other agriculture installations – this is adding significant cost for resource consents when these systems have little to no impact on the surrounding area. There needs to be a smarter approach to allow farmers simplified pathways to install solar on ground mounted structures." **Installer**
- "The requiring of resource consents seems to us to needlessly add to the cost of solar installations." **Consumer/advocacy organisation**

Strong support for exempting small and low-impact solar installations from planning processes

16. A clear and consistent theme from survey respondents is the view that small-scale and low-impact solar installations should not require resource consent at all. Respondents advocate for clearer national settings that enable these activities as permitted, rather than leaving decisions to local interpretation.
17. This aligns with interview evidence, where stakeholders emphasised that the absence of consent requirements for most rooftop solar installations is a key strength and should not be eroded. The combination of these sources suggests strong sector support for expanding permitted activity status to cover a broader range of installations.

- "Suggestion: Amend National Direction, particularly the National Policy Statement on Renewable Electricity Generation, such that residential and small-scale solar installations are provided for in plans as a permitted activity." **Consumer/advocacy organisation**
- "Systems under a certain size (300kW) not needing resource consent provided they meet criteria that they are located certain distances from road and do not impact neighbours and other logical exceptions where consent would need to be considered." **Installer**

Inconsistent and unclear council approaches create uncertainty

18. Survey responses highlight inconsistency across regions as a key concern, with different councils applying different thresholds, interpretations, and requirements. This lack of standardisation leads to uncertainty and additional effort for installers and project developers.
19. Interview material reinforces this, particularly through examples of ambiguity in planning rules and confusion within councils themselves. Stakeholders described situations where council staff were unsure how to treat solar within existing frameworks, especially for newer or hybrid use cases.

Planning issues are limited for standard residential solar installations but more relevant for medium scale installations

20. Across both evidence sources, there is broad agreement that RMA requirements are not a major barrier for standard residential rooftop solar. Interview participants noted that such installations are generally permitted and proceed without significant planning hurdles.
21. However, both survey and interview data highlight that RMA-related issues become more prominent for medium scale installations —such as rural installations, ground-mounted systems, and community or larger-scale projects. This suggests that while the current

framework works reasonably well for mainstream cases, it does not scale effectively to more diverse or emerging installation types.

- "Consenting! Especially for Ground Mounts requiring resource consents! I understand for solar farms, but for farmers or industrial applications, where solar can sit behind the meter and offset load directly, we should be able to install systems up to 300kW (or larger?) without the need for resource consents." **Installer**
- "Consent required for ground mount systems unnecessary where properly designed using quality gear installed by experienced installers. Not necessary!" **Installer**

Electricity distributors

What we heard:

- **Variation across electricity distribution business (EDB) processes** - inconsistent requirements and forms create complexity; suggestion that greater standardisation would reduce confusion
- **Inefficient Distributed Generation (DG) application processes** - uneven timeframes and manual processes cause delays; suggestions that more automation and consistent standards would improve speed
- **Limited data and upfront information** - poor access to capacity and meter data creates uncertainty; better data sharing would enable faster decisions
- **Low transparency in relation to capacity constraints** - unclear costs and timeframes, alongside resourcing pressure, weaken customer experience; suggestion that EDBs provide public information on network constraints to improve process efficiency

Variation across EDB processes creates inconsistency and complexity

22. A dominant theme across both survey responses and interviews is the **high degree of variation between EDBs**, which creates confusion, inefficiencies, and uneven customer experiences. Survey responses emphasise inconsistent requirements, fees, and timeframes across network areas, while interviews reinforce that each EDB operates its own processes, forms, and standards. This fragmentation increases administrative burden for installers operating across regions and makes it difficult for consumers to understand what to expect.
23. Interview evidence highlights that these differences are not just perceived but structural, with multiple application forms, approval pathways, and interpretations of industry rules. While some stakeholders acknowledge that differences in network conditions can justify variation, others consider much of the inconsistency unnecessary and inefficient. Overall, both sources point to a **strong case for greater standardisation**, even if full uniformity may be challenging.

- "The main issue is… there's 27 different forms, 27 different approved inverter lists. And it just seems ridiculously inefficient that there isn't a single nationwide system to do this." **Installer**
- "For example, in our experience [EDB1] is relatively straightforward to deal with, while [EDB2] is significantly more difficult and time consuming. This creates unnecessary

complexity for installers who work across multiple network areas, and it also leads to an inconsistent experience for customers depending purely on where they live." **Installer**

Distributed generation application processes are uneven and often inefficient

24. Both survey and interview evidence point to **inconsistent performance and inefficiencies in DG application processes**. While some EDBs process applications quickly and efficiently, others are described as slow, opaque, or overly manual. Survey respondents highlight variation in turnaround times, fees, and administrative burden, while interviews provide examples of delays and processes that appear outdated.
25. A recurring issue is the lack of upfront information about network capacity and approval likelihood. This leads to wasted effort, redesign, and delays. Interview participants contrast high-performing networks with others that still rely on manual processes, reinforcing that improvement is possible but unevenly realised.

- "We deal with a situation where one EDB can process all applications at no cost within the same day, then cross an invisible boundary and the other charges significant fees and takes much longer." **Installer**
- "In some cases, that's 60 to 90 days until you get an answer… it shouldn't take 45 days to process an application for something that you actually have all the information for." **Installer**
- "The prescribed fees can sometimes be insufficient in terms of the time that it actually takes to go through an application… but then we're limited in the amount that we can recover." **EDB**

Limited access to network and meter data constrains efficiency

26. A key systemic issue identified in interviews is **limited access to network and smart meter data**, which constrains EDBs' ability to automate processes and assess applications efficiently. Survey responses indirectly support this by highlighting lack of upfront information (such as network capacity), which contributes to delays and redesign.
27. Some EDBs are able to provide rapid, near-instant approvals due to direct access to data, while others must rely on third-party metering providers, introducing cost, delay, and technical barriers. This contributes to uneven service quality across the sector.

- "Very few EDBs have that level of access to smart meter data… they have to access it through a third party… it is a cost… there are technical barriers." **Industry association**
- "It costs a lot to put monitors on things like transformers… when it comes down to low voltage, we can't see at every point on every single line." **EDB**
- [Suggestion for change] "You plug in your address and it tells you available capacity… that's all you really need… otherwise you're in the dark until the network gives you that information, and you may well end up having to redesign and rework and create a whole lot of inefficiency, whereas having that information available upfront would be an efficiency gain for the whole industry." **Installer**

Resourcing constraints and regulatory change create pressure on EDBs

28. Interview evidence highlights that EDBs are operating under **significant resource constraints and high volumes of regulatory change**, which affects their ability to adapt and improve processes. While this theme is less explicit in survey responses, it aligns with reported delays and variability.
29. Stakeholders note that increasing demand for distributed generation is placing pressure on EDB teams, particularly for larger or more complex applications. At the same time, frequent regulatory changes require rapid implementation, which can divert resources from service improvements. This creates a tension between compliance and performance.

- "There is a lot of change going on… change on top of change… it has a compounding effect… it can be difficult to get a sense of the obligations." **Industry association**
- "Their internal teams are way too busy. They don't have enough people to cope with the demand… and it's going to get worse." **Consumer/advocacy organisation**
- "It's just like, you know, my goodness, there's just such a tsunami of stuff going on here… changes on top of changes." **EDB**

Lack of transparency and upfront information creates customer risk

30. Survey and interview evidence consistently identifies **limited transparency around pricing, network constraints, and timeframes** as a major issue. This affects both installers and consumers, who often invest time and money before receiving critical information.
31. Survey respondents emphasise the downstream impact of hidden costs and delays, while interview participants describe customers receiving "rude shocks" after progressing through the process. This lack of transparency undermines trust and contributes to poor customer experiences.

- “There is a lot of information that is kept back until you’ve already invested a fair amount of time and effort… then you get a rude shock with the price and timeframes.” **Consumer/advocacy organisation**
- “The process remains fragmented, financially exclusionary, optimised around individual ownership models and insufficiently designed around consumer experience, flexibility and long term sustainable outcomes.” **Other sector participant**
- “That process, that openness from the networks, that desperately needs to be improved. They've got forms and what have you on their websites, but if you want to go bigger than the 10 kilowatts, there is no information about what the process is, and how much roughly this is going to cost and how long it will take. Even if there is some information in there, it's usually buried and hard to find.” **Consumer/advocacy organisation**

Movement toward automation and standardisation is improving parts of the system

32. Despite challenges, both survey and interview evidence identifies **positive trends**, particularly increased automation, pre-approvals, and digital application processes. These improvements are not yet consistent across all EDBs, but where implemented, they are seen to significantly improve efficiency and customer experience.
33. Interview participants highlight examples of fast, automated approvals and online portals, while survey responses point to opportunities to expand these approaches across the system.

- “[One EDB] has been held up as a bit of an exemplar, with their one click sort of virtually immediate approval. Other EDBs are well aware of that, and are looking to replicate those processes if they can.” **Industry association**
- “Automation probably just came because of volumes – in the sense that 10 years ago there was no solar, and you had maybe two applications a year, and therefore doing it manually wasn’t a big deal. Now we get 500 or 600 [applications] a year. So, then you have to automate something, if you get in that much volume.” **EDB**

Metering

What we heard:

- **Metering can be fast where systems are enabled** - smart meters and remote programming allow quick activation when coordination works well, suggesting wider rollout and consistent use of these capabilities as a solution
- **Fragmented retailer and metering processes drive delays** - inconsistent requirements and poor coordination create bottlenecks, indicating a need for standardised processes and clearer sequencing across providers
- **Unclear and inconsistent upgrade requirements add cost and confusion** - uncertainty about when upgrades are needed leads to delays and unnecessary replacements, highlighting the need for clear national guidance and consistent interpretation
- **Limited data access and unclear accountability constrain performance** - restricted data use and multiple responsible parties reduce system optimisation and confuse consumers, pointing to improved data sharing and a single point of accountability as key solutions

Metering processes can work well when streamlined and enabled by smart technology

34. Across both survey responses and interviews, there is evidence that metering processes can operate efficiently in some cases, particularly where smart meter capability and retailer coordination are strong. Survey responses highlight examples where meter upgrades or reconfigurations are completed quickly, enabling immediate system commissioning. These examples align with interview evidence that points to increasing capability for remote programming and improved coordination as key enablers of efficiency.
35. However, this positive experience appears unevenly distributed. Interviews suggest that improvements such as remote programming are still being rolled out and are not yet consistently available across all regions or providers. This creates variability in outcomes, where some consumers experience seamless activation while others face delays or additional site visits. Both sources therefore indicate that while the underlying technology and processes exist to support efficient metering, they are not yet consistently applied across the system.

- "As we already had a smart meter installed in the last couple of years, our power company was able to remotely update our meter in order to export to the grid which was done within a day, so this was also done extremely efficiently and easily." **Consumer**
- "Power companies sometimes complete the smart meter upgrade prior to the solar installation. This allows the electrician to liven the system immediately upon passing inspection." **Installer or installer network**

Fragmented retailer and metering processes create delays and administrative burden

36. The most consistent theme across both surveys and interviews is that fragmented processes — particularly across retailers and metering providers — create delays and complexity. Survey respondents frequently identify the import/export meter change process as one of the most difficult parts of the installation journey, with inconsistent requirements, long wait times, and lack of coordination between actors.
37. Interview evidence reinforces this, highlighting the structural fragmentation of the metering system, where responsibilities sit across retailers, metering equipment providers, and other parties. This fragmentation creates inefficiencies such as duplicated steps, sequencing constraints, and delays when customers change retailers mid-process. Interviews also suggest that variability between providers contributes to inconsistent customer experiences, even when underlying technical requirements are similar.
38. Together, the evidence indicates that delays are not primarily driven by technical complexity, but by process fragmentation, inconsistent practices, and weak coordination across multiple responsible parties.

- "Import export meter change process with energy retailers – this is the most painful part of installing a solar system. Every retailer has a different process, and their staff aren't trained on that process. Retailers are hard to get hold of and this causes delays for the customer and take up lots of admin time." **Installer**
- "Retailers being very slow to arrange the export meters, and the chain of suppliers needed to get the meter changed. There are too many steps in the chain to get it done. And some retailers insist that the solar must be on first, and others don't." **Installer**
- "Metering: Inconsistent processes from the various retailers causing delays, some take days or weeks to get appropriate service orders to install meters." **Other sector participant**

Meter upgrades and requirements are unclear, inconsistent, and sometimes unnecessary

39. Both surveys and interviews highlight significant uncertainty around when meter upgrades are required. Survey responses point to long delays and customer frustration associated with upgrade processes, including cases where the need for an upgrade is unclear or disputed. Interview participants similarly note inconsistencies, including situations where meters are capable but still replaced, or where different actors interpret requirements differently.
40. Interviews also clarify some of the technical realities behind this issue: many legacy meters are not capable of measuring bidirectional flows, making upgrades necessary in some cases. However, there is also evidence that newer meters can sometimes be reprogrammed remotely, meaning physical replacement is not always required. The lack of clarity around these distinctions appears to contribute directly to customer confusion, unnecessary costs, and process inefficiencies.
41. Overall, the evidence suggests that both genuine technical requirements and inconsistencies in interpretation are contributing to perceptions of unnecessary upgrades.

- "We had to wait FIVE WEEKS to get [retailer's] contractor around to confirm whether or not we needed to upgrade our smart meter. The guy had a quick look and said "yup, all good" then left. FIVE weeks, for that? I think we had to pay $160 for the pleasure." **Consumer**
- "Power companies are very slow in approving applications and installing the correct meters… took months to get the solar system online even though it had already been physically installed." **Consumer**
- "Most of the smart meters that have been installed over the last 15 years are load only meters, so they need to be changed to import export meters." **EDB**

Limited access to and use of metering data constrains system-level optimisation

42. A major systemic issue identified in both evidence sources is the limited accessibility and use of metering data beyond billing purposes. Survey responses indirectly highlight system-level inefficiencies, including poor optimisation of solar systems and lack of coordination across actors. Interview evidence provides more direct insight into the underlying cause: metering data is largely controlled by retailers and used primarily for billing, with limited access for distributors and other parties.
43. This has significant implications for system performance. Interviews indicate that restricted access to timely, granular data limits the ability of networks to manage capacity, plan for solar uptake, and optimise outcomes. Delays in data access and commercial barriers to sharing it further reinforce conservative network decisions and inefficiencies. Both sources

therefore point to a broader issue: the metering system is not yet designed to support distributed energy as a coordinated system.

- "The current philosophy… that data is a one-to-one flow from the consumer to the [metering provider] to the retailer… and then if some other party wants to [access it], they approach the retailer and ask the retailer to share it with them, and the retailer gets the customer's permission. Whereas we're saying, no, roll it right back and go, this data is so valuable to the industry as a whole. The metering provider should be required to supply it at an incremental cost to whatever party they want. So, the whole paradigm has to be broken apart." **EDB**
- "We have to buy the data and then we have to analyse it… we can't see right down to the nitty gritty detail of the low voltage networks where the solar is being installed - so that does require purchasing of data from metering providers or going through retailers. I think people underestimate how blind we are beyond high voltage. The classic case is that most distributors don't know if [a pole has fallen over in a storm, causing an outage] until someone calls and tells us." **EDB**
- "The first issue is [EDBs] don't have access to the metering data until 24 hours later. That's ridiculous… there's this game that's been played for years around – you can get it, but you'll get it late. And so the networks have to be super conservative with what they say yes and no to, because they can't see the data fast enough. So that needs to be sorted out urgently, in my view, because that will give them much better visibility." **Consumer/advocacy organisation**

Lack of standardisation and single accountability point creates confusion for consumers

44. Survey responses consistently call for standardisation and simplification of metering processes, including suggestions for a single application pathway and clearer accountability. These concerns are echoed in interviews, which highlight the multiplicity of actors involved in metering and the resulting complexity for consumers.
45. This fragmentation creates confusion about who is responsible for each step, increases the risk of delays, and makes it difficult for consumers to navigate the process or resolve issues. Interview evidence further suggests that current arrangements reflect historical industry structures rather than being designed for distributed energy systems. Both sources point to the absence of a single accountable entity as a key driver of poor customer experience.

- "Solar is still being treated as an isolated system… nobody is optimising whole system outcomes and as a result creating under-sized systems, poor self-consumption, missed flexibility options and lower emissions impact than possible." **Installer**

Retailers

What we heard:

- **Consumers will often approach retailers with complaints** - complaints can often be driven by upstream issues, but fall on retailers due to poor communication and unclear responsibilities; suggestions to clarify roles and improve end-to-end information sharing
- **Inconsistent retailer processes create friction** - variation in requirements, sequencing, and timelines drives delays and rework; suggestions to introduce standardised processes and aligned requirements across retailers
- **Metering processes are a key bottleneck** - slow and complex coordination delays commissioning and export payments; suggestions to streamline coordination, and improve data flows
- **Low transparency limits informed consumer decisions** - tariffs, export payments, and system performance are difficult to understand; suggestions to improve guidance, simplify plans, and support clearer comparison of options

Retailers play a critical but often misunderstood role in the customer experience

46. Survey responses and interview material consistently show that retailers sit at a pivotal point in the solar installation journey, particularly at the transition from installation to billing and ongoing system operation. Both sources highlight that issues attributed to retailers are often symptoms of upstream problems (for example, installation quality or poor information), yet retailers remain the primary point of contact for customers once the system is operational. This creates a structural tension where responsibility and accountability are blurred.
47. Interview evidence emphasises that retailers frequently receive complaints linked to installation or setup issues, particularly when customer expectations do not match billing outcomes. Survey responses reinforce this, showing persistent confusion about retailer responsibilities, billing arrangements, and export payments. Together, these sources suggest that while retailers are central to the post-install experience, the system does not clearly define or communicate their role to consumers, leading to misplaced expectations and dissatisfaction.

- "[Issues due to incorrect system configuration] seem to have given rise to complaints which come back to bite the retailer when the retailer is not actually at fault. (…) And then when they don't see those outcomes on their bill, the blame automatically shifts to the retailer who's charging them." **Retailer**
- "Poor communication between installers, electricity retailers, and lines companies, especially during grid connection approval." **Consumer**
- “We are mandated to ensure that if they don’t want their meter reconfigured, then they are gifting their excess power to the grid. That’s up to the retailer to tell them. The network could tell them. (…) It could be part of the [installation] process – sometimes they’ll install everything and keep the inverter turned off. A lot of this stuff falls on the retailer as they have to have the conversation, but at that point it’s too late. More often than not it can’t be back-dated.” **Retailer**

Inconsistent retailer processes create fragmentation and inefficiency

48. A dominant theme across both survey and interview evidence is the lack of standardisation across retailers. Survey respondents repeatedly highlight wide variation in processes, information requirements, and turnaround times between retailers, with this inconsistency identified as a major source of delay and administrative burden. Interviewees similarly describe differences in retailer practices (for example, when meters are installed or enabled) as creating confusion and inefficiencies across the system.
49. The survey material suggests that this fragmentation reflects a broader structural issue in the market, with multiple retailers operating divergent processes. Interview evidence complements this by showing how these differences manifest in practice, including mismatched sequencing of steps and varying approaches to risk and cost management. Together, the evidence indicates that inconsistency between retailers is a core driver of friction across the installation and connection process.

- "Metering - significant variation across the retailers in how metering requests/applications are made i.e it can go from minimal/extremely slow responses and physical jobs being issued taking weeks, all the way through to excellent turnaround within a few days. Generally speaking, the larger the retailer, the slower and worse this process tends to be." **Installer**
- "Energy retailers all requesting different information and having different processes for the metering element. Some request ROI's and COC's, which are not required to raise a request, and it wastes a lot of time fighting this." **Installer**

Metering and retailer processes are a major bottleneck in the system

50. Both survey and interview evidence strongly converge on metering — largely managed or coordinated through retailers as one of the most significant bottlenecks in the solar installation journey. Survey responses repeatedly identify delays in arranging import/export meters, slow processing times, and complex coordination chains involving retailers and their metering providers. These delays directly affect when systems can be commissioned and when customers begin receiving export payments.
51. Interview evidence adds nuance by explaining some of the underlying causes of these delays, including sequencing constraints, data accuracy issues, and retailer decisions about when to initiate meter changes. It also highlights how differences in retailer behaviour (for example, whether metering is arranged early or late in the process) can significantly affect customer timelines. Together, the evidence indicates that retailer-led metering processes are both operationally complex and a key source of customer frustration.

- "Retailers being very slow to arrange the export meters, and the chain of suppliers needed to get the meter changed. There are too many steps in the chain to get it done." **Installer**
- "In some cases, there is 3-week delay in obtaining these." **Other sector participant**
- "Retailers are in control of when export from the solar system is recorded and credited to an account. So, if there are issues in back-office processes or with metering the customer misses out on payments. In a recent install this was 6,400kWh or almost a whole household's annual consumption." **Other sector participant**

Limited transparency and complexity undermine consumer understanding and outcomes

52. Across both sources, there is strong evidence that retailer processes and offerings are difficult for consumers to understand, particularly in relation to tariffs, export payments, and system performance. Survey respondents describe confusion about pricing, export limits, and billing arrangements, while interviewees highlight the absence of clear guidance on selecting appropriate retail plans or understanding expected financial outcomes.
53. The interview material adds depth by showing how even well-informed participants struggle to navigate retailer options, particularly in aligning system design with retail tariffs. Survey evidence supports this by pointing to structural issues such as fragmented markets, variable buy-back rates, and inequities in access to benefits. Overall, the evidence indicates that the current retailer landscape is not well aligned with consumer decision-making needs in the context of distributed generation.

- "There is no easy way for a customer to understand where the best plan for them is. So, I mean, I had a four-tab spreadsheet for myself to try and work out, and I still didn't get it right." **Consumer/advocacy organisation**
- "In addition, consumers are frequently encountering different export limits, connection processes, unclear hosting capacity and variable buy back across regions signalling immature distribution energy and flexibility markets creating friction and uncertainty as consumers don't understand the reason for export limits and the price they receive." **Installer**
- " I was disappointed [retailer] doesn't implement net billing. Within a half hour period I found I was paying for import at high tariff rates and getting a pittance for export." **Consumer**

Existing practices show that retailer processes can be efficient when well coordinated

54. While most evidence highlights challenges, both survey and interview material point to examples where retailer processes work well, particularly when metering and coordination are handled proactively. Survey responses note that pre-install meter upgrades and remote programming can significantly streamline the process, while interviews describe how coordination between retailers and installers can reduce the number of site visits and shorten timelines.
55. These examples demonstrate that current inefficiencies are not inherent to retailer involvement but rather reflect inconsistent practices across the market. Where coordination, sequencing, and data processes are well managed, retailer-related steps can be completed quickly and with minimal friction. This suggests potential for system-wide improvement through standardisation and better integration.

- "As we already had a smart meter installed in the last couple of years, our power company was able to remotely update our meter in order to export to the grid which was done within a day so this was also done extremely efficiently and easily." **Consumer**
- "Power companies sometimes complete the smart meter upgrade prior to the solar installation. This allows the electrician to liven the system immediately upon passing inspection." **Installer**

Electrical inspection

What we heard:

- **Inspection is widely supported as an important safety safeguard, but views are mixed on how it should be applied in practice** – stakeholders generally agree on the purpose of inspection but differ on whether the current approach is proportionate for all installation types
- **Concerns about independence and consistency** – some stakeholders raised concerns about how inspections are arranged in practice, including examples of "inspector shopping". This suggests the current model may create risks for consistency and perceived independence
- **Delays and process challenges affect time and cost** – the inspection process is often where delays emerge, due to limited inspector capacity, coordination issues, and inconsistent interpretation of standards. These issues can lead to rework, duplication, and higher costs

Electrical inspection is widely supported in principle, but views are mixed on how it operates in practice

56. Across survey responses and interviews, electrical inspections were generally seen as an important safety safeguard in the solar installation process. Stakeholders described it as a key "backstop" that helps ensure installations are safe, meet minimum standards, and that defects or non-compliant work are picked up before systems are connected. This was raised by industry participants, government and regulatory stakeholders, and consumers, particularly given the electrical risks involved and variation in installer capability.

57. There was broad agreement on why inspection exists and the role it plays in maintaining trust and confidence in the system. However, views differed on how inspection should be applied in practice. Industry participants were more likely to question whether a "one-size-fits-all" approach is proportionate, particularly for smaller, lower-risk systems, while some regulatory and safety-focused stakeholders supported retaining a consistent approach across all installations.

58. Some stakeholders supported retaining independent, in-person inspections. Others suggested more targeted alternatives, such as remote or photo-based inspections, greater reliance on installer certification with auditing, or different requirements for lower-risk systems. This reflects a shared understanding of the purpose of inspection, but less alignment on how it should be delivered.

59. Consumers also highlighted confusion about what inspections check, when they are required, and how they fit into the wider installation journey. Some described multiple inspections or repeated checks as feeling duplicative, and adding cost without a clear benefit.
60. Overall, most stakeholders supported keeping electrical inspections in place, but saw opportunities to make it more proportionate, targeted, and easier to navigate without compromising safety.

There is no single bottleneck – delays are driven by a web of interacting issues

- "The reason why solar has to be inspected is because it's bloody dangerous. The solar panels do not stop working when the sun's out." **Industry body**
- "Continue with the current CoC / RoI for high-risk PEW and educate the public on the dangers if the electrical safety regulations are not followed." **Electrical inspector**
- "Why can't we do remote site inspections instead of needing an inspector onsite with every single job? Can't remote photo inspections be done and used like in Australia?" **Consumer**
- "The installers could have a self-inspection system... big penalties for failing random inspections." **Consumer**
- "It is important all PV solar installs are inspected on site, due to non-compliance issues, which then also affects people's insurance if they are not inspected." **Electrical inspector**
- "They're effectively just another qualified electrician. The person that's often installing the system has the same level of qualification as them. It seems like an additional layer that's somewhat not needed." **Installer**

61. While a small number of respondents reported no issues with inspection timing, most survey responses and interviews identified delays as a key pressure point. Consumers described systems being fully installed but sitting idle for weeks while awaiting inspection sign-off. Installers, electricians, and inspector-related groups linked these delays to a limited pool of inspectors, with travel to rural areas adding further time and cost.
62. Stakeholders also described delays arising from how inspection operates in practice. Electricians and inspectors do not always share a consistent understanding of how standards should be applied, and concerns raised during inspection are not always clearly linked to a specific requirement or clause. This can create back-and-forth, rework, and uncertainty before sign-off can occur.
63. As a result, inspection was often described as the point where progress slows or stops. Even where an installation is ready, it cannot move forward until inspection and associated paperwork are resolved. Electricity distributors, while less directly involved, noted that

Records of Inspection are not always received in a timely or consistent way, which can delay metering changes and final connection.

64. Stakeholders also pointed to limited visibility of inspection outcomes, including failed inspections. This lack of consistent data makes it harder for regulators and industry to identify where delays are occurring, assess overall system performance, or target improvements.

65. Beyond the immediate process, stakeholders linked these issues to constraints in the inspection workforce. Inspectors and industry representatives described a small and unevenly distributed pool of endorsed inspectors, complex and inconsistently applied endorsement requirements, and limited financial incentive relative to the responsibility and liability involved. These factors may make it harder for experienced practitioners to enter or remain in inspection work.

66. Taken together, the evidence suggests inspection delays are not caused by a single bottleneck, but by several interacting factors: limited inspector capacity, travel-related cost pressures, inconsistent interpretation of standards, fragmented paperwork and handoffs, and constraints in the inspection workforce. These issues combine to slow progress and increase costs for consumers and installers.

- “We’ve had instances where we’ve gone to site and looked at retrofitting systems and our installers have gone out and said, ‘I’ve got no idea how this was signed off by an inspector.’” **Installer**
- “Electrical inspectors are hard to come by. In some regions like Bay of Plenty, for example, there’s only three electrical inspectors for that region.” **Installer**
- “There’s going to be a huge shortage of electrical inspectors coming up. There’s going to be a real bottleneck. Endorsed electrical inspectors. It’s something which the EWRB needs to realise. There needs to be better pathways to actually getting your endorsement.” **Industry body**
- “Getting an inspection to source the installed system took 6 weeks, which seemed way too long to my mind." **Consumer**
- “The inspection date had to be rebooked twice. My hardware was completed and isolated for three weeks after construction, awaiting inspection before the solar array could be turned on.” **Consumer**

The model is designed to be independent, but commercial relationships can blur that in practice

67. Concerns about potential conflicts of interest were raised in a small number of survey responses and explored further through targeted engagement with stakeholders. These

centred on the current model where installers or electricians directly engage inspectors, which some respondents suggested may affect how consistently inspections are applied in practice. References to practices such as “inspector shopping” were raised, although this was not described as a universal experience.

68. To test these concerns, the review team engaged directly with government stakeholders in Victoria (Australia), where a similar inspection model is used. These stakeholders confirmed that comparable issues have been observed in that system, noting that where inspections are commercially arranged, there can be risks to consistency and perceived independence. They emphasised that this reflects a structural feature of the model rather than individual behaviour.

69. Taken together, the evidence suggests that the current model can create conditions where independence may be harder to demonstrate in practice. While not a dominant theme, concerns about consistency and impartiality were raised across both domestic and international engagement, with some stakeholders suggesting stronger oversight or clearer separation of roles as potential ways to build confidence in inspection outcomes.

- “We have a big problem going on in New Zealand at the moment where there are inspectors who probably don't do the job that they should be doing and are far too trusting.” **Industry body**
- “Inspector shopping. Electricians who fail to follow installation standards shop around for electrical inspectors willing to pass non-compliant work. This is caused by a lack of enforcement and guidance from the electrical regulator. It results in unsafe installations remaining on the network.” **Consumer**
- “I’ve known other inspectors that have lost contracts from large solar companies who fail installations, which then find another inspector to pass the work instead of actually fixing or changing what’s wrong.” **Electrical inspector**
- “Inspectors will turn a blind eye to compliance and quality issues as this could lead to them losing that electrician as a client and any future work. The process of getting an electrical inspector needs to be separate from the electrician to make it independent and remove this conflict of interest.” **Installer**

Plug-in solar units

What we heard:

- **Plug-in solar would provide an option for consumer groups who wouldn't otherwise be able to access it** - renters, apartment dwellers, and lower-income households cannot access rooftop solar
- **Safety and system risks are a key concern** - lack of inspection, back-feeding risks, and compatibility with NZ's system create tension between access and safety
- **Enable with clear safeguards** - stakeholders support legalisation with standards, wattage limits, certification, and simple registration to balance access with system integrity

Plug-in solar is widely supported as a flexible, low-cost entry point

70. Survey responses show strong interest in plug-in (balcony) solar as a simple, lower-cost pathway into solar, particularly for consumers who are not yet ready for full rooftop systems. Many respondents frame plug-in solar as an "intermediate" or "trial" option that allows households to engage with solar incrementally. This perspective is reinforced by the affordability and portability of plug-in systems compared to traditional installations.
71. Interview evidence supports this framing, particularly in discussions about the potential role of plug-in solar internationally. Stakeholders noted that plug-in systems are already used overseas as a way to "democratise" access to solar power by lowering both cost and complexity. However, interviews add nuance by highlighting that while plug-in solar may appear simple to consumers, its integration into the New Zealand system raises technical and regulatory challenges not present in other jurisdictions.
72. Overall, both sources align in identifying strong consumer demand and potential system benefits, but interviews emphasise that realising this potential requires careful consideration of New Zealand-specific constraints.

- "I like the idea of plug in solar or balcony solar and think this should be an option for New Zealanders" **Consumer**
- "Would like to see plug in solar made legal like in Germany, UK and the USA" **Consumer**
- "Plug in solar needs to be a priority for average to lower income households to alleviate power costs." **Consumer**

- “Solar plug in options need to be introduced into the market. This will enable people to try out a small system before committing to solar.” **Consumer**

Current rules significantly limit access, particularly for renters and non-standard housing

73. Survey evidence consistently highlights that the current regulatory framework excludes large groups of consumers from accessing solar, especially renters, apartment dwellers, and low-income households. Respondents repeatedly point to the inability to install rooftop systems and the prohibition of plug-in solar as key barriers, framing this as an equity issue.
74. Interview material complements this by identifying broader structural issues in how the system is designed, including a strong focus on fixed, property-based installations. While interviews do not always directly reference renters, they reinforce the idea that current regulatory and system settings are not well aligned with more flexible or decentralised energy models.
75. Together, the evidence suggests that plug-in solar is seen as a critical mechanism for expanding access beyond traditional homeowners, but that regulatory settings have not kept pace with this need.

- “I would like to be able to use plug in solar but it's currently not possible in NZ. I live on a leasehold property. Having once installed solar but having lost my house due to divorce I would prefer a system I don't leave behind if I move house.” **Consumer**
- “Current New Zealand electrical standards and wiring regulations have not kept pace with global technology. They do not legally recognize or permit simple, small-scale 'plug-in' solar kits. (…) For a renter, apartment dweller, or someone who moves frequently, traditional fixed rooftop solar is impossible because we do not own the roof.” **Consumer**

Safety and system integrity concerns create tension in stakeholder views

76. While surveys show strong support for legalising plug-in solar, they also contain significant concern from some industry participants about safety risks. These concerns focus on the absence of inspection, potential misuse, and incompatibility with New Zealand’s electrical system.
77. Interview evidence strongly reinforces these concerns, particularly from technical stakeholders. Issues raised include risks associated with backfeeding during outages, challenges in tracking installations, and differences between New Zealand’s Multiple Earthed Neutral (MEN) system and overseas systems. Interviews also highlight that safety risks may not come from normal operation but from misuse or system edge cases.

78. This creates a clear tension in the evidence: survey respondents (particularly consumers) prioritise access and affordability, while technical stakeholders emphasise system safety and risk management.

- "Plug-in solar hazards. Plug-in systems bypass electrical inspections. Older homes never get their wiring checked." **Installer**
- "Plug-in solar creates a safety risk for older homes… homeowners can install these systems without an electrician, meaning the existing wiring is never checked…other countries allow this because their homes undergo mandatory electrical checks and they do not use the Multiple Earth Neutral system we have in New Zealand." **Consumer**
- "If you have an outage… and you've got a plug-in solar exporting that could be… bad." **EDB**
- "The main issue… is that safety aspect… they don't want the lines backfeeding. [if a linesperson is] working on a line that they think is down and it has powered back up through a device that's sitting at a person's property – it can be quite dangerous for the guy working on the line." **Other sector participant**

Stakeholders see plug-in solar as a pathway to simplify the system and reduce process friction

79. Survey responses highlight strong expectations that enabling plug-in solar would reduce complexity across the installation process. Respondents argue that plug-in systems could bypass many approval steps, reduce reliance on installers, and eliminate delays associated with metering and network approvals.
80. Interview evidence partially supports this view but adds caution. While plug-in systems may simplify the consumer-facing process, interviews suggest they could introduce new challenges for system visibility, network management, and compliance monitoring. This indicates that simplification at the consumer level may shift complexity elsewhere in the system rather than eliminate it entirely.
81. Overall, plug-in solar is widely seen as a way to reduce friction, but both sources suggest that system-level impacts need to be carefully managed.

- "Plug-in solar would significantly shorten installation timelines, allowing households to deploy basic generation in a day rather than waiting weeks for installer scheduling, scaffolding, and electrical sign off." **Consumer**
- "Removes the need for full installation, approvals, and metering delays. Gives households a fast, low-cost entry into solar with minimal admin." **Consumer**

There is strong support for legalisation, but with clear standards and safeguards

82. Survey responses overwhelmingly support legalising plug-in solar, but many also recognise the need for standards, limits, and certification to ensure safety. Suggested approaches include wattage limits, product standards, and simplified approval or registration processes.

83. Interview evidence aligns with this to the extent that stakeholders acknowledge plug-in solar could be feasible if appropriate safeguards are in place. However, interviews emphasise that designing these safeguards will require careful alignment with New Zealand's existing standards and system characteristics.

84. This suggests a broad consensus that plug-in solar could be enabled, but only within a clearly defined and regulated framework.

- "Germany has set up over a million installations over a number of years now, and they've had zero safety incidents over those million setups. (…) These inverters… have anti-islanding and disconnect when the power shuts off – it's essentially milliseconds… making sure the pins shut off. (…) If that house runs a washing machine or an oven, that produces way more risk than a [plug-in] solar setup. (…) Creating a subcategory (…) will probably be the way forward." **Other sector participant**
- "I would allow micro/plug in solar without approval, as long as it meets standards." **Consumer**
- "Allow certified plug-in balcony solar systems up to a safe wattage. Standard plug-in systems are typically around 800 watts, but this could safely increase to up to 2000 watts with a correct switchboard connection." **Consumer**
- "Update electrical safety regulations to permit certified plug-in solar systems under a sensible threshold such as 800W." **Consumer**
- "Allow plug in solar use if using already approved equipment, without external approval procedures" **Consumer**