MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Cover note

Updated Regulatory Impact Statement: Incentivising solar generation

Confidential advice to Government

Why is this regulatory impact statement being updated?

On 9 April 2025, Cabinet agreed to amend Schedule 1 of the Act to exempt rooftop solar installation in existing residential buildings from requiring a building consent, subject to technical consultation and further technical work on any risks involved [ECO-25-MIN-0054 refers].

MBIE has completed further technical work and identified an opportunity to simplify and expand the proposed scheme. To take advantage of this opportunity, MBIE gained policy approval from the Minister to depart from the original Cabinet decision.

Opportunity to extend regulatory clarification to all buildings

Based on our technical work, MBIE identified an opportunity to safely expand the scope of the exemption to apply to *all* buildings, including simple and large residential, commercial, industrial and rural buildings.

Expanding the scope of the exemption will help to clarify the regulatory settings and remove a potential obstacle to non-residential building owners installing rooftop solar panel arrays. Removing the requirement for a building consent to install rooftop solar on non-residential buildings (subject to checking wind speeds) will also benefit rural building owners who may not have ready access to networked electricity.

Proposed amendment

To take advantage of the opportunity to further clarify regulatory settings, we propose to expand the original Option 5 – No consent required for retrofitting rooftop solar panels on homes to include non-residential buildings and new buildings (new option 5a in the update RIS refers).

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Updated Regulatory Impact Statement: Incentivising solar generation [redacted]

Decision sought	*Cabinet approval to amend the Building Act 2004 to provide for:* - *fast track consents for residential solar generation [redacted]; and* - *exempt the installation of rooftop solar panel arrays on existing and new residential and non-residential buildings from building consent requirements.*
Agency responsible	*Ministry of Business, Innovation and Employment (MBIE)*
Proposing Ministers	*Minister for Building and Construction*
Date finalised	*First issued: 3 April 2025* *Updated edition: 8 September 2025*

The average New Zealand household uses around 7,100 kWh of electricity per year.[1] Demand for electricity is expected to increase significantly.

Buildings contribute around 11 per cent of gross domestic greenhouse gas emissions and will be increasingly vulnerable to the impacts of climate hazards.

The proposal is to incentivise the uptake of solar electricity generation [redacted].

The proposal is expected to support the Government's:

- Climate strategy: transitioning New Zealand to a low emissions economy in a market-led and cost-effective way
- Housing priorities: making it easier to build a home
- Energy priorities: a modern, affordable and secure energy system.

Summary: Problem definition and options

What is the policy problem?

The average New Zealand household uses just under 10,000 kWh of energy per year. Around 7,100 kWh of that is electricity.[2] Demand for electricity is expected to increase significantly

[1] https://www.level.org.nz/energy/
[2] https://www.level.org.nz/energy/

by 2050 and meeting this demand will require a large increase in investment in generation and network infrastructure.

Ensuring security of supply and affordability as the energy system decarbonises is crucial. The Government's approach is to remove barriers, provide certainty and ensure incentives are aligned across the system.

Buildings contribute around 11 per cent of gross domestic greenhouse gas emissions. Confidential advice to Government

The benefits from solar generation Confidential advice to Government can lead to significant savings over time, for example through lower power bills, but require an upfront investment. In some cases, the savings are enjoyed by people who do not directly pay the investment cost (tenants, future occupiers).

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Whether or not rooftop solar installation requires a building consent is left to BCA discretion. Consequently, solar panel installation is treated inconsistently by different BCAs, resulting in regulatory uncertainty and potentially unnecessary compliance costs. This uncertainty, and potential compliance costs create unnecessary barriers for building owners who are interested in rooftop solar electricity generation.

What is the policy objective?

The overall aim of this policy is to stimulate the voluntary uptake of solar electricity generation Confidential advice to Government, which would in turn support the Government's climate, energy and housing priorities.

The policy aims to stimulate some demand by providing a faster consent processing timeframe for buildings that meet solar generation Confidential advice to Government criteria. This will provide greater certainty for building consent applicants and allow construction to begin sooner.

It is envisaged this policy will initially target new detached dwellings up to two storeys. This is because these buildings are generally less complex and easier and quicker to assess for Building Code compliance.

Success of the incentive would be demonstrated by more solar panels on buildings than there otherwise would have been. Uptake will be monitored to evaluate and assess the success of the incentive.

The baseline data for solar generation Confidential advice to Government will be dependent on the performance criteria for the incentive (which are expected to be developed through secondary legislation). It is difficult to estimate this baseline data at this stage.

What policy options have been considered, including any alternatives to regulation?

The scope of feasible options is limited to reducing consenting barriers for buildings with solar panels. This has been limited by Cabinet and Ministerial direction [ECO-24-MIN-0312].

Option 1 – Status Quo

Building consent applications for buildings with solar panels would continue to need to be processed within 20 working days. The current median timeframe to process consent applications for new residential builds up to two storeys is 13 days. BCAs would continue to have the option to operationally enforce a policy of faster consenting for buildings with solar panels (we are not aware of any such policies at this time).

Option 2 – Non-regulatory option: Minister letter of expectations

This option would involve the Minister of Building and Construction writing to BCAs setting out an expectation that building consent applications for buildings with solar panels are to be processed within 10 working days. This would be voluntary for BCAs to comply with.

Option 3 – Introduce a 10-working day timeframe to process a building consent for buildings with solar panels (Minister preferred)

Amend the Building Act to require building consents for buildings with solar panels to be processed within 10 working days. We expect that this option would require secondary legislation setting out minimum requirements for solar panels.

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Option 5 – No consent required for retrofitting rooftop solar panels on homes

Amend Schedule 1 of the Building Act to exempt retrofitting rooftop solar panels on existing homes from requiring a building consent.

New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings (Minister and MBIE preferred)

Amend Schedule 1 of the Building Act to exempt rooftop solar panel installation on residential and non-residential buildings from requiring a building consent.

What consultation has been undertaken?

Due to time constraints, we have not undertaken public consultation. We have instead undertaken targeted engagements on the proposal to provide faster consent timeframes with sector groups. This includes the Building Advisory Panel[3], a BCA, BRANZ, Confidential advice to and architect and designer peak bodies. They provided the following feedback:

- a reduction in consent timeframes to 10 days will be relatively small in the context of building a home and would not be enough of an incentive
- there will be a risk of gaming
- for BCAs, digital systems can be complex to update, and any changes would be resource dependent. An appropriate transition period would be required to implement any changes

[3] The Building Advisory Panel is a statutory board appointed by the chief executive under the Building Act 2004. It provides independent strategic advice on issues facing the construction sector. The Panel's membership includes sector leaders across building, engineering, products and research.

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The above feedback does not indicate strong support for the preferred option Confidential advice to . We expect that the select committee process will provide an opportunity to consult further on issues raised through the targeted consultation.

No consultation was undertaken on the rooftop solar panel array exemption proposal due to time constraints.

Is the preferred option in the Cabinet paper the same as preferred option in the RIS?

No. MBIE's preferred options are:

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- New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings.

The Minister's preferred options are:

- Option 3 – Introduce a 10-day timeframe to process a building consent for buildings with solar panels

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- New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings

The main reason for this difference is that MBIE considers that:

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This means the balance of effectiveness versus the risk of gaming and complexity in the system is different for options three and four.

Summary: Minister's preferred option in the Cabinet paper

Costs (Core information)

Outline the key monetised and non-monetised costs, where those costs fall (e.g. what people or organisations, or environments), and the nature of those impacts (e.g. direct or indirect)

BCAs (through higher administrative burden) and other building consent applicants (through transferred consent processing days) face most of the costs.

Our initial analysis suggests that the additional administrative burden for BCAs will be low or minor and assumes that staff will be reprioritised, and extra resource is not required. However, this is heavily dependent on uptake. We have not been able to test uptake assumptions with BCAs.

Benefits (Core information)

Outline the key monetised and non-monetised benefits, where those benefits fall (e.g. what people or organisations, or environments), and the nature of those impacts (e.g. direct or indirect)

Building consent applicants for dwellings that meet solar generation Confidential advice to Government criteria receive most of the benefits from this policy, through faster consent timeframes and avoided consent fees for installing rooftop solar. Because the incentive scheme is voluntary, these benefits will only occur if building owners choose to build to a higher design standard.

Our initial analysis suggests that at a 10 per cent uptake for faster consents for new buildings (around 1,600 consents), successful building consent applicants could avoid around 5,161 consenting days per year (around 3 days saved per consent).

It is expected that the provision of information about the incentives will improve awareness of the benefits of solar generation Confidential advice to Government and increase uptake, leading to small reductions in power bills, emissions and demand on the national energy grid.

The potential for emissions reductions from the preferred option is unlikely to have a material impact on New Zealand's net emissions.

Balance of benefits and costs (Core information)

Does the RIS indicate that the benefits of the Minister's preferred option are likely to outweigh the costs?

The quantified and monetised benefits do not appear to outweigh the costs of the preferred option, given the benefits and costs are expected to be transferred between parties (for example, the time saved by consent applicants that meet solar generation Confidential advice to Government criteria will be offset by an approximately equal increase in processing times for other consent applicants).

Nevertheless, these options would signal a step towards meeting the Government's energy and climate priorities.

Household benefits and the benefits of no consents for retrofits have not been quantified. However, there is clear evidence of the benefits of solar panels including:

- Power bills saved: If you include the upfront costs, divided over the 30-year lifetime of solar panels, electricity from rooftop solar works out about 75% cheaper than electricity purchased from the grid (6c/kWh compared to 24c/kWh) when finance costs are excluded.

- Sell the excess: Occupiers with solar panels can sell the electricity they don't use to their retailer. Although this is typically for less than you'd pay to buy it from them.
- Lower emissions: Installing solar will reduce a home's emissions by utilising home-generated renewable energy, rather than grid electricity which is around 80-85 per cent renewable.
- Increased energy resilience: when coupled with home batteries[4].

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We expect these benefits will have a small but positive impact over time.

The Minister's preferred options may meet the objective of incentivising demand for solar generation Confidential advice to Government. However, the incentive effect is not clear and expected to be minor. This is due to:

- the small difference in consent timeframes expected for the target building types (given the current median timeframe is 13 days)
- the cost of solar panels (around $10,000 for a medium-sized installation which provides approximately half of the energy needs for an average household) C on
- unclear levels of expected uptake (partly due to uncertainty around the performance criteria for the incentive). Confidential advice to Government
- not all BCAs requiring a building consent for installing solar panels currently.

Additional costs from purchasing and installing solar panels Confidential advice to Government would be incurred only if building owners choose to include solar panels in their home design Confidential advice to Government.

The following risks have been identified with the preferred options:

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[4] https://www.genless.govt.nz/for-everyone/at-home/explore-solar-energy/rooftop-solar/

Risk of severe impacts from unexpectedly high uptake

Where the uptake is so high that it creates an excessive technical and administrative burden for BCAs to process consents within the shorter timeframe. This could lead to a longer median processing time for standard consents.

Work to develop criteria for solar generation Confidential advice to Government in secondary legislation will seek to address this risk, including by limiting the building types to which the incentive applies.

Risk of poor outcomes from building work related to exempting rooftop solar panel installation from requiring a building consent

Where the lack of regulatory oversight leads to greater risk.

MBIE considers this risk is minor because:

- energy work is regulated under the Electricity Act 1992. The building consent process relates only to the building work associated with installation
- some BCAs already provide a discretionary exemption for installing rooftop solar arrays on buildings
- the main risks from the building work associated with installation are structural and weathertightness risks. These risks will be effectively mitigated by the proposed requirement for a chartered professional engineer to provide or review the design of large arrays and arrays in high wind speeds.

Risk of unintentionally regulating previously unregulated parties
New option 5a (No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings) includes a provision for a chartered professional engineer to provide or review the design of structural fixings of the solar array if it is greater than 40 square metres or will be installed in high wind speeds.

Formalising this provision creates a risk that installers incur additional costs to meet it.

However, MBIE considers this risk is unlikely to materialise as most structural fixings have been designed or certified by a chartered professional engineer before going to market. Some suppliers and manufacturers of proprietary products have pre-engineered kitsets with unified sign-off from a chartered professional engineer. This means that a chartered professional engineer will not need to review or provide the design of the structural fixings for every solar panel installation in high wind speeds or for solar arrays which are greater than 40 square meters in size.

Implementation

How will the proposal be implemented, who will implement it, and what are the risks?
MBIE, as the central regulator, will be responsible for the implementation and ongoing operation of the incentive scheme and consent exemption. The implementation work will include producing guidance, making changes to the building.govt.nz website, promotional activity, awareness campaigns, and producing other educational collateral or resources to support the effectiveness of the new scheme.

BCAs will be responsible for assessing whether a building consent application is eligible for the solar generation Confidential advice to Government incentive and processing those eligible consent applications within 10 working days. There may be risks associated with implementing this policy related to the timeliness of processing other consent applications, resourcing (particularly for smaller BCAs) and the cost and timing of software upgrades.

There is no funding available for implementation. We will seek to mitigate this by minimising the administrative burden on BCAs, including through the development of clear and accessible performance criteria which are quick and easy to apply and implement. MBIE can implement the scheme using baseline funding.

Confidential advice to Government A transition period to assist BCAs to adjust their policies, procedures and systems to implement the scheme will be required.

Limitations and Constraints on Analysis

We have limited information on the:

- number of solar panels on new homes and retrofitted under the status quo
- number of rooftop solar installations subject to building consent requirements under the status quo
- Confidential advice to Government
- likely uptake of the incentives
- impact on BCA workload or the distribution of effort
- current treatment of solar panel retrofitting by BCAs in terms of whether they need a consent.

One reason it is difficult to estimate the likely uptake of incentives is because it depends heavily on the performance criteria for the incentives. These criteria are expected to be developed through secondary legislation.

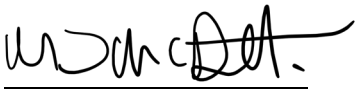
To mitigate these data limitations, we have conducted a brief cost-benefit analysis using readily available data and scenario analysis. However, we have not been able to test this cost-benefit analysis with the sector.

We also intend to monitor the scheme's uptake and review the scheme within three years. The use of secondary legislation will provide some room to readily recalibrate the performance criteria and address any unintended consequences informed by regular monitoring and review.

Due to time constraints caused by Cabinet decision deadlines, we have not undertaken any public consultation. We have instead undertaken targeted engagements with limited sector groups.

Given this incentive scheme will be voluntary and is expected to have only minor impacts, we believe that Cabinet can still make an informed decision using the available analysis.

I have read the Regulatory Impact Statement and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the preferred option.

Responsible Manager(s) signature: 

Matthew McDermott Manager
Building Performance and
Resilience Policy
08/09/2025

Quality Assurance Statement	*[Note this isn't included in the four-page limit]*
Reviewing Agency: MBIE	**QA rating:** Partially meets
Panel Comment: A Regulatory Impact Analysis Review Panel at the Ministry of Business, Innovation and Employment (MBIE) has reviewed the Regulatory Impact Statement Incentivising residential solar generation Confidential advice to Government. The panel has determined that the RIS **partially meets** the QA criteria, due to limited consultation undertaken on the proposal.	

Section 1: Diagnosing the policy problem

What is the context behind the policy problem and how is the status quo expected to develop?

The government's energy strategy

1. The average New Zealand household uses just under 10,000 kWh of energy per year. Around 7,100 kWh of that is electricity. In 2024, the commercial sector (which includes non-residential buildings such as offices, retail, education, and healthcare facilities) used around 10,970 GWh (or 10.97 billion kWh) annually.[5] Demand for electricity is expected to increase significantly by 2050 and meeting this demand will require a significant increase in investment in generation and network infrastructure.

2. Ensuring security of supply and affordability as the energy system decarbonises is crucial. The Government's approach is to remove barriers, provide certainty and ensure incentives are aligned across the system.

3. Solar generation uptake is low compared to countries such as Australia, generally because of upfront costs and a lack of incentives.

Solar generation uptake in New Zealand and Australia		
Metric	**New Zealand[6]**	**Australia**
Total residential ICPs[7]	67,000	Over 4 million[8]
Residential capacity	350 MW	25,500 MW[9]
Total Non-residential ICPs	5,500	78,000[10]
Non-residential capacity	200MW	17,600 MW[11]

4. The regulatory environment in Australia is broadly similar to that in New Zealand. Exemption from a 'development application' (similar to a building consent) is subject to the national construction code and heritage or conservation restrictions. The Australian framework is more specific about when a development application is or is not required compared to New Zealand. Installation of most residential rooftop solar installations is exempt and does not require a full development application.[12] Specified classes of non-

[5] Electricity statistics | Ministry of Business, Innovation & Employment
[6] Electricity Authority - EMI (market statistics and tools), Economics of utility-scale solar in Aotearoa New Zealand
[7] Installation Control Point – a unique identifier assigned to a specific location where electricity is supplied. It's used across the electricity industry to track and manage electricity connections, billing, and metering.
[8] Solar Panel Install Statistics and Facts in Australia - Solar Calculator
[9] Australian Energy Update 2025 | energy.gov.au
[10] Solar Panel Install Statistics and Facts in Australia - Solar Calculator
[11] Australian Photovoltaic Institute • Market Analyses
[12] Do You Need Council Approval For Solar Panels?

residential buildings typically require an approval and may require a structural assessment.[13]

5. In New Zealand, the building consent requirements for installing rooftop solar is left to BCA discretion, resulting in inconsistency and regulatory uncertainty. This uncertainty and the potential compliance costs[14] create unnecessary barriers to building owners which may affect the uptake of solar power in New Zealand.

6. There is an opportunity to help increase choices by providing incentives that encourage homeowners to install solar panels and remove barriers to uptake.

The Government's climate strategy

7. The Government is committed to meeting New Zealand's climate change targets, which include:

    a. reducing net greenhouse gas emissions by 2030 (Target 9)

    b. New Zealand's Nationally Determined Contribution under the Paris Agreement by 2030

    c. Net zero for long-lived gases by 2050 under Zero Carbon Act.

8. The New Zealand Emissions Trading Scheme (NZ ETS) is the government's main tool to reduce net emissions. All domestic building emissions fall under the NZ ETS. Emissions from imported building products do not fall under the NZ ETS.

9. Buildings contribute around 11 per cent of gross domestic greenhouse gas emissions[15].

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[redacted]

[13] Building Permit and Structural Assessment Requirements for Solar Panel Installations in Australia — Gamcorp Structural Engineers

[14] The consent and associated fees may add up to $13,040 – see appendix 2.

[15] 'In 2022, we estimate the total domestic emissions for the building and construction industry to be 8,384 kt CO_2 -e, or 10.7 per cent of New Zealand's emissions. That breaks down to 5,885 kt CO_2-e (7.5 per cent) for operational emissions (emissions associated with the use of energy and water in a building) and 2,499 kt CO_2-e (3.2 per cent) for embodied emissions (emissions associated with the use of materials in a building and construction processes).

Confidential advice to Government

[redacted]

[redacted]

The building regulatory system

14. The *Building Act 2004* (the Act) ultimately aims to improve control of, and encourage better practices in, building design and construction to provide greater assurance to consumers. This includes setting clear minimum performance requirements buildings must meet (through the Building Code), providing certainty that capable people are undertaking design, construction and inspections, and providing protection for homeowners through mandatory warranties.

15. One purpose of the Act is to provide for the regulation of building work to ensure that buildings are designed, constructed, and able to be used in ways that promote sustainable development.

16. Relevant principles under the Act include:

    a. the need to facilitate the efficient use of energy and energy conservation and the use of renewable sources of energy in buildings:

    b. the need to facilitate the efficient and sustainable use in buildings of—

        i. building products (including building products that promote or support human health); and

        ii. material conservation;

    c. the need to facilitate the efficient use of water and water conservation in buildings

Building consents

17. The Act requires that a person must not carry out any building work except in accordance with a building consent (some exemptions apply). This supports buildings to be built to the Building Code and will be healthy, safe and durable.

18. For most building consent applications, a BCA must process the application within 20 working days.

19. The Building Act exempts some building work from building consent requirements. These exemptions include:

[redacted]

a. Ground mounted solar arrays

b. Penetrations in a roof up to 300mm

c. Energy work including the electrical installation of solar panels.

20. Nevertheless, the building work (not electrical installation) associated with installing rooftop solar panels is not explicitly exempt under the Act. This contributes to regulatory uncertainty and potentially unnecessary costs as some BCAs require a building consent for this work while others do not.

Other initiatives that could help reduce the time and cost to build

21. This analysis is part of a wider work programme on streamlining building consent systems and processes to deliver housing growth. Cabinet has made decisions on the following initiatives as part of this programme:

    a. The Building (Overseas Building Products, Standards, and Certification Schemes) Amendment Bill. This bill intends to improve competition in the building materials market by making it easier for overseas products to be used in New Zealand.

    b. Exempting granny flats (standalone buildings up to 70m^2) from requiring a building consent and strengthening occupational licensing regimes.

    c. Amending regulations to clarify the definition of 'minor variation' to make product substitution more predictable and consistent, and defining 'minor customisation' for MultiProof to allow minor design changes without voiding a certificate.

22. The following initiatives have, or will be, considered by Cabinet alongside the solar panel incentive proposal:

    a. Improving the efficiency of building inspections.

    b. Amending the *Plumbers, Gasfitters and Drainlayers Act 2006* and *Building Act 2004* to enable opt-in self-certification for simple residential work for plumbers and drainlayers

23. These work streams can all help to lower the time and cost to build by reducing wait times and delays and increasing consistency between BCAs.

24. Due to time constraints, we have not been able to analyse the cumulative effects of these initiatives underway. There may be some dilution of benefits for some consent applications (for example, a small dwelling with solar panels cannot take advantage of the benefits of both the granny flats and the solar panel incentive initiatives). However, these initiatives will provide more choices to building consent applicants.

What is the policy problem or opportunity?

25. We estimate that there will be around 16,400 consents for new detached houses which are two storeys or less in the year ended June 2025. We do not have good data to estimate how many of those houses will include solar panels.

26. Solar panels can lead to significant savings over time, through lower power bills, but require an upfront investment. In some cases, the savings are enjoyed by people who do not directly pay the investment cost (tenants, future occupiers).

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29. These barriers mean that Confidential advice to Government uptake of solar in New Zealand has lagged behind global uptake in recent years. This may lead to greater emissions, higher energy bills, worse health outcomes and lower climate resilience.

Confidential advice to Government

31. A full problem definition is provided below in Table 1.

32. Consent requirements for installing rooftop solar panels differ across BCAs. This introduces regulatory uncertainty and may result in unnecessary compliance costs. MBIE understands that this inconsistency stems from the existing exemptions related to solar panels in the Building Act, including the exemption for energy work.

33. If solar generation is planned for a new build, the solar array is often included in the building consent application. However, the solar installation component alone generally does not require a building consent unless specifically required by the BCA. While the electrical aspects of solar panel installation is considered energy work under the Act and is exempt from requiring a building consent, attaching anything with weight to a roof often requires a building consent to ensure structural integrity and weathertightness is maintained.

MBIE has gained policy agreement to extend the scope of the exemption for installing rooftop solar arrays on existing residential buildings to include new and non-residential buildings

34. On 9 April 2025, Cabinet agreed to amend Schedule 1 of the Act to exempt rooftop solar installation on existing residential buildings from requiring a building consent, subject to technical consultation and further technical work on any risks involved [ECO-25-MIN-0054 refers].

35. Through further technical work, MBIE identified an opportunity to safely expand the scope of the exemption to apply to *all* buildings. This includes simple and large residential, commercial, industrial and rural. This is because our original assumption that non-

residential buildings have a higher risk profile than residential buildings proved to be incorrect. Originally, we considered that rooftop solar array installations on non-residential buildings would be more susceptible to separation as these buildings can be taller and larger and therefore more exposed to high winds. However, further technical work indicated that the risk profile is similar irrespective of building type.

36. To mitigate the risks posed by very high winds and large solar arrays, we propose to apply the existing safeguard provided in Part 3 of Schedule 1 to require a chartered professional engineer to provide or review the design of the structural fixings for securing rooftop solar arrays:

    - larger than 40 square metres, or
    - located in areas where wind speeds are higher than 44 metres per second.

    See Appendix 4 for further information about the size and wind thresholds.

37. Expanding the scope of the exemption to all buildings will help clarify the regulatory settings and remove a potential obstacle for non-residential building owners installing rooftop solar panel arrays. Clarifying that a building consent is not required for solar panel installations on all residential buildings will also benefit rural buildings owners who may not have ready access to an electricity network.

Population groups and special factors or obligations

38. MBIE does not consider that this problem disproportionately affects any specific population groups.

39. MBIE does not consider there are any special factors or obligations relating to Te Tiriti o Waitangi, human rights issues or constitutional issues regarding the proposals.

Table 1: problem definition

Market failure	How the market failure applies to solar generation Confidential advice to Government	How the policy aims to stimulate voluntary uptake of solar generation Confidential advice to Government	Summary problem definition
Principal-agent problem* *Where there is a conflict in interests and priorities that arises when one person takes actions on behalf of another person*	Building consent applicants make decisions that affect future occupiers (future homeowners, tenants). Developers are incentivised to reduce upfront costs, while it is in occupiers' best interests to maximise health outcomes and reduce energy bills.	Providing an incentive for building consent applicants to build with solar panels Confidential advice to Government to overcome their focus on designing to minimum code requirements and upfront costs at the expense of future occupiers.	**Upfront cost:** • There can be an additional cost associated with Confidential advice to Government. Many of the benefits of these buildings are long term or are enjoyed by people who do not directly pay the investment cost (tenants, future occupiers). • Requiring a building consent can add unnecessary regulatory costs to installing a solar array. Building consent costs can range between $880 and $1,500 for a $10,000 array. These additional costs can discourage building owners from rooftop solar array installation .
Externalities** *Where a cost or benefit is caused by one party but financially incurred or received by another*	Building consent applicants create emissions. The ETS signal may be weak because of industrial allocation[19], the principal-agent problem above, Confidential advice to Government	Providing an incentive for building consent applicants to reduce emissions to overcome the fact that they tend not to directly see the costs imposed by the ETS Confidential advice to Government	
Myopia* *A cognitive bias causing strong preferences for immediate outcomes, resulting from a person's limited ability to evaluate the distant future*	Buildings are long-lived. Owners aiming to reduce upfront costs can ignore the potential for long term benefits. Buildings that are less energy efficient Confidential advice to can cost more in the long run, and the most effective and efficient time to improve is before the building is built (so high-quality construction can be designed in from the start).	Providing the dual benefits of a regulatory incentive and a financial incentive for building consent applicants to build with solar panels Confidential advice to to help overcome their primary focus on immediate upfront costs.	
Incomplete information** *Where one or more party in an arrangement does not have the information needed to act in their best interests*	Confidential advice to Government		Confidential advice to Government
Bounded rationality** *Where people employ the use of heuristics (or 'rules of thumb') to make decisions rather than a strict rigid rule of optimisation*	Building consent applicants face costs of gathering and processing information. This is due to the complexity of the situation, and their inability to process and compute the expected utility of every alternative action. Confidential advice to Government	Providing a heuristic Confidential advice to Government to support people's choices.	

*Applies to both solar generation Confidential advice to Government

Confidential advice to Government

Confidential advice to Government

What objectives are sought in relation to the policy problem?

40. The overall aim of this policy is to stimulate the voluntary uptake of solar generation Confident, which would in turn support the Government's energy and climate priorities.

41. The policy aims to achieve this by providing a faster consent processing timeframe for new homes with solar panels Confidential advice to Government and removing uncertainty about consenting requirements for rooftop solar panel installation.

42. Confidential advice to Government

43. Stimulating demand for solar generation Confidential advice to Government will in turn help to support the growth of the solar panel market Confidential advice to Government

44. It is envisaged that this policy initially targets new detached dwellings up to two storeys.

45. Success of the incentive would be demonstrated by more solar panels on buildings than there otherwise would have been. Uptake of the incentive will be monitored to evaluate and assess the success of the incentive. However, depending on the performance criteria there may not be good baseline data.

Confidential advice to Government

What consultation has been undertaken?

48. The Ministry for the Environment coordinated a submissions and consultation process for the second Emissions Reduction Plan, including releasing a discussion document on 17 July 2024. 149 submitters commented on perceived barriers for households and businesses to switch to more energy-efficient products or processes. Just over half of these (76 submitters) identified costs as the main barrier. Around 20–25% of submitters on this issue identified several other barriers, including: a lack of information or choices, changes in government policies, and a lack of incentive.

49. Due to time constraints, we have not publicly consulted on the proposals. We have instead undertaken informal and targeted engagements with sector groups.

50. This proposal is primarily for enabling legislation. Consultation will be undertaken as part of the select committee process. We expect that a greater level of consultation will occur when developing performance criteria, which are expected to be set by secondary legislation. In the absence of secondary legislation, the changes to the Building Act will have no effect as without criteria no buildings would qualify for the faster processing incentive.

51. Consultation on the secondary legislation will be important to better identify the costs, benefits and other impacts of specific proposals for eligible buildings, and to assess the level of expected uptake, for further regulatory impact analysis.

52. Our targeted engagements with sector groups included the Building Advisory Panel, a BCA, BRANZ, Confidential advice to Government and architect and designer peak bodies. The following feedback was provided on shorter consent timeframes:

    a. a reduction in consent timeframes to 10 days will be relatively small in the context of building a home and would not be enough of an incentive

    b. a risk of gaming is present in the proposals, undermining the integrity of the system Confidential advice to Government

    c. for BCAs, digital systems can be complex to update, and any changes would be resource dependent. An appropriate transition period would be required to implement any changes

Confidential advice to Government

53. The above feedback does not indicate strong support for the preferred options. We expect that the select committee process will provide an opportunity to consult further on issues raised through the targeted consultation.

54. No consultation was undertaken on the proposal to exempt rooftop solar panel installation due to time constraints.

Section 2: Assessing options to address the policy problem

What criteria will be used to compare options to the status quo?

55. MBIE has considered the following key criteria in its assessment of options:

    a. **Effectiveness (cost)**: To what extent will the option increase uptake by reducing the marginal cost of Confidential advice to Government adding solar panels to new or existing buildings?

b. **Effectiveness (information)**: Confidential advice to Government

c. **Simplicity**: To what extent is the option simple and practical to implement?

d. **Risk of gaming**: To what extent does the option mitigate against the risk of gaming? Confidential advice to Government

56. Confidential advice to Government

What scope will options be considered within?

57. Regulatory and non-regulatory options within the building regulatory system are considered within scope of this analysis.

58. The scope of feasible options is limited by the Minister's direction and:

- what Cabinet directed MBIE officials to provide advice on;
- how fast-tracking building consents could support the government's climate obligations [ECO-24-MIN-0312]
- Cabinet's direction to exempt rooftop solar installation in existing residential buildings from requiring a building consent [ECO-25MIN-0054]
- the Minister's subsequent direction, following further technical work by MBIE, to extend the scope of the proposed exemption to include new non-residential buildings.

59. Confidential advice to Government It is proposed that performance criteria are set by secondary legislation, and further impact analysis will be carried out during the development of that secondary legislation.

What options are being considered?

Option 1 – Status Quo

60. Building consent applications for Confidential advice to Government buildings with solar panels would continue to need to be processed within 20 working days. The current median timeframe to process consent applications for new residential builds up to two storeys is 13 days. BCAs would continue to have the option to operationally enforce a policy of faster consenting for Confidential advice to Government buildings with solar panels (we are not aware of any such policies at this time).

Option 2 – Non-regulatory option: Minister letter of expectations

61. This option would involve the Minister of Building and Construction writing to BCAs setting out an expectation that building consent applications for buildings with solar panels Confidential advice to Government are to be processed within 10 working days. This would be voluntary for BCAs to comply with.

Option 3 – Introduce a 10-working day timeframe to process a building consent for buildings with solar panels (Minister preferred)

Amend the Building Act to require building consents for buildings with solar panels to be processed within 10 working days. We expect that this option would require secondary legislation setting out minimum requirements for solar panels.

Confidential advice to Government

Option 5 – No consent required for retrofitting rooftop solar panels on homes

Amend Schedule 1 of the Building Act to exempt retrofitting rooftop solar panels on homes from requiring a building consent.

New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings (Minister and MBIE preferred)

Amend Schedule 1 of the Building Act to exempt fitting rooftop solar panels on residential and non-residential buildings from requiring a building consent.

MBIE's preferred options are:

- Confidential advice to Government
- New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings.

The Minister's preferred options are:

- Option 3 – Introduce a 10-day timeframe to process a building consent for buildings with solar panels
- Confidential advice to Government
- New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings.

Other options considered

62. The following options were also considered:

How do the options compare to the status quo/counterfactual?

	Option 1 Status Quo	Option 2 – Non-regulatory option: Minister letter of expectations	Option 3 – Introduce a 10-working day timeframe to process a building consent for dwellings with solar panels	Confidential advice to Government	Option 5 – No consent required for retrofitting rooftop solar panels on homes	New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings
Effectiveness (cost)*	0	0 Given BCAs already have the option to process certain types of consent faster, and it would continue to be voluntary to do so, we do not expect that this option will increase uptake of solar panels by addressing the cost barrier.	+1 This option may have a minor incentivising effect for solar panels by reducing timeframes.		+2 Removes direct costs of consent fees and the time taken to get a consent.	+2 Removes direct costs of consent fees and the time taken to get a consent. Expected to be marginally more cost effective than option 5
Effectiveness (information)*	0	0 Given that it will continue to be voluntary for BCAs to incentivise Confidential advice to Government, we do not expect that this option will increase uptake by improving information.	0 Unlikely to encourage uptake through providing more information about solar panels beyond what already exists.		0 Unlikely to increase uptake through providing information.	0 Unlikely to increase uptake through providing information.
Simplicity	0	0 This option is easy to implement. BCAs would be free to operationalise this in a way that suits their systems and processes. BCAs could decide not to operationalise this if desired.	-1 We expect this option to add only minor increases to BCA administrative processes. Clear guidance and implementation planning will support with this.		+2 Improves simplicity and reduces administrative burden by removing consent process.	+2 Improves simplicity and reduces administrative burden by removing consent process.
Risk of gaming	0	0 BCAs may not have statutory grounds to penalise a non-compliant consent applicant after they have received the incentive.	-2 Confidential advice to Government		N/A	N/A
Overall assessment	0	0	-1		+4	+4

Confidential advice to Government

Key for qualitative judgements:			
+1	better than doing nothing/the status quo/counterfactual	+2	much better than doing nothing/the status quo/counterfactual
-1	worse than doing nothing/the status quo/counterfactual	0	about the same as doing nothing/the status quo/counterfactual
		-2	much worse than doing nothing/the status quo/counterfactual

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

63. The policy objective is to stimulate the voluntary uptake of solar panels Confidential advice to Government, which would in turn support the Government's energy and climate priorities.

64. While the results of the options analysis are marginal, Confidential advice to Government

65. MBIE's preferred options are:

    a. Confidential advice to Government

    b. Option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings (however, we acknowledge that no consultation has occurred).

66. The Minister's preferred options are:

    a. Option 3 – Introduce a 10-day timeframe to process a building consent for buildings with solar panels

    b. Confidential advice to Government

    c. New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings.

67. Options 4 and 5a may meet the objective of incentivising solar panels Confidential advice to Government. However, the incentivising effect is not clear and expected to be minor. This is due to unclear levels of expected uptake, the upfront costs of installing solar, and the small difference in consent timeframes expected for the target building types. Nevertheless, these options would signal a step towards meeting the Government's energy and climate priorities.

68. As shown in the next section, the quantified benefits of the fast-tracked consent do not appear to outweigh the costs given that the quantified benefits and costs are expected to be transferred between parties. For example, the time saved by consent applicants with solar panels will be offset by an approximately equal increase in processing times for other consent applicants.

69. Although the benefits of exempting solar panel have been quantified, there is clear evidence of the benefits of solar panels including:

    a. Power bills saved: If you include the upfront costs, divided over the 30-year lifetime of solar panels, electricity from rooftop solar works out about 75% cheaper than electricity purchased from the grid (6c/kWh compared to 24c/kWh) when finance costs are excluded.

b. Sell the excess: Occupiers with solar panels can sell the electricity they don't use to their retailer. Although this is typically for less than the occupiers would pay to buy it from their retailer.

c. Lower operational emissions: Installing solar will reduce a home's emissions by utilising home-generated renewable energy, rather than grid electricity which is around 80-85 per cent renewable.

d. Increased energy resilience: when coupled with home batteries[20].

Confidential advice to Government

71. We expect that these benefits will have a small but positive impact over time. However, it is difficult to make an accurate judgment on the balance of benefits and costs at this stage given time constraints and limited consultation.

72. Building consent applicants for dwellings with solar Confidential advice to Government receive most of the benefits through faster consenting timeframes. BCAs (through higher administrative burden) and other building consent applicants (through transferred consent processing days) face most of the costs.

Risks

73. The following risks have been identified with the preferred options:

Confidential advice to Government

Risk of severe impacts from unexpectedly high uptake – options 3 and 4

75. Where the uptake is so high that it:

[20] https://www.genless.govt.nz/for-everyone/at-home/explore-solar-energy/rooftop-solar/

Confidential advice to Government

a. creates an inappropriate level of technical and administrative burden for BCAs to process consents within the shorter timeframe. We expect that larger BCAs will be in a better position to process consents for eligible dwellings in the shorter timeframe. Smaller BCAs may have more limited technical capability and capacity.

b. leads to longer median processing time for standard consents.

76. This risk can be mitigated through design of the performance criteria, including to assess the likely levels of uptake. The secondary legislation will have to balance the desire to stimulate demand for solar panels Confidential advice to Government with the capacity and constraints of BCAs. One mitigation could include ensuring there is enough flexibility to adjust the eligibility settings as information on uptake is received.

Minor risk of poor outcomes from building work related to exempting rooftop solar panel installation from a consent – option 5a

77. Where the lack of regulatory oversight leads to greater risk.

78. MBIE considers that this risk would be minor. This is because:

a. energy work is regulated under the Electricity Act 1992. The building consent process relates only to the building work associated with installation

b. some BCAs already provide a discretionary exemption for installing rooftop solar arrays on buildings

c. the main risks from the building work associated with installation are structural and weathertightness risks. These risks will be effectively mitigated by the proposed requirement for a chartered professional engineer to provide or review the design of large arrays and arrays in high wind speeds.

Risk of unitentionally regulating previously unregulated parties

79. New option 5a (No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings) includes a provision requiring a chartered professional engineer to provide or review the design of the structural fixings of a solar array if it is greater than 40 square metres or is installed in high wind speeds.

80. Formalising this provision creates a risk that installers will incur additional costs to meet it.

81. This risk is unlikely as most structural fixings are designed and/or certified by a chartered professional engineer before going to market. Some suppliers and manufacturers of proprietary products have pre-engineered kitsets with a unified sign-off from a chartered professional engineer. This means that a chartered professional engineer will not need to review or provide the design of the structural fixings for every solar panel installation in high wind speeds or for solar arrays which are greater than 40 square meters in size (Appendix 4 refers).

Is the Minister's preferred option in the Cabinet paper the same as the agency's preferred option in the RIS?

82. No. MBIE's preferred options are:

Confidential advice to Government

b. New option 5a – No consent required for installing rooftop solar panels on new and existing residential and non-residential buildings

83. The Minister's preferred options are:

a. Option 3 – Introduce a 10-day timeframe to process a building consent for buildings with solar panels

Confidential advice to Government

c. New option 5a – No consent required for installing rooftop solar panel arrays on new and existing residential and non-residential buildings.

84. The main reason for this difference is that MBIE considers that:

Confidential advice to Government

85. This means the balance of effectiveness versus the risk of gaming and complexity in the system is different for options three and four.

What are the marginal costs and benefits of the preferred option in the Cabinet paper?

Affected groups *(identify)*	**Comment** *nature of cost or benefit (e.g., ongoing, one-off), evidence and assumption (egg, compliance rates), risks.*	**Impact** *$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts.*	**Evidence Certainty** *High, medium, or low, and explain reasoning in comment column.*
Additional costs of the preferred option compared to taking no action			
Regulated groups	Cost of solar C on [redacted] (applicants for eligible building consents or homeowners installing solar)	Low	Low – depends on voluntary uptake
Regulators	Additional administrative burden (BCAs)	Low	Low – level of uptake is not clear (10 per cent assumed). Data limitations.
Others (e.g., wider govt, consumers, etc.) *For fiscal costs, both increased costs and loss of revenue could be relevant*	Transferred consent processing days (other building consent applicants)	$2.196m per annum	Low – level of uptake is not clear (10 per cent assumed). Data limitations.
Total monetised costs		$2.196m per annum	
Non-monetised costs		*Low*	
Additional benefits of the preferred option compared to taking no action			
Regulated groups	Consent processing days avoided (applicants for eligible building consents)	$2.196m per annum	Low – level of uptake is not clear (10 per cent assumed). Data limitations.
Regulators			
Others (wider govt, consumers, etc.)	Reduced energy bills and emissions	Low	Low – depends on voluntary uptake
Total monetised benefits		$2.196 per annum	
Non-monetised benefits		*Low*	

86. The calculations and assumptions used to reach these figures can be found in Appendices 1-3 .

87. We have assumed that the monetised benefits and costs of the Minister's preferred option are transferred.

88. We have assumed that BCA staff are reallocated from other applications to treat dwellings with solar panels Confidential advice to Government as higher priority. Given that this would likely impact timeliness for other BCA work, this is assumed to result in an approximately equal increase in processing days for those other applications.

89. Appendix 1 includes a range of indicative uptake scenarios for shorter consent timeframes from 1 per cent, 10 per cent and 25 per cent. The central uptake estimate is 10 per cent uptake – that is, 10 per cent of building consents in scope (new standalone houses up to two storeys) include solar panels Confidential advice to Government. An uptake of 10 per cent was chosen as an indicative central estimate only. While the results of the cost benefit analysis are highly sensitive to the uptake scenarios, the monetised costs and benefits will continue to be equal given the above transfer assumptions.

90. However, at higher levels of uptake, the identified risks are expected to have worse outcomes, such as the risk of creating too much technical and administrative burden on BCAs to process consents in the shorter timeframe.

91. We have not quantified the value or cost of any increase in solar panels Confidential advice to due to time constraints. However, we assume that, because the incentive is voluntary, the benefit of solar panels Confidential advice to Government to homeowners will be at least equal to their cost.

92. We have not quantified the cost to MBIE of implementing and monitoring or to BCAs of operationalising this policy. We expect that these activities will fall under business-as-usual activities and be funded from existing baseline funding. We have not consulted with BCAs to test this assumption.

93. Appendix 2 sets out the potential savings to be made through the avoidance of processing time for building consents to install rooftop solar panel arrays. The savings are based on the total working days taken to process consent applications relating to rooftop solar array installations. Our core assumptions are that the benefits to the owner of avoiding application processing delays relate only to using the solar panels sooner and that the building can be used during any delays.

Section 3: Delivering an option

How will the proposal be implemented?

Legislative changes

94. The preferred options would see the Building Act amended through legislation to be introduced to the House of Representatives Confidential advice to Government

95. There will be associated work to develop secondary legislation (criteria for the solar C on

Role of MBIE

96. MBIE, as the central regulator, will be responsible for the implementation and ongoing operation of the incentive scheme. The implementation work will include producing guidance, making changes to the building.govt.nz website, promotional activity, awareness campaigns, and producing other educational collateral or resources to support the changes.

97. Key audiences for information and guidance will be homeowners, industry, BCAs and International Accreditation New Zealand (the accreditation body for BCAs). MBIE may work with professional bodies such as Certified Builders Association of New Zealand, Architectural Designers New Zealand, New Zealand Institute of Architects and the Registered Master Builders Association, BCA cluster groups and the Building Officials Institute of New Zealand to develop this guidance.

98. We assume there will be no new funding to implement these proposals. We expect implementation costs to be met through baseline funding.

Role of BCAs

99. BCAs will be responsible for assessing whether a building consent application is eligible for the fast-track incentives and processing those eligible consent applications within 10 working days.

100. We expect that larger BCAs will be in a better position to process consents Confidential advice to [redacted] in the shorter timeframe. Smaller BCAs may have more limited technical capability and capacity. Limiting the scope of the incentives to simple detached dwellings will help mitigate this.

101. BCAs may require changes to their policies and IT systems, with associated costs to upgrade software. There are 67 BCAs which use different software providers.

102. If changes are required, a suitable transition period will be needed to support BCAs to update their IT systems.

103. There is uncertainty around the costs of operationalising the proposal. We have not tested the feasibility of implementing the preferred option with BCAs within the time available.

Confidential advice to Government [redacted]

Communication of changes

105. The changes to legislation will be communicated through existing MBIE channels, paid publicity (search engine optimisation) and leveraging existing relationships to on-share information, particularly with homeowners who may be harder to reach.

106. Proactive and reactive engagement with stakeholders is expected including targeted engagement with local government and industry associations. MBIE intends to manage queries and gaps in knowledge by developing online user specific guidance alongside a public education and awareness campaign. This will help support:

a. homeowners to make informed decisions Confidential advice to Government

b. rooftop solar installation on buildings

c. BCAs to understand what their role in the building system is in relation to incentivising solar panels Confidential advice to Government.

How will the proposal be monitored, evaluated, and reviewed?

107. This proposal, if agreed to, will need to be integrated into the existing regulatory system. One of MBIE's key roles as the system steward and central regulatory agency is to monitor the performance of the building regulatory system.

108. MBIE intends to monitor:

a. the number of buildings that are consented under the scheme and average consent processing timeframes for buildings with solar panels Confidential advice to Government, through Building Consent System Performance Monitoring quarterly reporting

b. the number of complaints raised, both through the determinations function and ad hoc communication with the sector and BCAs.

109. A draft intervention logic model was developed for this policy. While still in the scoping phase, this framework may be used to develop monitoring indicators. See Appendix 5.

Information that may be difficult to collect

110. It may be difficult to determine how many solar panels are installed, given they will no longer need a building consent.

111. It may be difficult to determine which performance criteria a building consent uses. This data would require additional BCA administrative activity. MBIE will work with BCAs to understand whether these can be collected as part of administrative data without adding an unreasonable burden to BCAs.

112. It may be difficult to estimate baseline data for solar panels in new buildings given they are not required by the Building Code. Confidential advice to Government This would make it difficult to evaluate the effectiveness of the incentives in inducing demand.

Timeframe for review

113. MBIE intends to review the arrangements within three years after commencement of the solar panel incentives. This will support MBIE to:

a. understand whether the solar panel Confidential advice to Government criteria continue to be fit for purpose

b. consider whether the solar panel Confidential advice to Government criteria and wider legislative provisions need to be amended (including to 'raise the bar' over time) or revoked.

114. MBIE will then provide the Government with advice on what, if any, changes are required.

115. This review timeframe will help mitigate any risks of BCA effort being diverted to dwellings with solar panels Confidential advice to Government having a negative impact on timeliness for other building consents. MBIE will continue ad hoc monitoring and engagement with BCAs and International Accreditation New Zealand. If concerns are raised, this may trigger an earlier review of the incentive settings.

Appendix 1: Cost-benefit analysis for solar panel [redacted] incentives proposal

Introduction

The average New Zealand household uses around 7,100 kWh of electricity per year.[22] Demand for electricity is expected to increase significantly. Additionally, buildings contribute around 11 per cent of gross domestic greenhouse gas emissions and are going to be increasingly vulnerable to the impacts of climate hazards.

The proposal is to incentivise the uptake of rooftop solar panels power as part of a modern, affordable and secure energy system [redacted].

The proposal is expected to support the Government's:

- Climate strategy: transitioning New Zealand to a low emissions economy in a market-led and cost-effective way
- Housing priorities: making it easier to build a home
- Energy priorities: a modern, affordable and secure energy system.

This report provides an initial cost benefit analysis (CBA) for the above proposal. The purpose of this initial CBA is to support Cabinet decisions on the proposal to amend the Building Act 2004 to provide for the incentive scheme. It provides an indication of potential impacts under different uptake scenarios. This report does not estimate wider impacts.

Cost benefit analysis (CBA) – methodology

CBA compares the costs and benefits of the proposal compared to the counterfactual (the likely scenario if the proposal does not go ahead). It typically involves:

- setting out the counterfactual
- quantifying and monetising the key costs and benefits of the proposal
- discounting future costs and benefits (to reflect that, for many people, a dollar today is worth more than a dollar in the future).

This last step has not been carried out for this CBA. This is because the quantified benefits and costs of this proposal are expected to be transferred (that is, any benefits to one party are offset by an approximately equal cost to another party).

The above approach means that the CBA results are expressed as an annual value, rather than a Net Present Value (NPV). Where all quantified benefits and costs are transferred between parties, the NPV will be zero and the Benefit Cost Ratio (BCR) will be one.

The results represent quantified and monetised costs and benefits only. The results should be considered alongside unquantified costs and benefits.

[22] https://www.level.org.nz/energy/

CBA

This report compares the proposed solar panel Confidential advice to Government incentives with the counterfactual:

- Counterfactual: no incentives for solar panels are introduced. Consent timeframes are approximately equal to those in 2024.
- Proposal: incentives, in the form of shorter consent timeframes for Confidential advice to Government buildings with solar panels and a consent exemption for rooftop solar installation, are introduced.

Assumptions

We have made the following assumptions for the purpose of modelling the impacts of the proposal:

- The quantified benefits and costs of this proposal are expected to be transferred (that is, any benefits to one party are offset by an approximately equal cost to another party).
- There is no induced housing growth – that is, any additional solar Confidential advice to Government attributable to the incentive scheme simply take the place of ordinary Building Code-compliant buildings that would otherwise have been built.
- The central uptake estimate is 10 per cent uptake – that is, 10 per cent of residential building consent applications for new detached dwellings up to two storeys include solar Confidential advice to Government.

Limitations

We have limited information on the:

- number of new buildings with solar panels Confidential advice to Government consented under the status quo
- likely uptake of incentives
- impact on BCA workload or the distribution of effort
- number of rooftop solar panels installed.

We have identified several costs and benefits that we have not quantified or monetized. These have not been included in the quantified CBA due to the level of uncertainty around their scale at this stage in the policy process, or difficulty in collecting information to monetise some impacts in the time available.

To mitigate these data limitations, we have conducted a brief cost-benefit analysis using readily available data and scenario analysis. However, we have not been able to test this cost-benefit analysis with the sector.

Costs

Table 1 summarises the quantified and unquantified costs associated with the solar panel Confident incentive proposal.

Table 1: Costs

Quantified costs		
Cost	**Description**	**Who pays**
Transferred consent processing days	Increase in processing days for other applications. Building consent authority staff may be reallocated to building consent applications that meet the incentive criteria, which may lead to delays in processing other building consent applications that do not meet the incentive criteria.	Other building consent applicants
Unquantified costs		
Additional administrative burden	Costs associated with checking consent applications for eligibility and verifying whether the building was built to meet the criteria for a 10-day consenting timeframe.	Building consent authorities
Implementation costs	Costs associated with building consent authorities complying with the proposal (such as modifying software)	Building consent authorities
Costs of solar panels	Costs associated with the purchase and installation of solar panels	Applicants for eligible fast-tracked consents for new dwellings with solar; building owners installing rooftop solar panels
Costs of showing how applicants meet the performance criteria	Costs associated with showing that they meet the performance criteria (i.e. certifications, professional services fees)	Confidential advice to Government

Benefits

Table 2 summarises the quantified and unquantified benefits associated with the solar panel incentive proposal.

Table 2: Benefits

Quantified benefits		
Benefit	**Description**	**Who benefits**
Consent processing days avoided	Consent processing days avoided by including solar panels Confidential advice to Government	Applicants for eligible Confidential advice to Government consents for dwellings with solar
Unquantified benefits		
Benefits of greater voluntary uptake of solar panels	Expected to include reduced emissions and energy bills Stimulating demand for and raising awareness of solar panels will in turn help to support the growth of an emerging market for solar panels on residential buildings.	Applicants for eligible consents for buildings with solar; owners and occupiers of buildings with solar
Confidential advice to Government		
Consent fees avoided	Fees avoided from clear consent exemption.	Building owners installing rooftop solar panels

CBA results

Table 3 below summarises the annual value of the quantified costs and quantified benefits.

Table 3: CBA results

	Annual value ($m)
Quantified costs	
Transferred consent processing days	2.186
Total annual costs	2.186
Quantified benefits	
Consent processing days avoided	2.186
Total annual benefits	2.186
Net annual value	0
BCR	1

Sensitivity analysis

Uptake of the incentives

The CBA results are highly sensitive to assumptions around uptake. It can be difficult to estimate the uptake expected from the incentive scheme because we are not clear on baseline data and have not been able to estimate uptake in the time available.

We have included three scenarios for the uptake of the incentive scheme in Table 4 below as part of our sensitivity analysis.

Table 4: Sensitivity analysis (faster consent timeframes for new dwellings proposal)

	Lower uptake scenario	**Central estimate**	**Higher uptake scenario**
Description	1 per cent uptake	10 per cent uptake	25 per cent uptake
Annual consent days avoided	$211,250	$2,112,913	$5,282,488

Appendix 2: Supplementary CBA analysis for solar exemption

Context

Using the building consent system performance monitoring data from 2024, we have identified thirteen applications relating to retrofitting solar panels. These applications were processed by seven BCAs.

Of the thirteen applications:

- Three were for a new building consent, seven for amendments to an existing building consent, and three for a code compliance certificate.
- Twelve were residential: four R1, four R2, and four R3. Just one was commercial (C1).[23]

Fees

Table 1: BCA fees avoided (per year, total)

Consent	$1,200 x 3	=	$3,600
Amendment	$800 x 7	=	$5,600
CCC	$250 x 3	=	$750
Inspection	$1,030 x 3	=	$3,090
Total			**$13,040**

Processing days

Total working days taken to process the 13 applications was 180. The average days to process each application type were:

- Building consent: 15 working days
- Amendment: 11 working days
- CCC: 19 working days

We assume that the benefits to the owner of avoiding application processing delays relate only to using the solar panels sooner. We also assume that (for retrofits) the building can be used during any delays. We also assume that builders can find other work during delays given these are not large projects.

Based on BRANZ analysis (see also Appendix 3: Assumptions), a day saved from building consent application processing can be valued at $409.40. Therefore, avoiding the 180 days of processing time for relevant applications can be valued at **$73,692** per year.

[23] The national BCA competency assessment levels (R1-R3, C1-C3) categorise buildings by complexity. https://www.building.govt.nz/building-officials/national-bca-competency-assessment-system/national-bca-competency-assessment-system-levels

Benefits

Table 2 summarises the quantified and unquantified benefits associated with the solar panel exemption proposal.

Table 2: Benefits

Quantified benefits		
Benefit	**Description**	**Who benefits**
Consent processing days avoided	Consent processing days avoided by exempting installing rooftop solar panels from the requirement to have a building consent	Building owners who would otherwise have needed to apply for a consent to install solar
BCA fees avoided	Application processing and inspection fees avoided by exempting installing rooftop solar panels from the requirement to have a building consent	Building owners who would otherwise have needed to apply for a consent for installing rooftop solar

CBA results

Table 3 below summarises the annual value of the quantified costs and quantified benefits.

Table 3: CBA results

	Annual value ($000s)
Quantified costs	
N/A	0
Total annual costs	0
Quantified benefits	
BCA fees avoided	13
Application processing days avoided	73
Total annual benefits	86
Net annual value	86
BCR	N/A

Appendix 3: Assumptions

Solar panel Confidential advice to Government **incentives proposal**

Description	Assumption
Modelling assumptions	
Scope	Building consents for new detached dwellings up to two storeys
Time period	Annual only, given the benefits and costs are assumed to be transfers
Uptake	We do not have good evidence on which to forecast uptake. We have selected three uptake scenarios to provide an indication of potential impacts. The central uptake estimate is 10 per cent uptake – that is, 10 per cent of building consents in scope have solar panels Con Uptake scenarios for sensitivity analysis: one per cent, 25 per cent
Consent processing days	
Monetary value of one day saved	BRANZ SR259 (2012) estimated the cost of a delay for a builder at between $1,000 and $1,600 per project per week.[24] Average = $1,300 per week in 2012 dollars Average = $2047 per week in 2024 Q3 dollars[25] Per working day = $409.40 (MBIE calculation: $2047 divided by five)
Number of days saved	Modelling based on internal MBIE data received from building consent authorities. The data covers consent timeframes for 2024. Note this modelling is indicative only.

Uptake	Consent days avoided
1 per cent	516
10 per cent	5,161
25 per cent	12,903

[24] BRANZ, 2012
[25] RBNZ (Wages inflation)

Description	Assumption
	Assumptions include: • The current processing time pattern doesn't change absent this intervention • We have correctly identified applications which are for new builds among the subset of applications which are for non-amendments • The proportion of applications which are for new builds is the same among amendments as in non-amendments • There is no difference in the average processing days between alterations and new builds among building consent amendment applications • The proportion of applications which are for houses 2 storeys or less is equal to the proportion of houses which are 2 storeys or less which are active on the District Valuation Roll and built since 2014 Note this only applies to estimates of time saved for new dwellings.
Transferred processing days	We have assumed that the reduction in consent processing days for eligible consents leads to an increase in processing days for other applications. This allows building consent authority staff to be reallocated to building consent applications that meet the incentive criteria. The alternative assumption is that building consent authorities may hire more staff to deliver the same service in the shorter timeframes. In this case, it is expected that any additional staff costs would be paid by the building consent authority and passed on to consent applicants through higher fees.

Appendix 4: Chartered professional engineer provision for solar exemption

Requiring a chartered professional engineer to provide or review the design of the structural fixings is intended to mitigate the risks associated with larger rooftop solar arrays. Large arrays are riskier because they are heavier. They also have a larger surface area exposed to winds which can lift rooftop solar arrays if the structural fixings aren't appropriately designed. This can compromise a building's structural integrity and weathertightness and endanger people's safety.

The 40 square metre threshold is intended to apply to each independent roof structure. The roof of a building can be made up of multiple roofs which are supported by independent roof structures.

The wind threshold

The wind thresholds specified for when a chartered professional engineer needs to provide or review the design is intended to mitigate the risks associated with high wind speeds. High winds can lift rooftop solar arrays if the structural fittings are not appropriately designed.

The proposed settings would enable people to install rooftop solar arrays less than 40 square metres in size per roof without an engineer providing or reviewing the design if either:

a. For buildings no higher than 10 metres or 2.5 storeys, the wind zone is no greater than high as defined in Acceptable Solution B1/AS1 i.e. where speeds are less than 44 metres per second; or,

b. The design wind speed of a building does not exceed 44 metres per second as calculated, using Verification Method B1/VM1 (i.e. the maximum wind speed a structure is likely to experience during its lifetime used to determine the necessary strength and stability of a building's components). The calculation to determine a building's design wind speed takes the height of a building into account so taller buildings usually have higher design wind speeds which the building must be built to withstand. Buildings less than 10 metres in height can also choose to use this method.

A chartered professional engineer would be required to provide or review the design where buildings are in a wind zone greater than high and buildings where the design wind speed exceeds 44 metres per second.

Most residential installations will not need an engineer's design or review

MBIE expects the proposed conditions will mean most rooftop solar array installations will not require a chartered professional engineer to provide or review the design of the structural fixings. This is because most residential rooftop solar installations in New Zealand are for arrays between 25 and 35 square metres in size. Additionally, around 70 per cent of existing buildings are in wind zones no greater than high.[26]

MBIE has limited data on the average size of rooftop solar arrays which are installed on non-residential buildings. The size tends to vary significantly based on the size of the building and what it's used for. However, MBIE expects that an engineer is more likely to be required to provide or review the design of the structural fixings for rooftop solar installations on large

[26] Based on research undertaken by the Building Research Association of New Zealand in 2022.

commercial, industrial and residential apartment buildings. These buildings usually have higher design wind speeds as they are taller. People are also more likely to install larger rooftop solar arrays on these buildings.

Engaging an engineer to undertake customised design work is estimated to cost between $120 and $1,500. The cost depends on the engineer, the complexity of the building and whether a standardised design can be used repeatedly for different buildings. For most structural fixings on the market, an engineer will often provide a one-time sign off as part of the product development process. Therefore, the design of the structural fixings used in larger arrays are often already provided or reviewed by an engineer. This is evidenced by the lack of any examples of solar panel uplift, even in high wind areas where the BCA does not require a building consent, such as Wellington.

The engineer does not need to be involved in the installation of the array.

These conditions replicate existing conditions used to manage the risks associated with the Schedule 1 exemptions. For example, the exemptions for ground mounted solar panel arrays also limit the size of the solar arrays in urban areas and uses the same wind thresholds to determine when an engineer must provide or review the design. Another example is the exemption for single-storey pole sheds and hay barns in rural zones. This exemption limits the height and square metre size of the pole shed or hay barn and again uses the same wind thresholds.

Appendix 5: Draft intervention logic model

Draft logic map for solar generation Confidential advice to Government incentives

TO INCENTIVISE SOLAR PANELS Confidential advice to Government

Objectives	Inputs and activities	Outputs (<1 year)	Short term outcomes	Long term outcomes
To stimulate the voluntary uptake of solar panels Confide, which would in turn support the Government's energy and climate priorities.	MBIE – policy development, guidance and information and education activities	Building Act amendments – 10-day consenting timeframe for eligible consents and consent exemption for solar installations	Greater voluntary uptake of solar panels Confidential advice to Government	Reduced building-related emissions
	MBIE – monitoring activities	Secondary legislation development – criteria	Faster consenting timeframes for eligible consents	Lower energy bills
	Building consent authorities – policies and IT systems update, operational activities	Guidance for building consent authorities and building consent applicants	Lower cost and time to install solar	Greater resilience for energy grid
		Advertising	Confidential advice to Government	Confidential advice to Government
			Incentive for sector to upskill	

Assumptions: faster consenting timeframes and consent exemption for rooftop solar will reduce the comparative costs of solar panels Confidential advice to Government and incentivise uptake

Potential indicators

Number of projects qualifying for incentives | Average consent processing timeframes for dwellings with solar