AUCKLAND COUNCIL

Te Aroturukitanga o te Mahere ā-Wae ki Tāmaki Makaurau

Auckland Unitary Plan Resource Management Act (1991) Section 35 Monitoring: B3.4 Energy

August 2025

Technical Report

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Auckland Unitary Plan Resource Management Act (1991) Section 35 Monitoring:

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August 2025 Technical Report 2025/29

Planning and Resource Consents Department, Auckland Council

Auckland Council
Technical Report

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Executive summary

The Auckland Unitary Plan (AUP) became operative in part in November 2016. This report considers how effective and efficient the objectives, policies, rules and other methods of the AUP have been in meeting the outcomes intended by the Regional Policy Statement (RPS) in Chapter B3.4 Energy.

This monitoring work will contribute to our knowledge base – what is working in the plan and where there may be challenges. This knowledge will help to inform future plan changes and contribute to the policy cycle. Additionally, this report will address the Section 35(2)(b) plan monitoring requirements of the Resource Management Act 1991 (RMA).

This report is part of a series of reports, each relating to different chapters of the AUP RPS. It is recommended that this report is read in conjunction with its companion technical topic reports, and the summary report.

AUP Chapter B3.4 seeks to achieve the outcomes of increasing renewable electricity generation and promoting energy efficiency and conservation. This report examines whether the AUP is being effective and efficient in achieving each of these outcomes.

The assessment has primarily relied upon resource consent data, discussions with Auckland Council's sustainability and resilience advisor, resource consent planners involved in the processing of applications for renewable electricity generation activities, consideration of relevant reports, other district and regional plans, and website information. The lack of monitoring data has made it difficult to reach a clear conclusion on the AUP's performance. Notwithstanding this, the monitoring has provided some overall observations.

Assessment of the resource consents granted under the AUP suggests that resource consent for the installation of roof top solar panels is only triggered for those dwellings located in the Residential – Single House zone, subject to the Historic Heritage and Special Character Areas overlay.

While small-scale renewable electricity generation and electrical charging stations in all zones (except roads and strategic transport corridor zones), and community-scale electricity generation (in industrial, rural and future urban zones) are permitted activities that don't require resource consent. Monitoring of these activities is needed to ensure compliance with AUP provisions, assess the effectiveness of these provisions, and identify potential environmental issues or problems before they become serious.

Limited consideration of renewable electricity generation in structure plans indicate that consideration of these activities is desirable or optional rather than required.

A review of the AUP zoning and rules framework is needed to ensure that it is robust enough to address the environmental effects of applications for large-scale renewable electricity generation developments; rather than smaller, renewable energy projects and retrofits that have largely occurred in Auckland. Further work is also required to provide monitoring indicators for renewable electricity generation activities.

Contents

1.0 Introduction

This report considers how effective and efficient the objectives, policies, rules and other methods of the AUP have been in meeting the outcomes intended by the Regional Policy Statement (RPS) – Chapter B3.4 Energy. Monitoring is in accordance with section 35(2)(b) of the RMA.

Section 35(2)(b) specifies that monitoring results are published every five years. The AUP became operative in part in November 2016 and by November 2021 had been operative in part for five years.

Monitoring findings seek to tell a story of what the AUP is achieving and where challenges may be. With monitoring being a key link in the policy development cycle, the data can also provide the evidence base for taking appropriate action where necessary.

The terms 'effectiveness' and 'efficiency' are not explicitly defined in the RMA. For the purposes of this monitoring report the terms are generally interpreted as[1]:

Effectiveness is the contribution that the provisions make towards achieving the objective, and how successful they are likely to be in solving the problem they were designed to address when compared with alternatives. The difficulty when assessing effectiveness is to be able to answer the question 'how do we know that implementing the policy, rule or method led or contributed to the outcome?'

Efficiency is an assessment of whether the provisions will be likely to achieve the objectives at the lowest total cost to all, or achieves the highest net benefit relative to cost to all.

The steps undertaken in this monitoring work are briefly summarised in Figure 1 below.

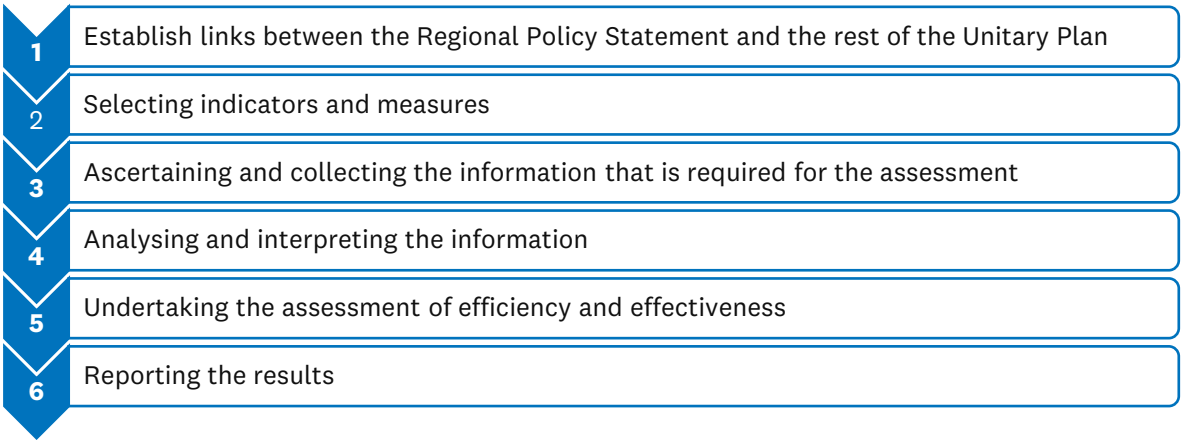


Figure 1. Steps in the monitoring process

[1] Auckland Unitary Plan Monitoring Strategy (2018).

2.0 RPS Chapter B3.4 overview

Background – Energy

Renewable energy means energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources[2]. Renewable electricity generation is the generation of electricity from these sources. It also includes the construction, operation, maintenance, and upgrading of structures associated with these activities. In 2022, 87.1 per cent of New Zealand's electricity was generated from renewable sources, comprising contributions from hydroelectric (60 per cent), geothermal (18 per cent), natural gas (9.9 per cent), and wind (6.5 per cent).[3]

Renewable electricity generation can occur at different scales, including small and community-scale distribution activities as well as larger scale activities. It includes the connection of generation facilities to the distribution network and national grid for electricity conveyance.

The National Policy Statement for Renewable Electricity Generation (2011) (NPS-REG) recognises and provides for renewable electricity generation activities as a matter of national significance. The contribution of renewable electricity generation towards addressing the effects of climate change plays a vital role in the wellbeing of New Zealand, its people and the environment. The NPS-REG directs Auckland Council (the council) to provide for various types of renewable electricity generation activities and at a range of scales, recognise their practical constraints, and directs decision makers to consider off-setting and compensation for addressing residual adverse effects. Appendix A to this report provides a summary of the energy strategies considered relevant to this topic.

Auckland context

Climate change is an important issue for Auckland, with Auckland Council declaring a climate change emergency in 2019, prior to the adoption of the city's Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan 2020. Increasing renewable electricity generation is closely intertwined with the city's response to climate change and efforts to transition to a low emissions economy and city by 2050 or sooner.

Most of Auckland's electricity is sourced from outside the city boundaries. Any disruption in supply, or problems with the infrastructure required to deliver electricity, is a significant issue given the city's reliance on electricity. Increasing renewable electricity generation activities and energy efficiency and conservation reduces greenhouse gas emissions and energy demand, and the need for the use of fossil fuels.

The Auckland regional peak demand for electricity is forecast to grow by an average 2.6 per cent per annum over the next 15 years, from 2,088 megawatts (MW) in 2023 to 3,050 MW by 2038 (which is a higher growth rate than the national average of 2.0 per cent).[4] The Auckland region's generation capacity is currently only 151 MW plus about 64 MW of embedded solar generation.[5] As Auckland's demand for electricity significantly exceeds local generation, the deficit is imported via the national grid.

[2] Definition from RMA and NPS-REG (2011)
[3] Ministry of Business, Innovation & Employment, Energy in New Zealand (2023).
[4] Transpower, Transmission Planning Report (2023), p114.
[5] Transpower, Transmission Planning Report (2023), p116.

Despite there being a deficit between demand and local generation of electricity, no large-scale renewable electricity generation projects have been constructed in Auckland, and only two proposals for large-scale solar farms are being planned or in the process of applying for resource consent since the AUP became operative. The development of additional renewable electricity generation is often constrained by economic viability and balancing local values (e.g. natural landscapes and loss of amenity) with broader national benefits.[6]

The development of renewable electricity generation can cause adverse effects in relation to amenity, noise, landscape, ecology, cultural values and traffic. These adverse effects need to be appropriately managed and weighed against the benefits of enabling increased generation capacity and efficiency of existing renewable electricity generation facilities.

There is also a need to protect established and consented renewable electricity generation activities from sensitive land uses to avoid reverse sensitivity effects, as this may result in complaints, and potentially lead to subsequent constraints on the operation, maintenance and upgrading of these activities.

Additionally, renewable electricity generation activities can only occur where the energy source (such as an abundance of solar and wind) exists and may need to integrate with existing supporting infrastructure such as electricity distribution networks.

Auckland Unitary Plan

The RPS chapter B3 covers the topics of infrastructure, transport and energy. The energy section of the chapter has two objectives and four policies as follows:

Section	Relevant Provisions
B3.4.1. Objectives	(1) Existing and new renewable electricity generation is provided for. (2) Energy efficiency and conservation is promoted.
B3.4.2. Policies	(1) Recognise the national, regional and local benefits to be derived from maintaining or increasing the level of electricity generated from renewable energy sources. (2) Provide for renewable electricity generation activities to occur at different scales and from different sources to reduce reliance on non-renewable energy sources. (3) Recognise the locational constraints in the development of large-scale renewable electricity generation activities. (4) Provide for the development, operation and maintenance of small-scale renewable electricity generation, provided that adverse effects on the environment are avoided, remedied or mitigated.

The RPS objectives seek (in broad terms) to increase renewable electricity generation and promote energy efficiency and conservation.

The RPS policies follow from this, and seek to:

- recognise the national, regional and local benefits of renewable electricity generation
- provide for renewable electricity generation at different scales and from different sources

[6] Auckland Council (2012). The Auckland Plan 2012, page 213.

- recognise the locational constraints associated with the development of large-scale renewable electricity generation
- provide for small-scale electricity generation while managing adverse effects.

It is noted that there are no specific RPS policies for promoting energy efficiency and conservation, and no clear link between RPS objective B3.4.1 and the RPS policy B3.4.2.

RPS Chapter B2 covering urban growth and form, includes the topic 'A quality built environment', which includes the following relevant objectives and policy[7]:

> ***B2.3. A quality built environment***
>
> *B2.3.1. Objectives*
>
> *(1) A quality built environment where subdivision, use and development do all of the following:*
>
> *(d) maximise resource and infrastructure efficiency;*
>
> *(f) respond and adapt to the effects of climate change.*
>
> *B2.3.2. Policies*
>
> *(5) Mitigate the adverse environmental effects of subdivision, use and development through appropriate design including energy and water efficiency and waste minimisation.*

Renewable electricity generation and storage forms part of the broader set of objectives, policies and rules in Chapter E26 – Network utilities and electricity generation. In this chapter, there is one specific objective and one specific policy for renewable electricity generation as follows:

Section	Relevant Provisions
E26.2.1. Objectives	(8) The use and development of renewable electricity generation is enabled.
E26.2.2. Policies	(12) Provide for renewable electricity generation activities to occur at different scales and from different sources, including small and community-scale renewable electricity generation activities.

There are also other infrastructure objectives and policies in Chapter E26.2 that apply to renewable electricity generation addressing benefits, development and use, reverse sensitivity, and new technologies.

Rules framework

It is considered that Chapter E26.2 provides an enabling framework with small-scale renewable electricity generation and electrical charging stations in all zones (except roads and strategic transport corridor zones), and community-scale electricity generation (in industrial, rural and future urban zones) being permitted activities subject to meeting relevant standards, i.e. they do not require resource consent.

Research and exploratory scale investigations for renewable electricity generation activities (in the open space, rural and future urban zones) are also permitted activities subject to standards.

[7] Refer Section 35 Monitoring of RPS Chapter B2.3 A quality built environment – Technical Report (July 2022).

Community-scale electricity generation (in the centres, mixed use, residential and open space zones) and large-scale wind farms (in the industrial, rural and future urban zones) are restricted discretionary activities. This is considered as permissible as possible given the potential environmental effects of these activities and their structures. Large-scale wind farms and other electricity generating facilities in the residential and open space zones are non-complying activities.

The amenity effects associated with small-scale solar and wind generation activities are addressed through the relevant standards controlling height, setbacks, shadow flicker, structure size and number limits. The provisions of the AUP balance the need to enable greater renewable energy generation, while managing adverse effects of these activities on the environment. Activities with the potential for more significant adverse effects have a restrictive activity status in the AUP.

Overlays

Renewable energy generation activities are provided for within some of the overlays for sensitive environments (i.e. protected and scheduled areas or sites) within AUP Chapter E26.2.

Small and community-scale electricity generation facilities are provided for as restricted discretionary activities within the Historic Heritage, Special Character Areas – Residential and Business, Regionally and Locally Significant Volcanic Viewshafts and Height Sensitive Areas overlays.

Electricity generation facilities not otherwise provided for where the site is identified as a site exception in Schedule 12 Sites and Places of Significance to Mana Whenua Schedule are provided for as a restricted discretionary activity. Where the site is not identified as a site exception in Schedule 12, it is provided for as a discretionary activity.

Building and structures for electricity generation facilities that do not comply with permitted activity standards are restricted discretionary activities within the High Natural Character and Outstanding Natural Landscape Areas overlays, and non-complying activities within the Outstanding Natural Character overlay.

Additionally, there are rules for vegetation removal, earthworks and land disturbance within overlay areas associated with electricity generation activities.

Definitions

The following definitions in Chapter J1 support the renewable electricity generation provisions in AUP Chapter E26.2:

- Large-scale wind farm

  Buildings, structures, access tracks and turbines used to generate electricity from wind and convey the electricity to an associated substation in order to supply the wholesale electricity market.

- Research and exploratory scale investigations for renewable electricity generation activities

  Undertaking monitoring and measuring activities of solar, wind, hydro-electricity or geothermal energy sources for potential renewable electricity generation activities.

- Small scale electricity generation

  Systems or equipment that:

  - generate electricity from renewable sources to meet on-site energy requirements and/or connect into a distributed energy network.

  Includes:

- roof-top wind turbines with a maximum blade diameter of 2.5m; and
- photovoltaic systems.

Excludes:

- hydro generation.

3.0 Indicators

Indicators and measures have been developed to assess the progress toward achieving the objectives and outcomes intended by the RPS. They are qualitative or quantitative measures that assess changes and help diagnose potential issues.

> An **indicator** (for the purposes of this report) is a qualitative or quantitative gauge that displays degrees of progress to determine whether or not the AUP is moving in the right direction toward meeting its objectives. An indicator should be used to assess the condition of the environment, to identify changes to that condition, to diagnose problems and then to guide future changes to objectives, policies or methods (via plan change or plan review).
>
> A **measure** is the selected information that enables evaluation of the indicator. Methods of measurement will differ depending on the indicator.

The indicators suggested for this topic have been shaped by some limitations. It was not possible to develop a set of indicators which encompassed all facets of the topic due to constraints on time, resource, and data availability.

Chapter B11 Monitoring and environmental results anticipated

Chapter B11 in the AUP sets out the monitoring and environmental results anticipated (ERA) of the regional policy statement. B11 is not exhaustive, an ERA is not listed for every objective in the RPS. Chapter B11 explains -

> *Environmental results anticipated identify the outcomes expected as a result of implementing the policies and methods in the regional policy statement and provide the basis for monitoring the efficiency and effectiveness of those policies and methods as required by section 35 of the Resource Management Act 1991.*

Environmental results anticipated are not additional objectives, policies or rules: they are indicators to be used when assessing progress towards achieving the objectives in the regional policy statement. These indicators should be used:

- to assess the condition of the environment
- to identify changes to that condition
- to diagnose the causes of environmental problems, and
- to guide future changes to objectives, policies and methods.

Table B11.2 does not provide environmental results anticipated or monitoring indicators for RPS Chapter B3.4 that could be used to further inform this report. Due to this, the objectives B3.4.1(1), B3.4.2(2) and E26.2.1(8) were initially used as surrogate indicators to assess the effectiveness and efficiency of the AUP provisions for this topic.

1.0 Data and information

Due to limited timeframes and resources, and complexity of this topic, this report only provides key observations, and trends from the various data and information sources identified by the council's sustainability and resilience advisor and resource consent planners. Further investigations including feedback from renewable electricity developers/providers on barriers to the provision of these activities, particularly large-scale proposals, is recommended to better understand the issues highlighted in this report.

The data and information sources used in this report included:

- resource consent data
- council initiated structure plans
- Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan 2020 - Progress Indicators Baseline Report, 2023 Progress Report, and 2024 Progress Snapshot
- Ministry of Business, Innovation & Employment data
- Energy Efficiency and Conservation Authority website
- Environmental Protection Agency data
- Electricity Authority data.

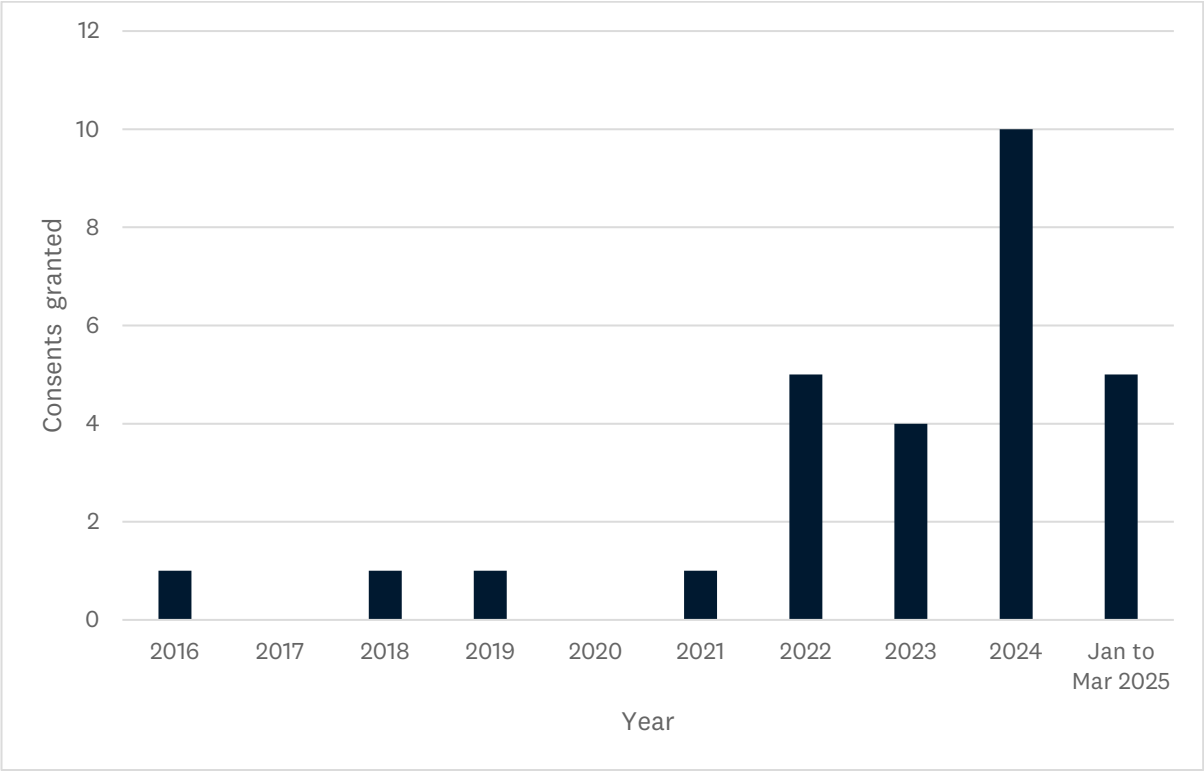
There were a number of limitations associated with the use of resource consent data. The data does not capture pre-application discussions or proposals that are withdrawn during processing rather than continuing towards a decision. There is also no monitoring data available on renewable electricity generation activities that are permitted activities, and therefore it is difficult to determine their extent or cumulative effects.

Resource Consents data

Resource consent data collected by Auckland Council between 2016 and 2025 was filtered by key wordsearch for electric, electrical, renewable, and renewable energy sources such as solar, wind and geothermal; and manually extracted from the database.

During this period, a total of 28 resource consents were granted by the council for the installation of solar panels on the roofs of dwellings (see Figure 2 below). All dwellings were located on Residential – Single House zoned sites and subject to the Historic Heritage and Special Character Areas overlay in the AUP. Rule D18.4.1(A4) – *External alterations or additions to a building on all sites in the Special Character Overlay – Residential or Special Character Areas Overlay - General (with a residential zoning)* are restricted discretionary activities, triggering resource consent requirements for the installation of roof-top solar panels.

Figure 2: ***Resource consents granted for installation of solar panels for residential dwellings***



Source: Auckland Council, Resource Consent data, 2016-2025

To note, the small number of resource consents is not indicative of renewable electricity generation activities being unduly constrained by the provisions of the AUP. The enabling zoning and rules framework of the AUP, provides for small-scale renewable electricity generation activities in all zones (except roads and strategic transport corridor zones) and community-scale renewable electricity generation activities (in industrial, rural and future urban zones) as permitted activities that don't require resource consent.

Two community-scale solar farms, and an outline plan of works for a floating solar array at Rosedale Wastewater Treatment Plant have also been consented by the council (see Table 1). Additionally, two proposals for large-scale solar farms are being planned or in the process of applying for resource consent, along with a solar farm project in Wellsford being listed to follow the fast-track process under the Fast-track Approvals Act (2024) (see Table 2).

The Act allows one application to cover multiple approvals. It aims to make the approval process easier for projects with national and regional importance.

Auckland Council's role in fast-track applications is to:

- provide advice before the application is submitted
- provide the Environmental Protection Authority (EPA) with comments on the application
- oversee approved resource consents.

The council does not make decisions on a fast-track application. An expert consenting panel appointed by the EPA makes all the decisions. However, the council plays an important part of this process.

Table 1: ***Resource consents and outline plan of works granted***

Application	Description	Lodged	Approved	Notification pathway	Status	Local Board
Rosedale Wastewater Treatment Plant	Install a 1040 kW floating solar array	May 2019 (via Outline Plan of Works)	June 2019	N/A	Constructed and commissioned 2020	Upper Harbour
Solar Farm	3 hectare, 2.5 Mega Watt Solar Farm at Glenbrook	February 2022	September 2022	Non-notified	Constructed and commissioned 2023	Franklin
Solar Farm	13 hectare, 13 Mega Watt Solar Farm at Ardmore	April 2023	February 2024	Non-notified	Constructed and commissioned 2025	Franklin

Table 2: ***Proposals for large-scale solar farms***

Application	Description	Status	Local Board
Solar Farm	179MW photovoltaic solar farm, located adjacent to the Kaipara Coast Highway in Glorit	Project referred to the Environmental Protection Agency to use the fast-track consenting process under the Natural and Built Environment Act 2023. Application lodged and in progress.[8]	Rodney
Solar Farm	50 Mega Watt Solar Farm at Helensville	Publicly notified – awaiting hearing of resource consent application.	Rodney
Solar Farm	76 Mega Watt Solar Farm at Wellsford	Project has been listed to follow the Fast-track process under the Fast-track Approvals Act 2024.[9]	Rodney

Consenting data findings

Resource consent data highlights that the installation of solar panels on the roofs of dwellings located within the Historic Heritage and Special Character Areas overlay of the AUP, triggers the requirement for resource consents. It is noted that all resource consent applications for these installations were granted on a non-notified basis, and none have been declined.

Apart from the overlay's resource consent requirements, the consenting data suggest that the provision of renewable electricity generation activities are not being unduly constrained by the AUP e.g. all zones

[8] Environmental Protect Authority website https://www.epa.govt.nz/fast-track-consenting/nbea-fast-track-projects/glorit-solar-farm/
[9] Ministry for the Environment, Fast-track website https://fasttrack.govt.nz.

(except roads and strategic transport corridor zones) provide for small-scale renewable electricity generation activities and electrical charging stations as permitted activities.

Building Consents data

Section 43 of the Building Act 2004 outlines that energy work, including solar panel installations are generally exempt from needing a building consent. However, if the work affects life or safety systems, or if it involves structural changes to the roof, building consent will be required.

Currently, data on solar panel installations from council's building consents database can only be manually extracted, if they are clearly identified in the consent application. Due to the inconsistent naming and categorization, and the fact that many smaller installations may not require a building consent at all, building consent data was not extracted and analysed for this report.

Public incidents and complaints

The council gathers incidents and complaints received from the general public in a database. This database was reviewed between January 2018 to July 2023, and no complaints were recorded relating to renewable electricity generation activities.

GeoMaps

The council's GIS viewer (GeoMaps) contains spatial and non-spatial data from across Auckland. The mapping information on GeoMaps is non-statutory. Although GeoMaps spatial data can be added and viewed in the AUP planning maps portal, the data does not form part of the AUP. GeoMaps does not include information on renewable electricity generation activities to which the rules in Chapter E26.2 apply.

Council-initiated Structure Plans

The AUP establishes that greenfield development should be preceded by structure planning. Under the AUP, a structure plan is a non-statutory plan that sets out the expected pattern, location and extent of different types of land use. It integrates land use planning with infrastructure provision and includes guidance regarding how development should be staged and how it should be managed to achieve social and environmental objectives. Plan changes then give effect to a structure plan by amending the regulatory planning regime through a public process of submissions and hearings that follows the processes prescribed in the Resource Management Act 1991.

At the time of reporting, Auckland Council had prepared five structure plans for greenfield areas, which provide the framework for new urban development across approximately 5,550 ha of rural land zoned Future Urban. Collectively, these future growth areas are anticipated to accommodate some 52,200 new households and 39,600 new jobs.

The structure plans prepared by the council, with specific references to sustainability and energy are summarised in Table 3 below.

Table 3: ***Summary of Structure Plans prepared by Auckland Council with specific references to sustainability and energy***

Structure Plan	Population Growth	Employment Growth	Specific references to sustainability and energy
Drury - Opāheke Structure Plan 2019 (1921 ha)	22,000 houses (60,000 people)	12,000 jobs	Appendix 6 Sustainability of the Plan outlines for energy use and generation: *Opportunities* *Promote diversified energy sources to increase energy resilience and a greater use of renewable energy resources.* *Enable smart grid infrastructure and community energy generation that can respond to future developments in energy technology. Respond to passive design principles in terms of the location and orientation of individual sites and land use zones.* *Constraints* *Inclination to adopt a business as usual approach to energy use, generation and infrastructure provision.* *Key structure planning response* *Energy production and distribution is outside the control of the structure plan process. However, the structure plan and associated integrated transport assessment provides for a multi-modal transport network that can utilise renewable energy and encourage walking and cycling.*
Whenuapai Structure Plan 2016 (1500 ha)	8,100 to 10,700 houses	8,600 jobs	Section 7.1 Sustainability of the Plan advises that: *Sustainable energy* *The council will work with infrastructure providers where possible to deliver resource management systems based on resource efficiency, reuse, renewable energy and district scale smart grid power networks. The council will also advocate for energy efficiency and energy conservation.*
Silverdale West Dairy Flat Industrial Area Structure Plan 2020 (600 ha)	Does not identify residential growth	9000 jobs	None identified

Pukekohe-Paerata Structure Plan 2019 (529 ha)	12,000 houses (33,800 people)	5,000 jobs	*The Plan responds to Low Carbon Auckland 2014 and the Draft Tāruke-ā-Tāwhiri Auckland Climate Action Framework 2019 in the provision for housing intensification, active transport modes, public transport, and riparian.*
Warkworth Structure Plan 2019 (1000 ha)	7,500 houses	5,000 jobs	*The Plan is consistent with Low Carbon Auckland, particularly in the provision for active transport modes, public transport, and the identification and protection of a Green Network throughout the study area.*

It is noted that renewable energy specialists are unlikely to be directly engaged during the development of structure plans to enable consideration of how these activities can support future growth and development in greenfield areas.

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan 2020 - Progress Indicators Baseline Report

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan sets out Auckland's long-term approach to climate action for the city. It outlines the priority action areas to deliver the city's goals to reduce emissions and adapt to the impacts of climate change.

The plan was adopted in July 2020 and included a list of indicative indicators to track progress against the priorities. Te Puāwaitanga ō te Tātai, as a principle-based priority, did not include specific indicators at the time of the plan's adoption. However, a Progress Indicators Baseline Report was subsequently published in November 2022 for Te Tāruke-ā-Tāwhiri that provided the following progress indicators for monitoring renewable energy and electricity usage:

- Percentage of renewable energy in the national electricity grid (2015-2021)
- Total megawatts (MW) of renewable energy generation installed in Auckland (2016-2021)
- Annual electricity use in Auckland in GWhr (2015-2021)
- Auckland's peak residential electricity use using the winter months in GWhr (2016-2021).

While data for each indicator was graphed, no analysis was provided on what the graphs showed or the implications for renewable electricity generation going forward.

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan – 2023 Progress Report

A 2023 Progress Report was published for Te Tāruke-ā-Tāwhiri that provided an overview of Project Gigawatt, an initiative to develop solar power and other renewable energy initiatives on properties owned and managed by Auckland Council. The project was approved as part of the 10-Year Budget climate action investment package and seeks to meet any growth in electricity demand through renewable energy.

The report listed a number of key Gigawatt projects, including:

- two 206kW Photovoltaic Arrays (PV) installed at Albany Pool
- a 144kW PV array installed at Manurewa Pool

- a 13.6kW solar array installed at Highland Park Library
- completion of feasibility studies on the use of solar panels over a number of sites including Bruce Mason Centre, Art Gallery, NZ Maritime Museum, Aotea Centre and Civic Centre.

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan – Progress Snapshot 2024

A 2024 Progress Snapshot was published for Te Tāruke-ā-Tāwhiri that highlighted Council's investments in renewable energy generation to lower energy costs and build resilience. The snapshot identified that several council owned sites have received solar photovoltaic arrays including:

- Waitakere transfer station (5.1kW) array and a second 50kW array at the new workshop
- Community Centre upgrades at both Blockhouse Bay and Glendowie, with 29kW and 6.56kW arrays respectively
- Installation of solar water pumps at sites in Anawhata and Pae o te Rangi regional parks.

The snapshot also noted that in the 2023 calendar year, 2,448 Auckland homes were Homestar certified (a 72 per cent increase on 2022), indicating that Auckland is making progress on building better quality, sustainable energy efficient homes.

Energy Efficiency and Conservation Authority (ECCA) website

EECA is responsible for is responsible for implementing programmes to improve the energy efficiency of New Zealand homes and business. The EECA website contains information on energy efficiency regulations and products, data and tools for tracking energy use and transition, insights into energy markets, details on co-funding and support programmes like the Warmer Kiwi Homes programme, and information on its initiatives to reduce carbon emissions in sectors like industrial process heat and transport.

Environmental Protection Agency (EPA) data

The EPA has data on the number of renewable energy generation projects in New Zealand that have sought consent under the COVID-19 Recovery (Fast-track Consenting) Act 2020, Natural and Built Environment Act 2023 and Fast-track Approvals Act 2024. Apart from the Glorit Solar Farm application that has been referred to the EPA for consideration by the Minister for the Environment[10] and the Wellsford Solar Farm project listed to follow the fast-track process, no other applications have been made for large-scale renewable energy generation projects in Auckland since the AUP has been operative in part (November 2016).

[10] Environmental Protection Agency website: https://www.epa.govt.nz/fast-track-consenting/nbea-fast-track-projects/glorit-solar-farm/referral-application-for-glorit-solar-farm/

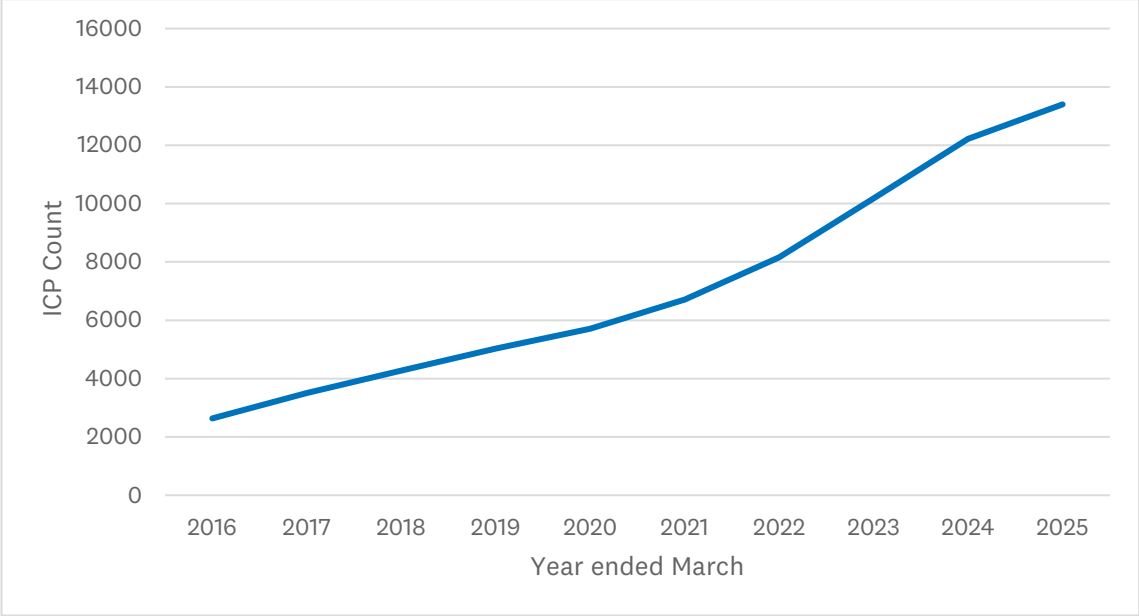
Electricity Authority (EA) data

ICP counts for solar connections

The installation control point (ICP)[11] counts from the Electricity Authority data[12] provides insights into the number of residential, commercial and industrial buildings with solar connections; and an indication of the penetration of solar generation within Auckland.

The number of ICP counts for residential solar connections continues to grow from 2,635 in March 2016 to 13,401 in March 2025. An increase of 10,766 over this period (see Figure 3). However, relative to the total number of dwellings in 2023[13], residential solar connections in March 2025 accounted for only 2.2 per cent of dwellings in Auckland.

Figure 3: ***Residential solar connections by installation control point (ICP) count for Auckland, March 2016 to March 2025***

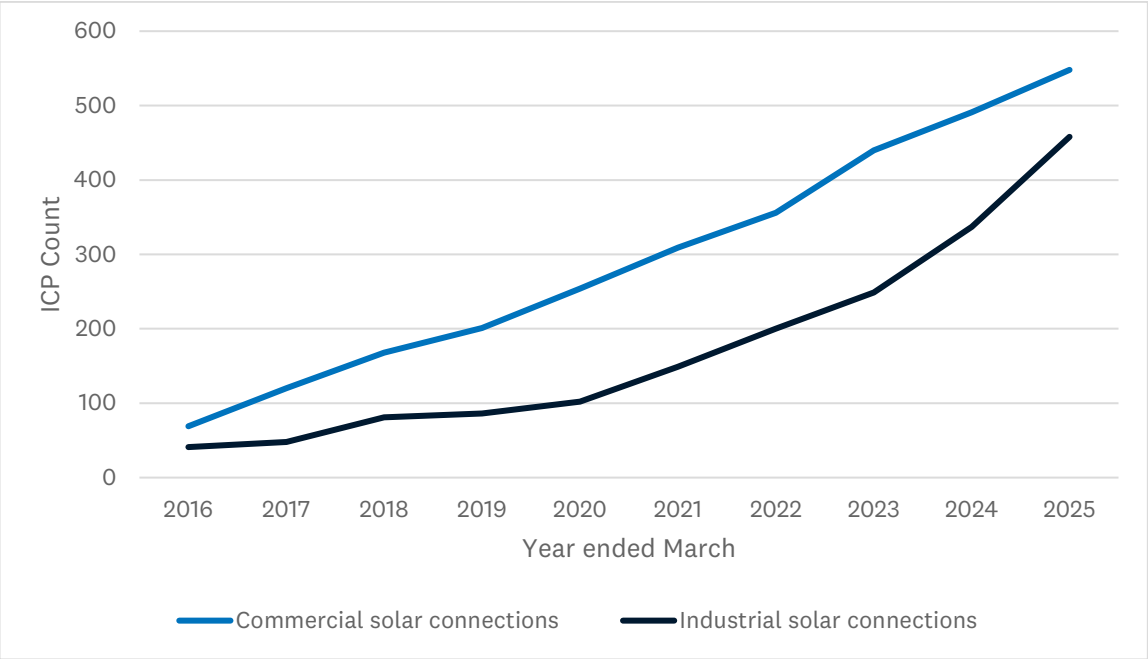


Source: EMI (Electricity Authority website) installed generation trends

The number of ICP counts for commercial and industrial solar connections also continues to grow (see Figure 4). Between March 2016 and March 2025, commercial solar connections increased from 69 to 548 (up 479 since 2016), and industrial solar connections from 41 to 458 (up 417 since 2016).

[11] An installation control point (ICP) is a unique number assigned to each electricity connection point. ICP counts are a measure of the number of individual electricity connections.
[12] From the Electricity Market Information website (EMI).
[13] The 2023 Census counted 611,895 total dwellings in Auckland.

Figure 4: ***Commercial and industrial solar connections by installation control point (ICP) count for Auckland, March 2016 to March 2025***



Source: EMI (Electricity Authority website) installed generation trends

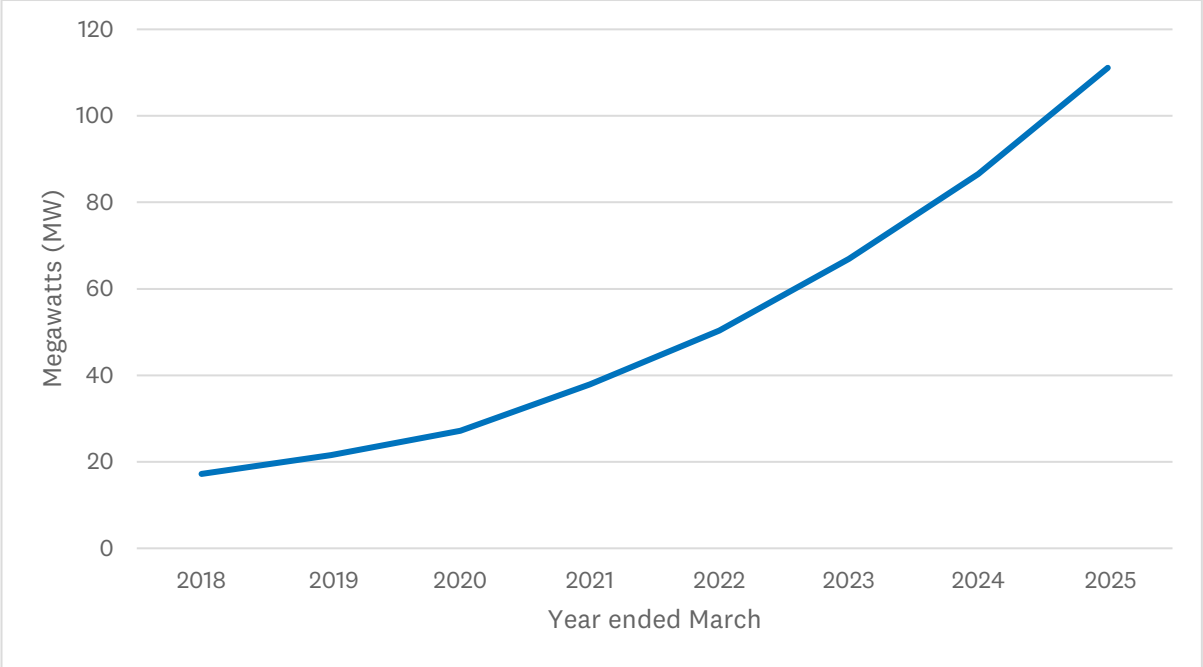
Installed generation capacity from solar and wind installations

The Electricity Authority also provides data on total installed generation capacity from solar and wind systems in Auckland. Between March 2020 and March 2025, the installed capacity from solar systems from all sources[14] increased from 27.2 MW to 111.1 MW, a 308% increase on 2020. Over the same period, installed capacity from wind systems remained static at approximately 2.52 MW (see Figures 5 and 6 below).

Key factors driving the growth in electricity generation from solar systems include the increased cost of electricity[15], falling costs of module solar panels, more efficient and cost-effective battery systems for storing excess solar energy for later use, and versatility in the application of solar panels from residential rooftops to solar farms.

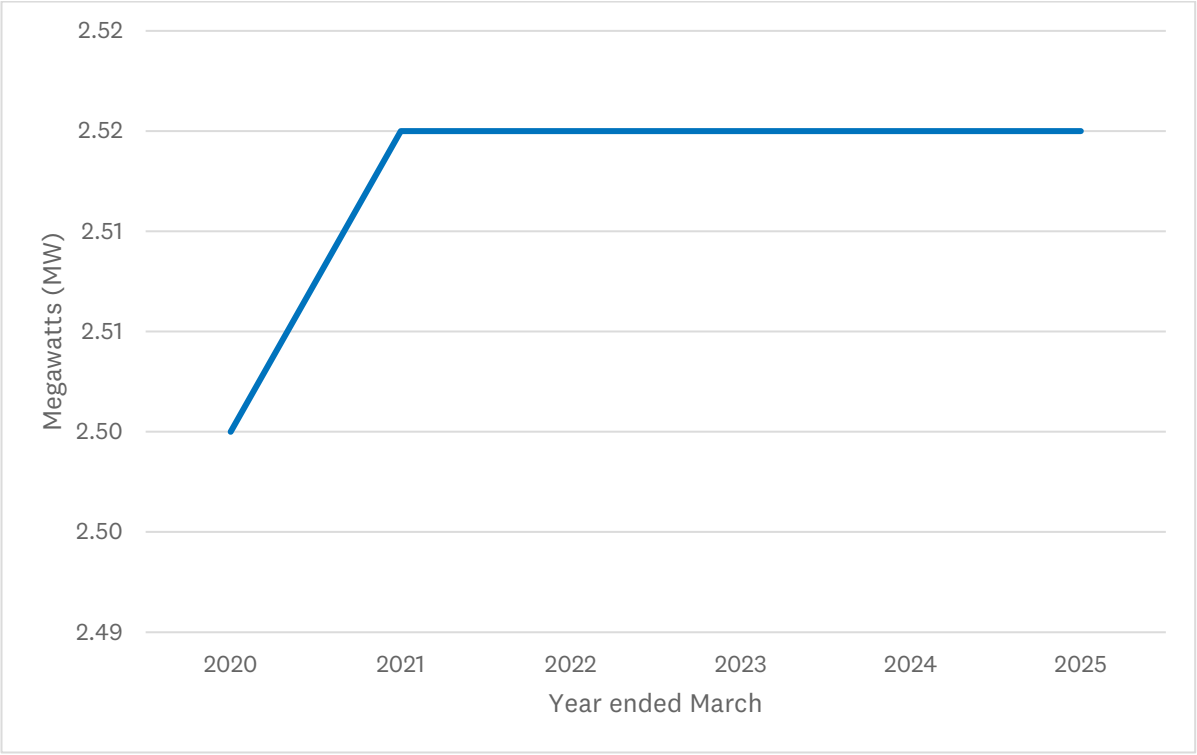
[14] Residential, small and medium enterprise, commercial and industrial.
[15] The Ministry of Business, Innovation & Employment information on residential electricity cost per kilowatt-hour (kWh), identifies that cost per kWh increased from 28.96c/kWh to 34.42c/kWh between March year 2018 and March year 2025.

Figure 5: ***Total installed solar generation capacity in Auckland (MW), March 2018 to March 2025***



Source: EMI (Electricity Authority website) installed generation trends

Figure 6: ***Total installed wind generation capacity in Auckland (MW), March 2020 to March 2025***



Source: EMI (Electricity Authority website) installed generation trends.

Ministry of Business, Innovation & Employment (MBIE) data

The MBIE has data on recipients of the Māori Housing Renewable Energy Fund. The three recipients within Auckland that have received funding are listed in Table 4 below.

Table 4: ***Recipients of the Māori Housing Renewable Energy Fund (2021 – 2023)***

Organisation	Project name	Description
Hāpai Housing Limited Partnership	Hāpai Housing Renewable Energy Project	Adding solar PV and centralised solar-tied hot water technology to new iwi-owned rental housing development. Glen Innes, Auckland.
Ahika Proprietary Limited	Te Paniora Hiko	Developing a feasibility study for a fully renewable energy-based smart microgrid covering the 500ha Māori community on Aotea, comprising up to 50 Māori households. Aotea/Great Barrier Island.
Te Uira ō Te Ringa Ltd, Aotea Energy	Te Uira ō Te Ringa	This project realises a renewable energy feasibility study that was supported by Round 2 of this Fund. A 32kW solar array and 190kWh battery solution, which has been developed by Aotea Energy, will service 10 homes and a marae. A microgrid will distribute power to serve about 47 nearby homes on Māori land on Aotea. This project will decrease the reliance on generators. Aotea / Great Barrier Island.

Source: Ministry of Business, Innovation & Employment data.

5.0 Findings and recommendations

This section reports on the data findings, and considers how effective and efficient the objectives, policies, rules and other methods of the AUP have been in meeting the outcomes intended by RPS Chapter B3.4. Where appropriate, recommendations are also provided. This section is divided into where the AUP is performing well and where it is underperforming.

The lack of monitoring data on how the AUP is increasing renewable electricity generation and explicitly promoting energy efficiency and conservation (i.e. through enabling a quality compact city form that reduces demand for travel or through energy-efficient development and design), has made it difficult to reach a clear conclusion on the AUP's contribution to achieving the outcomes sought in the Regional Policy Statement. Notwithstanding this, the monitoring has provided some overall observations.

Where is the AUP performing well?

- Installed solar generation capacity has continued to increase since the AUP became operative.
- The AUP enables small-scale renewable electricity generation and electrical charging stations in all zones, and community-scale electricity generation (in industrial, rural and future urban zones) to be permitted without the need for resource consents, subject to compliance with standards.

- Resource consent granted for renewable electricity generation activities are subject to compliance monitoring.

Where is the AUP underperforming?

- The AUP lacks environmental results anticipated (ERAs), indicators and measures for monitoring of RPS Chapter B3.4. A number of suggested indicators and measures for the chapter are outlined in Table 5 below:

Table 5: Suggested ERAs and indicators

Objective	Suggested ERAs/indicators	Suggested measures
Objective B3.4.1(1) Existing and new renewable electricity generation is provided for.	An increase in the generation and use of electricity from renewable energy sources. A decreased dependence on energy from non-renewable sources.	• The number of resource consents and building consents issued for renewable electricity generation activities. • Number of residential, commercial and industrial solar connections as measured by installation control point (ICP) counts • Total installed solar and wind generation capacity. • Reports from energy producers showing the uptake of small-scale energy saving and energy generation devices being installed. • Mapping of resource and building consent data to spatially identify where new activities have been approved.
Objective B3.4.2(2) Energy efficiency and conservation is promoted.	An increase in energy efficient design and methods in subdivision, use and development.	• Case studies of subdivisions and buildings using passive solar design and other energy efficient methods. • Number of residential buildings that achieve a Homestar™ certification. • Number of commercial buildings that achieve a Green Star rating.

- Monitoring data collected from the progress indicators on renewable energy and electricity usage from Te Tāruke-ā-Tāwhiri Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan will help inform the monitoring of RPS Chapter B3.4.
- It is suggested that key information on resource consents, compliance reporting and handling of complaints be structured and organised in a way that is linked to the anticipated environmental results of RPS Chapter B3.4 to understand the effectiveness of provisions and inform future plan development.
- RPS Chapter B3.4 has an objective on promoting energy efficiency and conservation, but no specific policy to achieve this objective. It is suggested that a new policy be added that supports increasing energy efficiency and conservation through subdivision and building design to give effect to this RPS objective.
- Planning for renewable electricity generation activities, and energy efficiency and conservation practices could be supported by including more explicit references to planning for these activities and practices through the structure plan process via changes to Appendix 1 – Structure Plan Guidelines to the AUP.
- A definition is needed for 'community-scale electricity generation' in the AUP, to provide clarify on whether an activity that does not meet the thresholds for small-scale electricity generation standards, becomes assessed as a community-scale activity. There is also a need to define the capacity of small-scale and community-scale electricity generation in recognition of new technologies for generation and storage, including small and micro-scale transmission, solar and wind hybrid systems and more efficient battery storage systems. In the Hamilton City and Wellington City Operative District Plans, small-scale and/or community-scale energy generation are defined as activities producing less than 20 Kilowatts (kW).
- The Government has signalled a shift through RMA reforms to streamline consenting processes for renewable energy projects, aim to reduce timeframes and costs, and increase the likelihood of consent approvals. A review of the AUP zoning and rules framework is needed to ensure that it is robust enough to address the environmental effects of applications for large-scale renewable electricity generation developments; rather than smaller, renewable energy projects and retrofits that have largely occurred in Auckland. The council should also collaborate with renewable electricity developers/providers to understand whether the current AUP provisions are fit for purpose, particularly for assessing large-scale renewable energy proposals, and whether they need to be updated.
- There is poor understanding of the cumulative effects of permitted activities for small-scale and community-scale renewable electricity generation activities that individually have only minor effects but can be widespread. Monitoring of these activities is needed to ensure compliance with AUP provisions, assess the effectiveness of these provisions, and identify potential environmental issues or problems before they become serious.
- Proposed amendments to legislation on renewable energy generation aim at reducing timeframes and costs by streamlining processes such as the Proposed National Policy Statement for Renewable Electricity Generation, if enacted, will require the council to make amendments to the AUP to align with government policy and legislation.

6.0 Conclusions

Overall, this monitoring report has found that it is difficult to reach a definitive conclusion on the performance of the AUP in achieving the outcomes in RPS Chapter B3.4. The small number of resource consents is not indicative of renewable electricity generation activities being unduly constrained by the AUP provisions. In this regard, the enabling framework of Chapter E26.2 means that small-scale renewable electricity generation and community-scale electricity generation activities (in industrial, rural and future urban zones) do not trigger resource consents, subject to compliance with standards.

However, the findings in this report have identified that some of the AUP provisions to be lacking and requiring clearer direction including the promotion of energy efficiency and conservation, a definition for community-scale electricity generation, and a need to undertake a review of the AUP zoning and rules framework to ensure that it is robust enough to address the environmental effects of applications for large-scale renewable electricity generation projects.

The upcoming review of the AUP will provide an opportunity to consider the AUP's current approach to structuring and drafting provisions for this topic.

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Appendix A: Other Relevant Energy Strategies

Document	Organisation	Relevant Provisions
New Zealand Energy Efficiency and Conservation Strategy (2017- 2022)	Energy Efficiency and Conservation Authority	Goal: New Zealand has an energy productive and low emissions economy; Priority Area: Innovative and efficient use of electricity. Target: 90 percent of electricity will be generated from renewable sources by 2025. Objectives: Individuals, households and community institutions choose energy efficient technologies, adopt energy efficient behaviours and make greater use of renewable energy.
New Zealand Energy Strategy 2011-2021 : Developing our energy potential, and the New Zealand Energy Efficiency and Conservation Strategy 2011-16	Ministry of Economic Development	The Strategy sets the strategic direction for the energy sector and the role energy will play in the New Zealand economy. In the Strategy, the Government's goal is for New Zealand to make the most of its abundant energy potential through the environmentally responsible development and efficient use of the country's diverse energy resources. The strategy sets out four priority areas: • diverse resource development; • environmental responsibility; • achieving efficient use of energy; and • promoting energy security and affordability. None of these priorities is more important than the other.
Rautaki Hanganga o Aotearoa: New Zealand Infrastructure Strategy 2022-2025	Te Waihanga – New Zealand Infrastructure Commission	The Strategy sets out actions New Zealand needs to take over the next 30 years to ensure that the infrastructure system meets future challenges and opportunities. It set out five objectives with supporting actions, including the objective: Enabling a net-zero carbon emissions Aotearoa through rapid development of clean energy and reducing the carbon emissions from infrastructure. It recognises that clean electricity will be key to reducing carbon emissions from transport and agricultural activities, and to do this, New Zealand will need to build significantly more low-emissions electricity generation over the next 30 years. Most of this low-emissions electricity is expected to come from new solar and wind generation.

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