Appendix B Economic Report

Fast Track Approvals Act Application

Foxton Solar Farm

Genesis Energy Limited

SLR Project No.: 810.V14848.00001

13 February 2026

SLR

ASSESSMENT OF ECONOMIC EFFECTS OF THE PROPOSED FOXTON SOLAR FARM

Prepared for Genesis Energy Limited

Mike Copeland

Brown Copeland & Co Ltd

26 November 2025

INTRODUCTION

Background

1. Genesis Energy Limited is proposing to build and operate a 180 megawatt-AC (MWac) solar farm with battery storage on a 400-hectare rural site approximately 10 kilometres north of Foxton within the Horowhenua District of the Manawatū-Whanganui Region. It is expected to generate around 345,000 MWhs per annum, enough to power approximately 47,000 homes. The solar farm will connect to the existing 220kV overhead transmission line that crosses the property. Construction is expected to commence in early 2027 with the solar farm expected to become fully operational in mid to late 2028 - i.e. after an 18-24 month construction period.

Report Purpose

2. The purpose of this report is to provide an assessment of the economic effects of the proposed 180 MWac Foxton Solar Farm (the Project) for the Horowhenua District, the Manawatū-Whanganui Region and New Zealand economy generally during its construction and operational phases. The report will form one of the technical appendices to the Assessment of Environmental Effects (AEE) accompanying the Resource Consent Application.

Report Format

3. The remainder of this report is in five parts and covers:

    a. The relevance of economic concepts under the Fast Track Approval Act 2024 (FTAA) and Resource Management Act 1991 (RMA);

    b. Background to the Horowhenua District and Manawatū-Whanganui Regional economies;

    c. The economic benefits from the proposed Project;

    d. The potential economic costs from the proposed Project; and

    e. The report's conclusions.

RELEVANCE OF ECONOMIC CONCEPTS UNDER THE FTAA and RMA

Significant Regional or National Benefits

4. The purpose of the FTAA, as set out at section 3, is "*to facilitate the delivery of infrastructure and development projects with significant regional or national benefits*". Later sections of this report detail how the proposed Foxton Solar Farm Project will

deliver significant economic benefits to the Manawatū-Whanganui region and New Zealand generally.

Community Economic Wellbeing

5. Economic considerations are intertwined with the concept of the sustainable management of natural and physical resources, which is embodied in the RMA. In particular, Part 2 section 5(2) refers to enabling "*people and communities to provide for their social, economic and cultural well-being and for their health and safety*" as part of the meaning of "*sustainable management*", the promotion of which is the purpose of the RMA.

6. As well as indicating the relevance of economic effects in considerations under the RMA, section 5 also refers to *"people and communities"*, which highlights that, in assessing the impacts of the proposed solar farm, it is the impacts on the community and not just Genesis or particular individuals or organisations that must be taken into account. This is underpinned by the definition of *"environment"* which also extends to include people and communities.

7. The proposed Project will enable the residents and businesses of the Horowhenua District, the wider Manawatū-Whanganui Region and New Zealand as a whole to better provide for their economic and social well-being. These benefits are discussed later in this report.

Economic Efficiency

8. Part 2 section 7(b) of the RMA directs that, in achieving the purpose of the Act, all persons *"shall have particular regard to ... the efficient use and development of natural and physical resources"* which includes the concept of economic efficiency.[1] Economic efficiency can be defined as:

> *"The effectiveness of resource allocation in the economy as a whole such that outputs of goods and services fully reflect consumer preferences for these goods and services as well as individual goods and services being produced at minimum cost through appropriate mixes of factor inputs".*[2]

9. More generally, economic efficiency can be considered in terms of:

   a. Maximising the value of outputs divided by the cost of inputs;

---

[1]See, for example, in *Marlborough Ridge Ltd v Marlborough District Council* [1998] NZRMA 73 at [86], the Court noted that all aspects of efficiency are "*economic*" by definition because economics is about the use of resources generally.

[2]Pass, Christopher and Lowes, Bryan, 1993, *Collins Dictionary of Economics* (2nd edition), Harper Collins, page 148.

b. Maximising the value of outputs for a given cost of inputs;

c. Minimising the cost of inputs for a given value of outputs; and

d. Minimising waste.

10. The proposed Project will bring economic efficiency benefits to the residents and businesses of the Horowhenua District, the Manawatū-Whanganui Region and New Zealand as a whole and therefore is consistent with this part of the RMA. These efficiency benefits are discussed later in this report.

Economic Growth and Employment

11. Section 32(2)(a) of the RMA requires evaluation reports prepared in relation to statutory planning and policy documents under the Act to:

"Identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provision, including the opportunities for:

Economic growth that are anticipated to be provided or reduced; and

Employment that are anticipated to be provided or reduced."

12. Although this section of the RMA relates to evaluations of statutory planning and policy documents rather than resource consent applications and is therefore not directly relevant here, it again highlights that economic costs and benefits and economic growth and employment effects are relevant under the RMA. As explained later in this report the proposed Project will contribute to increased economic growth and employment for the Horowhenua District, the Manawatū-Whanganui Region and New Zealand.

Viewpoint for Economic Assessment

13. An essential first step in carrying out an assessment of the economic effects of the proposed Project is to define the appropriate viewpoint that is to be adopted. This helps to define which economic effects are relevant to the analysis. Typically, a district (city) or wider regional viewpoint is adopted and sometimes a nationwide viewpoint might be considered appropriate. In the case of the proposed solar farm Project, there are economic effects for the Horowhenua District, the Manawatū-Whanganui Region and New Zealand as a whole to be assessed. Therefore, all of these viewpoints are relevant. These economic benefits are discussed later in this report.

14. There are also private or financial costs and benefits associated with the proposed Project. If consents are granted allowing the Project's construction and operation, then it

can be assumed that the private or financial costs and benefits have been responsibly and properly analysed and that from the viewpoint of Genesis which has money at risk, the expected financial benefits exceed the expected costs. Accountability for the accuracy of the financial analysis clearly rests with Genesis and ultimately the net financial benefits it might receive from the proposal are not directly relevant to the assessment of effects under the RMA. However, to the extent that the New Zealand Government has a 51% cornerstone shareholding in Genesis Energy Limited, some of the financial benefits accrue to the New Zealand pubic generally.

15. The main focus of this report is on the wider economic effects on parties other than Genesis. Economists refer to such effects as "externalities".[3]

Intangible Effects

16. In economics, 'intangible' costs and benefits are defined as those which cannot be quantified in monetary terms. For any project, such effects may include amenity effects, landscape effects, ecological effects, Māori cultural and relationship effects and recreational effects. Such effects may be positive or negative – i.e. a benefit or a cost for a particular community of interest.

17. Sometimes attempts can be made to estimate monetary values for so called 'intangibles' using techniques such as willingness to pay surveys or inferring values on the basis of differences in property values. However, these techniques are frequently subject to uncertainty and criticism.

18. It is generally better to not attempt to estimate monetary values for these effects or to assess them as part of economic wellbeing or efficiency effects but to leave them to be part of the consideration under section 5 of the RMA. This also avoids the danger of 'double-counting' – i.e. including them within an assessment of economic effects and treating them as a separate matter in the overall judgement under section 5.

19. This report addresses the economic effects[4] of granting consents enabling the construction and operation of the Project. Non-economic effects (e.g. landscape, ecology and cultural effects) are covered elsewhere in the Application.

[3]Defined as the side effects of the production or use of a good or service, which affects third parties, other than just the buyer and seller.
[4]Sometimes economic effects can have a social dimension – e.g. employment and income effects.

THE HOROWHENUA DISTRICT AND MANAWATŪ-WHANGANUI REGIONAL ECONOMIES[5]

Horowhenua District Economy

20. Statistics New Zealand's June 2025 population estimate for the Horowhenua District is 38,400 or 0.7% of New Zealand's population. In 2018, the population in the District was estimated to be 34,500, also representing 0.7% of New Zealand's population and implying an increase of 11.3% over the period 2018 to 2025, as compared to growth of 8.7% for New Zealand as whole. Statistics New Zealand's 'medium' population projections[6] have the Horowhenua District's population increasing to 40,100 in 2048 – i.e. an average rate of growth of 0.4% per annum over the period 2024-48, compared to an average rate of growth for New Zealand of 0.9% per annum.

21. In February 2024, 1,350 jobs (13.0%) of the Horowhenua District's 10,400 jobs were in the agriculture, forestry and fishing industry group, with most being agricultural jobs (an estimated 1,315 jobs including agricultural support jobs). Of these 380 were in dairy cattle farming and 340 in sheep, beef cattle and grain farming. There were 1,250 jobs (12.0% of total employment) in the manufacturing sector, including 630 jobs in food manufacturing (6.1% of total employment).

22. Other important employment sectors in the District are health care and social assistance (1,400 jobs or 13.4% of the total), retail trade (1,200 jobs or 11.5% of the total), education and training (1,000 jobs or 9.6% of the total), construction (970 jobs or 9.3% of the total) and accommodation and food services (560 jobs or 5.3% of the total).

23. The key economic drivers of the Horowhenua District economy are the agriculture and manufacturing sectors. In the year to 31 March 2024, agriculture forestry and fishing accounted for 12.8% of the District's gross domestic product (GDP), whilst construction and manufacturing each accounted for 9.4% of the District's GDP. The electricity, gas, water and waste services accounted for only 2.9% of the District's GDP.[7]

Manawatū-Whanganui Regional Economy

24. Statistics New Zealand's June 2025 population estimate for the Manawatū-Whanganui Region is 260,700 or 4.9% of New Zealand's total population. In 2018, the population in the Region was 247,500 persons, which represented 5.0% of New Zealand's population. The Region's population over the period 2018 to 2025 has grown by 5.3%. Statistics

[5]Unless stated otherwise data in this section from Statistics New Zealand.
[6]Statistics New Zealand prepare three sets of projections – high, medium and low – according to natural population change (i.e. the net effect of birth and death rate assumptions) and net migration assumptions. These projections do not explicitly incorporate assumptions about different rates of economic development.
[7]Source: Horowhenua District Economic Profile; Infometrics; 2024. (https//ecoprofile.infometrics.co.nz/Horowhenua%20District)

New Zealand's 'medium' population projections have the Region's population increasing to 285,600 – i.e. at an average rate of 0.6% per annum over the period 2025-48.

25. For the Manawatū-Whanganui Region in February 2024 there were 111,300 jobs. Agriculture, forestry and fishing is an important sector with 8,800 jobs (7.9% of total employment). Of these 8,280 jobs are in agriculture[8] (7.4% of total employment). Of these 2,900 were in sheep, beef cattle and grain farming and 1,850 in dairy cattle farming. Manufacturing with 11,800 jobs (10.6% of total employment) is a significant sector and this included 5,300 jobs in food manufacturing. Other important sectors include health care and social assistance (15,200 jobs or 13.7% of the total), education and training (11,400 jobs or 10.2% of the total), public administration and safety (10,500 jobs or 9.4% of the total), retail trade (10,400 jobs or 9.3% of the total), construction (9,400 jobs or 8.4% of the total) and accommodation and food services (6,600 jobs or 5.9% of the total).

THE ECONOMIC BENEFITS OF THE PROPOSED FOXTON SOLAR FARM

Additional Employment, Incomes, Expenditure and GDP During Project Construction[9]

26. Upon the granting of resource consents and subject to final investment decisions, an 18-24 month construction programme from the beginning of 2027 to late 2028 would commence. The total construction cost of the Project over this 18-24 month period is estimated to be $312 million. Of this $54.6 million (17.5%) is expected to be spent within the Horowhenua District and an estimated $78.0 million (25%) within the Manawatū-Whanganui Region (including the Horowhenua District). During the construction period an average workforce of 103 full-time equivalent (FTE) jobs are anticipated to be created with an estimated 62 resident within the Horowhenua District and an estimated 98 resident within the Manawatū-Whanganui Region (including the Horowhenua District). Wages and salaries over the 18-24 month period to the construction workforce residing in the Horowhenua District are estimated at $5.0 million and within the Manawatū-Whanganui Region $7.8 million.[10] Therefore the expenditure on other goods and services (i.e. other than labour) over the 18-24 month construction period is estimated at $49.6 million within the Horowhenua District and $70.2 million within the Manawatū-Whanganui Region. The types of local businesses within the Horowhenua District to benefit from this expenditure from the Project's construction include transport providers, civil engineering service providers, mechanical and electrical service providers, aggregate and cement suppliers, landscapers, nurseries, accommodation providers, retail (tool and trade suppliers) and waste collection and disposal services.

---

[8]Including an estimated 1,882 agriculture support services jobs.
[9]Unless stated otherwise data in this section provided by Genesis and are estimates based on current Project information.
[10] Assumes average construction wage of $80,000 per annum.

27. These jobs, incomes and expenditure within the Horowhenua District and the Manawatū-Whanganui Region are the direct economic impacts of the Project on the local economies. However, in addition there are 'indirect' (or 'multiplier') impacts as a result of:

    a. The effects on suppliers of goods and services provided to the Project from within the local Horowhenua District and Manawatū-Whanganui Regional economies (i.e. the "forward and backward linkage" effects); and

    b. The supply of goods and services from within the local economies to construction employees at the Project and to those engaged in supplying goods and services to it (i.e. the "induced" effects). For example, there will be the additional jobs and incomes for employees of retail outlets, public and provide service providers, etc. as a consequence of the expenditure by construction employees.

28. Multipliers can be estimated to gauge the size of these indirect effects. The size of the multipliers is a function of the extent to which an area's economy is self-sufficient in the provision of a full range of goods and services and the area's proximity to alternative sources of supply. Multipliers typically fall in the range of 1.5 to 2.0 and it is reasonable to take the lower end of this range (i.e. 1.5) for the local Horowhenua District economy and the upper end of this range (i.e. 2.0) for the Manawatū-Whanganui Region, which would include Palmerston North City. This implies total impacts (i.e. direct plus indirect impacts) for the local Horowhenua District economy during the Project's 18-24 month construction period of:

    a. 93 additional jobs for local Horowhenua District residents;

    b. $7.5 million in additional wages and salaries for local Horowhenua District residents; and

    c. $74.4 million in additional expenditure for local Horowhenua District businesses.

29. At a Manawatū-Whanganui regional level (using a multiplier of 2.0, since the region is more self-sufficient in the supply of goods and services than the Horowhenua District) the direct plus indirect impacts during the Project's construction are:

    a. 196 additional Manawatū-Whanganui Region residents;

    b. $15.6 million in additional wages and salaries for Manawatū-Whanganui Region residents; and

    c. $140.4 million in additional expenditure for local Manawatū-Whanganui Region businesses.

30. The indirect (or "multiplier") effects of the Project's construction may be overstated when the economy is operating at full capacity. However, it is reasonable to expect some flow-on effects to non-construction sectors of the economy.

31. GDP per employed person in the Horowhenua District construction industry is given as $86,988 per annum in Infometrics 2024 Horowhenua District Economic Profile. Therefore, the Project's construction will contribute directly around $5.4 million to the Horowhenua District's GDP over the 18-24 month construction period. Including indirect effects increases the contribution to District's GDP to $8.1 million. Using the same GDP per employed person for the Manawatū-Whanganui Region construction industry, the Project's construction will contribute directly around $8.5 million to the Manawatū-Whanganui Region's GDP over the 18-24 month construction period. Including indirect effects increases this to $17.0 million.

32. As indicators of levels of economic activity, economic impacts in terms of increased expenditure, incomes, employment and GDP within the local economy are not in themselves measures of improvements in economic welfare or economic wellbeing. However, there are economic welfare enhancing benefits associated with increasing levels of economic activity. These relate to one or more of:

    a. Increased economies of scale: Businesses and public sector agencies are able to provide increased amounts of outputs with lower unit costs, hence increasing profitability or lowering prices;

    b. Increased competition: Increases in the demand for goods and services allow a greater number of providers of goods and services in markets and there are efficiency benefits from increased levels of competition;

    c. Reduced unemployment and underemployment[11] of resources: To the extent resources (including labour) would be otherwise unemployed or underemployed, higher levels of economic activity can bring efficiency benefits when there is a reduction in unemployment and underemployment; and

    d. Increased quality of central government provided services: Sometimes the quality of services provided by central government such as education and health care are a function of population levels and the breadth and quality of such services in a community is higher with higher levels of economic activity, particularly to the extent they lead to or maintain higher levels of population.

[11]Underemployment differs from unemployment in that resources are employed but not at their maximum worth; e.g. in the case of labour, it can be employed at a higher skill and/or productivity level, reflected in higher wage rates.

Employment, Incomes and Expenditure Effects During Project Operation

33. Once operational, the proposed Foxton Solar Farm is expected to generate around 3-5 ongoing roles over its expected operating life of at least 35 years. These ongoing jobs will include maintenance contracts for panel cleaning, fence repair, road grading etc. and Genesis hopes to source this work from local contractors and will generate both direct and indirect employment, income and expenditure effects for the local District and regional economies. However, there will be reductions in stock carrying capacity and agricultural productivity for the land required for the solar farm. The consequent reductions in agricultural employment, incomes and expenditure are expected to be offset by the additional economic activity generated by the solar farm during its operational phase.

Other Economic Benefits

34. The main text of AEE refers to the need for New Zealand to increase electricity generation in the future and for this to be from low-emission and diverse sources in order for New Zealand to have a resilient electricity supply and to meet its national targets and international obligations in relation to greenhouse gas emissions.

35. The Foxton Solar Farm will generate positive effects through the provision of a new renewable energy generation source, which will contribute to New Zealand's efforts to transition more quickly to a low-emissions economy. By increasing renewable energy capacity through the consenting of solar power projects such as the Foxton Solar Farm, more fossil fuel powered electricity generation could be displaced, more vehicles will be able to move away from fossil-fuel powered modes of transportation and/or more of the industrial sector will be able to transition away from fossil fuels without increasing electricity generation from non-renewable sources.

36. The proposed solar farm will generate around 345,000 MWh/year of electricity per annum, which could power around 47,000 homes or power additional transport from electric vehicles by around 1.8 billion vehicle-kilometres travelled.[12] The Project's electricity generation could potentially remove equivalent emissions to 18,000 petrol powered vehicles on New Zealand roads or avoid emission of an estimated 25,000 tonnes of CO2 per annum.[13] The purpose of Genesis' solar farm projects is to displace baseload coal-fired generation at the Huntly Power Station with renewable energy and, in doing so, free up the Huntly generation capacity to provide firming and backing of

[12] Source: Genesis Energy, using data from https://ev-database.org/cheatsheet/energy-consumption; an electric car requires an average of 189 Wh/km.
[13] Source: Genesis Energy – calculation based on NZ grid mix emission factor x power generation. Emission factor FY23 = 0.073 x 345,000 MWh = 25,185 t/CO2e, from Measuring emissions: A guide for organisations; Ministry for the Environment.

renewable energy and help New Zealand to meet its climate change commitments and net zero 2050 goal.

37. The Solar Farm Project, by generating energy close to where it is consumed (Palmerston North and Foxton), increases efficiency and resilience, because it results in lower energy losses that would occur with more distant sources of supply and less likelihood of outages caused by failures occurring in the national transmission network. To an extent it will also add some diversity to the local Horowhenua District economy and increase the rates income for the Horowhenua District Council.

POTENTIAL ECONOMIC COSTS OF THE PROPOSED FOXTON SOLAR FARM

Alternative Land Uses

38. The site is currently used for dairy farming. Once the solar farm is constructed the site will be used for sheep farming as part of the site's maintenance. The AEE main text refers to environmental benefits from this change in agricultural use. Also, because Genesis will lease the land at a market rental, the use of the land for the Project is the best use of the site in economic terms, as judged by the market. The cost of the land is incorporated within the Project's cost structure and there is no associated economic externality cost.

Public Infrastructure Costs

39. Externality costs can arise when utilities provided by central or local government (e.g. water supply, stormwater and flood control systems and wastewater disposal) are not appropriately priced. In the case of the Project no such externality costs will arise. The Project will be self-sufficient with respect to water supply and stormwater control and no reticulated/public wastewater disposal from the site will be required. During the Project's construction and operation visitors to the site will pay road user charges, fuel taxes and rates covering the costs of road operating and maintenance costs.

Road Congestion Costs

40. The Project will not give rise to operational road congestion costs as noted in the Transportation Assessment supporting the Project prepared by SLR.

Property Value Effects

41. Property value effects are a reflection of, not in addition to, adverse effects (if any) from the Project for nearby residents. Any such adverse effects for nearby residents are assessed elsewhere in the Application. The Environment Court has accepted that to

include both adverse effects for local residents and property value effects would involve double counting.[14]

CONCLUSIONS

42. The proposed Genesis solar farm is an infrastructure and development project which will deliver significant regional or national economic benefits and enable "*people and communities to provide for their social*… and … *economic … well-being"* and is consistent with *"the efficient use and development of natural and physical resources"*. It will provide additional employment, incomes and expenditure within the Horowhenua District and Manawatū-Whanganui Region's economies during its construction and will add diversity to the local economy. The Project will help New Zealand to have a resilient electricity supply and to meet its national targets and international obligations in relation to reductions in greenhouse gas emissions.

[14]See for example, paragraphs 249 - 256 of: Environment Court in *Foot v Wellington City Council* ENE Wellington W73/98, 2 September 1998 which dealt with the impact of height restrictions on properties in Oriental Parade.