

Economic Assessment of:
Proposed Solar Energy Farm
at 176 Pricor Road, Wellsford

PREPARED FOR
Energy Farms Limited



ABOUT US

OUR AREAS OF EXPERTISE

Economic Analysis

Our work aims to bridge the gap between land-use planning and urban economics. Our focus is on the interaction between land markets, land-use regulations, and urban development. We have developed a range of methodologies using a quantitative approach to analyse urban spatial structure and audit land-use regulations.

Property Research

We provide property and retail market research to assist with planning and marketing of new projects. This includes identification of new sites and market areas, assessments of market potential and positioning, and the evaluation of market-feasibility of specific projects.

Development Advisory

We provide development planning and costing advisory services to support small and large-scale developments.

DISCLAIMER

This document has been completed, and services rendered at the request of, and for the purposes of the client only. Urban Economics has taken every care to ensure the correctness and reliability of all the information, forecasts and opinions contained in this report. All data utilised in this report has been obtained by what Urban Economics consider to be credible sources, and Urban Economics has no reason to doubt its accuracy. Urban Economics shall not be liable for any adverse consequences of the client's decisions made in reliance of any report by Urban Economics. It is the responsibility of all parties acting on information contained in this report to make their own enquiries to verify correctness. © 2021 Urban Economics Limited. All rights reserved.

P: 09 963 8776

150 Foundry Road, Silverdale, Auckland

s 9(2)(a)

www.ue.co.nz



CONTENTS

1.	EXECUTIVE SUMMARY	4
2.	INTRODUCTION.....	5
	2.1. The Proposal.....	5
3.	ECONOMIC CONTRIBUTION OF PROPOSAL.....	6
4.	FAST TRACK ASSESSMENT CONSIDERATIONS.....	7
5.	NPS-UD ASSESSMENT	8
6.	CONCLUSION.....	8
7.	APPENDIX 1: FTE EMPLOYEES BY INDUSTRY CALCULATIONS	10



1. Executive Summary

The proposal is to build approximately large solar farm at 176 Prictor Road, Wellsford, comprising 150,000 solar panels. The proposal would utilise approximately 120 hectares of the 220 hectare property. It would produce an estimated 162,000 MWh per year, enough to provide electricity to an estimated 23,000 homes.

The construction of the proposal would result in an increase in construction sector output, with an additional 289 full time equivalent employees (FTEs) and a value-added contribution of \$38.5 million to GDP.

The ongoing employment from the proposal would result in an increase in energy sector output, with an additional 23 direct FTE jobs generated per annum, with a value added of \$12.2m to energy sector GDP per annum.

The ongoing agricultural use of the land would result in agriculture sector output, with an additional 17 direct FTE jobs generated per annum, with a value added of \$2.7m to agriculture sector GDP annum.

The net present value (NPV) of the ongoing operation of the solar farm and livestock grazing on the site over a 30-year period is estimated to be \$266.5m.

In summary, the initial economic impact from the proposed solar farm will be experienced in the construction sector with the construction of the solar farm. This will generate 289 FTE jobs and a value added contribution to GDP of \$38.5. Upon completion, the total ongoing economic impact will be the generation of 40 FTE jobs and a value added contribution to GDP of \$14.9m.



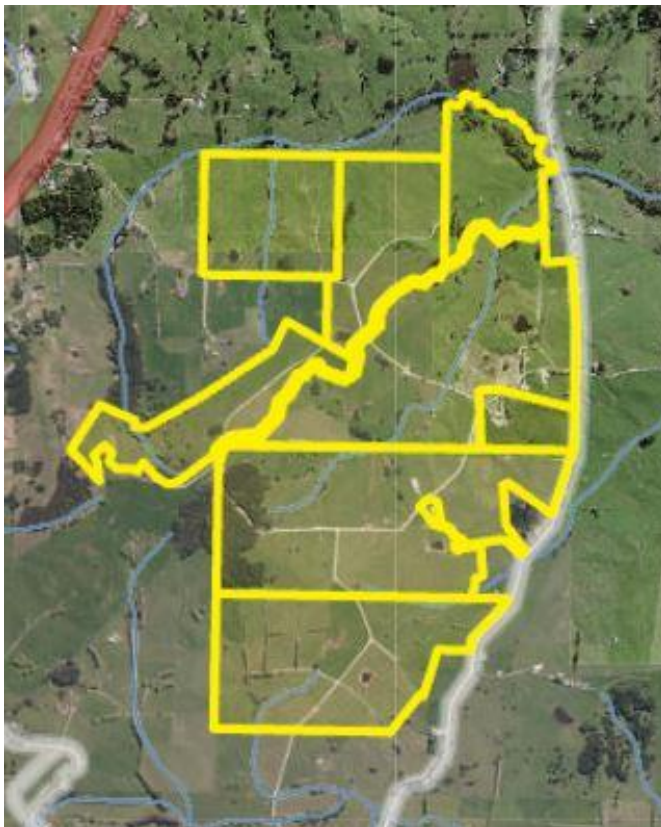
2. Introduction

This report provides an economic assessment of a proposed solar energy farm located at 176 Prictor Road, Wellsford. This is to support an application for a consent under the COVID-19 Recovery (Fast-track Consenting) Act 2020.

2.1. The Proposal

The proposal is to build approximately large solar farm at 176 Prictor Road, Wellsford, comprising 150,000 solar panels. The proposal would utilise approximately 120 hectares of the 220 hectare property. It would produce an estimated 162,000 MWh per year, enough to provide electricity to an estimated 23,000 homes.

Figure 1: Proposal Site (176 Prictor Road, Wellsford)



Source: CoreLogic



3. Economic Contribution of Proposal

The proposal would create a significant number of jobs within the construction, energy (electricity, gas, water & waste services) and agriculture sectors. This is comprised of the initial construction of the solar farm, the ongoing operation of the solar farm and the partial agricultural operation of the property.

The national 'value added per employee' for each sector (Figure 3) has been used to estimate the full time equivalent (FTE) employment for this project, as shown in Figure 2. The methodology is described in Appendix 1.

The construction of the solar farm, in particular 150,000 solar panels, is estimated to generate 289 FTE jobs in the construction sector and contribute \$38.5m to construction sector GDP.

The ongoing operation of the solar farm is estimated to generate 23 FTE jobs in the energy sector and contribute \$12.2m to the energy sector GDP. This is based on an estimated annual revenue of \$31.6m generated from the 162,000 MWh generated from the proposal at a charge rate of 19.5c per KWh (as per the Auckland North Shore charge rate¹).

During the operation of the solar farm, the property owner intends to partially utilise the land for agricultural use (i.e., grazing of livestock). This will generate an estimated 17 FTE jobs and contribute \$2.7m to agriculture sector GDP.

In summary, the initial economic impact from the proposed solar farm will be experienced in the construction sector with the construction of the solar farm. This will generate 289 FTE jobs and a value added contribution to GDP of \$38.5. Upon completion, the total ongoing economic impact will be the generation of 40 FTE jobs and a value added contribution to GDP of \$14.9m.

Figure 2: FTE Employee Estimates

Site	Value (\$M)	Value Added GDP (\$M)	FTE Employees
Construction	\$9(2)(b)(ii)	\$38.5	289
Operation of Solar Farm (p.a.)	\$31.6*	\$12.2	23
Agricultural Use (p.a.)	\$6.0**	\$2.7	17

Source: Statistics NZ, Urban Economics

*Estimated value based on a 19.5c/KWh charge for electricity

**Current council valuation of the site

Figure 3 shows the estimated national 'value added per FTE employee' for the construction, energy, and agriculture sectors. These value added per employee figures are used to estimate the FTE employees created by the construction and ongoing use of the project outlined in Figure 2.

Figure 3 shows that the construction sector has a \$18.5B contribution to national GDP and a

¹ <https://www.canstarblue.co.nz/energy/electricity-providers/average-electricity-costs-per-kwh/>



workforce of 139,800 FTEs. The agriculture sector has a \$12.6B contribution to national GDP and a workforce of 83,200 FTEs. The energy sector has a \$8.8B contribution to national GDP and a workforce of 17,000 FTEs. This results in a respective value added of \$133,000, 152,000 and \$523,000 per FTE employee.

Figure 3: Industry GDP and Value Added per Employee

Sector	Value Added GDP (\$M)	FTE Workers	Value Added GDP Per Employee
Construction	\$18,540	139,800	\$133,000
Agriculture	\$12,660	83,200	\$152,000
Electricity, Gas, Water & Waste Services	\$8,890	17,000	\$523,000

Source: Statistics NZ, Urban Economics

Figure 4 displays the economic contribution of the ongoing operations for the proposed solar farm over a period of 30 years. The net present value (NPV) of the proposal is estimated to be \$266.5m.

Figure 4: Economic Contribution of Ongoing Operation

Ongoing Operation	Value Added p.a. (\$M)	Present Value (\$M)	Time Period (Years)
Operation of Solar Farm	\$12.2	\$218.8	30
Agricultural Use	\$2.7	\$47.7	30
Net Present Value	\$14.8	\$266.5	30

Source: Statistics NZ, Urban Economics

4. Fast Track Assessment Considerations

The COVID-19 Recovery (Fast-track Consenting) Act 2020 requires several economic considerations, which are addressed as follows.

The project's economic benefits and costs for people or industries affected by COVID-19 (see section 19(a)).

The project will create a range of employment opportunities in the construction, energy and agricultural sectors. Notably, during the construction phase of the development, local spending in the Covid-19 impacted retail and hospitality sector is likely to experience a boost from the increased local employment and thus benefit from the construction of this project.

The project's effect on the social and cultural well-being of current and future generations (see section 19(b)).

The proposed development would provide employment and create a reliable source of renewable energy for current and future generations. The project is estimated to supply enough electricity per annum to power approximately 23,000 homes. This is a considerable social benefit for current and



future generations in the local environment.

If applicable, whether the project may result in a public benefit by generating employment (see section 19(d)(i)).

As outlined above, the construction of the project would create an estimated 289 direct FTE jobs and contribute \$38.5 million to GDP. These jobs would be in roading, construction, landscaping, planting, land surveying, administration and support services and other related activities.

The ongoing employment from the project is estimated to be 23 direct FTE jobs with a contribution of \$12.2 million to GDP. These jobs will be in the ongoing maintenance and operation of the solar farm. Additionally, the land will continue to be utilised for the grazing of various livestock, which will create an estimated 17 direct FTE jobs and contribute \$2.7 million to GDP in the agricultural sector. These are notable economic benefits.

If applicable, whether the project may result in a public benefit by contributing to well-functioning urban environments (see section 19(d)(iii)).

The project will provide a sustainable and reliable supply of electricity, which is a key contributor to well-functioning urban environments. The project is estimated to produce approximately 162,000 MWh of energy per year, supplying electricity to approximately 23,000 homes. This is a considerable economic benefit.

5. NPS-UD Assessment

The NPS-UD 2020 requires planning decisions to contribute to well-functioning urban environments, which are urban environments that support reductions in greenhouse gas emissions (Policy 1 (e)). The proposal contributes towards achieving this policy by increasing the accessibility to renewable energy, contributing to achieving a well-functioning urban environment.

The NPS-UD 2020 requires city's "have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; (Policy 1 (b))". A key requirement of the NPD-UD is the enabling of suitable sites for a range of businesses in terms of location and size. Solar farms are land intensive businesses which require large sites in close proximity to power stations/substations. The site is efficiently located to supply electricity to the local Wellsford. Therefore, the proposal is in accordance with Policy 1(b) of the NPS-UD.

6. Conclusion

The proposal would result in an increase in construction sector output, with an additional 289 full FTEs with a value-added contribution of \$38.5 million to GDP. The proposal would also create direct ongoing employment in the energy and agricultural sectors, with an additional 23 FTEs and a value added contribution of \$12.2 million to GDP in the energy sectors, and an additional 17 FTEs and a value added contribution of \$2.7 million to GDP in the agricultural sector.



The net present value of the ongoing operation on the site over a 30-year period is \$266.5m. This is a considerable contribution to GDP.

The proposal would meet the economic requirements of the fast track consenting process and in respect of economic matters and is recommended for approval.



7. Appendix 1: FTE Employees by Industry Calculations

To determine the FTE employees generated, Statistics NZ data for each industry was gathered on the number of FTEs, and the value added contribution to GDP each industry accounts for. From this, an approximate value added per employee is calculated (e.g. \$133,000 per construction sector FTE etc.). The value added contribution of the development is estimated based on the value added of the respective industry with which it applies to. This is calculated by taking the proportion of output the industry contributes towards GDP (e.g. approximately 29% for the construction industry). Once the value added contribution to GDP for the various phases of development has been calculated, it is then divided by the value added per employee value calculated in Figure 3 to estimate the FTE job count generation from the development.