



Investors bet on solar as 'the new hydro' in New Zealand's next energy chapter

*With gas reserves in decline and hydropower running dry, investors are leading a new wave of solar projects across New Zealand, **Tom Taylor** writes*

For the past hundred years, New Zealand's electricity system has run largely on renewable energy.

After gold miners built the country's first small-scale hydroelectric dams in the late 19th century, hydropower grew to become the dominant source of power by the mid-20th century.

It has helped New Zealand to achieve a share of more than 80 percent renewable energy in most years; this share hit 88.1 percent in 2023 before dipping to 85.5 percent in 2024.

But despite the strength of its renewable energy sector, New Zealand's power prices have been on the rise since the start of the decade.

Average households paid NZ\$2,067 (\$1,186; €1,016) for their electricity in 2020; five years later, and this figure is approximately 18 percent higher at NZ\$2,437, according to the Ministry

of Business, Innovation and Employment.

A range of factors have hit the electricity sector at the same time.

Low rainfall meant that in 2024, hydro generation fell to its lowest level since 2013. Meanwhile, New Zealand's natural gas reserves have been dwindling, with major gas fields decreasing their output by more than one-fifth from 2023 to 2024.

With hydropower historically doing the bulk of the work, New Zealand has been slow to build out alternative infrastructure.

Although wind energy has steadily increased since the turn of the millennium to provide about 9 percent of the mix in 2024, solar power has been a laggard, accounting for just 1.4 percent. However, this figure has been rising swiftly as investors look to become first-movers in New Zealand's nascent solar sector and provide the

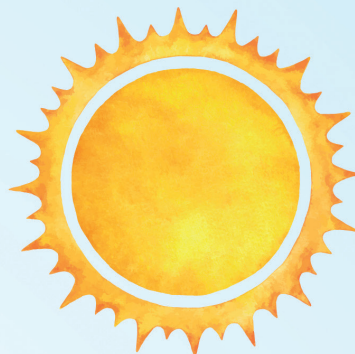
diversification the country's electricity system urgently needs.

Dry spell

"It's become a real hot-button issue," Conor McCoolle, chief executive officer of fund manager SC Oscar, an affiliate of real asset manager CapitaLand Investment, says of New Zealand's power prices. He says these prices will remain high until new capacity comes online – but this capacity is not going to come from hydropower.

Environmental protests throughout the second half of the 20th century have translated into limited political support for new hydropower facilities; since the 423MW Clyde Dam near tourist hub Queenstown started generating electricity in 1992, no significant projects have been built.

Hydropower's share of New Zealand's total electricity generation has slipped from a high of more than 85



percent in the 1980s to about 54 percent as of 2024, while geothermal and wind energy have been on the rise.

Yet when Singapore-based SC Oscar – formed in 2022 with a remit to invest in Asia-Pacific’s energy transition and decarbonisation – began investigating where to put its money, it was New Zealand’s solar potential that stood out.

“Solar is the new hydro,” McCooles says.

New Zealand is notable among OECD countries as having an extremely low share of solar on its grid: only Costa Rica, Norway and Iceland have less, these countries also relying heavily on hydropower.

“It’s got a good solar resource, and there’s all sorts of reasons why it never took off,” McCooles says. “Basically, there was no feed-in tariff, government subsidy, or mandate, and that’s why solar has lagged. That just creates an even bigger opportunity now, because solar is highly complementary to the country’s hydroelectric system.”

As of October, SC Oscar’s first solar project in New Zealand has been partially commissioned: the 31MW Rānui Twin Rivers solar farm in Kaitaia, about 110km from the northernmost tip of the North Island.

Total investment in the project from SC Renewable Energy Plus Fund 1 amounts to NZ\$44 million.

Although the individual investment is small by international standards, SC Oscar is building out a portfolio of projects across the country, with about NZ\$110 million to be invested across two more solar farms that will see

77MW worth of additional capacity under construction from next year.

And this could be just the beginning, as McCooles estimates solar capacity could grow to supply 10-15 percent of New Zealand’s electricity within 10 years.

Slow burn

The official ambition on solar has been more measured, with modelling by the Climate Change Commission in 2021 suggesting it could reach a figure of 6 percent by 2035.

Still, SC Oscar is not alone in seeing the appeal of the sector. In October, developer Aquila Clean Energy, part of asset manager Aquila Group, also commissioned its first solar project in New Zealand: the 20.8MW Pukenui solar farm, about 40km further north than Rānui Twin Rivers.

“You’re a five-and-a-half-hour drive from Auckland after a fuel stop and a lamb-and-mint pie,” says Dennis Freedman, ACE’s head of Australia and New Zealand. “You’re at the end of the world in terms of New Zealand references, and that brings a lot of challenges, especially around finding good resources for the development and construction operations.”

Despite the challenges involved with such isolation, Freedman says Aquila took the time to work alongside the small Pukenui community, which he hopes will serve the firm well as it accelerates its pipeline of 1.4GW worth of solar projects across the country.

Having a platform of this size helps to tackle one of New Zealand’s biggest

challenges, according to Freedman – attracting international capital.

“Most of the international investors look at the Australian scenario. They come in looking for half a gigawatt or a gigawatt pipeline as an absolute minimum – that’s what they want to buy into. They don’t exist in New Zealand unless you buy Aquila, and we’re not up for sale.”

While Australia is building solar farms by the hundreds of megawatts, New Zealand’s progress to date has been an order of magnitude smaller.

As of October, Genesis Energy’s 63MW Lauriston Solar Farm is the country’s largest operational project, while total installed capacity was just 567MW as of 2024.

“It’s hardly scratching the surface, but it’s right at the start of the journey,” Freedman says.

New Zealand’s journey will likely follow a different path to its neighbour’s, with Australian developers benefiting from attractive funding, feed-in tariffs, and revenue support schemes that have seen solar grow to about 19.6 percent of the electricity mix.

Shock therapy

Yet Freedman says financial support from the government may not be what New Zealand needs. The government, he says, can back renewable energy without subsidies. Instead, it can refine its planning, providing more timely grid connections to help projects progress faster.

He says a state-wide blackout in South Australia in 2016 spurred policies

Analysis

that stimulated large-scale investment in energy storage, transmission and grid-stabilising synchronous condensers.

New Zealand's own "shake-up" moment, he says, could come from data centres. "There are data centres in Australia connecting at 1GW and above of constant load. If you build one of those in New Zealand, it's 14 percent of the demand all of a sudden."

New Zealand's peak electricity demand is about 7GW, while one 500MW hyperscale facility alone would consume almost all of New Zealand's current solar capacity.

Aside from data centres, which companies including Microsoft have already begun building in New Zealand, a more immediate trigger to ramp up investment could be coming as the country runs out of natural gas.

After peaking at 11,362MWh in 2001, electricity generation from natural gas has fallen off to 4,082MWh in 2024. With major gas fields in decline, New Zealand's natural gas reserves dropped 27 percent in 2024 alone, contributing to the country's rising power prices.

Michael Bessell, executive general manager, infrastructure at ASX-listed real assets group Dexu, a majority stakeholder in New Zealand gas and electricity distributor Powerco, says the country is in an "energy crisis".

However, he says the situation has improved since the government announced it will run a competitive process to build a liquefied natural gas import terminal by 2027.

New Zealand has not previously been an importer of gas.

"Without that, you'd be looking at a continued decline in the domestic production of gas, and gas is essential for firming up renewables," Bessel says.

As well as addressing the gas shortage, in its 'Energy Package' plan released in October, the government outlines steps towards "unlocking investment in new generation", including



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DENNIS FREEDMAN
Aquila Clean Energy



a goal to double New Zealand's renewable energy by 2050.

Target practice

Bessell agrees that the government is unlikely to meet this goal by providing financial support and is rather focusing on improving its approvals process. Impending legislation also aims to encourage offshore wind development, including a designated area for development likely to overlap with that of Taranaki Offshore Partnership, a joint venture between NZ Super Fund and Copenhagen Infrastructure Partners.

The current government has abandoned a previous goal of 100 percent renewable electricity generation by 2030, and more recently slashed its 2050 methane reduction target from 24-47 percent to 14-24 percent.

However, Bessell says the government has taken positive steps in place of those targets: "They're focusing on making changes to policies to try and encourage development, because there wasn't as much development happening in the renewable side in New Zealand while everyone was still trying to target that 100 percent."

While Bessell says New Zealand's solar capacity is "definitely going to increase", Dexu is more focused on opportunities in supporting infrastructure, such as batteries on power poles, which, he says, can provide an alternative to upgrading the electricity network in some areas.

In a bid to replace New Zealand's "fast-disappearing" gas, SC Oscar is also pursuing wood pellet projects that could help to meet the thermal energy demand of industrial players. Aquila, too, aims to broaden its portfolio with wind projects and batteries.

As New Zealand builds its solar industry up from a small base, its early investors are looking to ensure the transformation leads to a more diversified and reliable electricity system that, in turn, could help to drive down power prices. ■