Project Update

Week ending 23 October 2020

Solar power fuels South Australia's total energy demand in global first

16 October

Last Sunday, for one hour between 12 noon and 1:00pm, solar power provided 100 per cent of South Australia's energy needs - a first in Australia and for any major jurisdiction globally.

Mild temperatures and cloudless skies contributed to ideal generation conditions in South Australia, with solar power from the state's 288,000 rooftop systems providing 992 megawatts (MW) and large-scale solar 313 MW to power the state.

Rooftop solar is installed on one-in-three homes in South Australia, with 2,500 systems installed monthly this year alone.

AEMO Managing Director and CEO, Audrey Zibelman, said that this milestone affirms the world-leading scale and pace of transition underway in Australia's power system. "The domination and successful integration of rooftop solar in South Australia foreshadows the rebuilding of jurisdictional power systems in Australia," Ms Zibelman said.

"Never before has a jurisdiction the size of South Australia been completely run be solar power, with consumers' rooftop solar systems contributing 77 per cent," she said.

The new record follows the previous milestone of 89 per cent of state demand set earlier this year on September 13, when rooftop solar output reached 900 MW for the first time.

To achieve this level of renewable penetration, AEMO has worked closely with

transmission and distribution network service providers throughout the National Electricity Market, including ElectraNet and SA Power Networks in South Australia, to ensure the power system remains secure and reliable.

"AEMO is also working hard to identify technical solutions to replace power system services, such as inertia, system strength and voltage control, traditionally provided by conventional thermal generation in Australia to reach higher penetrations of renewable generation," Ms Zibelman.

AEMO's Integrated System Plan (ISP) forecasts that by 204, 63 percent of coal generation will need to be replaced with grid-scale renewable energy (26 gigawatts) and dispatchable resources (6 to 19 GW). Distributed energy sources, such as rooftop solar PV and residential batteries, are also expected to double or triple in capacity by 2040.

"South Australia is experiencing a surge in rooftop solar installations. AEMO is forecasting an additional 36,000 new rooftop solar systems in the next 14 months, which will mean that South Australia's grid will see zero demand as rooftop solar alone will be capable of meeting 100 per cent of demand," Ms Zibelman said.

"This is truly a phenomenon in the global energy landscape," she said.

Source: AEMO

Post-2025 market design on the right track, but time to down tools on COGATI

19 October

In submissions lodged today, the Clean Energy Council has provided its broad support for the Energy Security Board's (ESB) direction for the future design of the National Electricity Market (NEM), but outlined its opposition to the Australian Energy Market Commission's (AEMC) transmission access reform proposal (more commonly referred to as the co-ordination of generation and transmission investment – COGATI – initiative).

Clean Energy Council Chief Executive, Kane Thornton, said that the energy market framework was in clear need of change to ensure that it would be able to support a renewable energy future.

"These proposed market reforms represent a significant redesign of the Australian energy market that can encourage the much needed investment in energy generation, storage and services that we require to provide clean, reliable and low-cost power.

"The energy system we have in place today is the legacy of another era and isn't fit to support the new, more distributed, flexible, intelligent and clean energy generation that we need and want.

"We broadly welcome the high-level directions outlined in the ESB's Post-2025 Market Design Consultation Paper, noting significant detail still needs to be developed across each of the market design initiatives.

"In particular, we are pleased to see the work to value essential system services and better integrate distributed energy resources."

Thornton said, however, that the Clean Energy Council did not support one of the seven market design initiatives relating to transmission access and the COGATI proposal.

"The Clean Energy Council remains firmly opposed to the transmission access reforms proposed by the AEMC, which will do very little to improve the co-ordination of generation and transmission while increasing risk, complexity and cost to the market," said Thornton.

This reform will fundamentally alter current market operations through the introduction of locational marginal pricing and financial transmission rights. The AEMC also proposes to move to dynamic loss factors, which will be more volatile and unpredictable than the current, already problematic marginal loss factor regime, without any capability for generators to manage the associated risks.

A recent member survey conducted by the Clean Energy Council found that the COGATI reform would add 1.4 per cent risk premium to new projects, as well as existing projects as they seek to refinance over the next few years ($18 billion of project debt needs to be refinanced between now and 2025).

This would result in a $5.50/MWh increase to wholesale prices, equivalent to approximately $990 million in additional consumer costs across the NEM.

For state governments, this increased risk premium will raise the cost of meeting renewable energy targets. For Queensland, it would amount to around $55 million per annum and for Victoria, this will cost in excess of $27 million per annum.

"The AEMC's analysis is premised on over 20 GW of avoided investment in new generation by 2040. This fails to recognise the broader economic and societal benefits of new investment. Without this investment, we would miss out on a $36 billion injection into the economy, and 30,000 construction and installation jobs and 2000 ongoing operations and maintenance jobs would not proceed," said Thornton.

"The COGATI proposal is a case of the wrong reform at the wrong time. It will have a chilling effect on investment at a time when we need to be attracting new investment to replace ageing thermal generators and stimulate economic activity in response to COVID-19.

"With these high costs and risks, we cannot support the proposal. We encourage the AEMC to down tools on this reform proposal in order that AEMC and industry resources can be redirected to more pressing issues within the ESB's market reform package, as well as actioning of the Integrated System Plan, development of renewable energy zones and addressing connection issues," he said.

Source: Clean Energy Council

PROJECT NEWS

Rangoon Wind Farm

Meridian Energy's proposed Rangoon Wind Farm near the village of Ben Lomond, approximately 25km south of Glen Innes in NSW, is open for public comment as part of the federal government's EPBC Act assessment. Meridian is seeking consent for the project which includes: the construction, operation and decommissioning of a wind farm with an estimated capacity of 130 MW, with a maximum of 25 turbines; a battery energy storage system up to 100MW/ 400MWh; and ancillary infrastructure including site offices, storage facilities, access tracks, road upgrades, underground and overhead electricity cabling, substations, transmission lines and grid connection to both TransGrid and Essential Energy transmission networks.' Approximately 1000ha has been selected and investigated for the Project infrastructure and is defined as the Project Investigation Area. The Project comprises two parts, Rangoon Wind Farm South (4 turbines) and Rangoon Wind Farm North (21 turbines).

Yackandandah hits 3GWh and nearly $500,000 in savings

19 October

Yackandandah residents hit a new milestone on the 31st of August when the town's mini grid recorded over 3GWh of locally generated renewable energy! This is an exciting step as the town strives to reach its 100% renewable energy target.

This 3GWh is enough to power the MCG lights for almost a decade and has reduced carbon emissions by 420 tonnes when compared with coal-fired generation. It has also resulted in $473,273.90 in collective bill savings for the 191 customers involved.

Since the project began, participants have generated a whopping 30% of their energy from the sun. This also represents an average annual bill saving of 63% when compared to equivalent properties without solar. Even more remarkably, those with batteries found an average bill saving of 72%. Yep, 72%!

The project is demonstrating the financial and environmental impacts of solar photovoltaic systems. Moreover, these results do not tell the full story of solar in Yackandandah. The mini-grid (those homes and businesses connected and monitored by the Ubi Energy Management Platform) is just a portion of those who generate solar electricity in Yackandandah – with some 60% of buildings in Yackandandah currently hosting solar installations.

The town's renewable energy journey is set to advance with the install of a 274kWh community battery. Located at Yackandandah's old sawmill site, now the home of The Agency of Sculpture, it will be charged by an on site 65kW solar system. These panels will charge the battery during the day and it will be discharged during the evening – offering Indigo Power (community electricity retailer and Social Enterprise) customers the opportunity to buy the value of it's stored renewable energy. For the wider community, the battery is a way of tracking and offsetting its reliance on grid imports – an

important step towards reaching 100% renewable energy target.

The Victorian Government has funded $171,00 for the project through the recently announced New Energy Jobs Fund. Mondo is partnering with local volunteer group Totally Renewable Yackandandah (TRY) and Indigo Power, to get the project off the ground.

Mondo is pleased to be supporting the remarkable community initiatives in Yackandandah and across Victoria. Exciting changes are happening right now as we nurse our energy system from reliance on centralised coal generation to the smart orchestration of renewable and distributed energy systems. The future truly is looking bright!

Source: Mondo

NEW PROJECT

Forest Glen Solar Farm

Location: Minore, approximately 19km west of Dubbo in NSW
Capacity: 120 MW
Developer: X-ELIO
Status: Scoping assessment underway for development approval from the NSW Department of Planning Industry & Environment
LGA: Dubbo Regional Council
Description: Land secured for the Forest Glen Solar Farm with direct grid access. When constructed the project will provide 230 GWh of renewable electricity per year, enough to power 25,000 NSW households per year. Construction targeted to commence in early 2022 for commercial operation late 2023.
Contact: David Stavridis
Business Development Manager
X-ELIO
Email: forest.glen@x-elio.com
Website: https://x-elio.com/project/forest-glen/

Trial sites for community battery project unveiled

19 October

Three community batteries will be installed on Ausgrid's network in 2021 as part of phase one of its Community Battery Trial.

The battery locations will be in the Northern Beaches City Council, City of Canterbury Bankstown, and Lake Macquarie City Council local government areas.

A community battery is shared by customers who have a solar panel system and are connected to the same local Ausgrid network. Customers connected to a community battery can use it to store their excess solar power and access it as needed later that day or night.

Customers must have solar to participate in the trial. Ausgrid will own and maintain the battery.

Ausgrid CEO Richard Gross said the first phase of the trial could drive solar uptake and increase production of renewable energy.

"At Ausgrid we're constantly looking for innovative ways to make energy more affordable for our customers while supporting a sustainable future and I believe this community battery trial will be a game changer for our industry.

"As the name suggests a community battery will allow communities to share the energy their solar panels generate without having to pay for their own storage battery at home.

"Customer expectations around how they use energy are changing so we have been developing this trial in close consultation with our network innovation and customer consultative committees".

A community battery allows solar customers to use all the clean energy they generate, save on their electricity bills, and get more value from their solar investment, without needing

to own and maintain their own household battery system.

Solar customers benefit from avoiding battery installation and maintenance costs and can choose unique storage levels for their individual needs.

"Joining this trial requires no upfront investment for our customers compared to installing their own battery and will provide a great option to save on energy costs."

"We want to be part of a green energy future and it's our ambition to deliver industry-leading sustainable energy solutions for our customers," Mr Gross said.

Community batteries encourage greater solar uptake by households and businesses, increasing the amount of renewable energy in the system, which can reduce peak demand and help distributors like Ausgrid place downward pressure on energy prices.

Earlier this year, Ausgrid commissioned KPMG to consider whether the initiative would be a feasible alternative to traditional network investment. The study assessed a range of technical, commercial and regulatory issues and concluded the community battery project initiative could be feasible within as little as 3-5 years.

You can read the Feasibility Report and find out more about the project here: https://www.ausgrid.com.au/batteries

Source: AusGrid

World's leading power system operators launch global consortium

20 October

Global effort aimed at reaching 50% emission reductions over next 10 years

Earlier today during the BloombergNEF Summit, Audrey Zibelman, CEO of the Australia Energy Market Operator (AEMO) announced the launch of the Global Power System Transformation Consortium (G-PST). Speaking during the European Energy Infrastructure in Transition Session, Zibelman highlighted the need for a major global collaborative effort in overcoming technical barriers related to the integration of clean energy into power systems at an unprecedented scope and scale.

"Countries around the world are looking to pursue a path to modern, low-emissions energy systems, but face significant challenges in acquiring and applying the technical knowledge needed to operate and plan rapidly transforming power systems," said Zibelman. "This consortium will help meet this need by engaging key power system operators, applied research and educational institutions, governments, businesses, and stakeholders from developed and developing countries to accelerate clean energy transitions at the ambitious scope and scale that is required."

The goal of the consortium is to dramatically accelerate the transition to low emission and low cost, secure, and reliable power systems, contributing to >50% emission reductions of all pollutants globally over the next 10 years by enabling the efficient integration of substantial clean energy investments into power systems.

CEOs of six of the world's leading system operators, Australia Energy Market Operator (AEMO), National Grid Electricity System Operator UK, California Independent System Operator (CAISO), Electric Reliability Council of Texas (ERCOT), Ireland's System Operator (EirGrid), and Denmark's System Operator (Energinet) are leading this consortium.

These founding system operators are partnering with more than 25 prominent system operators from Africa, Asia, Latin America, Eastern Europe, and other regions as well as renowned research and educational

institutions from around the world to help guide the G-PST vision. The system operators from emerging and developing countries will engage in technical collaboration, peer learning, and workforce development to support the application of advanced engineering and operational solutions to meet their priorities.

"We're excited to join fellow system operators in leading the consortium's research agenda that is holistic and driven by making it all work together," said Fintan Slye, Director, National Grid Electricity System Operator (ESO). "Through the consortium, we'll scale up global research collaboration on cutting-edge technical innovations in areas such as real-time intelligent control applications and state-of-the-art power electronics that will enhance the reliability and accelerate our transitions to best-in-class, low emission reliable power systems. These pioneering innovations will be shared rapidly with countries around the world."

The core technical team for the consortium includes the Energy Systems Integration Group (ESIG), Imperial College London, Council of Scientific and Industrial Research (CSIR), Fraunhofer Cluster of Excellence for Integrated Energy Systems, National Renewable Energy Laboratory (NREL), Latin American Energy Organization (OLADE), Institute of Electrical and Electronics Engineers (IEEE), Electric Power Research Institute (EPRI), Commonwealth Scientific and Industrial Research Organization (CSIRO), the Danish Technical University (DTU), and ASEAN Center for Energy (ACE).

According to Professor Mark O'Malley, Chair of the ESIG Research and Education Working Group, the consortium will engage in activities across five key pillars – System Operator Research & Peer Learning, System Operator Technical Support, Workforce Development, Standards & Testing and Open Data & Tools.

"Our collaborative system operator research and peer learning pillar is unique in its holistic approach, global ambition and rapid application, and the work in the other four pillars will leverage the research outcomes, reinforce existing initiatives and drive the global coordination of our efforts toward achieving cost-efficient, clean, and reliable power systems," said O'Malley.

"The coordinated effort and magnitude of this initiative is astounding," said Pak Haryanto, Director, Regional Business of Java Madura and Bali, Perusahaan Listrik Negara (PLN). "To engage in such deep technical cooperation across the world's leading system operators along with structured peer learning to all corners of the globe will have an immeasurable impact on achieving the goal of cost-efficient, clean, and reliable power systems worldwide."

Key sponsors and partners of the G-PST Consortium include Wellspring Climate Initiative, United States Agency for International Development (USAID), Children's Investment Fund Foundation (CIFF), BMWi (Federal Ministry for Economic Affairs, Germany) and Energy Innovation.

For additional information on the G-PST, please visit https://globalpst.org/.

Source: AEMO

Maryvale Energy from Waste project moving forward

20 September

The Maryvale Energy from Waste (EfW) project has marked three important milestones in its plan to deliver a state-of-the-art EfW facility, located at the Maryvale Mill in the Latrobe Valley, Victoria, Australia.

Opal Australian Paper and SUEZ Australia and New Zealand are pleased to announce that:

- Masdar and Tribe have joined as additional equity partners for the development of the EfW facility.
- ACCIONA has been selected as the construction partner.

• SUEZ Australia and New Zealand has committed 150,000 tonnes per annum of Commercial and Industrial waste, to meet close to half of its initial capacity.

”We are delighted to partner with Masdar, Tribe and ACCIONA. Securing their global expertise in developing EfW projects complements the proven SUEZ track record of operating 55 EfW facilities globally. The creation of this consortium is a major step forward in bringing the Maryvale EfW Project to fruition,” said Mr Mark Venhoek, CEO, SUEZ Australia and New Zealand.

”Masdar is proud to help advance Australia’s efforts to manage its waste sustainably while delivering cleaner sources of electricity for its citizens. It is a pleasure to join SUEZ and Opal Australian Paper as partners in this landmark project in Victoria, together with Tribe and ACCIONA. We look forward to leveraging our experience from similar projects such as East Rockingham Waste to Energy in Western Australia and the Sharjah Waste to Energy facility in the United Arab Emirates to contribute to the successful development of the Maryvale project,” said Mohamed Jameel Al Ramahi, CEO of Masdar.

“We are thrilled to partner with Opal Australian Paper, SUEZ, Masdar and Tribe to deliver a sustainable infrastructure solution for Victoria that also provides a significant job boost to the region,” said Mr Bede Noonan, ACCIONA’s CEO in Australia & New Zealand. “ACCIONA has a strong track record in sustainability and this project will complement our current waste to energy portfolio in Australia with investments at Kwinana and Rockingham.”

The facility will initially comprise one processing line, providing a commercially efficient waste management solution for regional and metropolitan councils. The project will be delivered in time to address the pending closure of south-east Melbourne’s main landfill and a second line could be added in future to cater for the infrastructure requirements of Victoria’s growing population.

The Maryvale EfW facility will divert approximately 325,000 tonnes of non-recyclable waste from landfill and reuse it to generate steam and electricity to replace natural gas and coal fired electricity. The facility is aligned with Victoria’s circular economy policy and is expected to deliver significant reductions in greenhouse gas emissions. It will provide councils and industry with a meaningful alternative to landfill while meeting EPA Victoria’s stringent emissions standards.

The project will require an investment of around AU$500 million, supporting the economic recovery of Victoria and the Gippsland region. It is expected to deliver more than 500 jobs in Victoria and the Gippsland region during the three-year construction phase and additional regional jobs ongoing.

”We are excited to reach this new stage for the Maryvale EfW Project. This efficient state-of-the-art recovery facility will help to secure Maryvale Mill’s future energy needs, generate valuable jobs for the Latrobe Valley region and create essential waste management infrastructure for Victoria,” said Mr David Jettner, GM Corporate Development & Strategic Projects, Opal.

The project will reduce Victoria’s greenhouse gas emissions by more than 270,000 tonnes per annum. The net energy benefit to Victoria’s energy network will result in enough gas and electricity to power over 50,000 homes.

Construction of the Maryvale EfW facility is expected to commence in late 2021, with completion expected by early 2025.

Source: Opal/SUEZ

PROJECT NEWS

Dunedoo Solar Farm
Tilbuster Solar Farm

Both ib Vogt's proposed Dunedoo Solar Farm and Enerparc's Tilbuster Solar Farm have been placed on exhibition by the NSW Department of Planning Industry & Environment with public comment invited.

The 55 MW AC Dunedoo Solar Farm development proposal includes approximately 173,000 PV solar panels mounted on single axis tracking systems powered by approximately 2,850 tracker motors, inverter/transformer stations and battery storage units distributed across the site, an onsite substation containing transformer, synchronous condenser, and a new hybrid Transmission Line (TL) to connect the solar farm into the Essential Energy transmission network.

Enerparc's proposed 150 MW AC Tilbuster Solar Farm site on 310ha is located 17 km north of Armidale, and would connect to the existing TransGrid 330kV transmission line connecting Dumaresq substation to the Armidale substation. Key equipment includes approximately 405,888 PV solar modules mounted on either fixed or horizontal single-axis tracking system, up to 30 Power Conversion Units – totalling 60 inverters, 30 transformers and associated ancillary equipment, a 330 kV substation and an onsite energy storage facility of be 40 MWh or less.

Mayors commit to clean, local jobs

21 October

Over forty mayors and councillors from across the country have today released a joint statement committing to economic recovery solutions that create jobs and tackle climate change.

The mass commitment to a sustainable economic recovery aims to support industries and sectors that invest in a zero carbon future, along with driving strong economic recovery for communities hit hard by twin climate and COVID-19 crises.

City of Ryde Mayor, Jerome Laxale said all councils must play a role in sustainable economic recovery and climate change.

"Be fires, floods or covid-19, local governments have been at the forefront to the response of economic recovery," said Mayor Laxale.

"Local governments across Australia can lead communities through a zero carbon recovery by prioritising local jobs, building sustainable infrastructure and investing in renewables."

Blue Mountains City Council Mayor, Mark Greenhill, whose community continues to feel the impacts of the horrific Gosper's mountain fire, said the community was crying out for solutions that would give a much-needed boost to the local economy and safeguard against future climate shocks.

"As mayor of a community hit by last season's catastrophic bushfires, which were supercharged by climate change, it's extremely disappointing to see that climate remains a glaringly missing piece on the Federal agenda," said Mayor Greenhill.

"The Blue Mountains community, which is heavily dependent on tourism dollars, has largely been cut off since October 2019. Some people simply cannot afford to rebuild their homes, and many have lost their jobs. We can't pay the price of inaction much longer.

"That's why I am standing alongside mayors from across the country to usher in job-creating, clean energy solutions that transition our economy away from the key drivers of the climate crisis, like coal and gas, and make communities like mine stronger and more resilient – it's crucial."

The joint statement, outlines eight solutions from renewable energy through to sustainable transport that put local governments on a practical, jobs-rich path to future-proof cities, reduce energy costs and create more comfortable homes and workplaces.

Source: Cities Power Partnership

BayWa r.e. signs PPA with CS Energy

21 October

BayWa r.e. has entered into a Power Purchase Agreement (PPA) with the Queensland government owned CS Energy. BayWa r.e. will supply electricity and Large Generating Certificates (LGCs) from its 20MWp Hughenden Solar Farm in Queensland, Australia.

"We are delighted to be working with CS Energy to assist their customers in meeting their renewable energy procurement objectives of reducing carbon emissions and securing stable energy supply in a cost effective manner. There are a growing number of similar customers who are proactively seeking green energy" said Kevin Sze, Managing Director of BayWa r.e. Projects Australia Pty Ltd.

CS Energy CEO Andrew Bills said CS Energy will supply the renewable energy to its large commercial and industrial customers in Queensland.

"We're thrilled to be adding further renewable energy to our portfolio to support our customers' requirement for a mix of renewable and thermal energy," Mr Bills said.

Source: BayWa r.e.

September Large-scale Renewable Energy Target market data now available

21 October

The Clean Energy Regulator has released the September 2020 Large-scale Renewable Energy Target market data.

Highlights include:

- 700 MW across three solar farms reached financial close in September. 300 MW of this capacity from two solar power stations (Suntop Solar Farm – 189 MW and Gunnedah Solar Farm – 110 MW) underpinned by a power purchase agreement with Amazon. The 400 MW New England Solar Farm is the third solar farm to be financed across the month.
- The total committed capacity in 2020 to just over 2 GW. The Clean Energy Regulator expects between 2 and 3 GW of projects will be financed by the end of 2020.
- The strong pipeline of projects continues with two utility-scale renewable energy projects, with a combined capacity of 328 MW, entered into power purchase agreements:
  - Berrybank Wind Farm Stage 2 in VIC – 110 MW, and
  - Ryan Corner Wind Farm in VIC – 218 MW.

Source: CER

PROJECT NEWS

Melbourne Regional Landfill Stage 2

Cleanaway Waste Management subsidiary Landfill Operations, has been granted development approval for its the progressive installation of a further eight X 1.15 MW biogas engines (modules 9-16) powered by gas collected from the Melbourne Regional Landfill. When fully completed stage 2 will double the capacity of the existing facility.

PROJECT NEWS

Australia-ASEAN Power Link

The Northern Territory EPA has opened for public consultation Sun Cable Pty Ltd's proposed Australia-ASEAN Power Link project.

Overview

Sun Cable Pty Ltd is proposing to establish a large-scale solar farm and energy storage facility in the Barkly region, NT, with power exported via a high-voltage direct current transmission network to Middle Arm peninsula, Darwin, and then sub-sea cable through Darwin Harbour and NT, National and International waters to Singapore. The proposal comprises:

- a solar farm precinct (up to 12 000 hectares in area) including battery and ancillary infrastructure in the Barkly region of the NT, approximately 40 km southwest of Elliott
- a high voltage, direct current (DC) overhead power transmission line (located mainly within the existing Alice Springs to Darwin railway corridor) from the solar farm to Middle Arm peninsula in Darwin, approximately 750 km to the north
- up to two voltage source converters located at Middle Arm peninsula to convert power from DC to alternating current (AC) for connection to the Darwin-Katherine Integrated System, and a point to point link from Darwin to Singapore.
- a land-sea joint station at Middle Arm peninsula to transition the high voltage cables from onshore to offshore
- a subsea high voltage DC cable and fibre optic cable network that will extend approximately 3750 km from Darwin to Singapore, via Indonesia, with approximately 106 km of the cable proposed for NT waters.

CEP.Energy reveals huge battery bank plan

22 October

- CEP.Energy has progressed its plan to become a major renewable energy supplier, revealing plans to build one of the world's biggest energy battery banks.
- In the first stage it plans to build a 1000-megawatt (MW) battery bank, made up of aggregated batteries in a Virtual Power Plant, as well as three large scale utility batteries.
- CEP.Energy has signed a deal with SmartestEnergy Australia to manage and operate the first 400-MW Virtual Power Plant of battery storage across Australia.
- SmartestEnergy, an international leader in commercial and industrial energy retailing, is a subsidiary of the Japanese conglomerate Marubeni. The 400-MW battery bank will be located on CEP.Energy industrial park sites across Australia.
- Retail and commercial customers will save an estimated 20 per cent on their electricity bills.

CEP.Energy has launched a $1 Billion fund to own and operate rooftop solar farms on industrial, commercial and large-scale retail properties. It plans to build 1500-MW of renewable energy generation and 1000-MW of battery storage over the next 5 years.

CEP.Energy has an agreement with large scale commercial and industrial property owner Pelligra to lease roof space and build and operate solar panels. In turn, CEP.Energy will offer tenants, which are predominantly small to medium-sized businesses, solar energy at a reduced cost and reliable supply.

CEP.Energy has also entered into negotiations with several large companies for long-term corporate power purchase agreements to underwrite their own renewable energy target dates.

CEP's secured property portfolio comprises several hundred properties, including the former Ford manufacturing sites in Geelong and Campbellfield in Melbourne's north, the former GMH manufacturing site outside of

Adelaide. The overall portfolio includes existing buildings totalling more than 10 million square metres.

CEP.Energy CEO Peter Wright said the agreement with SmartestEnergy Australia means landlords and tenants now had a total renewable energy solution.

"SmartestEnergy Australia has a proven track record in the commercial and industrial energy space in the UK, and we are pleased they have come on board to be our retailer of choice,'' he said.

"They will use their experience and battery and solar technology to offer electricity at a materially lower cost.''

SmartestEnergy Australia Chief Executive Officer Robert Owens said the company is strongly committed to a future energy market focused on decarbonisation, decentralisation and digitisation.

"We share a vision with CEP.Energy of an intelligent system maximising the opportunities of solar and battery VPPs to the benefit of consumers and the wider market," he said. "We look forward to growing the opportunity with them."

Capital Raising update
Mr Wright said the company's $1billion capital raising was progressing well.

"We've had a strong market response driven by the fact that many institutional investors are underweight in commercial clean energy investments.''

Mr Wright said the company was on track to kick off project work as soon as Victoria comes out of lockdown.

Former NSW Premier Morris Iemma is the Chairman of CEP.Energy.

Source: CEP.Energy

3 more projects complete!

22 October
- Batchelor One Farm (12.5 MW DC)
- Batchelor Two Farm (12.5 MW DC)
- Manton Dam Farm (12.5 MW DC)

The projects are located in the Northern Territory, approximately 1 hour south of Darwin.

Tranex Solar Pty Ltd was awarded the Manton Dam and Batchelor Two projects following our exemplary performance on Batchelor One Solar Farm.

The mechanical scope included 13,404 piles, 1,021 Nextracker Inc. single-axis trackers, and 84,140 PV modules

The combined projects will generate approximately 159,000-megawatt-hours (MWh) per annum of clean, renewable electricity into the national power grid each year, thereby making a major contribution to Australia's greenhouse gas reductions. This reduction will be equivalent to taking either 44,100 cars off the road or planting 35,700 trees, producing enough electricity to power approximately 34,500 homes with renewable energy.

Tranex Solar Pty Ltd delivered all 3 projects safely, ahead of budget and schedule.

Source: Tranex Solar

Quarterly Energy Dynamics Q3 2020

22 October
Executive summary
East coast electricity and gas highlights
Wholesale electricity and gas market price decline continues
• Mainland National Electricity Market (NEM) spot electricity prices[1] declined by 45-48% compared to Q3 2019, reaching the lowest Q3 level since 2014.

− Queensland's quarterly average price of $32 per megawatt hour (MWh) represents its lowest Q3 level since 2014, and the lowest NEM mainland quarterly price since Q2 2015.
− Drivers included a shift in offers from black coal-fired generators to lower prices, falling gas prices, increased variable renewable energy (VRE) output, and a 1.4% reduction in operational demand.
• Wholesale gas market prices reduced almost 50% compared to Q3 2019, reaching the lowest Q3 level since 2015. The Gas Supply Hub (GSH) price of $3.85 per gigajoule (GJ) was its lowest quarterly average since Q4 2015, while the Victorian price of $4.57/GJ was its lowest since Q1 2016. Drivers included:
− A continuation of comparatively low international oil and gas prices, which have influenced domestic gas market offers. Low Asian Japan Korea Marker (JKM) gas prices at the end of Q2 and into Q3 2020 are inputs into the Australian Competition and Consumer Commission's (ACCC's) average netback price, which fell to $2.60/GJ, its lowest level since reporting commenced.
− A 5% reduction in east coast gas demand compared to Q3 2019, due to reduced levels of liquefied natural gas (LNG) export (-11 PJ), as well as lower gas-powered generation (GPG) (-9 PJ). Australia Pacific LNG (APLNG) recorded the main reduction in flows to Curtis Island for LNG export, with both its major customers declaring downward quantity tolerance for 2020[2].

Reduced energy demand in Victoria
• In Victoria, a combination of strict COVID-19 restrictions and mild weather in the second half of the quarter resulted in a 90 MW average reduction in underlying electricity demand[3] in Victoria compared to a 5 MW reduction for the remainder of the NEM. COVID-19 influenced the demand shape, with a significant reduction in the morning peak between 0600 and 0800 hrs, partially offset by small increases in daytime demand and a higher evening peak.
• Victoria's gas demand profile was also affected, most noticeably on cold days with high heating demand. On those days the morning peak occurred two hours later in the day, and remained high during the day, although overnight demand was lower than in previous years.
− Additional operational and market measures, such as the use of the Dandenong LNG, were required to manage this increased daytime demand.

Other highlights
• New minimum operational demand records were set in South Australia (379 megawatts [MW]) and Victoria (3,073 MW)[4], largely due to increased penetration of distributed photovoltaic (PV), with installations continuing at record levels.
• Hydro generation declined to its lowest Q3 level since 2008, driven by dry Tasmanian conditions which limited hydro output in the region.
• NEM-wide solar and wind curtailment increased to almost 6% of total VRE output. Increases were driven by new North Queensland system strength arrangements (which were subsequently triggered by a series of plant outages), as well as increased economic curtailment in response to negative spot prices (which occurred at the highest quarterly level on record).

1 Uses the time-weighted average which is the average of spot prices in the quarter and is directly comparable to the swap contract price in the wholesale market. The Australian Energy Regulator (AER) reports the volume-weighted average price which is weighted against demand in each 30 minute trading interval and is an indicator of total market costs in the quarter.
2 Origin Energy, 2020 Full Year Results: https://www.originenergy.com.au/content/dam/origin/about/investorsmedia/presentations/200820_FY20_investor_pres_final.pdf.
3 Underlying demand means all the electricity used by consumers, which can be sourced from the grid but also, increasingly, from other sources including consumers' rooftop photovoltaic (PV) and battery storage.
4 These records have since been broken in Q4 2020

Source: AEMO

X-ELIO and Salesforce sign landmark PPA for Queensland's Blue Grass Solar Farm

22 October

• The 200 MW Blue Grass Solar Farm in Queensland is X-ELIO's largest solar farm development in Australia. The project includes more than $200m capital investment in Queensland, where it will power 80,000 homes across the state and create up to 400 new construction jobs.

• The 10-year Virtual Power Purchase Agreement (VPPA) is estimated to effectively displace 80,000 tonnes of CO2 emissions each year over the life of the agreement.

• This VPPA is Salesforce's first renewable energy offtake agreement in Australia. It supports Salesforce's ambitions to reach 100 percent renewable energy by 2022.

• X-ELIO is a global leader in renewable energy. It has strategic ambitions to expand its footprint in Australia's renewables market across the East Coast, with 400MW of pipeline currently in development. 22 October 2020.

X-ELIO, a leading global renewable energy producer has signed a landmark virtual power purchase agreement (VPPA) with Salesforce, its first renewable energy offtake agreement in Australia.

The VPPA is a key milestone for X-ELIO in Australia and its 200 MW Blue Grass Solar Farm in the Western Downs region of Queensland.

For Salesforce, the VPPA supports its objective to reach 100 percent renewable energy by 2022.

Under the agreement, the Blue Grass project will supply generation certificates to meet Salesforce's renewable energy requirements.

The MWs contracted under the VPPA are estimated to effectively displace 80,000 tonnes of CO2 emissions each year over the life of the agreement.

Pip Marlow, Chief Executive Officer, Salesforce Australia and New Zealand said: "We are proud to team up with X-ELIO on the Blue Grass solar farm, a project which will bring jobs to regional Queensland, support the local community and deliver new renewable energy generation. Salesforce is on a path to 100% renewable energy and we have a plan to get there by 2022. This is an important step on this path and one which we hope inspires other leaders. The climate crisis requires bold action, today."

The Blue Grass Solar Farm is X-ELIO's first and largest solar farm development in Australia. The 200MW utility scale farm is currently in construction, with full operation expected in late 2021.

The project will deliver 420 GWh of green energy annually, powering 80,000 Queensland homes and offsetting more than 320,000 tonnes of CO2 emissions. It will also create up to 400 new construction jobs and deliver more than $200 million capital investment in Queensland.

The Blue Grass Solar Farm project represents X-ELIO's long-term interests in Australia where it plans to leverage its 15 years' experience as a global leader in the development, construction and operation of solar PV projects, having built more than 2 GW solar PV plants and with 25 plants currently in operation across 10 markets globally.

Belinda Fan, X-ELIO's Country Manager in Australia, said: "This partnership with Salesforce is a significant milestone for X-ELIO in Australia, furthering our ambitions in Australia's renewables market. In Salesforce, we have found a like-minded partner who shares our community-focused goals and emissions reduction ambitions.

"While X-ELIO powers many global businesses across our international portfolio, this VPPA strengthens our position in Australia where we will continue to pursue new growth opportunities to expand our national footprint

in the renewables market. This includes 400MW of pipeline currently in development, which is growing exponentially each year.

“Solar is going from strength to strength in Australia and we’re thrilled to be a part of the nation’s renewable energy future.”

Lluis Noguera, CEO of X-ELIO, stated: "With Australia being a key future strategic market for X-ELIO, we are extremely excited to announce this landmark agreement with Salesforce. X-ELIO is continuously looking to grow its presence in attractive markets like Australia, where our local team will leverage the significant capital and global industry expertise of X-ELIO to grow our local presence and realise our ambitions in the market.”

In addition to the economic and social benefits of the project for the region, X-ELIO will dedicate a percentage of the Blue Grass Solar Farm’s annual gross income to a Community Support and Benefit Sharing Program.

Ms Fan added: “We are tremendously proud to be a part of the community in Queensland’s Western Downs region and contribute to the region’s economic and social development. This Community Support and Benefit Sharing Program will support local community projects in areas such as education and community renewable projects.”

Source: X-ELIO

Photon Energy and Mayor of Leeton Shire hold soil-turning ceremony to start construction of 14 MWp Leeton Solar Farms

22 October

Photon Energy N.V. (WSE: PEN, the 'Group' or the 'Company') and the Leeton Shire Council held a soil-turning ceremony on 22 October 2020 to celebrate the start of construction on two PV power plants with a combined capacity of 14 MWp in Leeton, New South Wales.

Photon Energy will be the owner and operator of the two power plants, Leeton Solar Farm Pty Ltd and Fivebough Solar Farm Pty Ltd. Each power plant has a grid connection capacity of 4.9 MW AC and an installed capacity of 7 MWp DC.

The power plants will be located on Fivebough Road on the outskirts of Leeton, in the heart of the Murrumbidgee Irrigation Area. The area is one of the most diverse agriculture regions in Australia, famous for the production of citrus fruits, rice, cotton and wine. It is also an area of significant energy use, traditionally importing energy from large coal power plants located hundreds of kilometres away.

The project’s construction phase is expected to create up to 50 jobs, the majority of which will be local, and Photon Energy aims to source supplies and services from local businesses.

The power plants will extend over 37 hectares and supply power to the grid of Essential Energy as non-scheduled generators. Together they are expected to generate approximately 27.8 GWh of clean energy per year.

These are the two largest projects to be added to Photon Energy’s global portfolio and its first merchant projects providing competitive energy into the Australian energy market. Upon completion, scheduled for the end of the fourth quarter of 2020, these new additions will expand the Company’s global PV portfolio of power plants to 88.7 MWp.

Photon Energy Engineering Australia Pty Ltd will act as engineering, procurement and construction (EPC) contractor for both projects. Once connected to the grid, Photon Energy Operations Australia Pty Ltd will provide long-term operations and maintenance as well as monitoring services.

'Leeton Shire Council is delighted that this long-awaited renewable energy project is commencing, which will contribute to up to 50 jobs locally during the construction phase and two to three jobs long-term,' commented Paul Maytom, Mayor of Leeton Shire Council.

'We thank the Leeton Shire Council for their support to make these projects possible and are proud to be adding to Australia's arsenal of reliable, clean and competitive fleet of solar power generation supplying a region which has significant power demands. We will participate directly in the National Energy Market and with single axis tracking technology we will be able to optimise power generation to take advantage of market opportunities with the flexibility of adding energy storage in the future,' said Michael Gartner, CTO of the Group and Managing Director of Photon Energy Australia.

'At Photon Energy, we care deeply about communities and the environment. The Murrumbidgee Irrigation Area has significant energy requirements, and we are very proud that with the Leeton solar farm we will help the area and its residents reduce their reliance on energy imported from large coal power plants hundreds of kilometres away,' added Georg Hotar, CEO of Photon Energy.

Source: Photon Energy

NEW PROJECT

First large-scale grid battery in NSW coming to Western Sydney

22 October

TransGrid welcomes today's announcements by Minister Taylor and Minister Kean of the decision by the NSW Government and the Australian Renewable Energy Agency (ARENA) to award funding for the installation of the first large-scale grid battery in NSW, at TransGrid's Wallgrove substation in Western Sydney.

The Wallgrove Grid Battery project will trial the use of a 50MW/75MWh lithium ion battery to provide fast frequency response and synthetic inertia services to the NSW transmission network. These network services help keep the grid stable, and will become increasingly important as the energy system adapts to accommodate higher levels of renewable generation connecting into the grid.

TransGrid's Executive Manager of Strategy, Innovation and Technology, Eva Hanly, said: "TransGrid is committed to finding low cost innovative solutions to the emerging challenges of the energy transformation. This will be the first battery in NSW to pilot grid scale synthetic inertia as a network service."

"It's a step forward for the NSW grid and the National Electricity Market. This innovation will help accelerate the industry's transformation to a low-carbon energy system, at a lower cost to customers." said Ms Hanly.

The power system currently relies on inertia provided by large spinning turbines inside coal, gas and hydro generators to maintain a consistent frequency and help the system ride out any disturbances. As coal-fired generators retire and more wind and solar generation connect to the grid, alternate sources of inertia will be needed to stabilise the network. Batteries offer a solution to this challenge at a small fraction of the cost of traditional technologies such as synchronous condensers. HoustonKemp has assessed the direct benefits to NSW electricity customers of this trial to be within a range of $93m to $135m.

Research and results from the trial will be shared to support future projects and help demonstrate that battery technology is a low cost and technically viable solution to the emerging challenge created by the transformation of the generation sector. Additionally, the trial will provide a foundation for third-party battery providers to submit credible options to TransGrid in

future relevant regulatory investment tests for transmission (RIT-T).

The battery will also be used by Infigen Energy who will have dispatch control of the battery for energy arbitrage and Frequency Control Ancillary Services (FCAS). These uses are complementary to the network services and ensure the full capacity of the battery is optimally utilised – which helps provide network services at the lowest possible cost to customers.

The battery will be designed and constructed by Tesla using Tesla Megapacks, and connected directly to TransGrid's transmission network.

For further information, please visit www.transgrid.com.au/wallgrovebattery

Source: TransGrid

Infigen enters agreement with TransGrid regarding the Wallgrove Grid Battery

23 October

Infigen (ASX: IFN) today announces that it has entered into an agreement with TransGrid relating to Infigen's dispatch of the 50MW/75MWh battery energy storage system that will be constructed at the Wallgrove substation in New South Wales (the 'Wallgrove Grid Battery').

The Wallgrove Grid Battery will be owned, constructed and maintained by TransGrid, with commercial operations expected to commence in H2-2021. Infigen's agreement with TransGrid is for a period of 10 years following the commissioning of the Wallgrove Grid Battery.

TransGrid's funding arrangements for the Wallgrove Grid Battery include funding from the Australian Renewable Energy Agency ('ARENA'), as part of ARENA's Advancing Renewables Program, and from the New South Wales Department of Planning, Industry and Environment ('DPIE'), as part of DPIE's NSW Emerging Energy Program.

Under the agreement, Infigen will have dispatch control of the Wallgrove Grid Battery and will receive all spot market revenue relating to its operations. This will include revenue from energy arbitrage and revenue from all eight Frequency Control Ancillary Services (FCAS) markets using Tesla's Autobidder platform. TransGrid will retain network services capabilities, including Fast Frequency Response (FFR) and Synthetic Inertia. Less than 5% of the Wallgrove Grid Battery's storage capacity will be reserved to deliver these network services.

Infigen will pay TransGrid a fee for use of the Wallgrove Grid Battery and will also be responsible for any costs relating to dispatch, including bought energy costs. Maintenance of the Wallgrove Grid Battery will be managed and paid for by TransGrid.

The Wallgrove Grid Battery is a complementary addition to Infigen's fast-start firming portfolio. This portfolio enables Infigen to significantly grow its renewable energy capacity by selling clean energy to customers under firm supply contracts.

Managing Director and Chief Executive Officer, Ross Rolfe, AO, said: "Our innovative agreement with TransGrid shows that Infigen continues to be at the forefront of the clean energy transition in Australia. Our arrangement allows Infigen to sell more clean energy to customers and allows TransGrid to improve the strength of the network in Australia. It is also pleasing to see Infigen continuing to grow rapidly, supported by the resources and expertise of our new controlling security holder, Iberdrola."

Independent Chairman, Len Gill, said:
"Today, Infigen is supporting investment in 50MW of dispatchable capacity. This will be an important addition to the NSW generation fleet and will contribute towards the goal of stabilising the energy supply system in that

state as coal fired generation is expected to withdraw over the course of the next decade."

"Infigen's investment in batteries and other firming assets demonstrates that private capital will respond to the changing market dynamics that accompany Australia's energy transition, including investment in dispatchable plant. However, investor confidence depends heavily upon the continued observance of the principle of competitive neutrality as the guiding principle behind a healthy market."

"Our investments are guided by our long-term view of the needs of our customers and our conviction that renewable generation supported by flexible and agile firming assets will continue to shape the future of the Australian market. We are delighted that Iberdrola, supports this long-term approach to investment in new capacity."

Source: Infigen

US$36 billion Asian Renewable Energy Hub receives double boost

23 October

- Australian Federal Government grants Major Project Status
- Western Australian Government gives Environmental Approval

The world's largest renewable energy project has taken two huge leaps forward, with the Australian Government announcing Major Project Status and the Western Australian State Government granting environmental approval for the project's first phase of 15GW hybrid wind and solar power. These momentous announcements set the stage for detailed design work and the next stage of discussions with offtakers and investors for what will be the biggest clean energy facility on the planet, exporting green hydrogen and green ammonia to global markets.

By granting Major Project Status to the Asian Renewable Energy Hub (AREH) project, located in Western Australia's Pilbara region, the Federal Government has committed to accelerate progress on further project approvals and support, including navigating recently-tightened Foreign Investment Review Board (FIRB) approvals, opening the door to international investors.

The Western Australian Government's approval gives the green light for the first 15GW of the project's hybrid wind and solar generation, which benefits from the stable, high-capacity power profile at the unique 6,500-square-kilometre desert site, promising some of the cheapest renewable energy in the world, and making it ideal for massive-scale green hydrogen and green ammonia production.

With confirmation of these two major milestones, the AREH project developers moved quickly late last week to submit a second stage project application to the WA Government, including plans to expand the project to a massive 26GW of hybrid wind and solar to power electrolysers for production of green hydrogen and green ammonia at export scale, with the potential to supply and export billions of dollars of green energy every year. This zero-emissions power will have the potential to play a significant role in reducing carbon pollution from energy generation, transport, shipping and steel production, and contribute towards the net zero emissions trajectories required to achieve the goals of the Paris Agreement.

Mr Brendan Hammond, AREH Project Director, said:
"These are huge steps towards achieving the full potential of our ground-breaking project, we now have a clear path to make the Asian Renewable Energy Hub a reality. We look forward to working closely with the Western Australian and Federal Governments to entrench Australia's status as a world leader in renewables and to deliver the world's largest new power facility – and it's green."

Mr Alex Tancock, Founder and Managing Director of Intercontinental Energy, a Hong Kong-based major partner in the AREH consortium, said:
"We are effectively creating a new industrial sector. The falling costs of wind and solar power, our carefully selected locations, and the vast scale of the facility we are building, all mean it's inevitable that we will be able to produce green fuels that are cost competitive with fossil fuels. This will speed up the essential decarbonisation of energy intensive sectors such as shipping, aviation, resource extraction and chemicals. Today marks a historic breakthrough for renewables."

Mr Alex Hewitt, Founder and Director of CWP Renewables, an Australian-based major partner in the AREH consortium, said:
"We are so pleased to have the confidence and support of the State and Federal Governments for our grand vision to establish a new green hydrogen-based industrial sector in Australia, drawing on Australia's many natural advantages. We have world-leading renewables resources, an innovative and flexible labour force, and a stable investment environment for what will be the country's largest-ever infrastructure build, generating thousands of new jobs in local manufacturing, technology development and export facilitation. This is exactly what the Government's Technology Investment Roadmap envisages."

Source: AREH