

**PROJECT TALLY (September)****Number of projects = 390****- 158 Generating****- 232 In Development****Total Capacity = 53,285.56 MW****- 17,828.63 MW Generating****- 35,456.93 MW In Development**

Project Updates

Week ending 29 September 2017

Redeveloping and expanding Tasmania's hydro system

22 September

The Australian Renewable Energy Agency (ARENA) has today announced feasibility studies to expand two hydro-electric power stations and explore the potential to develop significant pumped hydro energy storage (PHES) in Tasmania currently underway.

On behalf of the Australian Government, ARENA has committed up to \$2.5 million, to be matched by Hydro Tasmania, towards Hydro Tasmania's Battery of the Nation feasibility studies.

Two studies will assess the feasibility of expanding and redeveloping two existing hydro-electric power stations and identify 15 high potential PHES sites across Tasmania. A third study focusing on expanding Tasmania's role in supporting the National Electricity Market, through increased pumped hydro energy storage and wind power, is being scoped.

ARENA Chief Executive Officer Ivor Frischknecht said these studies would examine how pumped hydro could play an expanded role in Australia's energy mix, and help accelerate the nation's transition to renewable energy. ARENA is already supporting detailed feasibility studies for Snowy Hydro 2.0, and pumped hydro projects in Spencer Gulf and Kidston.

"These feasibility studies are the first step towards significantly upgrading or replacing

some of Tasmania's existing power stations and introducing pumped hydro energy storage."

"With these projects, we could more than double Tasmania's hydro capacity and power an additional 500,000 households. Tasmania could play a crucial role in helping to provide secure, reliable – and renewable – electricity for the National Energy Market," he said.

The CEO of Hydro Tasmania, Steve Davy, said Tasmania is uniquely placed to help lead Australia through its challenging energy transition.

"At the moment, about 80 per cent of Australia's electricity comes from coal-fired plants that will eventually close. Tasmania currently provides about five per cent of Australia's electricity.

"By boosting our hydropower system, further developing our world-class wind power, and increasing interconnection, we could grow our contribution significantly," he said.

"As Australia's largest generator of renewable energy, Hydro has the skills and experience to drive an energy future that's clean, reliable and affordable.

Expanding pumped hydro potential in Tasmania

This two-stage concept study is exploring the potential for pumped hydro energy storage across Tasmania, which could increase generation capacity by 2.5 gigawatts.

This initial stage – jointly funded with \$300,000 from ARENA – has identified high potential pumped hydro sites across Tasmania. Approximately 30 sites are being considered based on technical feasibility and topography, environmental sensitivity, land use constraints, road access and access to grid, proximity to existing renewable energy assets, construction risks and capital costs.

The next stage will involve a full pre-feasibility assessment of 10-15 shortlisted pumped hydro sites across Tasmania.

Tarraleah and Gordon Power Stations

With the support of ARENA, Hydro Tasmania is conducting pre-feasibility studies into the redevelopment of the Tarraleah Power Scheme and the augmentation of the Gordon Power Station.

The iconic Tarraleah Power Station in the Derwent Valley is more than 80 years old.

The Tarraleah redevelopment would involve building a new power station, which would cost up to \$650 million and increase the energy output by up to 200 gigawatt hours a year.

The augmentation of the 432 MW Gordon Power Station would involve building a new turbine at Tasmania's largest power station. To manage environmental water flows, one of the largest turbines is currently being run at very low efficiency. This augmentation would allow more efficient generation from existing environmental water flows to the Gordon River.

The initial stages of these studies, jointly funded by ARENA and Hydro Tasmania at a cost of \$1 million, will be completed by the end of the year. Based on the outcomes of the studies, construction on augmentation of the Gordon Power Station could commence in 2018.

Source: ARENA

NEW PROJECT - Lakeland Wind Farm

The proposed Lakeland Wind Farm project will be developed by Lakeland Wind Farm Pty Ltd, a subsidiary of Windlab Limited. The project proposes the construction and operation of 35 wind turbines and associated infrastructure at a site near the town of Lakeland in far north Queensland.

The proposed project will involve a number of components, including:

- 35 wind turbines (with blade swept area no less than 30m and no greater than 240m above ground level);
- Hardstand associated with turbines (each ~70 x 100 m in dimension; 0.7 ha)
- Overhead powerlines (approx. 11 km) connecting to the sub-station located south of Lakeland;
- Substation;
- Access roads (20 km) and carpark;
- Site office;
- Water storage facility;
- Underground reticulation (10 km);
- Monitoring masts (1 permanent; 3 temporary);
- Concrete batching plant (temporary); and
- Construction laydown areas (2 temporary).

The proposed wind turbine alignment will comprise of two adjacent lines approximately 1.5 – 2 km apart running approximately 4 to 5 km in length. The alignment to the west will consist of 17 wind turbines along a ridgeline of mostly rhythmically interbedded fine to medium grain arenite and mudstone, the alignment to the east will consist of 18 wind turbines along a lower ridgeline of mostly basalt. Powerlines will traverse south-east through properties and along Peninsular Developmental Road Reserve to connect the wind turbines to Ergon's existing Lakeland Substation.

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Adani receives approval for solar plant at Whyalla

27 September

Diversified infrastructure company, Adani, has received planning consent for its \$200 million solar energy farm just outside Whyalla.

The plant will generate 100MW, with potential capacity of up to 140MW, making it one of the larger solar farms in South Australia. Construction is planned to commence in 2018 with operation potentially from early 2019, subject to the outcome of ongoing commercial discussions.

Adani, the largest solar energy generator in India, is planning a number of solar projects in Australia with a total capacity of 1,500MW within the next five years.

Chief Executive Officer of Adani Australia Renewable Energy, Jennifer Purdie, said the workforce on the Whyalla solar project would peak at 150 employees during construction, with up to five full time operation staff.

“Opportunities exist for South Australia based electricians, technicians, engineers, and project managers,” Dr Purdie said. “In addition to those jobs for locals, the indirect employment benefits will flow from Adani’s policy to buy from local suppliers first.”

Dr Purdie said it was proposed that the solar farm would inject its power into the 132kv network between the Whyalla Central and Cultana substations.

Adani had undertaken stakeholder engagement to understand and work with expectations regarding the project.

“This was a very positive process for us and, I believe, all stakeholders,” Dr Purdie said.

“The Whyalla Solar Farm provides an opportunity to diversify the local economy, as well as provide the potential for community members and industry to gain new skills in a growth industry. In addition, the project will provide the region with an environmentally

sustainable power plant that will help to reinforce the local supply.”

Dr Purdie said the support provided by Investment Attraction South Australia throughout this process had helped Adani navigate through government approvals more quickly.

Whyalla Mayor Lyn Breuer said she was “very pleased at prospect of Adani coming here”.

“This would build on other potential projects planned for here,” Mayor Breuer said.

“We would welcome Adani, the jobs it will create and the opportunity to strengthen our economy.”

South Australian Member for Giles Eddie Hughes thanked Adani for their planned investment and said the project aligned with the objectives of the State Government’s Energy Plan in making the State’s energy grid more secure.

“With our abundant renewable energy resource and commitment to a low carbon economy, South Australia has positioned itself as a world-leader in renewable energy technology,” Mr Hughes said.

“Adani is the latest in a long line of high-profile companies to invest in South Australia’s renewables sector, and importantly they are creating new jobs for future generations of South Australians.

“South Australia’s Upper Spencer Gulf in particular is quickly becoming a renewable energy hub with SolarReserve building a ground-breaking solar thermal project at Port Augusta.

“Adani’s expansion into this State also complements our South Australia – India Engagement Strategy, which aims to grow strategic partnerships and enhance long-term economic ties with India.”

The project will also help Adani realise its ambition to become the world's largest renewable energy generator with more than 10,000MW globally by 2022.

Federal Member for Grey Rowan Ramsey welcomed the commitment from Adani. "It's interesting," Mr Ramsey said. "Many have been attacking Adani over its coal investment in the Galilee Basin, but this announcement shows they are far from single dimensional.

"In fact they are an example of the Federal Government's principles which are an 'all of the above' attitude to supplying cheap, reliable energy while making sure we reach our international commitments on CO2 reduction.

"While I welcome the extra generation capacity I have raised the all-important issue of energy storage with Adani, because the lack of dispatchability is the biggest issue facing the South Australian electricity grid at the moment.

"My preference is that storage should be part of every new renewable generating platform, whether it be alongside the generator or further away. There are a range of options and certainly some real opportunities surrounding pumped hydro facilities in the region."

Source: Adani Australia

Link to AltEnergy database: [Whyalla Solar Farm](#)

Federal approvals sought for Bulli Creek Solar Farm

Bulli Creek Solar Farm Pty Ltd submitted its plans for a large-scale, up to 2000 MW solar farm over multiple stages within 13,340 acres (5,398 ha) of freehold land at Bulli Creek, 34km west of the township of Millmerran in southern Queensland.

The proposed works will be constructed in stages across three adjoining properties (across four titles) that are currently, and have been historically, cleared and used for grazing cattle and growing fodder crops. The solar farm will be built within this cleared land, with only individual or small stands of non-threatened shade trees for cattle being removed within this footprint.

The proposed site is optimal for a large-scale solar farm due to its proximity to the major 330kV Bulli Creek substation on the arterial power interconnector between NSW and Queensland. To connect the solar farm to Queensland's transmission network, the project requires an easement along an existing 330kV transmission line owned and operated by Powerlink. The widening of this existing easement corridor is approximately 4.5 km in length to the northern most corner of the participating freehold, then a further 7km to centrally located proposed substation within the freehold.

The development will comprise a ground-mounted solar farm, deployed in stages across the properties. The solar arrays will be erected on a metal-framed supporting structure, likely to be pile driven, with the individual solar panels framed in a tempered glass panel.

Bulli Creek Solar Farm Pty Ltd obtained planning approval for the project from Toowoomba Regional Council In February 2015.

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Link to AltEnergy database: [Bulli Creek Solar Farm](#)

NEW PROJECT – Mareeba Solar Farm

Plans for a major solar energy farm southwest of Mareeba have been given the green light by Mareeba Shire Council.

Council this week approved an application from Cleangen Projects Pty Ltd to construct a 60-megawatt solar farm on Lockwood Road, Mareeba.

It is expected that energy collected from the solar farm will be fed back into the grid network via the Ergon Energy Turkinje Substation, situated 2 kilometres west of the site.

Mayor Tom Gilmore said Council welcomes the proposed development. “Mareeba prides itself on having 300 sunny days a year so we ought to take advantage of that. Renewable energy is becoming more in demand and we are certainly excited about this potential investment,” Cr Gilmore said.

Infrastructure associated with the proposed solar farm will include 196,000 solar photovoltaic (PV) panels, covering an area of approximately 110 hectares.

Source: Mareeba Shire Council

Mareeba secures planning permit

Mareeba Shire Council has approved the CleanGen Projects Pty Ltd planning application for the 60MW Mareeba Solar Farm southwest of Mareeba. The proposal will have numerous benefits for the community and local economy including job creation (200 construction jobs and up to 10 full-time operational roles) and increasing revenue in ancillary services such as tourism and hospitality.

The solar farm is expected to start construction in 2018. It will produce over 147GWh of solar power which is equivalent to offsetting 121,171 carbon emissions from the

atmosphere or powering at least 18,723 homes or removing 27,984 cars off the road.

Source: Cleangen

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Coppabella Wind Farm local business participation program launched

27 September

Goldwind Australia has launched the Local Business Participation Program for Coppabella Wind Farm. The Program will be a key initiative to identify capability and capacity in the local community and maximise opportunities for local subcontractors and suppliers to participate in the project.

It is structured around three stages:

1. Under the first stage of the Program, Coppabella Wind Farm is seeking Expressions of Interest for over 30 different work packages ranging from fencing to civil construction of on-site roads and local accommodation providers. The project has been listed on Industry Capability Network (ICN) Gateway and companies with an ABN are encouraged to register their interest via the ICN Gateway website.
2. Stage Two will be an Industry Briefing to be held in the local area following the appointment of the major subcontractors - the Engineering, Procurement and Construction (EPC) and Balance of Plant (BoP) contractors. The Industry Briefing will provide local businesses with additional information about the available work packages and the process of bidding for subcontracting or supply opportunities.
3. Stage Three, is the engagement stage where the main contractors for the project, will engage subcontractors and suppliers.

Stage three spans the phases of construction and the transition into the operations phase.

Tom Nielsen, Development Manager for the Coppabella Wind Farm said the project was pleased to launch the first stage of the Program.

‘We’ve already received a lot of interest regarding potential subcontracting and supply opportunities in relation to the project and we are committed to local sourcing where feasible. A dedicated project page on the ICN Gateway has now been established, specifying the available work packages. I encourage local businesses with an ABN to submit Expressions of Interest for relevant work packages listed on the project page.’

The ICN Gateway is an independent business network providing an online tool to connect subcontractors and suppliers with projects. In stage three of the Program, a database will be provided to the main contractor and major subcontractors of all businesses that submitted an Expression of Interest. Planning for construction of the Coppabella Wind Farm project has commenced. The project is expected to employ approximately 150-200 staff during construction and approximately 10-15 permanent staff when fully operational.

Source: Goldwind Australia

Link to AltEnergy database: [Coppabella Wind Farm](#)

Excerpt from AGL Energy’s AGM presentation

We believe the bulk of the 8 terawatt hours of energy needed to match Liddell’s output can come from new renewables projects, as we believe this is the most cost-effective option. That would include our Coopers Gap and Silvertown projects already under construction, other projects from within our pipeline, and other companies’ projects as well.

Lilyvale Solar Farm to bring jobs and renewable energy to regional Queensland

28 September

Another 100 megawatt large-scale Queensland solar project has reached financial close and will soon begin construction near Emerald, creating 200 construction jobs for the region.

Energy Minister Mark Bailey said Fotowatio Renewable Ventures’ Lilyvale Solar Farm is one of many renewable energy projects which will soon help power Queensland.

“This important milestone means that FRV now has the much-needed credit approval to secure funding and proceed with construction of its Lilyvale solar farm, located 50km north-east of Emerald in the Queensland Central Highlands region,” Mr Bailey said.

“The financial close for Lilyvale Solar Farm follows FRV’s 100 megawatt Clare Solar Farm in North Queensland, and follows the company securing a power purchase agreement for the Lilyvale project with Ergon Energy in January this year.

“I congratulate FRV for reaching yet another Queensland milestone, this is yet another project which will bring Queensland closer to reaching the Government’s 50 per cent renewable energy target by 2030.

“Construction of the Lilyvale Solar Farm is set to begin shortly, with the farm expected to be grid-connected and fully operational by late 2018. Once operational, the solar farm will generate enough electricity to power around 45,000 Queensland homes.

“It is one of 20 renewable projects totalling 1781 megawatts committed to or under construction in Queensland.

“The Palaszczuk Government is proud to have kick-started the renewable energy boom in Queensland and this is just another page in that exciting story.”

The pipeline of Queensland renewable projects includes:

Clare Solar Farm (100 MW), Collinsville Power Station (42 MW), Hamilton Solar Farm (57.5 MW), Hughenden Solar Farm (14.2 MW), Kidston solar project (50 MW), Lakeland Solar Farm (10.8 MW), Mount Emerald Wind Farm (180 MW), Normanton Solar Farm (5MW), Ross River Solar Farm (135 MW), Sun Metals Solar Farm (125 MW), Tablelands Sugar Mill stage 2 (24 MW), Whitsunday Solar Farm (57.5 MW), Daydream Solar Farm (150MW), Hayman Solar Farm (50MW), Lilyvale Solar Farm (100MW), Coopers Gap Wind Farm (460MW), Darling Downs Solar Farm (110MW), Longreach Solar Farm (15MW), Oakey Solar Farm (25MW), and Emerald Solar Farm (70MW).

Mr Bailey said FRVs financial close was more proof that the Queensland Government had created the right renewable investment climate.

“Under the recently launched Powering Queensland Plan the Government re-affirmed its commitment to a 50 percent renewable target by 2030,” Mr Bailey said.

“I thank FRVs continued commitment to our state, and I congratulate it for reaching yet another major milestone.

“We’re turning the sunshine state into the solar state!”

Powerlink will undertake works to connect what will be Central Queensland’s largest solar farm to its transmission network.

Powerlink Chief Executive Merryn York said the transmission network played an important role in facilitating the growth of renewable energy in Queensland, helping to deliver a lower carbon future.

“Powerlink currently has 11 new large-scale generators committed to connect to the Queensland transmission network,

representing more than 1,600 MW of solar and wind generation,” Ms York said.

“We look forward to the opportunity to work on FRV’s second solar farm connection in Queensland.

“Powerlink will construct a new substation and build a short transmission line connection as part of the connection works.”

Source: Queensland Government

Link to AltEnergy database: [Lilyvale Solar Farm](#)

Scaling up concentrated solar PV technology in Victoria

28 September

The Australian Renewable Energy Agency (ARENA) has announced \$4.8 million in support for Victorian company RayGen to continue commercialisation of RayGen’s solar power system PV Ultra, including construction of a 0.5MW concentrated solar PV demonstration project of the Australian developed technology.

The site near Newbridge near Bendigo in Victoria will showcase the grid-connected concentrated solar PV system which consists of two linked 250kW fields that will be used to power a local mushroom farm.

Concentrated solar PV involves converting concentrated light directly into electricity. RayGen’s solar collector consists of a field of wireless mirrors that track the sun, delivering a concentrated light beam to the array of high efficiency solar PV modules in a tower-mounted receiver.

RayGen’s technology requires just 4 square metres of photovoltaic material and 2500 meters of mirrors per megawatt, compared to 5000 square metres of photovoltaic material needed for traditional silicon PV per megawatt.

ARENA's funding will go towards the 0.5 MW expansion of the Newbridge pilot site. A scaleable manufacturing plant will also be upgraded to support deployment of RayGen's technology in two initial projects in China with a combined 11 MW capacity.

The Newbridge demonstration will allow RayGen to collect performance data, including efficiency, power and energy to provide 'bankable data' required to support the further take up of concentrated solar PV by suppliers, investors and customers.

Founded in 2010, RayGen has a manufacturing line in Blackburn, Melbourne and previously set the world record for solar efficiency with the UNSW in 2014. ARENA CEO Ivor Frischknecht said the demonstration was an important step for the technology in Australia.

"This is an exciting opportunity for ARENA to invest in RayGen, an Australian-based solar technology business, that is really leading the world in concentrated solar PV and making it commercially viable, Mr Frischknecht said.

"ARENA is committed to helping Australian companies create new renewable energy technology and export it to the world which RayGen is doing in China."

RayGen founder Dr John Lasich said ARENA's funding will allow RayGen plans to bring its concentrated solar PV technology, PV Ultra, to the marketplace.

"We're excited to be manufacturing concentrated solar PV in Australia and deploying this technology into the Australian and global marketplace at precisely the time where there is huge demand for large scale solar power.

"With proven high efficiency and ultra-low manufacturing cost, we see this as having huge potential, as we are on track to delivering the lowest cost solar power," said Dr Lasich. RayGen Executive Chairman David

Sutton said this support would help to create local jobs in Victoria.

"Automated manufacture of our small but ultra-powerful PV module underpins a capital light business model which sidesteps the normal constraints of high capital and overhead costs. This will create local high-tech jobs while producing a competitive product for export," he said.

Source: ARENA

Cultana seawater pumped hydro plant looks promising

28 September

A coastal pumped hydro plant proposed for South Australia's Spencer Gulf could generate 225 megawatts of electricity with eight hours of storage using seawater, according to the findings of an initial feasibility study released by the Australian Renewable Energy Agency.

On behalf of the Australian Government, ARENA in February announced \$453,000 in funding to Energy Australia to conduct the initial feasibility study into its proposed seawater pumped hydro energy storage (PHES) facility in Cultana. The study, totalling \$1.1 million was led by a consortium of Energy Australia, Arup and the Melbourne Energy Institute. The knowledge sharing report was produced by Energy Australia for ARENA.

The study found that the project would be technically viable with an optimal capacity of 225MW with storage capacity of 1,770MWh with eight hours of storage – the equivalent of more than 126,000 home batteries. The study found the facility would cost \$477 million, and would be economically viable based on several revenue streams. Subject to further engineering design, economical modelling and planning approvals, the project could be operational by 2023.

If it were built, the Cultana facility would be the largest seawater pumped hydro facility in

the world, and the first in Australia. A 30 MW plant was built in Okinawa in Japan in 1999, and operated for 17 years.

PHES involves pumping water uphill to a storage reservoir and releasing it through a turbine to provide additional energy into the electricity grid when it is needed.

ARENA CEO Ivor Frischknecht said pumped hydro had an important role to play in ensuring flexible capacity in Australia's energy system. Along with Cultana, ARENA is supporting Snowy Hydro 2.0 and PHES feasibility studies in Tasmania and Kidston.

"Pumped hydro is the most established and common form of grid-scale storage which can capture and harness electricity produced by solar and wind so it is available when needed," he said.

"We are exploring the potential for pumped hydro across Australia, and the findings of this study are promising for a seawater plant at Cultana," he said.

Source: ARENA

Link to AltEnergy project database: [Spencer Gulf Pumped Hydro](#)

Foresight Solar Fund Limited enters binding contract for the acquisition of 110MW Bannerton Solar Farm in Victoria, Australia

28 September

- First overseas acquisition for Foresight Solar Fund Limited
- Increases Foresight Group's global solar portfolio under management to over 1GW and portfolio of Australian solar assets to 135MW
- Foresight Group's largest solar project under management

Foresight Group ("Foresight"), a leading independent infrastructure and private equity manager, is pleased to announce the acquisition of the 110MW (DC) Bannerton Solar Project ("the Project") near Robinvale, Victoria on behalf of Foresight Solar Fund Limited ("FSFL"), KDB Infrastructure Investments Asset Management Co. Ltd ("KIAMCO") and Hanwha Energy Corporation ("Hanwha"). FSFL is taking a 48.5% stake in the project.

The acquisition heralds the development of FSFL's international growth strategy as the first overseas acquisition and sees FSFL's portfolio expand by 11% in capacity to 20 assets of aggregate net 528MW demonstrating FSFL's ability to grow the fund in attractive new geographies.

The Project is expected to connect to the grid in July 2018 and will receive regulatory support in the form of Large-Scale Generation Certificates ("LGCs") under the Renewable Energy Target regulatory framework. The Project benefits from a 10 year contract with the Victorian Government for the sale of a proportion of the LGCs produced and a 17 year fixed-price PPA with Alinta Energy, an Australian retailer, for a proportion of the electricity generated. In addition, the Project will benefit from an Australian Dollar denominated debt facility provided by the CEFC during the construction and operational phase.

The acquisition is subject to certain conditions being met. FSFL, in line with its low risk strategy, will not take development risk on the Project.

The transaction is Foresight's second solar acquisition in Australia following the acquisition of Barcaldine Solar Farm in early 2017, leveraging the extensive experience and track record of Foresight's 70 strong global Infrastructure team including the local expertise of the Australian team based in Sydney.

Ricardo Piñeiro, Partner, Foresight Group said: “We are pleased to have completed FSFL’s first overseas acquisition in Australia alongside the prestigious financial institutions and investors KDB KIAMCO and Hanwha, growing the fund’s portfolio to 20 assets with a capacity of 528MW. The transaction launches FSFL’s international growth strategy into the fast developing Australian solar market which offers investors attractive risk adjusted returns. We’re particularly proud that Bannerton was successful in the tender to provide clean power to the Melbourne Tram network, supporting Victoria State’s target of 40% renewable energy by 2025.”

Jay Shin of KIAMCO added: “We are delighted to have collaborated once again with

Foresight on the acquisition of the Bannerton project. This is the second Australian solar asset transaction where KIAMCO has partnered with Foresight and Hanwha, following the acquisition of the 25MW Barcaldine project in Queensland in February of this year. It has been a pleasure to work alongside the experienced team at Foresight and together we expect to explore further renewable opportunities in Australia and globally as we grow our portfolio of overseas infrastructure assets.”

Source: Foresight Solar Fund

Link to AltEnergy project database: [Bannerton Solar Farm](#)