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Lyon launches world-first utility scale battery storage market services tender

New \$660 million solar storage project in north-west Victoria

The Lyon Group has released a groundbreaking market-driven approach to determining the services that will be provided by a portfolio of its large-scale battery storage projects.

Lyon is seeking expressions of interest for contracts to cover up to 640MWh of storage capacity across Victoria, South Australia and Queensland.

Lyon's Battery Storage Market Services Tender, open from today, includes a new \$660 million combined large-scale solar and battery storage project at Nowingi in north-west Victoria. Construction at Nowingi will commence in the coming months and is expected to employ about 250 workers.

Lyon Group Partner David Green said his company's tender was an opportunity for electricity retailers and generators, large electricity users, and other sector participants.

"Lyon is able to offer multiple services from the same battery system, and flexibility in contract size to accommodate various users," Mr Green said. "Lyon will enter into commercial contracts for real services provided by physical assets. This is not a theoretical exercise."

Services that large-scale battery storage systems can provide include Energy Price Arbitrage, Load Shifting, Renewable Energy Ramp Control, Frequency Control and Ancillary Services, Caps, Network Control and System Restart Ancillary Services, Marginal Loss Factor services and Firming Capacity.

The outcome of the tender will influence the final engineering design of the projects' battery storage systems. This innovative approach is believed to be a world first.

The solar storage projects within the scope of the tender are Nowingi (Victoria), and the already announced Cape York (Queensland) and Riverland (South Australia).

"These projects are working through development consultation and approvals. The land has been secured, technology and other commercial arrangements are in place, and the required network capacity analysis and consultations are well advanced. Lyon's projects are 100% equity financed."

"Projects like these are the heart of Australia's energy transition, allowing for substantially higher levels of variable, low emissions generation, while strengthening the resilience of the system."

Mr Green said the recent Finkel report into the future of Australia's electricity market shone a spotlight on large-scale battery storage and its central role in the evolving energy system.

"Lyon's Battery Storage Market Services Tender is a reflection of the new energy world the Finkel Report describes. It is real and it is happening."

"Large-scale battery storage will be integral to meeting the Energy Security Obligations recommended by Dr Finkel."

Large-scale battery storage provides a cost-effective alternative to network infrastructure upgrades, and new gas generation. It ensures the true value of large-scale renewables can be realised, and provides multiple capacity and security services to the energy market at any given moment.

"The Finkel Report highlighted the importance of fast frequency response, which is delivered by large-scale battery storage more effectively than any other alternative."

"As the cost of large-scale solar with storage has fallen, the interest of international investors has risen considerably."

Mr Green said Nowingi Solar Storage would have 2.3 million solar panels and the battery storage system would deliver power on demand.

Nowingi Solar Storage's 250MW solar generation will charge an 80MW / 160 MWh battery storage system, making it the world's second biggest such project, after Lyon's Riverland Solar Storage, which was announced in March this year.

"Nowingi Solar Storage will improve the security and reliability of a stretched part the grid and put downward pressure on electricity prices."

Lyon developed and sold Australia's first large-scale solar and battery storage project, having identified that a high penetration of large-scale variable renewables would need to be supplemented by storage in order to deliver reliable, flexible power.

"Lyon identified the need for large-scale battery storage some five years ago. We've been working with governments, market bodies and utilities for an extended period."

The Lyon Group's Australian project pipeline currently comprises more than 1,700MW of large-scale solar and 1,000MW of large-scale battery storage.

Lyon is developing a number of new and innovative battery storage products that it will release to the market in the near future.

For more information about Nowingi Solar Storage or Lyon's Battery Market Services Tender, visit www.lyonbatterystorage.com.au

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PROJECTS WITHIN LYON GROUP'S BATTERY STORAGE MARKET SERVICES TENDER			
Further details at www.lyonbatterystorage.com.au			
	Nowingi	Riverland	Cape York
Project Planned construction start date	September 2017	September 2017	November 2017
Project first operations date	As early as January 2018	Q1 2018	Q1 2018
Location	Nowingi, NW Victoria	Morgan, SA Riverland	Lakeland, Far North Qld
Site	600 hectares	600 hectares	200 hectares
Total project investment	\$640-\$680 million	\$950-\$1,000 million	\$180-\$200 million
Estimated construction jobs	250	270	70
Estimated value of in-state services[#]	\$100 million	\$100 million	\$20 million
[#] Eg. site preparation, accommodation, tracker structure assembly, access roads development, electrical services, panel installation.			
Storage			
Capacity (* depending on configuration)	80MW / 160MWh*	100MW / 400 MWh*	20MW / 80MWh*
Approx. investment value	\$120-160 million	\$250-300 million	\$60-\$80 million
Number of batteries	880,000	1.1 million	220,000
Solar			
Capacity	250MWac	330MWac	55MWac
Approx. investment value	\$520 million	\$700 million	\$120 million
Number of panels	2.3 million	3.4 million	560,000

About Lyon Group

Lyon Group is a developer and principal investor in utility, commercial/industrial and residential scale solar and solar battery projects in Australia, Japan, Philippines, Thailand and India, and is soon to expand into Korea and Indonesia. Where others see problems, we see solutions.

About AES Energy Storage

AES is a leader in commercial energy storage solutions. AES manages installations from concept to operation with a market-proven solution that integrates best in class battery and power conversion technologies. AES introduced the first grid-scale advanced battery-based energy storage solution in commercial operations in 2008 and operates the largest fleet of battery-based storage assets in service today. Outside Australia, AES has a total of 436MW in operation, construction or late stage development in seven countries.

The AES Corporation is a Fortune 200 global power company. It provides energy in 17 countries and has a workforce of 18,500. It owns and manages \$39 billion in total assets.

In early 2017, AES Energy Storage delivered the world's largest battery storage system in six months.

<https://www.youtube.com/watch?v=t-9PrcPceY4>

<http://www.energy-storage.news/news/sdgc-and-aes-complete-worlds-largest-lithium-ion-battery-facility>

<https://cleantechnica.com/2017/02/27/worlds-biggest-lithium-ion-energy-storage-facility/>