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# Genex Power

## COMPANY SNAPSHOT

Reuters/Bloomberg:	GNX.AX / GNX AU
Market cap:	US\$20.6m
	A\$28.5xm
Current price:	A\$0.18
Average daily turnover:	US\$0.01m
	A\$0.01m
Current shares o/s	158.4m
Free float:	62.0%

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## Power to the North

- Genex Power (GNX) is a renewable generation and storage development company, seeking to leverage its Kidston site in north Queensland by developing a large-scale solar PV project (first stage 50MW) and pumped storage hydro project (up to 450MW).
- GNX's projects stand to benefit from strong Queensland power prices and renewable certificate prices.
- GNX is targeting first production from its solar plant in 2017 and from its pumped storage project in 2019.

### Projects progress

The bankable feasibility study (BFS) for the solar project was completed in April 2016, with final investment decision targeted for Q3 2016. Securing a power purchase agreement (PPA), sourcing debt and equity funding, obtaining ARENA funding, and locking in a construction contractor are critical items. If successful, first generation and therefore cash flow from the project is relatively quick, given the construction phase is about nine months and GNX can utilise the existing transmission line to sell into the grid.

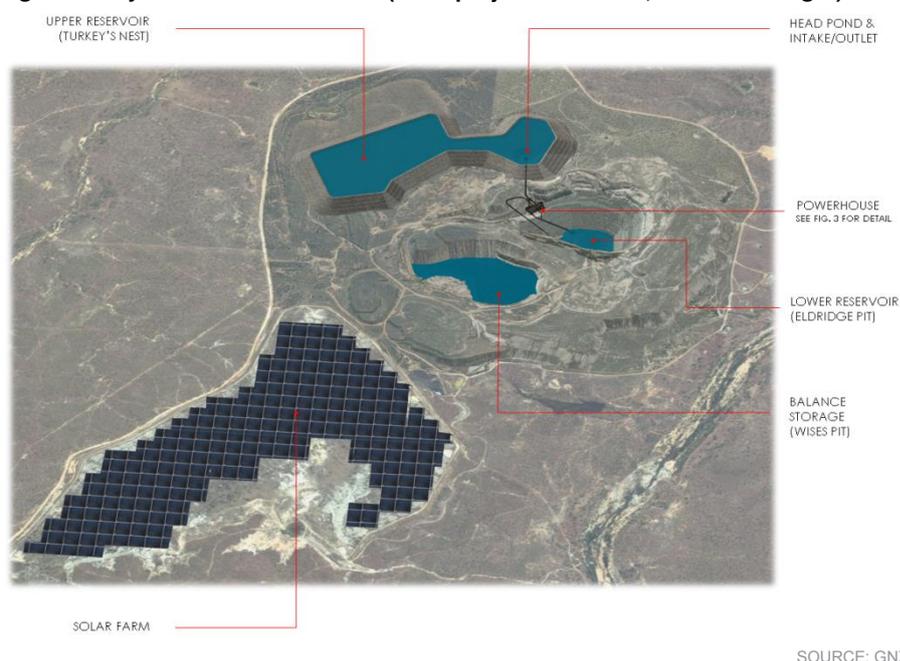
The BFS for the pumped storage project is due Q3 2016. The pumped storage project is a larger (more than three times the capital cost) and more complex project than the solar development. The project will require a new transmission line to be constructed to connect it to the grid. First generation is targeted in 2019.

### Financial profile

GNX will most likely require new equity to part-fund construction of its projects, either from a third party at the asset level and/or a capital raising from its investors. The capital raising for the solar farm will likely be relatively small compared to that required for the pumped storage project, given the differences in capital costs and the potential ARENA funding.

Unless GNX enters a power purchase agreement (PPA) for its output or some other offtake arrangement, the earnings from both projects are likely to be volatile. A PPA would increase earnings certainty but reduce potential upside (albeit this is partly offset by the greater financial leverage that can be achieved with a long-term PPA).

**Figure 1: Layout of the Kidston site (solar project on the left, PSP on the right)**



# Powering towards a final investment decision

## Company overview

Genex Power (GNX) is a power generation development company based in Australia, focused on developing large-scale renewable energy and energy storage projects at its Kidston site located 300km north-west of Townsville in north Queensland.

Figure 2: Location of the Kidston site



## Key projects

### Pumped hydro storage project

GNX's flagship project is the proposed Kidston pumped storage hydro project located in northern Queensland.

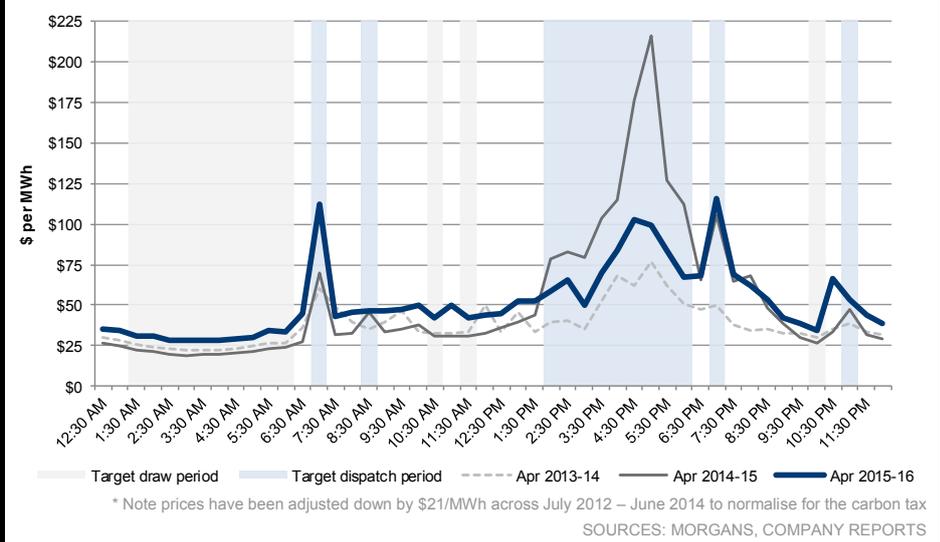
GNX believes the project can take advantage of the increased volatility in wholesale power prices caused by: (i) oversupply of baseload generation capacity, (ii) escalating peak power prices driven by increasing gas turbine fuel costs, and (iii) more renewables in the generation mix.

The general operation of the project will be to sell power to the grid during high price periods (releasing water from the upper reservoir through the generator to the lower reservoir) and buy power from the grid during low price periods (pumping water from the lower to upper reservoir). Thus, project economics are driven by the level and spread of prices between high price periods and low price periods. The greater the spread the better for the project, and vice versa.

The chart overleaf shows the average Queensland wholesale power price per half-hour trading period in a 24-hour period for each 12-month period ending 30 April 2014, 2015, and 2016. The shading shows the periods that GNX indicated in its IPO prospectus that it would draw electricity from the market to pump water from its lower reservoir to higher reservoir, and which periods it planned to dispatch power via releasing water from its upper to lower reservoir.

Over the last 12 months, pricing dynamics have weakened as prices in targeted draw periods have risen, while dispatch period pricing has generally weakened. However, the ultimate operation of the plant and the prices that GNX receives and pays will depend on its contracting strategy; it may enter a fixed price contract to buy power, and a mix of merchant sales and sale of cap contracts with respect to its revenues.

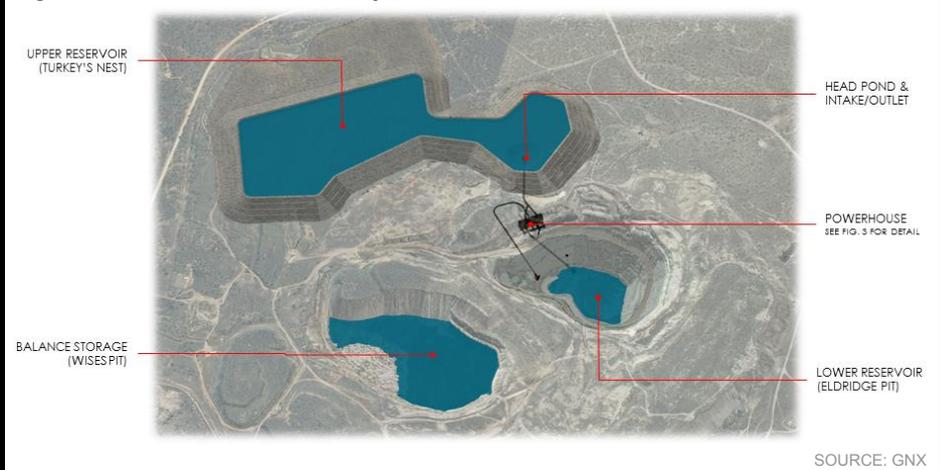
**Figure 3: 12m average of Queensland wholesale price per half-hour trading period\***



A critical element to the project’s success is the construction of a new 275kV transmission line that will connect the site to the National Electricity Market. Without this transmission line, the project has no way of monetising the power it generates. GNX says it is currently in discussions about innovative funding arrangements in respect to the power transmission line. We note that the chairman of GNX is also on the board of ASX-listed Victorian energy utility AusNet Services (ASX: AST), thus providing GNX with expertise in these discussions.

The project’s BFS is due to be completed in Q3 2016, and thus far GNX reports that no fatal flaws have been found. The focus of the BFS is currently on optimisation of the design, including generation capacity sizing. The project was originally expected to have a capacity of 330MW (three units at 110MW each), but now capacity is being considered at up to 450MW to generate for more than five hours.

**Figure 4: Revised PSP scheme layout**



The project was also originally expected to utilise the two existing pits, but the design now being considered includes building a new upper reservoir at the waste rock dump (see figure above), due to a number of engineering advantages. The existing upper pit will be utilised for excess water storage and water balancing. GNX is confident it can deliver the project at a cost of around \$1m per MW.

In order to deliver this project GNX is considering partnering with an integrated generator and retailer in the Queensland market.

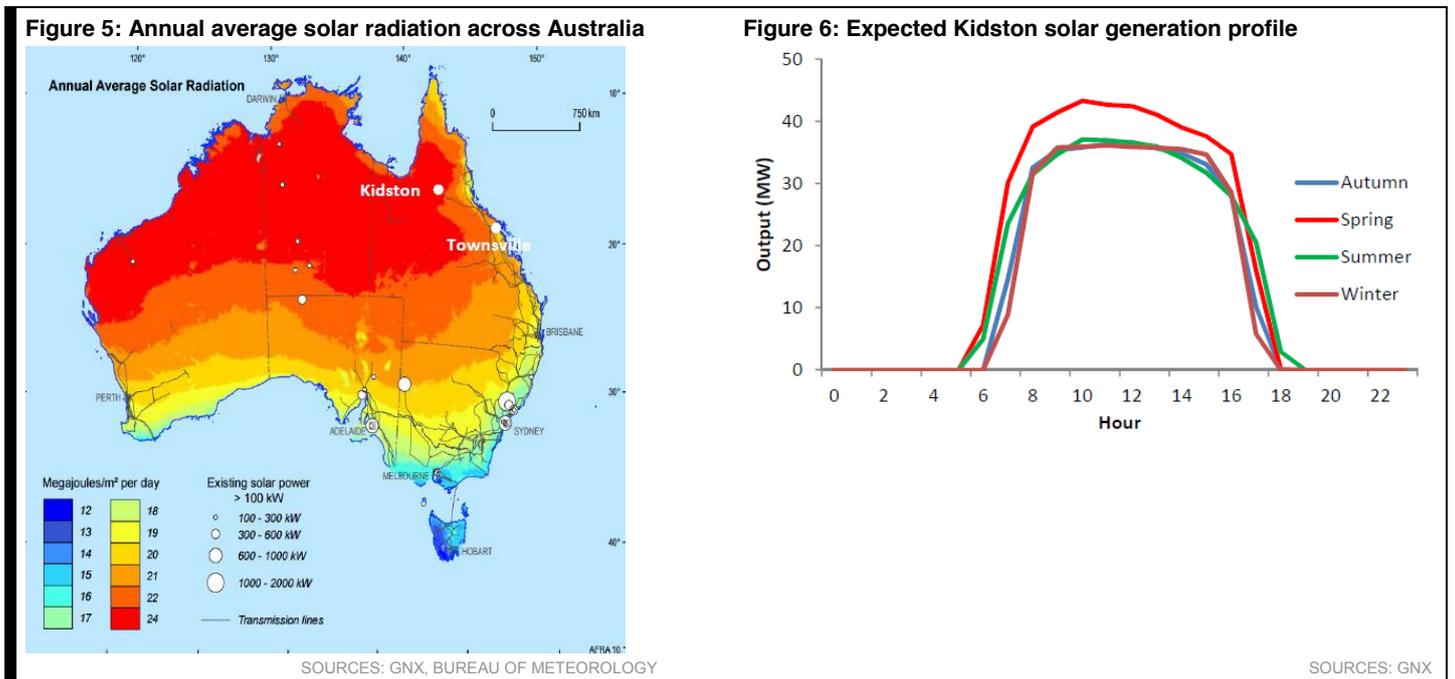
GNX says it has clear visibility of available debt, equity and other funding alternatives and financing structures. For instance, it may be able to access the Commonwealth Government’s Northern Australia Infrastructure Facility, which offers concessional debt pricing and tenor.

First generation is targeted for late 2019.

**Solar project**

GNX is developing a large-scale solar photovoltaics project at its Kidston site in north Queensland. The project will be constructed on the tailings storage facility of the former Kidston gold mine.

GNX believes the site has the highest solar resource in Australia connected to the National Electricity Market (NEM). The capacity factor of the project is expected to be at least 33% (implying power generation in excess of 130 GWh pa). The charts below show the solar radiation across Australia and the expected generation profile from the project across an average day, by season. Note that generation in summer will likely be affected by the extreme heat and rain (thus cloud cover).



The first stage of the 150MW project comprises a 50MW single axis tracking system. The first stage of the project has been sized so as to utilise the existing electricity grid connection.

GNX has shortlisted two firms for the design and construction of the project, from which it will chose one firm for the project. GNX has not disclosed the expected capital budget of the project. However, we would expect the capital cost to be below the \$2.9m per MW incurred by the 56MW Moree solar project, due to competition, price deflation in solar panels and inverters, efficiency gains, and easing of the construction market post-mining boom. Note the criteria for

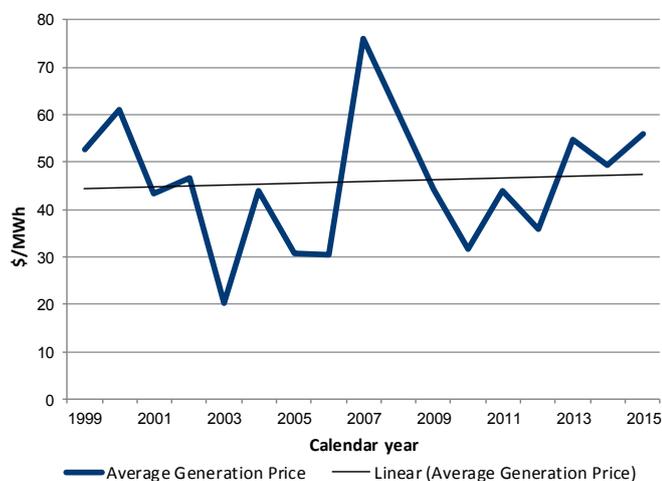
the Levelised Cost of Electricity under the ARENA Large Scale Solar PV is less than \$135/Mwh, indicating capex closer to \$2m per MW.

The project will connect to the NEM via an existing substation on-site which, in turn, is connected to the main grid via an existing 132kV transmission line, both of which are owned by Ergon Energy. A connection agreement has been executed with Ergon, which gives GNX access to the transmission line (and thus the National Electricity Market) for 25 years.

A critical path item is the securing funding from ARENA under its large-scale solar photovoltaics program of up to \$100m (alongside up to \$250m in debt funding from the CEFC to support the projects). The funding will impact power purchase agreement (PPA) and project funding options. GNX is one of 22 short-listed under this program, with detailed submissions due in June and announcement of successful bidders in September. GNX says the key ARENA criteria includes how advanced in development and how efficient and/or low capital cost a project is. GNX believes it is in a good position on both fronts.

The project will earn revenue from the sale of its power into the grid. Since it will be an accredited renewable generation facility, it will also be credited with one large-scale generation certificate (LGC) for each MWh of power generated under the Federal Government’s Renewable Energy Target. LGCs are sold to electricity retailers and financial intermediaries. Spot prices for both revenue streams have been strong recently; however, we expect that GNX will ultimately into a PPA for the sale of its products. As an example, in conjunction with the ARENA funding process, the Queensland Government is running its Solar 60 initiative, which offers a 20-year PPA to successful bidders (indicative price range is \$80-100/MWh flat nominal, based on sent-out generation)<sup>1</sup>; we expect GNX to be involved in this competitive tender process for its offtake.

Figure 7: Qld dispatch-weighted pool prices



SOURCES: MORGANS

Figure 8: Large-scale generation certificate prices



SOURCES: GREEN ENERGY MARKETS

GNX has appointed French bank Societe Generale as its debt funding advisor for the project. Banks are cautious of merchant or uncontracted power projects. Thus, the amount of debt that the project will be offered, the cost of that debt, and its tenor will ultimately be dependent on the size and length of the PPA contract that GNX secures and the credit quality of the PPA counterparty. Thus the PPA contract is critical to the project economics.

The final investment decision is targeted for Q3 2016.

At this stage it is difficult to value the project, given the number of uncertain variables. For instance, if GNX enters into a PPA for the sale of its products, this will influence the structure of its debt funding. The PPA may be dependent

<sup>1</sup> See [https://www.dews.qld.gov.au/data/assets/pdf\\_file/0020/307154/solar60-indicative-pricing-range.pdf](https://www.dews.qld.gov.au/data/assets/pdf_file/0020/307154/solar60-indicative-pricing-range.pdf)

on the ARENA funding (ie. Solar 60 PPA initiative). Capital costs are likely to be materially different to previous solar farm developments. Valuing the project on a 100% owned basis can be undertaken with greater accuracy once the PPA, debt, ARENA funding, and construction contract are secured. How much of that value will benefit GNX shareholders will depend on negotiations with potential equity investors at the asset level and/or how dilutionary the capital raising that GNX may need to undertake to fund the equity requirement.

## Financial position

As at 31 March 2016, GNX had \$6.2m of cash. Of this amount, \$4m is committed to a bank guarantee to support an environmental bond, thus \$2.2m of unrestricted cash.

In the March quarter 2016 net operating cashflow was -\$2.7m, including \$2.5m spend for research and development and a \$670k R&D tax refund.

GNX is the recipient of up to \$4m of funding from ARENA (federal government) for studies into the pumped hydro project. The funding is provided by ARENA via unsecured notes that are zero coupon, convertible at 20 cps or redeemable by GNX at face value for a period of five years. Redemption is mandatory upon financial close of the PSP. If not redeemed or converted within five years the notes may lapse and not be repayable by GNX. During the March quarter, GNX received \$1.7m from ARENA in three instalments. Fourth and fifth instalments totalling ~\$400k have been received in May 2016.

As at 31 March 2016, GNX had total liquidity sources of \$4.5m (unrestricted cash and unutilised capacity under the ARENA facility).

## Key risks

- Securing power purchase agreements (PPA) with creditworthy counterparties for a sufficient term and adequate price to deliver an appealing economic return.
- Uncontracted or merchant output is exposed to spot Queensland wholesale power and large-scale generation certificate prices.
- Plant capacity factor, which is partly dependent on the solar resource and plant and transmission availability.
- Annual changes by the market operator of transmission and distribution loss factors.
- Operating cost overruns.
- Construction cost overruns and/or delays.
- Sourcing competitive term debt, which is highly dependent on the quality of the PPA.
- Dilution from capital raisings to fund working capital and/or capital investments.
- Government policy supporting renewable projects, including ARENA and the Renewable Energy Target.

## Key milestones and targets

The table below summarises the key milestones and targets for the company.

**Figure 9: Summary of key milestones and timing targets**

Date	Description
<b>Milestones Achieved</b>	
04-Jun-14	Acquisition of Kidston Gold Mines from Barrick Gold (including Kidston project site). Genex was required to assume environmental management of the site as well as replace an existing environmental assurance bond with the Queensland Government (totals \$3.8m).
Dec-14	Completion of the Kidston pumped storage hydro project pre-feasibility study.
08-Jul-15	Listing on ASX.
10-Aug-15	Appointed Hyro Tasmania-subsi-dary Entura to deliver Bankable Feasibility Study (BFS) for its Kidston pumped storage hydro project in north Qld. Target completion of the BFS is 30 June 2016. In September 2015, the target BFS completion timing was revised to Q3 2016.
08-Oct-15	Feasibility study commenced for 150MW Kidston Solar Project.
18-Dec-15	Secured \$4m in funding from ARENA, pay able in instalments as conditions are met with respect to the pumped hydro storage project.
14-Jan-16	Successful in Expressions of Interest for ARENA's large-scale solar funding award program.
18-Jan-16	Received freehold ownership of Kidston Project Site.
02-Feb-16	Received development approval for Kidston Solar PV Project.
03-Mar-16	Kidston pumped storage project declared a 'Prescribed Project' by the Queensland Government, which provides benefits such as intervention throughout approval process and assistance in unexpected delays.
Apr-16	Completion of Kidston Solar PV BFS.
05-May-16	Received environmental approval for the Kidston Solar Project.
10-May-16	Executed a Connection Agreement with Ergon Energy for the Kidston Solar Project.
16-May-16	Entered into a debt funding mandate with Societe Generale in respect of the solar project. The bank is to act as sole lead arranger and financial advisor with respect to the project financing.
<b>Upcoming Milestones</b>	
<b>Solar PV project</b>	
15-Jun-16	Submission of full project application to ARENA.
3Q 2016	Securing a power purchase agreement, senior debt funding, and ARENA funding. Thus, leading to financial close in the period and commencement of construction.
4Q 2017	Target first generation.
<b>Pumped hydro storage project</b>	
3Q 2016	Completion of BFS.
4Q 2019	Target first generation.

SOURCES: MORGANS, COMPANY REPORTS

## Shareholders

GNX has 158.4m shares on issue, of which 60.2m are subject to escrow until 8 July 2017.

Board and management hold 36% of shares on issue, Zhefu Hydropower 20.0%, institutional investors 9%, and the remaining 35% by other investors.

GNX has the following options on issue:

- 8.5m exercisable at 25c each expiring 7 February 2019 (8.0m are subject to escrow until 8 July 2017).
- 17.3m exercisable at 20c each expiring 25 February 2018.
- 5.0m options exercisable at 25c each expiring 6 August 2020 (not subject to escrow but with various vesting milestones).

## Board and senior management

The board and management have a complementary skill set and experience combining engineering, project finance, electricity generation and management of Australia's second largest pumped storage hydro power station – Wivenhoe Dam.

**Figure 10: Summary of Directors and Executives**

Name	Position	Background	Shares (k)	Options (k)
Dr Ralph Craven	Non-Executive Chairman	Former CEO and Chairman of Ergon Energy and CEO of Transpower NZ. Chairman of Stanwell Corporation. Non-executive director at Senex Energy and AusNet Services.	250	3,000
Alan du Mee	Non-Executive Independent Director	Former CEO of Tarong Energy (now part of Stanwell Corporation)	200	2,000
Michael Addison	Managing Director	Founder of EndoCoal and Carabella Resources. Water engineer with extensive finance experience.	27,500	1,000
Simon Kidston	Executive Director	Founder of EndoCoal and Carabella Resources. Former banker with HSBC, Macquarie, and Helmsec.	20,720	1,000
Yongqing Yu	Non Executive Director	Vice Chairman of Zhefu		
Ben Guo	Finance Director	10 yrs experience with PWC, E&Y, Helmsec, and Carabella Resources.	2,040	1,000
Arran McGhie	COO General Manager	20 years experience in senior project management roles for underground excavation and civil construction projects		5,000
Justin Clyne	Company Secretary / Legal Counsel	Experienced lawyer and company secretary		

SOURCES: MORGANS, COMPANY REPORTS

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