

# Kidston Renewable Energy Hub

## Kidston Renewable Energy Hub

- 50MW Kidston Solar Project
- 250MW Kidston Pumped Storage Hydro Project – 2,000MWh of peaking power generation
- 270MW Kidston Solar Project
- Located in Far North Queensland, on the site of the disused Kidston Gold Mine

### Key Project Parameters

#### STAGE ONE

##### 50MW Kidston Solar Project

Generation capacity (per annum)	145GWh
Capacity factor	>33%
Capital cost	\$126 million
Project status	Under construction
First generation date	Q4 2017

#### STAGE TWO

##### Kidston Pumped Storage Project

Nameplate capacity	250MW
Continuous generation capacity	8 hours
Generation capacity (per cycle)	2,000 MWh
Indicative capital cost	\$330 million
Project status	Securing offtake & funding
First generation date	Q1 2021

##### 270MW Kidston Solar Project

Generation capacity (per annum)	725GWh
Capacity factor	>33%
Indicative capital cost	\$420 million
Project status	Securing offtake & funding
First generation date	Q1 2020

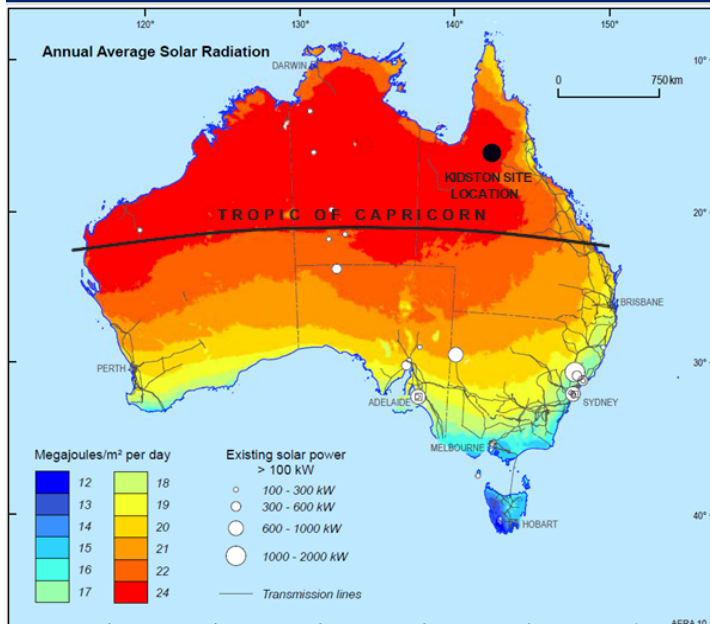
### Kidston Site Access



### Existing Site Assets – Time and Capex Savings

- ✓ Existing reservoirs with water
- ✓ Existing water dam, pipeline and water access rights
- ✓ Existing road access, accommodation and airstrip
- ✓ Existing building materials on site
- ✓ Existing substation and transmission line for construction use
- ✓ Freehold land, extinguished pastoral lease and native title
- ✓ Site environmental approval in place - subject to modifications
- ✓ Water license in place

### Kidston Site Location



### Key Project Drivers

- Generation shortage in NQ – NQ is a net importer from CQ
- Increasing LNG prices driving higher gas turbine peaking prices
- Need for large-scale storage to meet growth in renewable energy
- Forecast growth in Queensland total energy demand
- Potential to create an “energy corridor” in Far North Queensland
- Need for reliable, affordable power

### Board and Management

#### Dr Ralph Craven - Chairman, BEng, FIEAust, FIPENZ, FAICD

- Chairman of Stanwell Corporation, Director of AusNet, Windlab
- Former CEO and former Chairman of Ergon Energy
- Former CEO of Transpower New Zealand

#### Michael Addison - Managing Director, BSc (Eng), MPhil (Oxon), MAICD, FAIM

- Founder of EndoCoal and Carabella Resources
- Water engineer with extensive finance experience

#### Alan du Mee - Director, MSc, MBA, FAIM, FAICD, MIIE

- Former CEO of Tarong Energy
- Former Chairman of the Australian National Generators Forum

#### Simon Kidston - Executive Director, BCom, Graduate Diploma in Applied Finance and Investment, MAICD

- Founder of EndoCoal and Carabella
- Former banker with HSBC, Macquarie, Helmsec

#### Ben Guo - Finance Director, BCom, Finance & Accounting (Hons 1st)

- 10 years experience with PWC, E&Y and Helmsec.

#### Arran McGhie - COO BEng GradDip (Applied Fins Investments)

- 20 years feasibility and construction experience

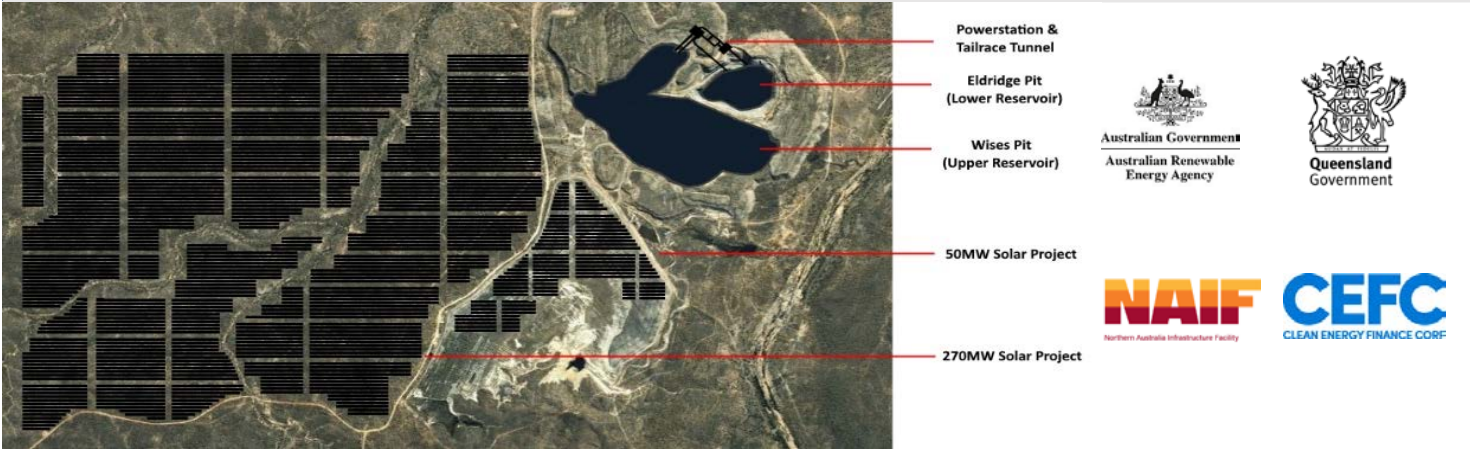
#### James Harding - EGM (BA Hons (Cantab), MA (Cantab), MBA)

- 30 years experience in international project development

#### Justin Clyne - Co Secretary / Legal Counsel, LL.M (UNSW), ACIS, AGIA

- Extensive company secretary and legal experience

## Proposed Site Configuration



## Key Government Relations

<b>Federal Government - ARENA</b>	<ul style="list-style-type: none"> <li>• 2015 - \$4M Hydro Feasibility Funding</li> <li>• 2016 - \$8.9M Solar Project Funding</li> <li>• 2017 - \$5M Stage Two Funding</li> </ul>
<b>Federal Government - CEFC</b>	<ul style="list-style-type: none"> <li>• \$54M in concessional debt financing for 50MW Kidston Solar Project</li> </ul>
<b>Federal Government - NAIF</b>	<ul style="list-style-type: none"> <li>• Strong engagement to date</li> <li>• First stage board approval for concessional debt funding</li> </ul>
<b>Queensland State Government</b>	<ul style="list-style-type: none"> <li>• Solar 150 Award – 20yr revenue support deed</li> <li>• 2016 - Declared Prescribed Project</li> <li>• 2017 - Declared Project of Critical Infrastructure</li> </ul>
<b>Etheridge Shire Council</b>	<ul style="list-style-type: none"> <li>• Strong support from local council</li> <li>• Genex prioritises local employment</li> </ul>

## Proposed Hydro Project Layout



## Key Project Highlights

<b>1 Peak power represents a unique opportunity</b>	<ul style="list-style-type: none"> <li>▪ Queensland electricity market in need of large-scale energy storage solutions</li> <li>▪ Growth in renewables (wind/solar) destabilises base load generation and creates market volatility/instability</li> </ul>
<b>2 Demand for power in QLD expected to rise</b>	<ul style="list-style-type: none"> <li>▪ Demand for peak electricity generation is growing despite oversupply of base load power</li> <li>▪ Driven by high demand from the CSG operators, generator closures, high gas prices and capacity constraints</li> </ul>
<b>3 Pumped Storage Power is a proven technology</b>	<ul style="list-style-type: none"> <li>▪ Many 100s of examples of pumped storage schemes in use globally - but only 3 in Australia</li> <li>▪ Tumut 3 Snowy Hydro NSW (1,500 MW): Wivenhoe QLD (~500 MW): and Shoalhaven NSW (240 MW)</li> </ul>
<b>4 Kidston project has unique characteristics</b>	<ul style="list-style-type: none"> <li>▪ The Kidston Site has many characteristics required for the construction of a large-scale pumped storage scheme</li> <li>▪ Assets include land, reservoirs and water resource, back-up water supply, onsite power and existing approvals</li> </ul>
<b>5 Low capex requirements</b>	<ul style="list-style-type: none"> <li>▪ Existing infrastructure will significantly mitigate high capex costs normally associated with similar schemes</li> <li>▪ Existing permits and approvals will facilitate shortening of project development timetable</li> </ul>
<b>6 Solar project compelling</b>	<ul style="list-style-type: none"> <li>▪ The Kidston project site is located in the highest solar radiation region of Australia</li> <li>▪ 300 ha on-site tailings dump is an ideal site for installation of 50MW solar PV scheme</li> </ul>
<b>7 Experienced management and board</b>	<ul style="list-style-type: none"> <li>▪ Board and management collectively have a very strong track records</li> <li>▪ Experience in electricity generation, transmission, project delivery, engineering and finance</li> </ul>

## Contact

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