



Application form for the issue of an Electricity Generation Licence

by the Essential Services Commission of SA under the
Electricity Act 1996

Nov 2018

Enquiries concerning this application form should be addressed to:

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Licence requirements and conditions

It is essential that licence applicants read the Essential Services Commission's (**Commission**) Advisory Bulletin No 4 – "*Licensing Arrangements for the Electricity and Gas Supply Industries*" before they fill out this form. This Bulletin is available on the Commission website www.escosa.sa.gov.au under electricity/licensing.

Generation operations which require a licence

Section 15(2)(a) of the *Electricity Act 1996* (**Act**)¹ is explicit in that it requires a person that carries on the operation of the generation of electricity to hold a licence. This requirement applies to all generators with the exception of a generator that can rely on:

- (1) one of the statutory exemptions specified in the Electricity (General) Regulations 1997 (**Regulations**) outlined below;
- (2) an individual exemption issued by the Commission (with the approval of the Minister) pursuant to section 80(1) of the Act; or
- (3) an exemption made by Governor under a regulation pursuant to section 98(2)(e) of the Act.

Pursuant to Regulations 6(1) and (2), the following generators are exempt from the requirement to hold a generation licence:

- ▶ a generator whose generating plant has a rated nameplate output of 100kVA or less;
- ▶ a generator that does not supply electricity for reward to or by means of a transmission or distribution network;
- ▶ a generator that generates electricity for the sole consumption of that generator or a designated body (such bodies must be designated by the Minister²); or
- ▶ a generator that generates electricity for a person at a premises occupied or used by the person as a tenant or licensee (whether directly or indirectly) of the generator (or a designated body) where that person is not charged for the supply of electricity except by a licensed retailer/generator or as an unspecified part of rent or charges for the occupation or use of the premises.

It is important for generators (or proposed generators) to carefully consider whether they can rely on a statutory exemption from the requirement to be licensed. If the reliance on a statutory exemption is queried by the Commission, the onus to provide evidence that a particular exemption can be relied upon is on the relevant generator.

In addition, in the event that the operations of a generator change so that it can no longer rely on one of the three exemptions specified above, it will need to apply to the Commission for a generation licence immediately in order to continue those operations.

Mandatory licence conditions

Sections 21(1) and 22 of the Act requires the Commission to place certain mandatory conditions in generation licences. The Commission strongly recommends that applicants review these mandatory conditions. Applicants must be familiar with the relevant conditions and confident that they can comply with the conditions.

Additional technical licence conditions

Additional technical licence conditions apply to all new electricity generators seeking to connect to the South Australian power system. Applicants for a generation licence should familiarise themselves with the Commission's Inquiry into the licensing arrangements for generators in South Australia final report, available on the Commissions website.³

¹ Available at <https://www.legislation.sa.gov.au/LZ/C/A/ELECTRICITY%20ACT%201996.aspx>

² To date, the Minister for Energy and Resources has not designated any bodies for the purposes of Regulations 6(1).

³ Refer: <http://www.escosa.sa.gov.au/projects-and-publications/projects/inquiries/inquiry-into-licensing-arrangements-under-the-electricity-act-1996-for-inverter-connected-generators/inquiry-into-licensing-arrangements-under-the-electricity-act-1996-for-inverter-connected-generators>

Model licence conditions reflecting the Inquiry findings and conclusions have been developed and are available in Appendix 1. The model conditions will be applicable to all new applications, having regard to advice from the Australian Energy Market Operator (**AEMO**) on the specific circumstances of individual applications received.

Depending on the specific characteristics of a given generation project, the model conditions may be varied to the degree necessary to ensure that South Australian consumers' long-term interests with respect to the price, quality and reliability of electricity services are protected.

Annual licence fees

Holding a licence incurs annual licence fees. The licence fees determined by the Minister for Resources and Energy are administered by the Commission. At annual intervals, the Commission, on behalf of the Minister, will send to each licensee, depending on the category within the sector, an invoice for the licence fee. Licence fees are to be paid on receipt of an invoice via one of the payment options set out in the invoice.

The initial licence will not be issued until the first annual licence fee (or approved licence fee instalment) has been paid.

this is clearly highlighted on the form. Applicants should also provide a ‘non-confidential’ version of the form capable of publication on the Commission’s website.

The Commission will use information supplied in applications and in support of applications in accordance with the requirements of Part 5 of the Essential Services Commission Act 2002. Applicants claiming confidentiality are encouraged to familiarise themselves with Part 5. Applicants should note that the Commission may disclose confidential information in some circumstances.

Further information

Applicants should note that the Commission may ask applicants who have submitted an application form to provide further information to the Commission, or to clarify the information that they have already provided if required.

Please note that, in the event that an application lacks sufficient detail and the Commission is required to request additional information from an applicant, delays in the assessment of the application may occur.

Licence Application Form

1 The Applicant

Applicants must answer all questions in this section.

1.1 Identity of Applicant

State the full name of the applicant. The applicant is the person who will be undertaking the electricity generation operations that will be the subject of the licence. Joint applicants should each complete an application form, and submit their application forms at the same time, with a covering letter explaining that a joint application is being made.

The applicant is Whyalla Renewables Pty Ltd as a Trustee of the Whyalla Renewables Trust

1.2 Legal Identity of Applicant

Provide information about the applicant, (i.e. whether the applicant is a natural person, private limited company or partnership, etc). If the applicant is a body corporate, please also state the jurisdiction in which the applicant is registered, and the applicant's ABN/ACN.

Whyalla Renewables Pty Ltd ACN 626 021 369 as trustee for Whyalla Renewables Trust ABN 88 614 040 484 of Level 25 AMP Place, 10 Eagle Street, BRISBANE QLD 4000.

Attachment 1 evidences the ASIC information for Whyalla Renewables Pty Ltd (ACN 626 021 369).

1.3 Address and Contact Details of Applicant

Business Address: Level 25, 10 Eagle Street, Brisbane

State: Queensland

Post Code: 4000

Postal Address (if different to Business Address):

GPO Box 2569, Brisbane

State: Queensland

Post Code: 4001

Telephone: +61 (0) 7 3223 4800.....

E-mail: soruby.bharathy@adani.com.au

1.4 Contact Person on behalf of Applicant

The full name, title and contact details of a person to whom the Commission can direct enquiries and correspondence about the application.

Full Name: Soruby Bharathy

Title: Network Connections Manager

Business Address: Level 25, 10 Eagle Street, Brisbane

State: Queensland

Post Code: 4000

Postal Address (if different to Business Address):

GPO Box 2569, Brisbane

State: Queensland

Post Code: 4001

Telephone: +61 (0) 7 3223 4800

Facsimile:

E-mail: soruby.bharathy@adani.com.au and

1.5 Contact Person for Licence Fees

The full name and/or title of the person to whom the Commission can direct enquiries and correspondence about licence fees.

Full Name: Trish Auld

Title: Project Manager & Enablement - Adani Renewables

Business Address: Level 25, 10 Eagle Street, Brisbane

State: Queensland Post Code: 4000

Postal Address (if different to Business Address):

GPO Box 2569, Brisbane

State: Queensland Post Code: 4001

Telephone: 07 3223 4865/ 0448030930

E-mail: trish.auld@adani.com.au

1.6 Diagram of Corporate or other Structure

Please attach with this application form details of the corporate or other structure, including details of any related companies within the meaning of the Corporations Act 2001; and a diagram of the organisational chart, including composition of the board, management and other key personnel responsible for the key functions of the business.

Ownership & Operations:

Whyalla Solar Farm facility is owned and all its asset are held by **Whyalla Renewables Pty Ltd** (ACN 626 021 369), the sole trustee for the Whyalla Renewables Trust (ABN 88 614 040 484). Whyalla Renewables Pty Ltd is 100% owned by Whyalla Renewable Holdings Pty Ltd, is a newly established entity under and wholly owned by Adani Renewable Asset Holding Pty Ltd.

Attachment 2 is a corporate holding entity structure for the Whyalla Solar Farm.

Attachment 3 is the Certificate of Registration for Whyalla Renewables Pty Ltd.

Attachment 4 is the Unit Trust Deed for Whyalla Renewables Pty Ltd as trustee for Whyalla Renewables Trust.

The applicant is a wholly-owned subsidiary of Adani Renewable Asset Holding Pty Ltd, which in turn is wholly-owned by Adani Global Pte Ltd of Singapore. The ultimate parent company of the generating plant is Adani Enterprises Ltd (AEL).

The ultimate parent company is **Adani Enterprises Ltd** (AEL) which is listed on the Indian National Stock Exchange (NSE: ADANIENT) and the Bombay Stock Exchange (BSE: 512599). In assessing the parent company suitability, ESCOSA should have consideration that AEL is a compliant, publicly listed company.

Adani Renewables Asset Holding (ARAH) Pty Ltd's mission is to develop a portfolio of renewable generation including technologies such as storage and pumped hydro. ARAH is working to build and lead a new Renewable Energy business in Australia. Rugby Run is the first of its projects.

ARAH is a registered limited liability company incorporated under the *Corporations Act 2001* (Cth). Day to day operations of ARAH and its subsidiaries is managed by the Australian management team. AEL is the ultimate parent company of ARAH and Australian resident directors operate ARAH within a governance and reporting framework established by AEL that complies with Australian legislation and regulation.

AEL, established in 1988, has operated in the renewable energy space since 2012. AEL is India's top infrastructure and energy conglomerate and is India's largest private company in power and transmission and solar power generation. Expertise in the renewable energy sphere allows AEL to pursue global opportunities.

The applicant's affiliate company, Adani Green Energy Limited (AGEL, established in 2015 and listed in the National Stock Exchange, India), has to has 2000 MW of solar and 750 MW of wind power in operation. AGEL developed the 648 MW solar power plant at Kamuthi, Tamil Nadu and at that time, was the world's largest single-location solar power plant. AGEL also developed India's largest single-location horizontal single axis tracker (HSAT) solar power plant at Bathinda, Punjab at 100MW. AEL's aim is to generate over 10 GW of renewable energy by 2022.

The applicant considers it and the other relevant entities have the engineering, technical and operational expertise to competently operate the proposed generating plant.

Further information about Adani Enterprises Ltd is attached to this application:

Attachment 5 is a summary of Company Report for the Publicly Listed Parent Company, AEL

Adani Enterprises Investor Presentation is provided as Attachment 6;

AEL Quarterly Results is provided as Attachment 7;

AEL Annual Report is provided as Attachment 8; and

2 The Licence

Applicants must answer all questions in this section.

2.1 Date from which Licence is sought

Applicants should usually allow the Commission a minimum of 12 weeks to consider an application, as a public consultation period of at least four weeks forms part of the Commission's consideration of licence applications. If the applicant seeks to have the licence issued by a certain date, provide this date. Please note that the Commission does not undertake to issue the licence by this date.

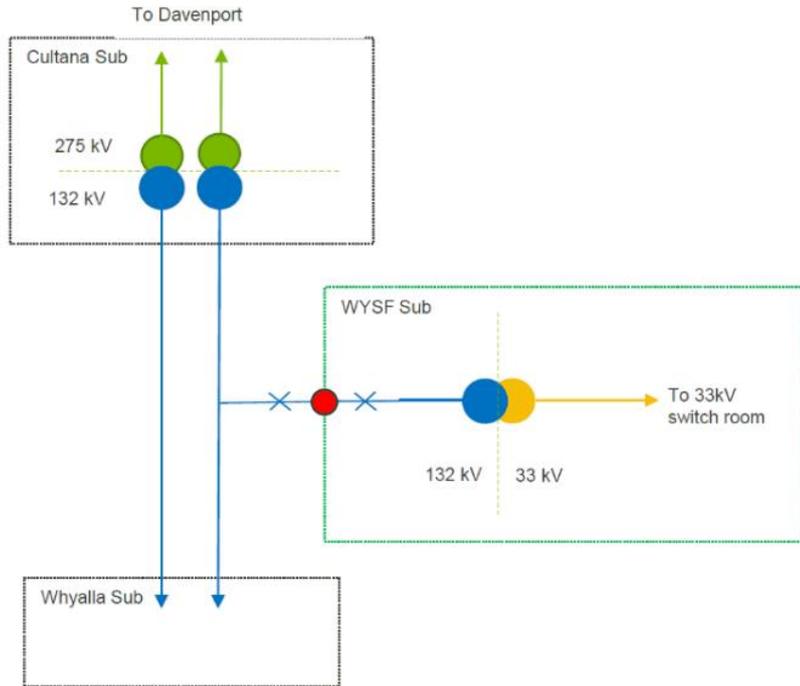
Licence to Operate the Whyalla Solar Farm is sought from 4 December 2018, as we require certainty for the project. Also the Licence is a pre-requisite to AEMO registration, therefore, we require the licence and finalised technical conditions from ESCOSA to finalise the GPS and AEMO Registration.

2.2 Nature and scope of operations for which Licence is sought

Applicants for a generation licence must state the location of the generation plant, the expected name plate capacity of the generation plant, the type of generation and fuel used and some details about how the generator is to be connected to the network. Applicants for a wind generation licence must attach a map showing the location of the wind turbines.

The Whyalla Solar Farm will be a solar farm up to 160MW connecting to existing ElectraNet 132kV transmission lines from Whyalla to Davenport. The proposed connection is to cut into the existing Whyalla – Davenport Eastern line (Feeder identified as F1893 by ElectraNet) with a new shared switching station at the Point of connection. The Solar farm will operate at 33kV and will be aggregated through a 132/33kV transformer to export power to the grid.

A simple illustration of the connection is presented below.



A single line diagram of the connection and switching station is provided as **Attachment 9** and a detailed layout of the 33kV solar farm is provided as **Attachment 10**.

The solar farm is proposed to be located on 396.5 hectares of land adjoining the Lincoln highway on one side on land leased from the Whyalla Shire Council.

An illustration of the Site Locality Plan Showing Townships nearby is provided below.



The co-ordinates and the survey plan is provided as **Attachment 11**.

The Whyalla Solar Farm is a solar photovoltaic electricity generation plant. The project will utilize single axis tracking systems and central Inverter technology to maximise electricity generation.

There are no energy storage devices such as batteries or other storage devices at this solar farm installation.

The Solar panels used at Rugby Run are manufactured by **Longi and Mundra Solar (MSPVL)**. *The approximate Site layout of the solar farm is provided as **Attachment 12**.*

The maximum installed capacity will be 160MW (ac) as per the Development Approval. The inverter selection is at its final stages. Adani will make a final selection of the inverter by 5 November 2018. The total number of Inverters in the layout is a minimum of 50 and a maximum of 66 inverters, depending on the final model and size of inverters. The inverters are manufactured in Europe by leading manufacturers of inverters.

A Transmission **Connection Agreement** (TCA) is currently being negotiated with ElectraNet for 132MW. The template of the agreed Transmission Connection Agreement is *provided as **Attachment 13**. It is to be noted that this TCA is in the process of being finalised with ElectraNet.*

The probability (taking into account solar resource, cloud cover, planned and unplanned maintenance) based projected energy export to the grid is estimated to be 348GWh per annum.

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3 Suitability of applicant to hold a licence

Applicants must answer all questions in this section.

3.1 Standard of honesty and integrity shown by Applicant

In deciding whether the applicant is a suitable person to hold a licence, the Commission may:

- ▶ consider the applicant’s previous commercial and other dealings, and
- ▶ the standard of honesty and integrity shown in those dealings.

Please provide information that will assist the Commission in its consideration of this matter. If the applicant:

- ▶ has been found guilty of any criminal offence,
- ▶ has been successfully prosecuted under any Territory, State or Commonwealth legislation (such as the Australian Securities and Investments Commission Act 2001 or the Competition and Consumer Act 2010) or
- ▶ has been the subject of disciplinary action,
- ▶ has been the subject of any past or present administrative or legal actions in relation to an authorisation, authority, or licence in any industry,

details of such matters must be disclosed. Failure to disclose such information or misrepresent any matter relevant to such information may result in the cancellation of a licence.

The Commission may use the service of an external expert to assist with the assessment of the applicant’s standard of honesty and integrity.

We declare that the applicant, Whyalla Renewables Pty Ltd ACN 626 021 369 as trustee for Whyalla Renewables Trust ABN 88 614 040 484:

- ▶ has not been found guilty of any criminal offence,
- ▶ has not been successfully prosecuted under any Territory, State or Commonwealth legislation (such as the Australian Securities and Investments Commission Act 2001 or the Competition and Consumer Act 2010) or
- ▶ has not been the subject of disciplinary action,
- ▶ has not been the subject of any past or present administrative or legal actions in relation to an authorisation, authority, or licence in any industry,

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3.2 Standard of honesty and integrity shown by Officers and major shareholders of Applicant

Applicants should address responses to this question in the same manner as 3.1 above except here it relates to officers and major shareholders of the applicant. **(To be provided)**

Please also supply details of any policies and procedures addressing the probity and competence of officers and other key management staff.

Please reference:

Attachment 25 – Adani Australia Government Approvals Protocol

Attachment 26 – Australian Business and Code of Ethics Policy

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.....

3.3 Names and addresses of the Officers of Applicant

State the names and addresses of the officers of the applicant. “Officers” of the applicant include the applicant’s directors and secretary, and other persons who make or participate in making decisions that affect a substantial part of the business of the applicant.

Full Name: **Dr Jennifer Marilyn Purdie**

Date of Birth: [REDACTED] Office Held: Chief Executive Officer / Director

Address: Level 25, 10 Eagle Street, Brisbane

State: Queensland Post Code: 4000

Home Address: 60 Peronne Place, Brookfield

State: Queensland Post Code: 4069

Full Name: **Samir Sevanti Vora**

Date of Birth: [REDACTED] Office Held: Director

Address: Level 25, 10 Eagle Street, Brisbane

State: Queensland Post Code: 4000

Home Address: Unit 71, Macrossan Street, Brisbane

State: Queensland Post Code: 4000

Full Name: **Rajesh Gupta**

Date of Birth: [REDACTED] Office Held: Company Secretary

Address: Level 25, 10 Eagle Street, Brisbane

State: Queensland Post Code: 4000

Home Address: 23, Rothburn Street, Doolandella

State: Queensland Post Code: 4077

(attach additional pages if necessary)

3.4 Names and addresses of major shareholders of Applicant

State the full names and addresses of the major shareholders of the applicant

Name: Whyalla Renewable Holdings Pty Ltd (ACN 626 021 734) not beneficially held
Date of Birth (if applicable): not applicable Office Held (if applicable): not applicable
Address: Level 25, 10 Eagle Street, Brisbane
State: Queensland Post Code: 4000

3.5 Details of the group members

This is information about entities controlled by the applicant, or by the ultimate parent entity of the applicant (if applicable).

The ultimate parent company is Adani Enterprises Ltd (AEL) which is listed on the Indian National Stock Exchange (NSE: ADANIENT) and the Bombay Stock Exchange (BSE: 512599). In assessing the parent company suitability, DNRME should have consideration that AEL is a compliant, publicly listed company.

AEL, established in 1988, has operated in the renewable energy space since 2012. AEL is India’s top infrastructure and energy conglomerate and is India’s largest private company in power and transmission and solar power generation. Expertise in the renewable energy sphere allows AEL to pursue global opportunities.

Please reference Attachment 3 - Summary of Company Report for the Publicly Listed Parent Company, AEL

3.6 Additional information

Please answer the following questions.

- Is the applicant a resident of, or does it have permanent establishment in, Australia? Where the answer to this question is no, please provide further detail.

Yes.....

The applicant is a wholly-owned subsidiary of Adani Renewable Assets Pty Ltd, which is in turn wholly-owned by Adani Renewable Asset Holding Pty Ltd. Adani Renewables Asset Holding (ARAH) Pty Ltd’s mission is to develop a portfolio of renewable generation in Australia.

ARAH is a registered limited liability company incorporated under the Corporations Act 2001 (Cth). Day to day operations of ARAH and its subsidiaries is managed by the Australian management team. AEL is the ultimate parent company of ARAH and Australian resident directors operate ARAH within a governance and reporting framework established by AEL that complies with Australian legislation and regulation.

- Is the applicant under external administration (as defined in the Corporations Act 2001) or under a similar form of administration under any laws applicable to it in any jurisdiction? Where the answer to this question is yes, please provide further detail.

No.....

- Is the applicant immune from suit in respect of the obligations under the Electricity Act 1996? Where the answer to this question is yes, please provide further detail.

No.....

- Is the applicant capable of being sued in its own name in a court of Australia? Where the answer to this question is no, please provide further detail.

Yes

(attach additional pages if necessary)

3.7 Financial resources available to the Applicant

Provide information about the financial resources available to the applicant. If the applicant is a company, please also enclose:

- ▶ copies of all audited profit and loss statements and balance sheets for the last three financial years (including all notes), and

Whyalla Renewables Pty Ltd was registered on **8 May 2018**, therefore there are no financial statements prior to this period.

- ▶ director's declaration that the financial statements comply with accounting standards, give a true and fair view, have been made in accordance with the Corporations Act and that there are reasonable grounds to believe the company/entity will be able to pay its debts as and when they fall due; and
- ▶ the director's report and the audit opinion.

If the applicant is a subsidiary company, please also provide:

copies of all audited profit and loss statements and balance sheets of the applicant's parent company for up to the last three financial years.

Please see Attachment 24 – Financial Statements of AEL

The applicant should also submit copies of:

- ▶ its business plans including at least strategic direction and objectives, identified opportunities in the market place and forecast results; and

Adani Renewables Australia (Strategic Direction and Objectives)

- ▶ Our vision is to generate renewable energy as part of an energy mix that is affordable, secure and reliable for all customers with a particular focus on industry, as Australia transitions to a lower emissions economy. To do this, we aim to establish a leading renewable energy business operating in Australia, which provides affordable, reliable and sustainable energy solutions to industry and to the wider community. We believe all electricity users have the right to affordable and reliable energy. Delivering this will require a mix of energy types, including thermal and renewable, and technologies including storage options.
 - Adani Rugby Run in Queensland is under construction and to be commissioned for commercial operations by December 2018.
- ▶ The first two operations in Adani Renewables' portfolio are the 65MW Rugby Run Solar Farm in Queensland (under construction), and the Whyalla Solar Farm in South Australia which is in advanced stages of development and could supply up to 140 MW from 2020.
- ▶ In India, Adani has 2000 MW of solar and 750 MW of wind power in operation. A solar park of 2000 MW capacity is under development in Rajasthan. The vision is to have 10 GW by 2022, using a vertically integrated model, including module production with a capacity of 1200 MW annually. India has target of 175 GW renewables by 2022 of which 100 GW is solar and 75 GW as other renewables. Adani plans to achieve 10 GW of this national target directly and to support a further 23 GW through construction of solar parks.

We believe that our best chance of building a sustainable renewables business is to acknowledge that Australia's energy mix must be affordable, secure, and reliable. Understanding the needs of our diverse customers including industry, and seeking to provide solutions that meet those needs, is a key part of our strategy.

Adani Corporate Brochure is provided as Attachment 14.

Market opportunities and forecast results

- ▶ Evidence of capital and liquidity support in place, including any bank or cross guarantees, to support the business and evidence of negotiations with the network service provider concerning credit support arrangements.

The project will not be fully financed until the Power Purchase agreement and the Transmission Connection Agreement are executed.

Evidence of Intercompany agreements to support early works is provided as **Attachment 15**.

3.8 Additional Details of Structure of Applicant

If the applicant is part of a group of related companies, and/or party to a partnership, joint venture or alliance agreement with another company, please provide:

- ▶ Contractual arrangements (e.g. alliance contracts, associate contracts, establishment contracts) that define relationships within the group – including shared resources, guarantees, revenue flows, obligations and or responsibilities.

3.9 Human resources available to the Applicant

Provide information about the human resources available to the applicant. This includes:

- ▶ the experience and qualifications of those employees outlined in the organisational chart (see point 1.6); and
- ▶ If the applicant will employ contractor/s to assist with the licensed operations, the name of that contractor/s, details about the experience of the contractor/s in such operations and details of the processes in place to ensure the contractor/s complies with the regulatory obligations imposed by the licence.

Attachment 16 contains the profile of key staff members at Adani Renewables Assets Holding.

Attachment 17 is the Organisation Chart for the Whyalla Solar Farm

Adani Renewable Asset Holdings Pty Ltd is the current principal Australian holding entity for Adani's Australian Renewable business.

There is a provision in all employment contracts for staff under Adani Renewables Asset Holdings to allow working for all related companies and body corporate, which includes Whyalla Renewables Pty Ltd to cover personnel resourcing and provision of expertise for the Whyalla Solar Farm facility

Employees (including the Asset Manager will have accountability for all Adani Renewable generating Assets) of the Adani Australian Renewable business are engaged under the principal holding entity, to provide services to all related body corporates, including Whyalla Renewables Pty Ltd.

Adani's Australian Renewables has a full time Asset Manager with accountability for operational readiness and achieving optimum outcomes (safety, environment, production, financial) from commissioned Adani Renewable Assets. The position will oversee all Operations and Maintenance activity (including Operating philosophy) working in partnership with O&M suppliers and OEMs to build and lead a high performance service. *Please see Attachment 17A Position Description – Asset Manager*

Whyalla Renewables Pty Ltd will employ contractors as the project advances to provide specialised services.

ElectraNet will be undertaking construction of physical substation and interface to the ElectraNet 132kV connection point at Whyalla under the Transmission Connection Agreement and will also be responsible for maintaining the connection infrastructure, therefore, the construction works that Adani will be undertaking is limited to within the solar farm.

3.10 Technical resources available to the Applicant

Applicants for a generation licence are asked to provide details about the availability of technical resources to be used in carrying out the operations for which a licence is sought. The information should include details about the technically qualified staff available to the applicant and (if relevant) details of experience gained in similar operations.

Where applicants are relying on a third party to provide staff and resources to meet the technical requirements of the generation licence, please provide:

- ▶ a list of all functions and activities being proposed to outsource;
- ▶ details of any formal agreement/s to provide services, including confirmation that the third party possess relevant technical competencies to conduct the proposed activities;
- ▶ a summary of the third party's technical capacity to meet relevant obligations, including relevant accreditations; and
- ▶ a summary of the third party's experience and knowledge in the relevant area.

Adani is seeking a licence to operate a solar farm in South Australia. Adani's Australian Renewables has a full time Asset Manager with accountability for operational readiness and achieving optimum outcomes (safety, environment, production, financial) from commissioned Adani Renewable Assets. The position will oversee all Operations and Maintenance activity (including Operating philosophy) working in partnership with O&M suppliers and OEMs to build and lead a high performance service.

3.11 Quality of Electricity Produced/Connection Agreement

The Commission may not issue a generation licence unless it is satisfied that the generating plant (or proposed generating plant) will generate electricity of the appropriate quality for the relevant transmission or distribution network. The Commission will be satisfied that the electricity is of an appropriate quality if the applicant has entered into a connection agreement which meets the Commission's technical requirements with the licensed operator of the relevant transmission or distribution network. **Applicants are therefore required to submit a copy of such a connection agreement.**

A Transmission **Connection Agreement** (TCA) is currently being negotiated with ElectraNet. The template of the agreed Transmission Connection Agreement is *provided as Attachment 13*.

3.12 Risk Management

Provide confirmation and reasonable evidence that the applicant's management has identified the risks associated with electricity operations and has established, utilises and relies upon risk management systems and processes which are adequate, accurate and current to address those risks. A copy of the applicant's risk management strategy should be submitted.

The major risks identified and planned controls to mitigate or limit the risk relevant to this stage of the project are presented in **Attachment 18**.

3.13 Development Act Approval

Please advise if the applicant has or is applying for approval under the Development Act 1993 (SA). If so, provide details, including the date on which approval was or will be granted.

Whyalla Solar Farm obtained its Development Approval (DA) 850/V002/17 from the South Australian Government on the 6th September 2017.

The **Decision Notification Form** (6 Sep 2017) from the South Australian Crown Development and Public Infrastructure and Electricity Infrastructure is provided as **Attachment 19**.

On the **2 August 2018** WYSF met pre-construction conditions under this Development Approval. (Pre-Construction DA Approval Letter Issued by the Government of South Australia – Department of Planning, Transport and Infrastructure is evidence in **Attachment 20**).

3.14 Registration with AEMO

Please advise if the applicant will apply to register with AEMO. If so, provide details. Applicants for a wind generation licence should note that registration as a semi-scheduled market participant is required for all new generators and all expansions to existing wind generation plant.

Whyalla Solar Farm will be applying to AEMO for Registration as a semi-scheduled market generator. The registered participant and controller may be the retailer, with Whyalla Renewables Pty Ltd being the exempt party retaining functions of asset owner, manager and operator.

3.15 Licences held by the Applicant in other Australian jurisdictions.

If the applicant holds, or has previously held, electricity and/or gas licences in other Australian jurisdictions please provide details. If a licence previously held has been suspended or cancelled, please provide details.

None; *please refer question 3.17 for licences for related entities.*

3.16 Previous unsuccessful licence applications in other Australian jurisdictions

Please state whether the applicant has applied for an electricity or gas licence in another Australian jurisdiction and not been issued with a licence, and provide details if relevant.

None

3.17 Licences held by Associates of the Applicant

If an associate of the applicant (within the meaning of the Corporations Act) holds an electricity or gas licence in South Australia or in other Australian jurisdictions, please provide details.

Galilee Special Approval (Issued by DNRME, Queensland) - SA06/15 – is a special approval to authorise the supply of electricity using a supply network, and the provision of customer connection services to the proposed Carmichael Mine and associated airport and accommodation village.

Galilee Transmission Authority (Issued by DNRME, Queensland) T01/13 – is a transmission authority in respect of an area in the Northern Galilee Basin.

Rugby Run Solar Farm – QLD Generation Authority / Licence (15th Nov 2018).

3.18 Compliance Plans

Applicants are required to submit a copy of their Compliance Plan which demonstrates how the compliance systems the applicant has (or will have) in place will ensure compliance with all of the applicable regulatory obligations imposed by the relevant licence.

Adani Renewables will provide a compliance plan which covers amongst other requirements the technical reporting required under the National Electricity Rules.

3.19 Additional Information

The Commission encourages applicants to provide any additional information they consider would be of assistance in supporting the application. Please provide below.

Whyalla Solar Farm obtained its Vegetation Clearing Permit from the Native Vegetation Council on the 25th October 2017. The Vegetation Clearance Permit is provided as **Attachment 22**.

Decision by the delegate of the Minister for Environment and Energy under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is provided as **Attachment 23**.

4 Factors specified in the Essential Services Commission Act 2002

In considering a licence application, the Commission must have as its primary objective protection of the long term interests of consumers with respect to the price, quality and reliability of electricity supply, and must also have regard to the need to:

- (a) promote competitive and fair market conduct;
- (b) prevent misuse of monopoly or market power;
- (c) facilitate entry into relevant markets;
- (d) promote economic efficiency;
- (e) ensure consumers benefit from competition and efficiency;
- (f) facilitate maintenance of the financial viability of regulated industries and the incentive for long term investment;
- (g) promote consistency in regulation with other jurisdictions.

If the applicant believes that information about their application would assist the Commission in its consideration of these factors, the applicant should provide such information below.

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5 Application fees

Applicants for a licence must pay to the Commission an application fee fixed by the Minister for Energy from time to time. This fee is presently set at \$1,000 per licence. Please enclose this fee with the application. An application cannot be considered until this fee has been received and cannot be refunded.

The fee for AUD 1000 has been paid for this application as instructed by ESCOSA

Adani Renewables will provide proof of payment once invoice is received.

6 Declaration

All information in this application for the issue of a licence to authorise electricity generation operations in the electricity supply industry in South Australia must be verified by a Statutory Declaration of the applicant, in accordance with the provisions of the *Oaths Act 1936* (SA)⁴, stating that the information contained in the application is true and correct to the best of the applicant's knowledge, information and belief.

Where the applicant is a body corporate, evidence of the relevant authority of the declarant to sign on behalf of the body corporate must also be provided to the Commission.⁵

Statutory Declaration

I, Jennifer Purdie

of... ~~Adani Renewable Holdings~~ *Adani Renewable Asset Holdings Pty Ltd* ^{is just.}

do solemnly and sincerely declare that the information contained in this Application for the issue of a licence to authorise electricity generation operations in the electricity supply industry in South Australia is true and correct to the best of my knowledge information and belief.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1936*.

Date 26 November 2018

Signature *J Purdie*

(Where the applicant is a body corporate, the declaration must be made by a person authorised by body corporate to sign on its behalf)

Declared at: *BRISBANE* this *26th* day of *NOVEMBER* 2018....

Before me: *[Signature]* (Signature of Justice of the Peace or other person authorised under the *Oaths Act 1936*)

(SOLICITOR - QLD) (R/DEC)
LEWIS MICHAEL
NAPA

⁴ or equivalent legislation in other Australian jurisdictions.

⁵ The Commission will accept a copy of a Board minute (or circulating resolution) giving approval for the declarant to sign on behalf of the applicant as evidence of the relevant authority.

2017 model licence conditions for new generators

Interpretation of this schedule

1. Interpretation

1.1. Terms used in this schedule and also in the National Electricity Rules (NER) have the same meaning in this schedule as they have in those rules (unless otherwise specified or unless the context otherwise requires).

1.2. For the purposes of this schedule, the term:

Commission - means the Essential Services Commission, established under the Essential Services Commission Act 2002.

continuous uninterrupted operation means that, for voltage disturbances within the continuous operating range (that is, connection point voltage fluctuating within 90 percent and 110 percent of normal voltage), active power must be maintained (unless there has been a change in the intermittent power source) and reactive power must be managed to meet voltage control requirements.

Disturbance ride through capability

2. Disturbance ride through capability – general requirements

2.1. The non-synchronous generating system must meet the following requirements:

- (a) The low voltage ride-through activation threshold (LVRT), as measured at the low voltage (LV) terminals of the generating units and dynamic reactive support plant (as applicable), must not be less than 85 percent of nominal voltage.
- (b) The generating system must maintain continuous uninterrupted operation for voltage disturbances as specified in clauses 3, 7 and 8.
- (c) Where LVRT and high voltage ride-through (HVRT) requirements in the NER are specified in respect of the generating system's connection point, the withstand capability of individual generating units is to be determined at the LV side of the generating unit's transformer. All individual generating units must remain connected for connection point voltages within the LVRT/HVRT withstand requirements, irrespective of the generating system's transformer tap position.

3. Disturbance ride-through (reactive current injection)

3.1. The generating system must supply additional capacitive reactive current (reactive current injection) of up to 4 percent of the maximum continuous current of the generating system (in the absence of a disturbance) for each 1 percent reduction of connection point voltage below 90 percent of normal voltage, as shown in Table 1. This requirement applies at the LV terminals of the generating units and dynamic reactive support plant (as applicable) for power system disturbances resulting in a voltage reduction of up to 100 percent of normal voltage at the connection point.

3.2. The generating system must supply additional inductive reactive current (reactive current absorption) of up to 6 percent of the maximum continuous current of the generating system (in the absence of a disturbance) for each 1 percent increase in connection point voltage above 110 percent

of the normal voltage, as shown in Table 1. This requirement applies at the LV terminals of the generating units and dynamic reactive support plant (as applicable).

- 3.3. The reactive current injection must be maintained until the connection point voltage returns to within the range of 90 percent to 110 percent of normal voltage.

Table 1: Reactive current injection requirements

Reactive current response	Current injection gain (%)	Current absorption gain (%)	Minimum amount of contribution as percentage of rated current	Speed of contribution	
				Rise time (millisecond)	Settling time (millisecond)
Synchronous	4	6	250	30	N/A
Non-synchronous	4	6	100	30	60

- 3.4. The amount of reactive current injection required may be calculated using phase-to-phase, phase-to-ground, or sequence components of voltage. For the last method, the ratio of negative-sequence to positive-sequence current injection must be X.⁶

- 3.5. The generating system must comply with the following response characteristics for reactive current injection:

- (a) A rise time no greater than 30 milliseconds and a settling time no greater than 60 milliseconds applies to reactive current injection requirements.⁷
- (b) The reactive current injection requirements described above apply for all pre-disturbance reactive power control modes (voltage control, power factor control and reactive power control).⁸
- (c) The reactive current response must be adequately damped as defined in the NER.
- (d) Upon occurrence of a fault, reactive power consumption must not exceed 5 percent of maximum continuous rated current of the generating system and must be limited to the rise time duration set out in Table 1.
- (e) The post-fault reactive power contribution of the generating system must be sufficient to ensure that the connection point voltage is within the following ranges for continuous uninterrupted operation:
 - (i) voltages over 110 percent for the durations permitted under NER clause S5.1a.4;
 - (ii) 90 percent to 110 percent of normal voltage continuously;
 - (iii) 80 percent to 90 percent of normal voltage for a period of at least 10 seconds; and
 - (iv) 70 percent to 80 percent of normal voltage for a period of at least 2 seconds.

4. Disturbance ride through (active power injection requirements)

⁶ The exact ratio of negative-sequence to positive-sequence current injection will be specified by the Commission at the time the licence is issued.

⁷ The settling time requirement does not apply to synchronous generators.

⁸ This requirement does not apply to synchronous generators.

- 4.1. The generating system must be capable of restoring active power to at least 95 percent of the level existing just prior to a fault within X milliseconds after disconnection of the faulted element.⁹
- 4.2. Upon occurrence of a fault, a generating system's transient active power consumption must not exceed one power frequency cycle and must not exceed 5 percent of the maximum continuous rated current of the generating system.

5. Multiple low voltage disturbance ride-through

- 5.1. The generating system, including, but not limited to, each of its generating units and dynamic reactive power support plant, must be capable of withstanding both of the following within a five minute interval:
 - (a) Any combination of voltage disturbances causing the voltage at the respective low voltage (LV) terminals of the equipment to drop below 85 percent of the nominal voltage for a total duration of 1,500 milliseconds regardless of disturbance type, duration, and residual voltage at the generating unit's terminals. The total number of voltage disturbances for which successful ride-through is required is limited to 15. Each fault can be a solid fault resulting in 100 percent voltage drop at the connection point with duration not exceeding the longest time expected to be taken for the breaker fail protection system to clear the fault, as set out in Table S5.1a.2 of the NER.
 - (b) A single worst-case long-duration shallow voltage disturbance, causing the voltage at the connection point to drop to 70- 80 percent of the normal voltage for a total duration of 2,000 milliseconds.
- 5.2. Subject to compliance with the requirements in clause 5.1, the generating system, including, but not limited to, each of its generating units and dynamic reactive power support plant, is not required to withstand any additional voltage variation exceeding ± 10 percent of nominal voltage experienced at the respective LV terminals within 30 minutes from the commencement of the first variation.¹⁰

6. Disturbance ride-through (high voltage disturbance ride-through)

- 6.1. The generating system must have a level of over-voltage withstand capability consistent with the levels shown in Table 2.¹¹
- 6.2. The generating system must maintain continuous uninterrupted operation for temporary over voltage durations as specified in Table 2.

Table 2: Required over voltage withstand capability

Temporary overvoltage (% of normal voltage)	110–115	>115–120	>120–125	>125–130	>130–140
Duration(s)	1,200	20	2	0.2	0.02

7. Disturbance ride-through (partial load rejection)

- 7.1. The non-synchronous generating system must be capable of continuous uninterrupted operation during and following a power system load reduction of 30 percent from its pre-disturbance level or equivalent impact from separation of part of the power system in less than 10 seconds, provided that the loading level remains above minimum load.

8. Disturbance ride-through (frequency disturbance ride-through)

⁹ The exact active power recovery time will be specified by the Commission at the time the licence is issued and will be between 100 and 500 milliseconds.

¹⁰ For synchronous generators, consideration will be given to the physical limitations of the plant. This may require a variation to this condition, to be determined by Commission at the time of issuing of the licence.

¹¹ Unless otherwise specified by the Commission at the time the licence is issued.

- 8.1. The generating system must be capable of continuous uninterrupted operation for any combination of the following rates of change of frequency:
- (a) ± 4 Hz/s for 250 milliseconds
 - (b) ± 3 Hz/s for 1 second, until such time as power system frequency breaches the extreme frequency excursion tolerance limits.¹²

9. Disturbance ride-through (voltage phase angle shift)

- 9.1. The generating system must not include any vector shift or similar relay/protective function acting upon voltage phase angle which might operate for phase angle changes less than 20 degrees.

Voltage control capability

10. Voltage control capability

- 10.1. The generating system must be capable of being controlled by a fast-acting, continuously variable, voltage control system which must be able to receive a local and remote voltage set point.
- 10.2. The generating system must be capable of operating at either a set reactive power level or a set power factor, which must be able to be set locally or remotely at any time.
- 10.3. The voltage, power factor and reactive power control mode of the generating system must be capable of:
- (a) being overridden by the disturbance ride through requirements specified in clauses **Error! eference source not found.** to 9 (inclusive) during power system voltage disturbances, and
 - (b) automatically reverting to power factor or reactive power mode when the disturbance has ceased.

System strength

11. System strength

- 11.1. Individual components of plant within a generating system, which includes but is not limited to generating units and dynamic reactive power plant, must be capable of operating down to the following levels at the high voltage terminals in relation to each component:
- (a) minimum short circuit ratio of 1.5, and
 - (b) minimum positive sequence X/R ratio of 2.

Active power control capability

12. Active power control capability

¹² For synchronous generators, consideration will be given to the physical limitations of the plant. This may require a variation to this condition, to be determined by the Commission at the time of issuing of the licence.

- 12.1. The generating system must be capable of automatically providing a proportional increase or decrease in active power output, in response to falling and rising power system frequency respectively.
- 12.2. To comply with clause 12.1:
 - (a) An active power response to changing power system frequency must be provided with no delay, beyond that required for stable operation, or inherent in the plant controls, once frequency leaves the deadband.
 - (b) The steady state droop setting of the active power response must be adjustable in the range 2 percent to 10 percent.
 - (c) The frequency deadband for the active power response must be adjustable in the range from 0 to +/- 1.0 Hz.
- 12.3. The generating system must be capable of sustaining a response to abnormal frequency conditions for at least 10 minutes, subject only to energy resource availability for intermittent generating systems.
- 12.4. The generating system must be capable of applying different deadband and droop settings in response to rising and falling frequency and for different levels of frequency change.

13. Active power control capability (AGC capability)

- 13.1. The generating system must have active power control capabilities that allow it to participate in existing national electricity market arrangements requiring automatic generation control (AGC).
- 13.2. At a minimum, the AGC must have the capability to:
 - (a) receive and respond to a remotely determined active power control setpoint, updated at a rate of every four seconds, transmitted to the generating system, and
 - (b) provide the following information to AEMO, upon a request from AEMO under NER clauses S5.2.6.1 or 3.8.2:
 - (i) actual active power output;
 - (ii) maximum raise limit;
 - (iii) minimum lower limit;
 - (iv) maximum raise ramp rate; and
 - (v) maximum lower ramp rate.

14. Active power control capability (rate of change of active power)

- 14.1. The generating system must be capable of limiting the rate of change of active power, both upwards and downwards. A generating system is not required to comply with a limit on the rate of reduction of active power where the reduction in active power is caused by energy resource availability for intermittent generating systems.
- 14.2. The generating system must be capable of implementing different active power rate limits for operation in the normal operating frequency band and for contingency events.
- 14.3. The generating system must be capable of setting a ramp rate limit with accuracy of within 10 percent.

15. Active power control capability

- 15.1. The generating system must have the capability to provide real-time information about its active power control settings to AEMO, including mode of operation, deadband and droop parameters and any other active power control setting that may change during real-time operation.

System restoration

16. System restoration

- 16.1. Where sufficient minimum fault level is available from online synchronous machines, the generating system must have the following capability in the event of a black system:
- (a) the generating system must be capable of operation with auxiliary loads only for X minutes¹³ while system load is being restored, and
 - (b) the generating system, including, but not limited to, each of its generating units and dynamic reactive power support plant (as applicable) must have the capability to provide steady-state and dynamic reactive power when operating with auxiliary loads only for X minutes while system load is being restored.¹⁴

¹³ The exact duration will be specified by the Commission at the time the licence is issued.

¹⁴ The exact duration will be specified by the Commission at the time the licence is issued.



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