Licence

Electricity Generation Licence

Waterloo Wind Farm Pty Ltd

ABN 87 113 160 731

Issued by the Essential Services Commission of South Australia on 16 October 2009 and last varied on 17 December 2015

Variation history

AMENDMENT NUMBER	VARIATION DATE	REASON
ESCOSA1	17 December 2015	Amendment to include an additional six wind turbines

1 Definitions and interpretation

1.1 Words appearing in bold like **this** are defined in Part 1 of the Schedule.

1.2 This licence must be interpreted in accordance with the rules set out in Part 2 of the Schedule.

1.3 Clauses 1 to 19 (inclusive) apply to the entire **electricity generating plant.**

1.4 In addition to clause 1.3, clauses 20 to 23 (inclusive) apply to **Stage 1** of the **electricity generating plant.**

1.5 In addition to clause 1.3, clauses 24 to 27 (inclusive) apply to **Stage 2** of the **electricity generating plant.**

2 Grant of licence

2.1 The **licensee** is licensed under Part 3 of the **Act**, and subject to the conditions set out in this licence, to generate electricity:

(a) using the **electricity generating plant** as specified in Annexure 1; and

(b) at the location described in Annexure 2

3 Term

3.1 This licence commences on the date it is issued and continues until it is:

(a) surrendered by the **licensee** under section 29 of the **Act**; or

(b) suspended or cancelled by the **Commission** under section 37 of the **Act**.

4 Access

4.1 The **licensee** must:

(a) in accordance with, and to the extent required by, the **Electricity Transmission Code**, grant to licence **network service provider**, rights to use, or have access to, those parts of the **licensee's electricity generating plant** that are interconnected to or interface with the **electricity entity's** assets for the purpose of ensuring the proper integrated operation of the South Australian power system and the proper conduct of the operations authorised by that **network service provider's licence**; and

(b) in the absence of agreement as to the terms on which such rights are to be granted, comply with a determination of the **Commission** as to those terms.

5 Dispute Resolution

5.1 A dispute relating to the granting of rights to use or have access to the inter-connecting assets of the **licensee's electricity generating plant** referred to in clause 4 shall be resolved in accordance with any applicable **industry code** developed by the **Commission** for the resolution of disputes.

5.2 Clause 5.1 does not apply to the extent the dispute is subject to resolution in accordance with or under the **National Electricity Rules**.

6 Compliance with Codes

6.1 The **licensee** must:

(a) comply with all applicable provisions of the **Electricity Transmission Code**, the **Electricity Distribution Code** and the **Electricity Metering Code**;

6.2 comply with all applicable provisions of any other **industry code** or **rule** made by the **Commission** from time to time; and

6.3 notify the **Commission** if it commits a material breach of the **Electricity Transmission Code**, the **Electricity Distribution Code** or the **Electricity Metering Code** within 3 days after becoming aware of that breach.

7 Safety, reliability, maintenance and technical management plan

7.1 The **licensee** must:

(a) within 12 months of the commencement of this licence, or within 3 months of the date (as advised by the **licensee**) of final commissioning and plant acceptance, whichever is the later, prepare a safety, reliability, maintenance and technical management plan dealing with matters prescribed by regulation and submit the plan to the **Commission** for approval;

(b) annually review, and if necessary update, the plan to ensure its efficient operation, and submit the updated plan to the **Commission** for approval;

(c) comply with the plan prepared in accordance with clause 7.1(a) and as updated from time to time in accordance with clause 7.1(b);

(d) not amend the plan without the approval of the **Commission**; and

(e) undertake annual audits of its compliance with its obligations under the plan and report the results to the **Technical Regulator**, in a manner approved by the **Technical Regulator**.

8 National electricity market

8.1 Subject to clause 8.2, the **licensee** must hold and comply with the conditions of any registration required under the **National Electricity Rules** granted by **AEMO** (or the person responsible for the granting of such registrations under the **National Electricity Law** or the **National Electricity Rules**) at all times that such registration is required for the operations authorised by this licence.

8.2 In respect of the **electricity generating plant** which the **licensee** is authorised to operate under this licence, the **licensee**:

(a) must obtain registration as a market **generator** under the **National Electricity Rules**; and

(b) must not apply for any **generating unit** within that **electricity generating plant** to be classified as a non-scheduled **generating unit** under the **National Electricity Rules**.

9 Ancillary services

9.1 The **licensee** must ensure that it has installed, and keeps operational, metering suitable for the purposes of clause 3.15.6A(h) of the **National Electricity Rules** to allow the individual contribution of the **electricity generating plant** to the aggregate deviation in frequency of the power system to be assessed within each trading interval of the National Electricity Market.

9.2 The **licensee** must comply with requirements imposed under the **National Electricity Rules** from time to time in relation to ancillary services arrangements.

10 System controller and AEMO

10.1 The **licensee** must, following a request from the AEMO, provide to the **AEMO** such documents and information as the **AEMO** may reasonably require for the performance of its functions under the **Act**.

10.2 The **licensee** must comply with any directions given to it by the **System Controller**.

11 Information to the Commission

11.1 The **licensee** must, from time to time, provide to the **Commission**, in a manner and form determined by the **Commission**:

(a) details of the **licensee's** financial, technical and other capacity to continue the operations authorised by this licence; and

(b) such other information as the **Commission** may require from time to time.

11.2 The **licensee** must notify the **Commission** of any changes to its officers, and (if applicable) major shareholders, within 30 days of that change.

12 Operational and compliance audits

12.1 The **licensee** must undertake periodic audits of the operations authorised by this licence and of its compliance with its obligations under this licence and any applicable Codes in accordance with the requirements of Energy Industry Guideline No. 4 issued by the **Commission**.

12.2 The **licensee** must also conduct any further audits at a frequency and in manner approved by the **Commission**.

12.3 The results of audits conducted under this clause must be reported to the **Commission** in a manner approved by the **Commission**.

12.4 The **Commission** may require the **licensee** to use an independent expert approved by the **Commission** to conduct audits under this clause.

12.5 The **Commission** may require the costs of using an independent expert approved by the **Commission** to conduct audits under this clause to be met by the **licensee**.

13 Confidentiality

13.1 The **licensee** must, unless otherwise required by law, this licence, an **industry code**, or the **National Electricity Rules**, comply with any **rules** made by the **Commission** from time to time relating to the use of information acquired by the **licensee** in the course of operating the business authorised by this licence.

14 Community service

14.1 The **licensee** must comply with the requirements of any scheme approved and funded by the Minister for the provision by the State of customer concessions or the performance of community service obligations by the electricity entities.

15 Compatibility

15.1 The **licensee** must not do anything to its **electricity generating plant** affecting the compatibility of its **electricity generating plant** with any **distribution network** or **transmission network** so as to prejudice public safety or the security of the power system of which the **electricity generating plant** forms a part.

16 Insurance

16.1 The **licensee** must undertake and maintain during the term of this licence insurance against liability for causing bush fires.

16.2 The **licensee** must provide to the **Commission** a certificate of the insurer or the insurance broker by whom the insurance was arranged (in a form acceptable to the **Commission**) to the effect that such insurance is adequate and appropriate, given the nature of the **licensee's** activities conducted under this licence and the risks associated with those activities.

17 Compliance with laws

17.1 The **licensee** must comply with all applicable laws including, but not limited to, any technical or safety requirements or standards contained in regulations made under the **Act**.

18 Variation

18.1 This licence may only be varied in accordance with section 27 of the **Act**.

19 Transfer

19.1 This licence may only be transferred in accordance with section 28 of the **Act**.

CONDITIONS APPLYING TO WATERLOO WIND FARM STAGE 1 (refer to Annexure 1 Part 1)

20 Fault ride through capability

20.1 Each **generating unit** of the **electricity generating plant** operated by the **licensee** must be capable of continuous uninterrupted operation during the occurrence of a normal voltage fluctuation caused by a **transmission network** fault involving a single phase or two phase to ground condition with a loading level after the fault is cleared that is at, or reasonably about, the loading level immediately prior to the fault.

20.2 For the purposes of clause 20.1 normal voltage fluctuation means voltage remaining within a band for 3 minutes, 10 seconds and 175 milliseconds following a fault, with the band having:

(a) an upper boundary of 110% of nominal voltage at all times; and

(b) a lower boundary of 0% of nominal voltage for the first 175 milliseconds during the fault, 80% of nominal voltage for the first 10 seconds after the fault is cleared and 90% of nominal voltage for the next 3 minutes.

21 Reactive power capability

21.1 At full rated power output the **electricity generating plant** operated by the **licensee** must be capable of:

(a) absorbing reactive power of 0.395 times that power output; and

(b) delivering reactive power of 0.395 times that power output.

21.2 At generation levels below full rated output the **electricity generating plant** operated by the **licensee** must be capable of:

(a) absorbing reactive power at a level at least pro-rata to that of full output; and

(b) delivering reactive power at a level at least pro-rata to that of full output.

21.3 The **electricity generating plant** operated by the **licensee** must at all times be capable of providing:

(a) at least 50 percent of the reactive power capabilities referred to in clause 21.1 and clause 21.2 on a dynamically variable basis; and

(b) the balance of any reactive power capability referred to in clause 21.1 and clause 21.2 not supplied dynamically on a static basis.

21.4 The reactive power capability of the **electricity generating plant** operated by the **licensee** must be capable of control by a fast-acting, continuously variable, voltage control system which is able to receive a voltage set point.

21.5 The **electricity generating plant** operated by the **licensee** must be capable of operating to a power factor set by the **network service provider** from time to time.

22 Wind forecasting

22.1 The **licensee** must, on request, provide to the **AEMO** or the **Commission**, accurate and verifiable wind energy forecasting data and temperature data, appropriately constructed wind energy conversion models, documents and other information concerning the operation of the **electricity generating plant** which the **licensee** is authorised by this licence to operate.

22.2 Any data, models, documents and information requested under this clause must be provided in the manner and form and within the time frame specified by the **AEMO** or the **Commission**.

22.3 The **licensee** must cooperate with the development and implementation of wind energy forecasting systems for use in the National Electricity Market and must provide timely, accurate, and verifiable information for this purpose.

23 Information to AEMO

23.1 The **electricity generating plant** operated by the **licensee** must be:

(a) able to meet the requirements specified by **AEMO** from time to time for the real time supply of data on active and reactive power, wind speed and wind direction; and

(b) capable of remote control by **AEMO**.

23.2 The **electricity generating plant** operated by the **licensee** must meet the information provision requirements specified in clause 23.1(a) for at least 3 hours following total loss of supply at the connection point.

23.3 The **licensee** must provide **AEMO** with forecasts of expected generation output for the purposes of incorporation into pre-dispatch, medium term and long term PASA data.

CONDITIONS APPLYING TO WATERLOO WIND FARM STAGE 2 (refer to Annexure 1 Part 2)

24 Fault ride through capability

24.1 Each **generating unit** which the **licensee** is authorised to operate under this licence must comply with:

(a) the automatic access standards for generating system response to disturbances following contingency events specified in clause S5.2.5.5(b)(1) of the **National Electricity Rules**; and

(b) subject to clause 24.2, the automatic access standards for generating system response to disturbances following contingency events specified in clause S5.2.5.5(b)(2) of the **National Electricity Rules**; and

(c) subject to clause 24.3, the automatic access standards for generating system response to voltage disturbances specified in clauses S5.2.5.4 of the **National Electricity Rules**.

24.2 The **licensee** is not required to comply with clause 24.1(b) in respect of a **generating unit** which the **licensee** is authorised to operate under this licence where:

(a) the minimum access standard requirements specified in clause S5.2.5.5(c)(2) of the **National Electricity Rules** in relation to generating system response to disturbances following contingency events; and

(b) the requirements of clauses S5.2.5.5(d), (e) and (f) of the **National Electricity Rules**,

are satisfied in respect of that **generating unit**.

24.3 The **licensee** is not required to comply with clause 24.1(c) in respect of a **generating unit** which the **licensee** is authorised to operate under this licence where:

(a) **AEMO** and the relevant **network service provider** have agreed, pursuant to clause S5.2.5.4(c)(3) of the **National Electricity Rules**, that there would be no material adverse impact on the quality of supply to other network users of power system security as a result of that non-compliance; and

(b) the requirements of clauses S5.2.5.4(c), (d), (e) and (f) of the **National Electricity Rules** are otherwise satisfied in respect of that **generating unit**.

25 Reactive power capability

25.1 The **electricity generating plant** operated by the **licensee** must at all times be capable of continuous operation at a power factor of between 0.93 leading and 0.93 lagging at real power outputs exceeding 5MW at the connection point.

25.2 The **electricity generating plant** operated by the **licensee** must at all times be capable of providing:

(a) subject to clause 25.4(b), at least 50 percent of the reactive power required to meet the power factors referred to in clause 25.1 on a dynamically variable basis; and

(b) the balance of the reactive power required to meet the power factor referred to in clause 25.1 on a non-dynamic basis.

25.3 At generation levels below full rated output the **electricity generating plant** operated by the **licensee** must be capable of:

(a) absorbing reactive power at a level at least pro-rata to that of full output; and

(b) delivering reactive power at a level at least pro-rata to that of full output.

25.4 For the purposes of clause 25.2(a):

(a) dynamically variable means continuous modulation of the reactive power output over its range, with an initial response time or dead time of less than 200 milliseconds and a rise time (as defined in clause S5.2.5.13 of the **National Electricity Rules**) of less than 1 second following a voltage disturbance on the network; and

(b) for a period of not more than 2 seconds on any single occasion, a short-term overload capability may be used to meet the 50 percent requirement, provided that use of that short-term overload capability does not cause a breach of any other licence condition.

25.5 The reactive power capability of the electricity generation plant operated by the **licensee** must be capable of control by a fast-acting, continuously variable, voltage control system which is able to receive a local and remote voltage set point.

25.6 The **electricity generating plant** operated by the **licensee** must be able to operate at either a set reactive power, or a set power factor, which is able to be set locally or remotely at any time.

25.7 The power factor or reactive power control mode of the **electricity generating plant** operated by the **licensee** must be capable of:

(a) being overridden by voltage support mode during power system voltage disturbances; and

(b) automatically reverting to power factor or reactive power mode when the disturbance has ceased.

26 Wind forecasting

26.1 In the event that any **generating unit** which the **licensee** is authorised to operate under this licence is classified under the **National Electricity Rules** other than as a semi-scheduled **generating unit**, the **licensee** must, on request, provide to **AEMO** or the **Commission**, accurate and verifiable wind energy forecasting data and temperature data, appropriately constructed wind energy conversion models, documents and other information concerning the operation of that **generating unit**.

26.2 Any data, models, documents and information requested under this clause must be provided in the manner and form and within the time frame specified by the **AEMO** or the **Commission**.

27 Information to AEMO

27.1 The **electricity generating plant** operated by the **licensee** must be:

(a) able to meet the requirements specified by **AEMO** from time to time for the real time supply of data on active and reactive power for at least 3 hours following total loss of supply at the connection point; and

(b) capable of remote control by **AEMO**.

27.2 In the event that any **generating unit** which the **licensee** is authorised to operate under this licence is classified under the **National Electricity Rules** other than as a semi-scheduled **generating unit**, the **licensee** must provide **AEMO** with forecasts of expected generation output for the purposes of incorporation into pre-dispatch, medium term and long term Projected Assessment of System Adequacy data.

This licence was issued by the **Commission** on 16 October 2009 and last varied on 17 December 2015.

THE COMMON SEAL OF)
THE ESSENTIAL SERVICES)
COMMISSION OF SOUTH)
AUSTRALIA was hereunto affixed)
by authority of the Chairperson)
and in the presence of:)

.....

Witness

17 December 2015

.....

Date

Schedule: Definitions and Interpretation

Part 1 – Definitions

In this licence:

Act means the *Electricity Act 1996* (SA);

AEMO means the Australian Energy Market Operator Limited (ABN 94 072 010 327);

business day means a day on which banks are open for general banking business in Adelaide, excluding a Saturday or Sunday;

Commission means the Essential Services Commission established under the **ESC Act**;

distribution licence means a licence to operate a **distribution network** granted under Part 3 of the **Act**;

distribution network has the meaning given to that term under the **Act**;

Electricity Distribution Code means the code of that name made by the **Commission** under section 28 of the **ESC Act** which regulates connections to a **distribution network** and the supply of electricity by distributors;

electricity entity means a person who has been granted a licence under Part 3 of the **Act** to carry on operations in the electricity supply industry;

electricity generating plant includes all **generating units** and all other equipment involved in generating electrical energy authorised to be operated by the **licensee** under this licence;

Electricity Metering Code means the code of that name made by the **Commission** under section 28 of the **ESC Act** which regulates the installation, maintenance and testing of meters;

Electricity Transmission Code means the code of that name made by the **Commission** under section 28 of the **ESC Act**;

ESC Act means the *Essential Services Commission Act 2002* (SA);

generator means a holder of a licence to generate electricity granted under Part 3 of the **Act**;

generating unit means each individual unit producing electrical energy and all the related equipment essential to that unit's functioning as a single entity;

industry code means any code made by the **Commission** under section 28 of the **ESC Act** from time to time;

Licensee means Waterloo Wind Farm Pty Ltd (ABN 87 113 160 731);

National Electricity Rules has the meaning given to that term in the **National Electricity Law**;

National Electricity Law means the **National Electricity Law** referred to in the *National Electricity (South Australia) Act 1996* (SA);

network service provider means the holder of a **distribution licence** or a **transmission licence** (as the case may be) issued by the **Commission** under Part 3 of the **Act**;

rule means any rule issued by the **Commission** under section 28 of the **ESC Act**;

System Controller means the person licensed under Part 3 of the **Act** to exercise system control over a power system;

Stage 1 means 37 Vestas V90 3MW wind turbine electricity generators with a total combined maximum output capacity of 111 MW as outlined in Annexure 2 (Waterloo Wind Farm 1).

Stage 2 means 6 Vestas V117 3.3MW wind turbine electricity generators with a total combined maximum output capacity of 19.8 MW as outlined in Annexure 2 (Waterloo Wind Farm 2).

Technical Regulator means the person holding the office of Technical Regulator under Part 2 of the **Act**;

transmission licence means a licence to operate a **transmission network** granted under Part 3 of the **Act**; and

transmission network has the meaning given to that term under the **Act**.

Part 2 - Interpretation

In this licence, unless the context otherwise requires:

(a) headings are for convenience only and do not affect the interpretation of this licence;

(b) words importing the singular include the plural and vice versa;

(c) words importing a gender include any gender;

(d) an expression importing a natural person includes any company, partnership, trust, joint venture, association, corporation or other body corporate and any governmental agency;

(e) a reference to any statute, regulation, proclamation, order in council, ordinance or bylaw includes all statutes, regulations, proclamations, orders in council, ordinances or by-laws varying, consolidating, re-enacting, extending or replacing them and a reference to a statute includes all regulations, proclamations, orders in council, ordinances, by-laws and determinations issued under that statute;

(f) a reference to a person includes that person's executors, administrators, successors, substitutes (including, without limitation, persons taking by novation) and permitted assigns;

(g) a reference to a document or a provision of a document includes an amendment or supplement to, or replacement or novation of, that document or that provision of that document;

(h) an event which is required under this licence to occur on or by a stipulated day which is not a **business day** may occur on or by the next business day; and

(i) a reference to a person includes that person's executors, administrators, successors, substitutes (including, without limitation, persons taking by novation) and permitted assigns.

ANNEXURE 1

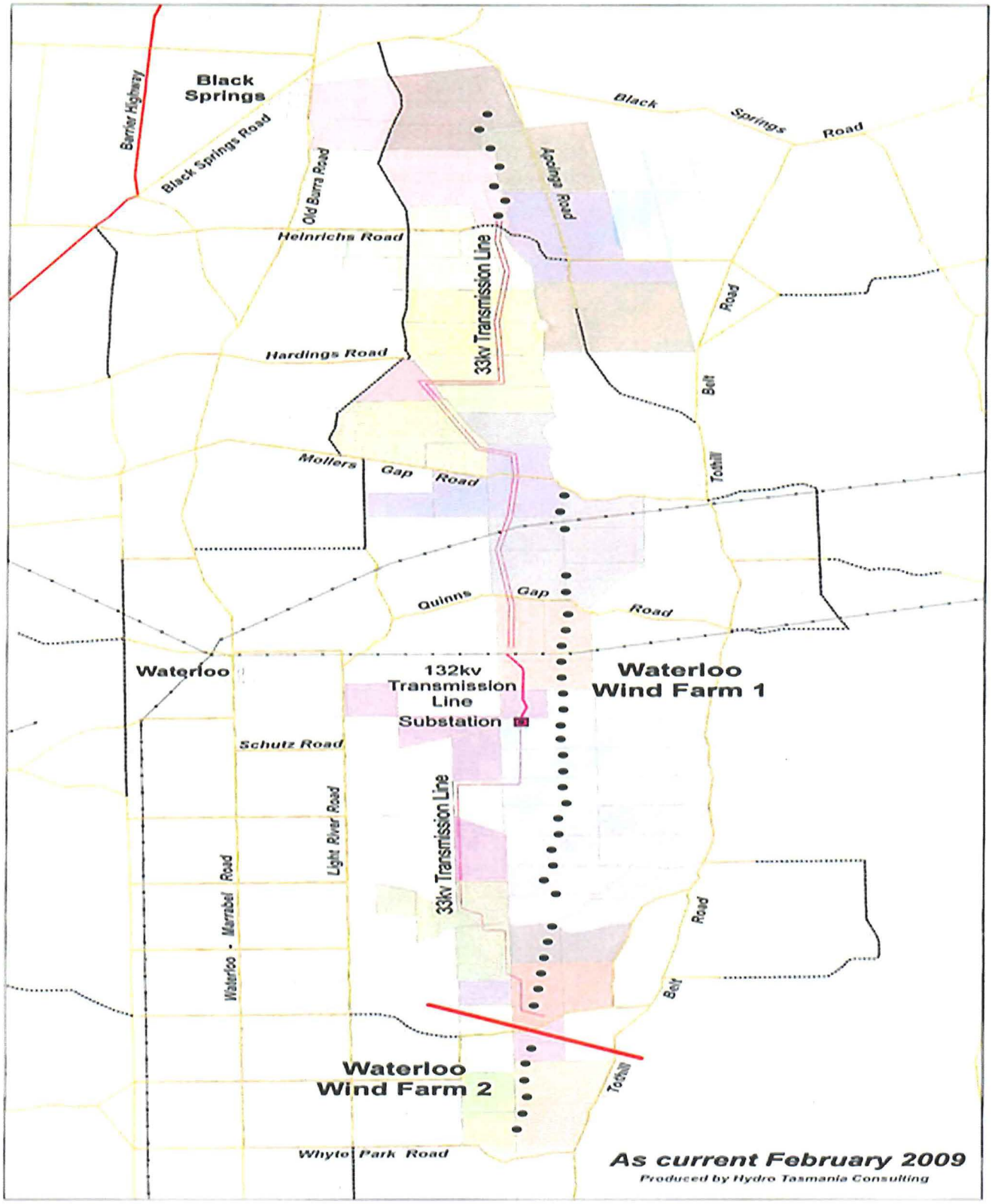
Part 1 - Stage 1

Up to 37 Vestas V90 3MW wind turbine electricity generators with a total combined maximum output capacity of 111 MW for Stage 1 of the electricity generating plant operated by the licensee.

Part 2 - Stage 2

Up to 6 Vestas V117 3.3MW wind turbine electricity generators with a total combined maximum output capacity of 19.8 MW for Stage 2 of the electricity generating plant operated by the licensee.

ANNEXURE 2 – LOCATION OF ELECTRICITY GENERATING PLANT



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