

Silverton Wind Farm

Community Consultative Committee
Meeting No.CCC-031

Thursday, 21 February 2019



Powering
Australian
Renewables
Fund



Agenda

1

Welcome

2

Previous minutes

3

Project update

- Overview
- Wind Farm Works
- Commissioning

4

Community relations update

5

Topics of interest

- Wholesale Electricity Market Volatility
- Silverton Wind Forecast
- Progressive Rehabilitation
- Proposed SA-NSW Interconnector

6

Other business



1. Welcome



2. Previous minutes

2. Previous minutes

Action items



Item	Action	Status	Who
3.23.16	AGL to contact Rod Grenfell in relation to erecting a fence along Daydream Mine Road near the Umberumberka pipeline access.	Open	AGL – 12/18
4.25.07	AGL to progress the 20m monopole with Telstra and Crown as part of the mobile reception program and contact AW to discuss the proposed solution.	Open	AGL – 12/18
3.26.25	AGL will continue to liaise with Telstra to avoid any impacts to N Schmidt's tower	Open	AGL – 12/18
5.27.05	AGL to review noise from night works around Umberumberka Reservoir with GE-CATCON.	Open	AGL – 2/19
4.28.08	AGL noted advice from our local landscaper that the best time for planning was in Aug/Sept to avoid frost shock. We will continue to work with the supplier in relation to timing to ensure the best success for the screening. AGL noted that the landscaper has already visited three properties.	Open	AGL – 12/18
4.28.04	AGL to provide a roadmap / timeline for the Mobile Reception Program	Open	AGL – 12/18
5.28.03	CCC member raised the potential of utilising the Silverton Wind Farm to attract tourism into the region. Discussion amongst the CCC and community considered the benefits and noted the concerns in relation to access on private property. AGL to liaise with the relevant stakeholders (lease holders, SVC, NSW Crown) and comment.	Open	AGL – 12/18

- Overview
- Wind Farm Works
- Connection Works



3. Project update

3. Project update

Silverton Wind Farm



Silverton Wind Farm

- Located in the Barrier Ranges approximately 5km north of the Silverton township
- Owned by the Powering Australian Renewable Fund (PARF)
- Generation capacity of 200 MW
- Wind turbines: 58 x GE 3.43-130
- Annual Energy Production (AEP)
 - ~780,000 MWh (capacity factor of 44.5%)
 - Powering more than 137,000 average Australian homes
- Connects into TransGrid's existing 220 kV substation at Broken Hill
- Design life of 25 years



3. Project update

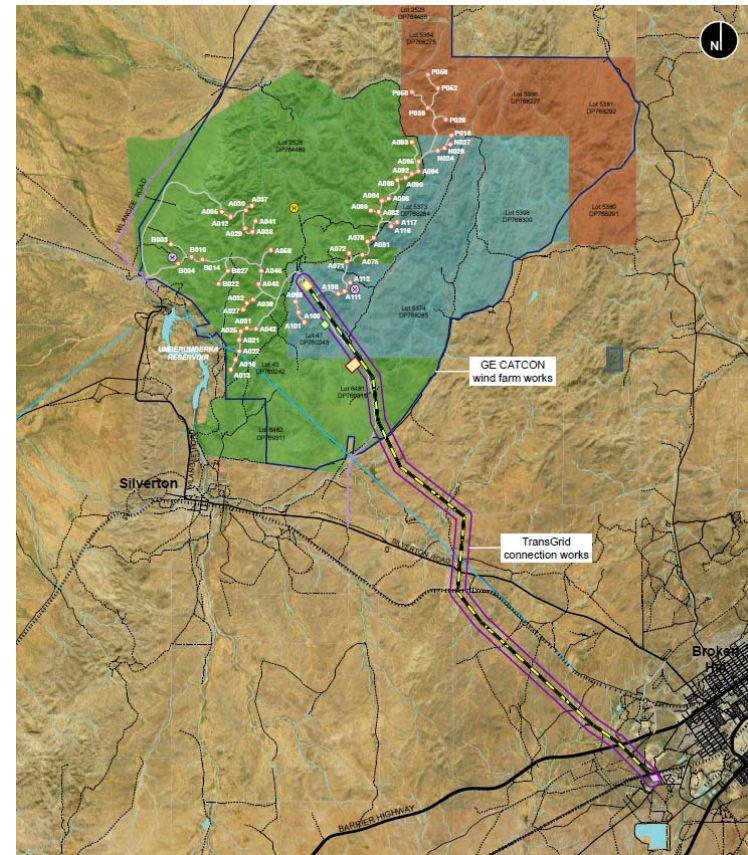
Silverton Wind Farm



Scope of works

- Silverton Wind Farm consists of two main scope of work:
 - Wind Farm Works (GE-CATCON)
 - Connection Works (TransGrid)
- AGL has prepared an Overview Environmental Management Strategy (OEMS) in accordance with the project approval
- Overview activities include
 - Community enhancement
 - Community consultative committee
 - Project website

<https://www.agl.com.au/about-agl/how-we-source-energy/renewable-energy/silverton-wind-farm>



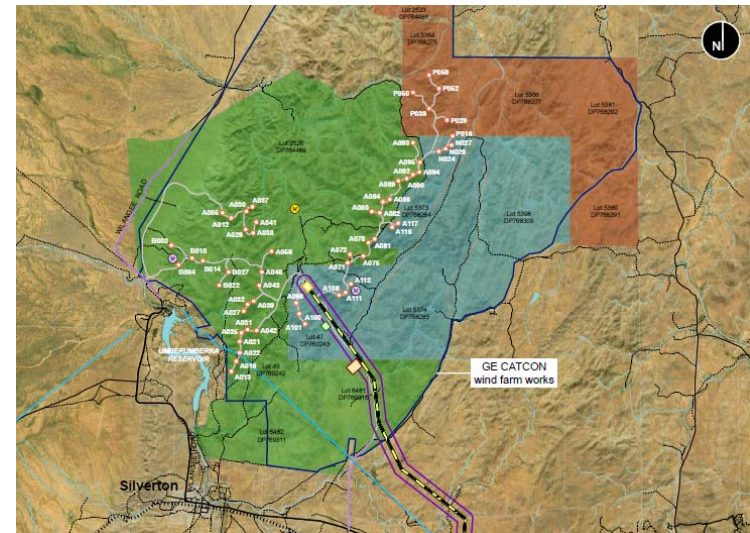
3. Project update

Silverton Wind Farm



Wind Farm Works

- GE-CATCON (joint venture) has been engaged to deliver the wind farm works
 - Engineer, Procure, Construct (EPC) Contract
- Scope of works, includes
 - 58 x GE 3.43-130 wind turbines
 - 33kV electrical reticulation (underground and overhead) and 33kV switchyard
 - Site access roads and O&M buildings
- Key project milestones (following previous CCC)
 - Demobilisation of Boom Logistics Crane
 - Mechanical completion of 50th wind turbine
 - Preliminary AEMO agreement of STWF PSCAD model
- Construction work hours
 - Out of hours work continuing for wind turbine erection and crane relocation in accordance with the project approval where noise does not impact neighbouring residents.



3. Project update

Silverton Wind Farm



Connection Works

- TransGrid has achieved Practical Completion on 20 February 2018
 - Existing Broken Hill 220kV substation (connection point)
 - 220kV transmission line
 - Wind farm 220kV substation
- Connection works were successfully energised on 23 Feb 2018.
- TransGrid’s Project Director summed up the milestone well:
 - **“It has been a challenging job but a great effort by a lot of people”**



3. Project update

Wind Farm Works



Construction works

- Wind turbines erection:
 - WTG erection complete: 57/58 (~98%)
 - WTG mechanical completion: 50/58 (~86%)
 - WTG commissioning: 41/58 (~71%)
- Wind turbines commissioning:
 - WTG commissioned: 46/58 (~79%)

Sarens LR1650 (650 tonne crane) is currently “boom-up” at WTG48 waiting for favourable wind conditions to install the final blade set.

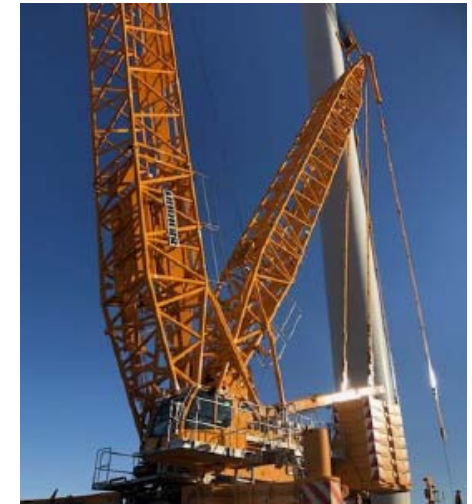


3. Project update

Wind Farm Works



Construction works – Progress photos



3. Project update

Wind Farm Works



Wind Turbine Commissioning

- The wind farm is currently being commissioned in accordance with the AEMO commissioning plan which involves coordination with AEMO and TransGrid (NSP).
 - AEMO – Australian Energy Market Operator
 - NSP – Network Service Provider
- Commissioning status:
 - WTGs mechanical completion: 50/58 (~86%)
 - WTGs commissioned: 46/58 (~79%)
 - WTG reliability testing completed (10d): 27/58 (~47%)
 - WTGs generating (day-time): 13/58 (~22%)
 - WTGs generating (night-time): 22/58 (~38%)
- Wind turbines will commence generating after being commissioned subject to the AEMO commissioning plan and any network constraints.



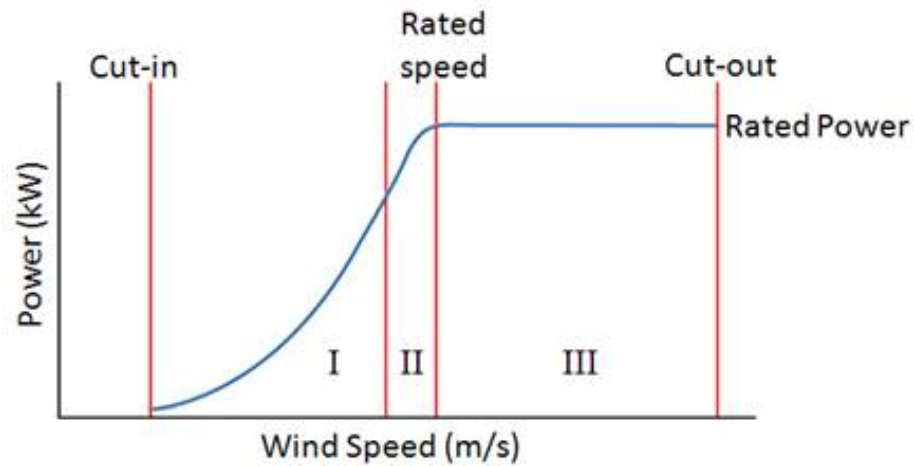
3. Project update

Wind Farm Works



Wind Turbine GE 3.43-130

- GE 3.43-130 Power Curve
 - Cut in wind speed – 3 m/s
 - Rated wind speed – 13 m/s
 - Cut out wind speed – 25 m/s



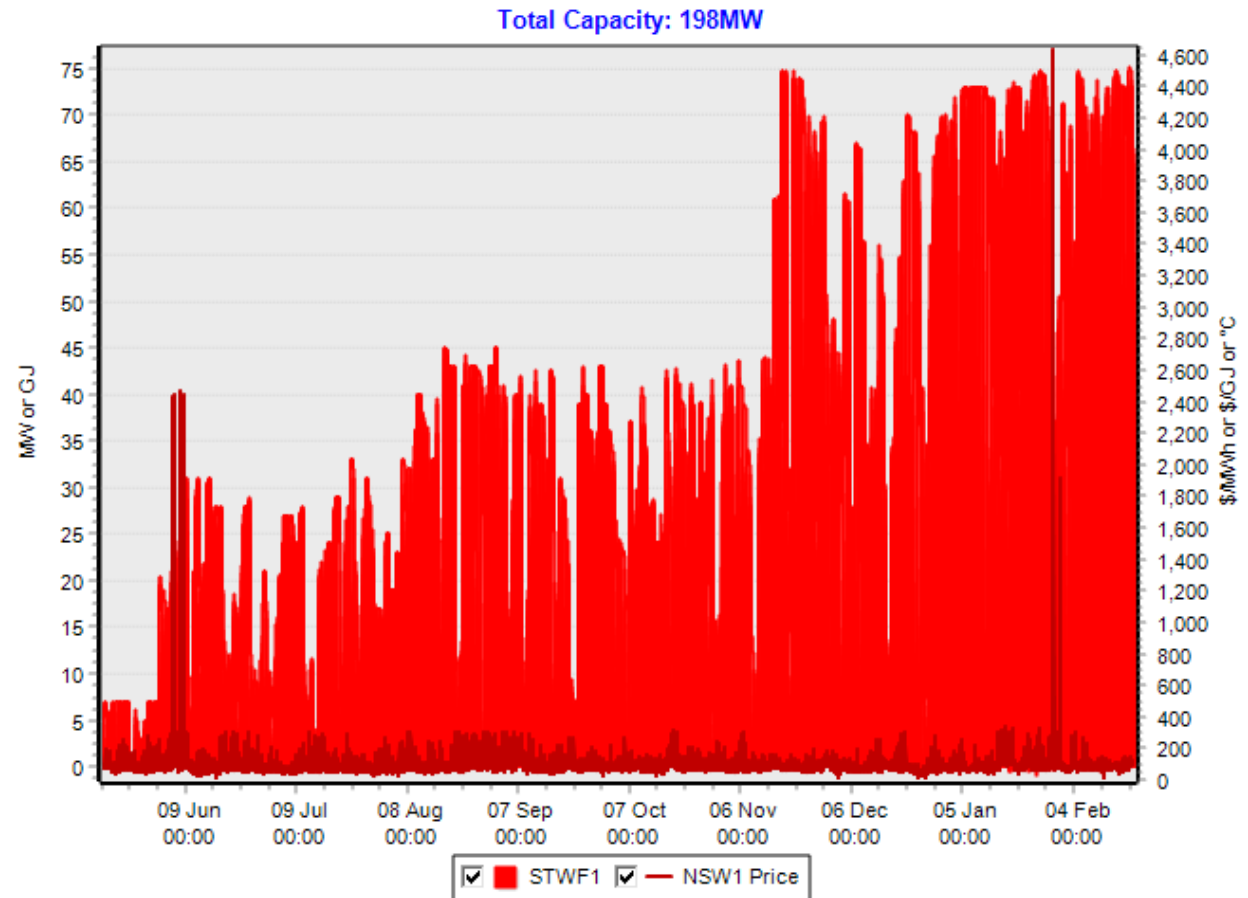
3. Project update

Wind Farm Works



First Generation

- First generation occurred from the Silverton Wind Farm (STWF) on Saturday, 12 May 2018 at 23:30 hrs
- Generation from the Silverton Wind Farm (STWF) as at Tuesday, 19 February 2019.
 - 142,000 MWh
 - Already powering approximately 25,000 average Australian homes (based on their annual consumption).



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3. Project update

Wind Farm Works



Local Industry Participation

- Currently ~50 construction workers with approximately 20% from the local area.
 - Significant reduction in the number of construction workers is forecast in the coming weeks.
 - Local component mainly associated with the operation and maintenance of the wind turbines.



3. Project update

Wind Farm Works



Local suppliers

- Delivery of the Silverton Wind Farm to date has involved the following local suppliers / contractors
 - Attards Transport
 - Barrier Daily Truth
 - Boss Construction
 - Broken Hill City Council
 - Broken Hill Hire & Engineering Services
 - Broken Hill Mini Excavators
 - Broken Hill Nissan
 - Broken Hill Skip Bins
 - Broken Hill Supplies
 - Cresswell Drilling
 - Getting There Excavations
 - Globe Timber Mills & Joinery
 - Goodyear Autocare
 - Hire vehicles – Avis and Hertz
 - Interhealth Broken Hill
 - Judd Plumbing
 - Lawrence Engineering
 - Mawsons Concrete & Quarries
 - My Maid Support
 - RPF Resources & Rural Supplies
 - Schembri Earthmovers
 - Silver City Plumbing
 - Silver Haven Motor Inn
 - Silverton Civil
 - Silverton Hotel / Sturt Motel
 - Solcon Trading
 - SouthState Industrial Supplies
 - Tasco Petroleum
 - Vertex Power & Process



4. Community relations update

4. Community relations update

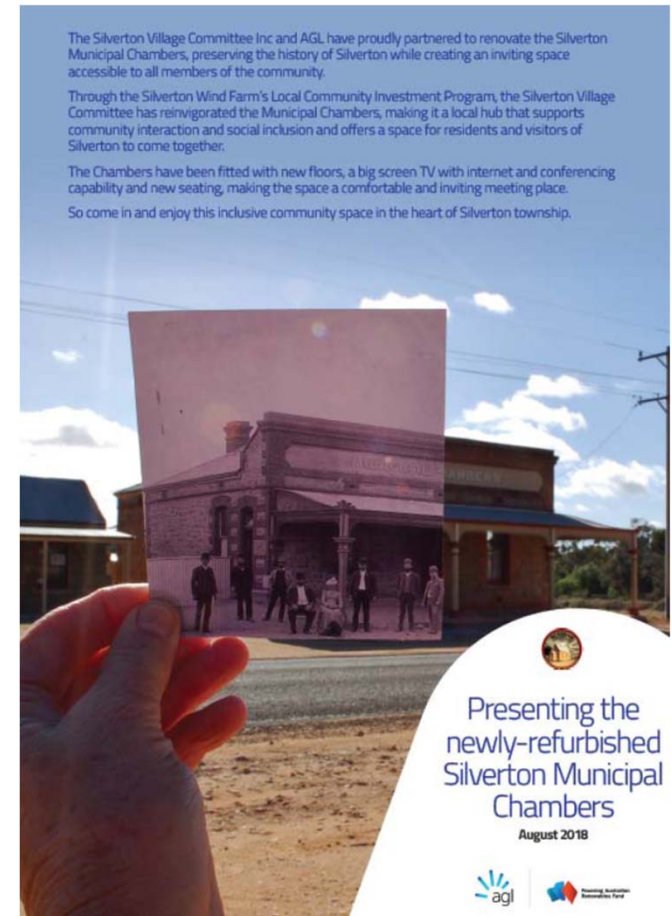
Community enhancement program



Community Enhancement Program

The Community Enhancement Program for the Silverton Wind Farm is progressing, in accordance with condition 18 (schedule 2) of the project approval. We are implementing the program to give effect to the commitments in Appendix 3, including:

- **Silverton Community Fund**
 - \$15,000 per year + CPI (life of project) – Applications for next round of funding will be announced in late January/early February 2019
- **Solar Silverton Program**
 - 5kW solar PV for leaseholder and residences within 10 km of project.
- **Water tank program**
 - Domestic sized water tank to all inhabited residences
- **Mobile reception program**
 - Contribution of up to \$50,000 for mobile reception improvement works



4. Community relations update

Community enhancement program



Silverton Solar Program

- To date, AGL has provided solar panels to 30 property owners and 23 of these properties have received their smart meters. Installers will return to Silverton on 28 Feb and 1 Mar 2019 in order to complete the remaining works
- For properties that cannot support solar installations, AGL is working with the property owners to find alternative solutions
- Origin, Red Energy and Acumen are generally the energy retailer and meter provider in the area and will be managing meter upgrades
- The final size of the solar PV system is subject to the available roof space and connection approval by Essential Energy



4. Community relations update

Community enhancement program



Water Tank Program

- AGL has started work on the supply, installation and connection of a domestic sized water tank (10,000L)
 - Water tank supply → Landmark
 - Installation and connection → Broken Hill Plumbing Services

- Rolling installations started in August/September 2018 and 11 property owners have received their water tanks.

- Broken Hill Plumbing will continue contacting property owners to arrange for inspections and installations over the next few weeks.



Capacity: 10000 L

Inlet Height: 1.49 m

Diameter: 3.08 m

Total Height: 1.7

State Available: ACT, NSW, NT, SA, VIC

Available Colours



4. Community relations update

Community enhancement program



Mobile Reception Program – Next Steps

- Prepare an Environmental Assessment to assess potential impacts of the proposal on the existing environment and recommend safeguards to mitigate any environmental risks.
 - This will commence shortly and take approximately 6-8 weeks to prepare involving consultation with relevant public authorities and stakeholders
- Consideration will be given to the requirements of the *Telecommunications Act 1997* and *Telecommunications Code of Practice 1997* (amended in 2002).
- Once finalised the Environmental Assessment is completed it will be provided to Telstra for execution of the works.



A typical 20m monopole with an omni antenna configuration

4. Community relations update

Community enhancement program



Mobile Reception Program

- AGL has a draft Enterprise Work Agreement (EWA) with Telstra in relation to the proposed 4GX solution developed with Telstra for the mobile reception program
 - Installation of a 20m monopole at Telstra's Silverton Exchange site with a 4GX small cell which will provide 4G 700 MHz coverage to the Silverton Village
- Construction timing for completion would be ~4 months, subject to approval requirements and availability of power
- AGL is progressing the environmental approval and will work with Telstra to ensure that it is consistent with their normal processes.



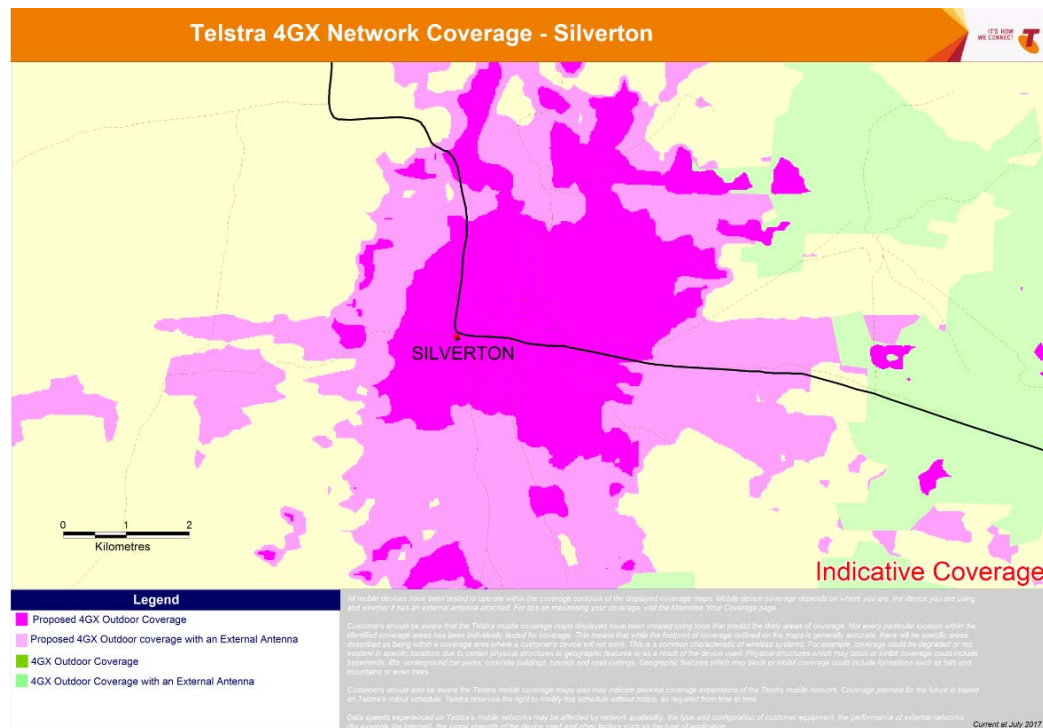
4. Community relations update

Community enhancement program



Mobile Reception Program

- The coverage predications below provide an indicative view of the coverage the proposed 4GX small cell would provide
 - Proposed 4GX solution would require a 4G 700 MHz compatible device to benefit from the improved coverage. This should cover any new smart phones purchased over the last 2 years



4. Community relations update

Visual impact mitigation



Visual Impact Mitigation

AGL issued notification to the Silverton residents in accordance with condition 2 (schedule 3) of the project approval in relation to the visual impact mitigation measures outlined in condition 1 (schedule 3).

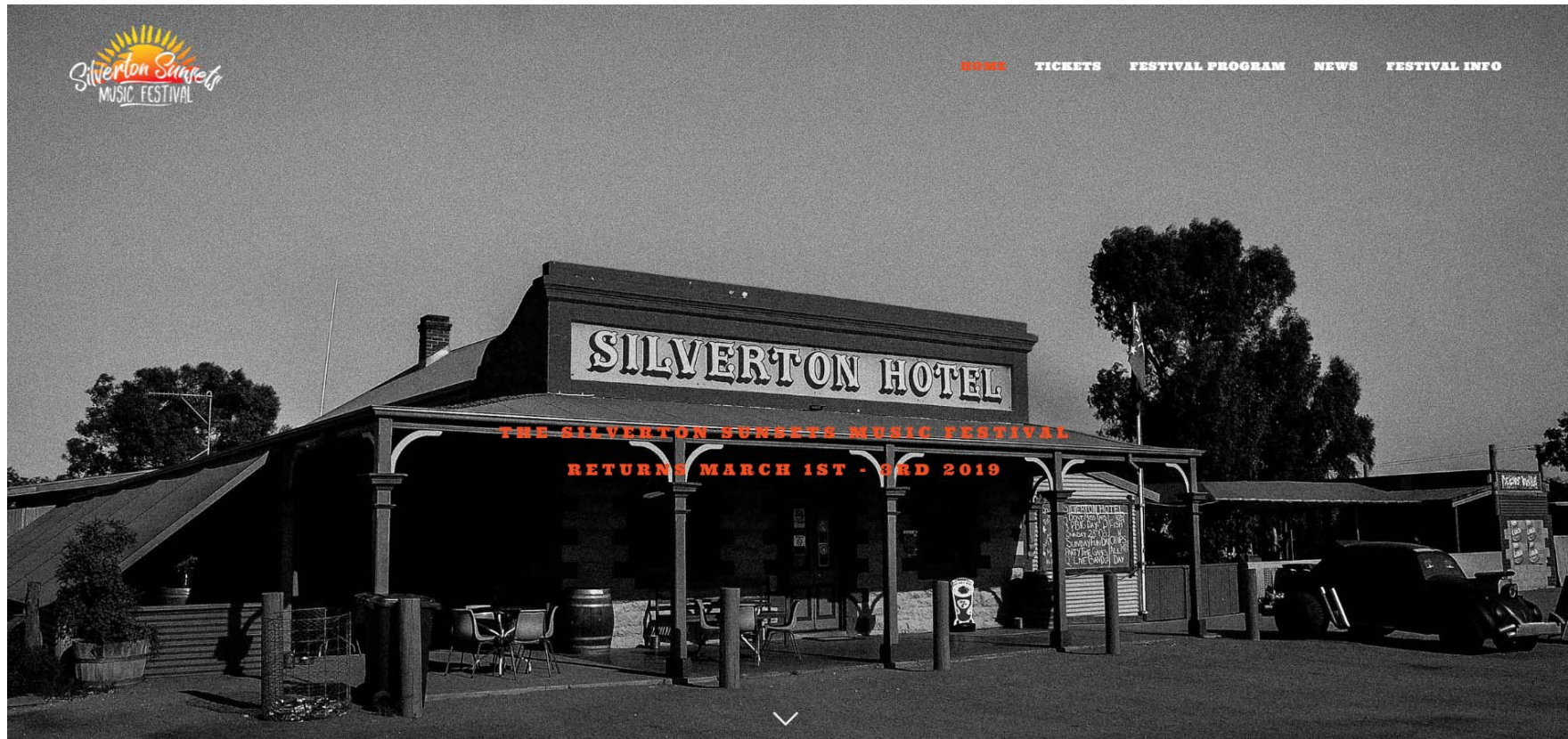
- Owners within 6km of any wind turbine forming the Silverton Wind Farm may request additional visual mitigation measures (such as landscaping and vegetation screening) at their residence to reduce visual impact of the wind turbines.
- Owners have the right to request the implementation of these additional visual mitigation measures at their residence at any time within 3 years of the commencement of construction.
- Landscaper has started viewing properties in the area to discuss most appropriate measures
- Timing for sourcing and planting vegetation and maintenance must be considered

The identification of appropriate visual impact mitigation measures will be easier following the construction of the wind turbines.



4. Community relations update

Community events



4. Community relations update

Community engagement



Community information

AGL contact details for community and project information are shown below:

- P: 1800-039-600
- E: AGLcommunity@agl.com.au
- W: agl.com.au/silverton

Construction information

GE-CATCON will provide contact details on the project signage for construction related queries.



- Wholesale Electricity Market Volatility
- Silvertown Wind Forecast
- Progressive Rehabilitation
- Proposed SA-NSW Interconnector



5. Topics of interest

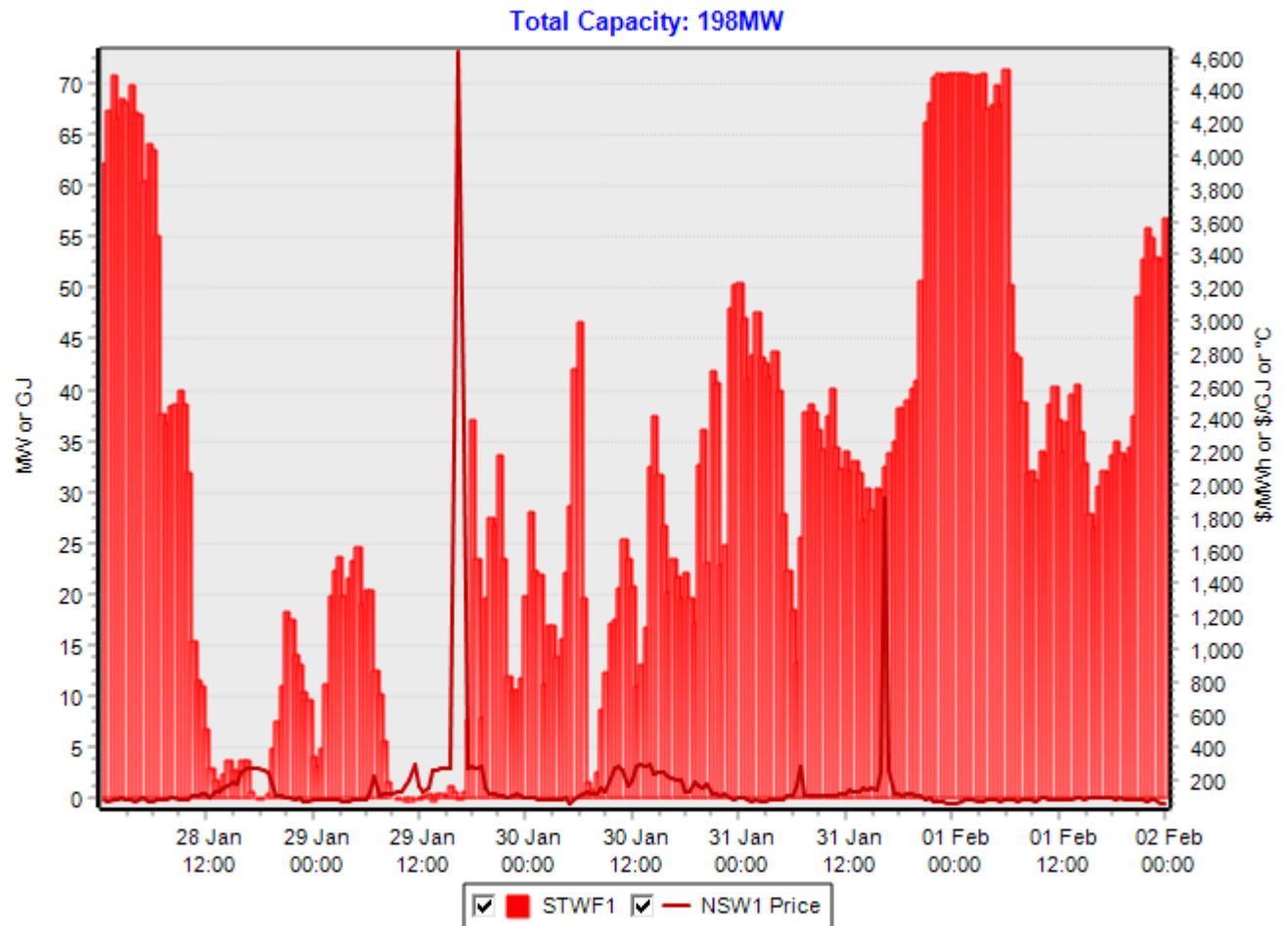
5. Topics of interest

Wholesale Electricity Market Volatility



Pricing Volatility

- Graph shows that spike in wholesale electricity prices on Tuesday, 29 January 2019 in the PM peak.
- NSW wholesale pricing which has typically been ~\$80 / MWh spiked to \$4,600 / MWh



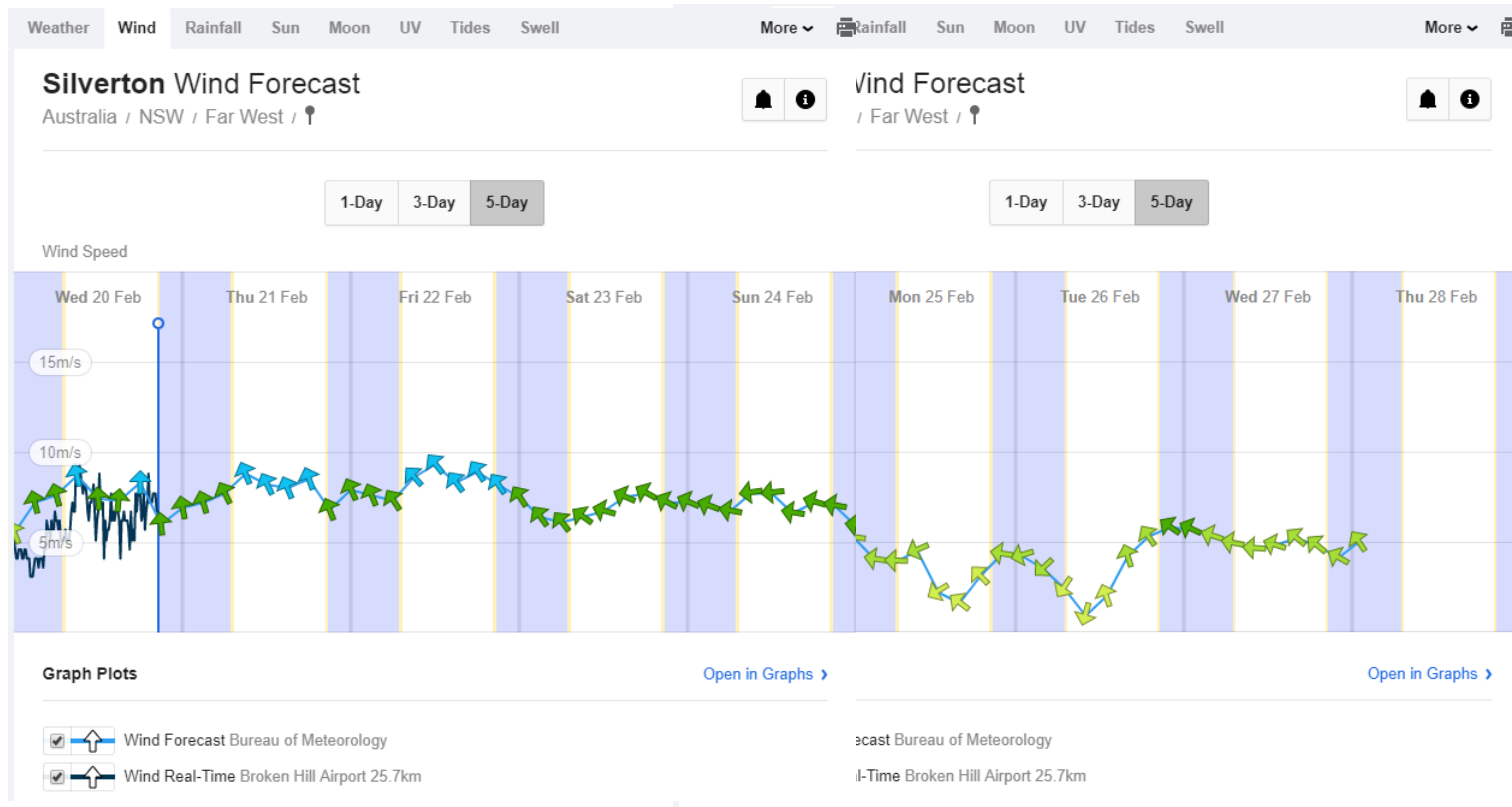
5. Topics of interest

Silverton Wind Forecast



Silverton Wind Forecast

- Currently forecasting erection of the final blade set on Monday, 25 February 2019.



5. Topics of interest

Progressive Rehabilitation



Wind Farm Works

- GE-CATCON is completing progressive rehabilitation in accordance with condition 36 (schedule 4) of the project approval.
- Works are being undertaken in accordance with the construction phase rehabilitation management plan specific to the Silverton Wind Farm site.
- Formal process to rehabilitation across site has commenced.
- Native seed is being collected and sowed across rehabilitated sites.



(Right) Rehabilitation of temporary site access track and
(Above) Rehabilitation of underground 33kV collector cable

5. Topics of interest

Progressive Rehabilitation



Installation of Permanent Drainage Works



(Above) Installed spoon drains
(Right) Installed cross drain
(Far Right) Installed spoon drains

5. Topics of interest

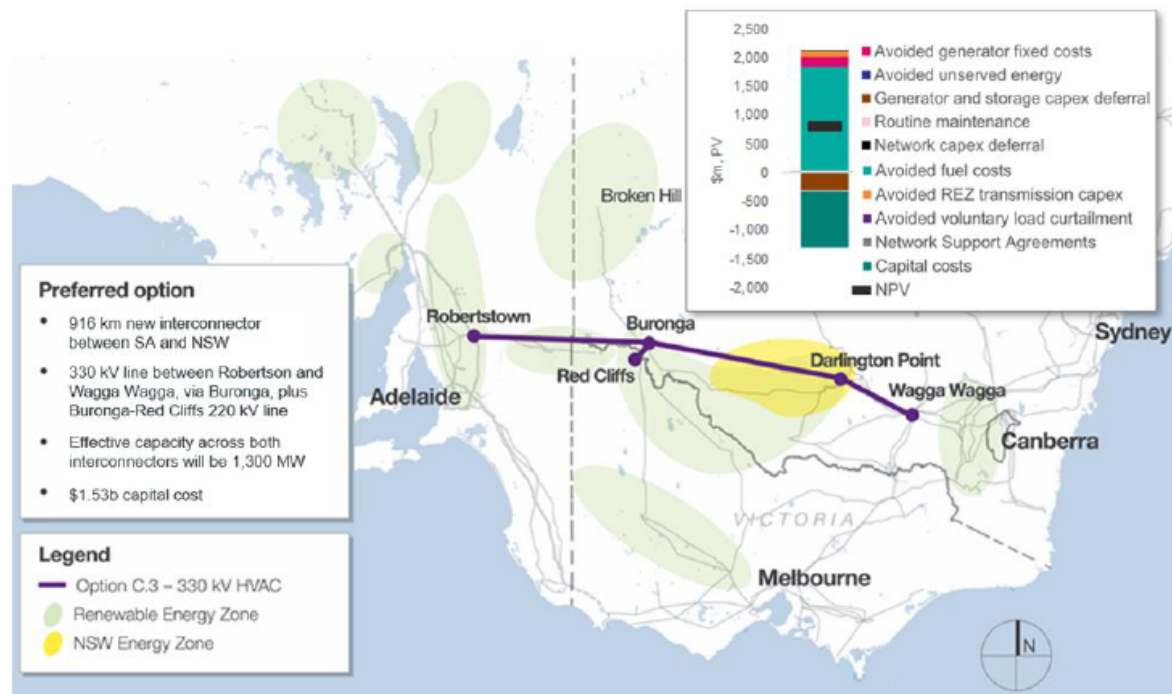
Proposed SA-NSW Interconnector



SA Energy Transformation RIT-T

- ElectraNet released the Project Assessment Conclusions Reports on 13 February 2019 (<https://www.electranet.com.au/wp-content/uploads/projects/2016/11/SA-Energy-Transformation-PACR.pdf>).
- ElectraNet is proposing the new high capacity interconnector between SA and NSW

Figure E.2 Preferred option for the South Australian Energy Transformation RIT-T, 'Option C.3'



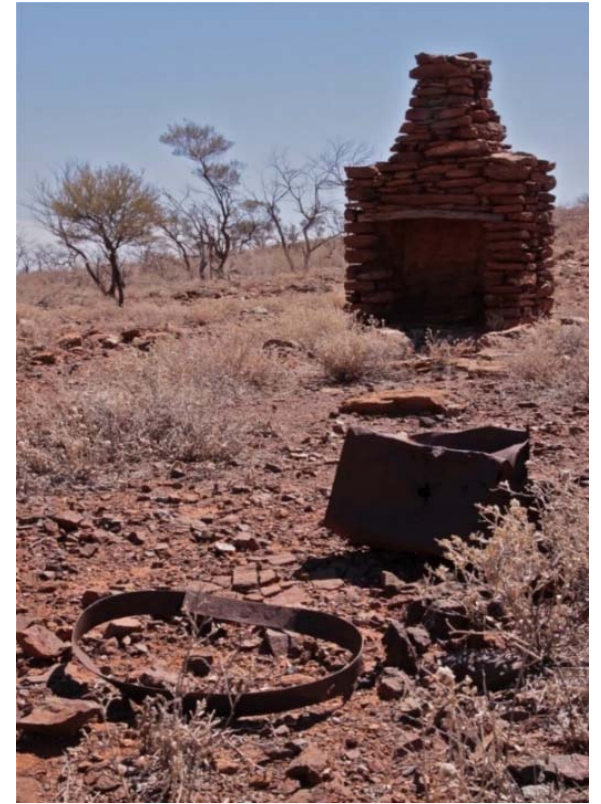


6. Other business

Silverton Wind Farm

Community Consultative Committee (CCC)

- Next meeting (TBC)
 - Thursday, 23 May 2019
 - Time: 3pm
 - Silverton Municipal Chambers, Silverton



Next meeting

Contact

AGL Energy
Silverton Wind Farm
1800-039-600

AGLcommunity@agl.com.au