

Silverton Wind Farm

Community Consultative Committee
Meeting No.CCC-024

Tuesday, 19 September 2017



Agenda

1

Welcome

2

Previous
minutes

3

Project update

- Overview
- Wind Farm Works
- Connection Works

4

Community
relations
update

5

Topics of interest

- Visual impact
assessment

6

Other
business



1. Welcome



2. Previous minutes

2. Previous minutes

Action items



Item	Action	Status	Who
5.19.01	AGL to arrange site tour for interested Silverton community members and the Broken Hill City Council.	Open	KL – 5/17
5.20.03	AGL is continuing to seek information from the horse stud farm and riding centre which has the Delabore Wind Farm operating on its land.	Open	AGL – 7/17
4.22.05	Naomi Schmidt to forward copy of email from Mark Coulton on telecommunication upgrade options to AGL	Open	NS – 6/17
3.23.10	GE-CATCON to review dust suppression activities along Daydream Mine Rd at intersection with Silverton Rd	Open	GEC – 7/17
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 – 8/17
5.23.03	Helen Murray to provide infrasound study report on animals to AGL	Open	HM – 8/17
5.23.06	Silverton Village Committee to provide comments on the Telstra proposal for the mobile reception program	Open	SVC – 8/17

- 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
- 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

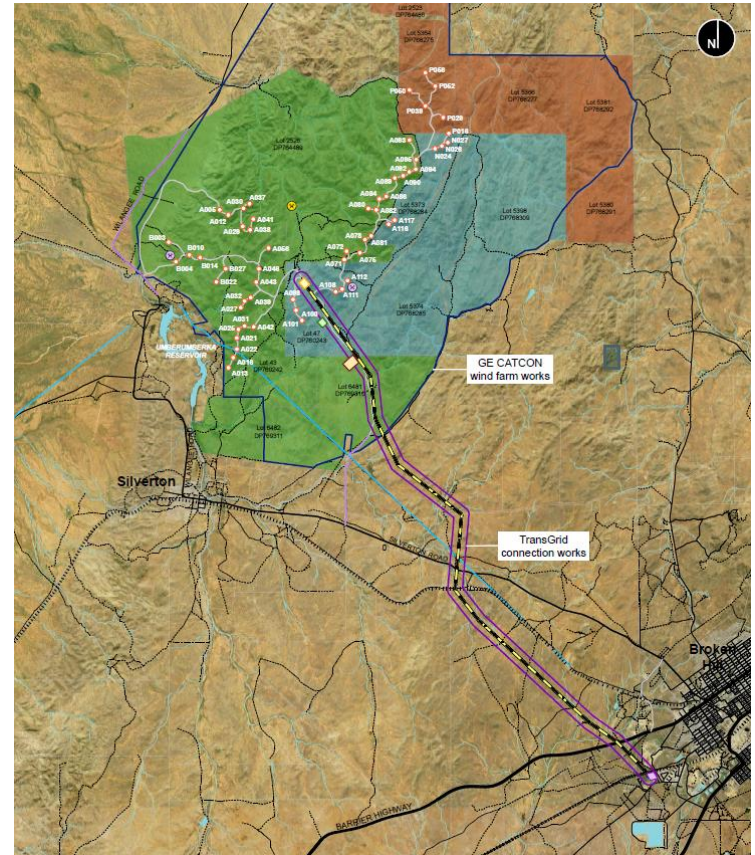
Silverton Wind Farm



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>



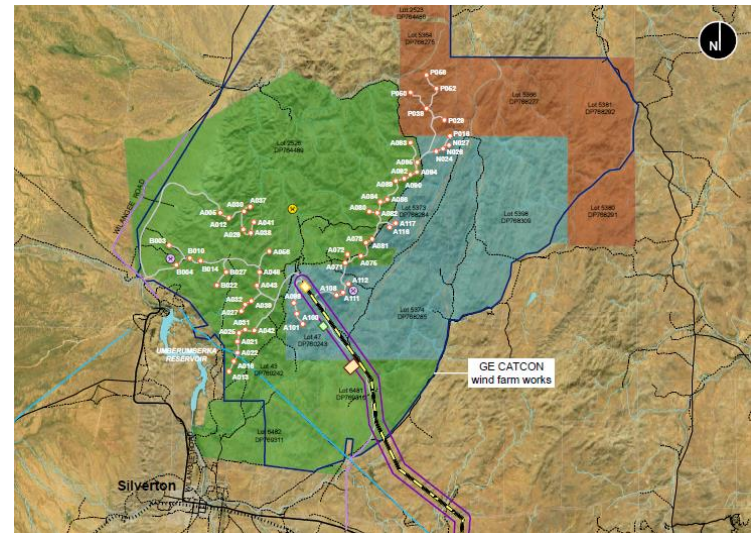
3. Project update

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)
 - First wind turbine foundation successfully poured
 - AGL Board's Safety, Sustainability & Corporate Responsibility (SSCR) Committee visited the Silverton Wind Farm on 5-6 Sept 2017.
- Construction work hours
 - Construction will be undertaken outside the typical hours where the noise will not impact neighbouring residents



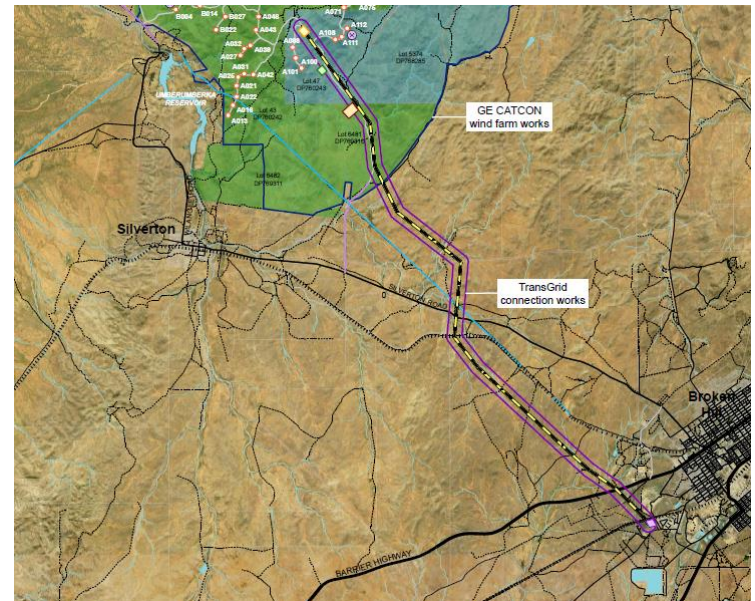
3. Project update

Silverton Wind Farm



Connection Works

- TransGrid (Network Services Provider) has been engaged to deliver the connection works for the wind farm
 - Project Agreement (construction)
- Scope of works, includes
 - Wind farm 220kV substation
 - ~25km of 220kV transmission line
 - New circuit breaker in TransGrid's existing 220kV Broken Hill substation
 - Communication works (within network)
- Key project milestones (following previous CCC)
 - First foundation poured for the 220kV transmission line



3. Project update

Wind Farm Works



Construction works

- Civil works progress:
 - Access road clearance: 50/63km (~80%)
 - Access road capping: 25/63km (~40%)
- Structural works progress:
 - WTG foundations excavated: 25/58 (~43%)
 - WTG foundations poured: 8/58 (~14%)
- Electrical works progress:
 - Commenced pre-trenching for underground 33kV collector system
 - Commenced earth grid and earth stake installation to the 33kV switchyard

External roadworks

- Works Authorisation Deeds (WADs) have been executed with RMS and works will commence following RMS approval.

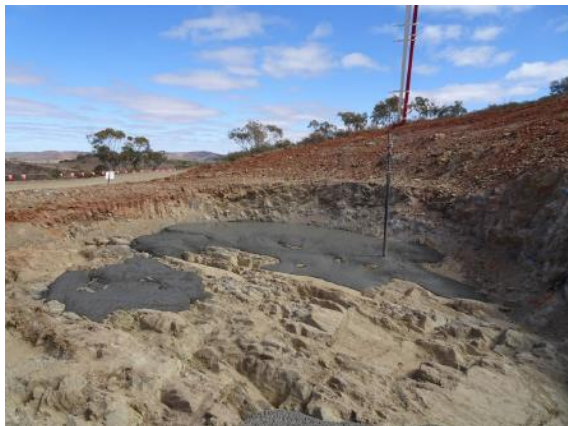


3. Project update

Wind Farm Works



Construction works – Progress photos



3. Project update

Wind Farm Works



Daydream Mine Road

- GE-CATCON undertake dust suppression activities
 - Early morning (before work)
 - Late afternoon (after work)
 - Other high traffic occasions

Need to balance dust suppression with water usage.

- Maintenance roadworks are currently being undertaken which should provide improved binding of the road surface (ie. reduce dust generation)



3. Project update

Wind Farm Works



Road Upgrade and Maintenance Strategy

- GE-CATCON has revised the Road Upgrade and Maintenance Strategy (revision 3) which was formally accepted by RMS on 24 August 2017.
- The Road Upgrade and Maintenance Strategy forms the basis of the external roadworks, including:
 - Broken Hill Short bypass (WAD 1) → Oct / Nov 2017*
 - Silvertown Road / Daydream Mine Road intersection (WAD 2) → Sept / Oct 2017*
 - Daydream Mine Road maintenance and upgrade (incl site access) (WAD 3) → Oct 2017*
 - Silvertown Road pull over bays (WAD 4) → Oct / Nov 2017*
- WAD 1-3 have been executed and WAD 4 is currently being finalised with RMS.

* *Subject to RMS approval*

SILVERTOWN WIND FARM

Energy in Action | SIFAGL | GE | catcon civil & steel technical construction

ROAD UPGRADE AND MAINTENANCE STRATEGY

Project Name: Silvertown Wind Farm
Level B1 Doc No.: B1-2-5

CURRENT REVISION		
Revision:	Reason for Revisions:	Date of Revision
3	Issued for Construction	
Prepared by:	C. Patterson	07.08.17
Reviewed by:	P. Busolin	10.08.17
Approved by:	P. Busolin	10.08.17

Doc No: B1-2-5 | Rev: 3 | Rev Date: 07.08.17 | Authorised by: Project Manager | Page 1 of 37
S:\V4.0 Document Control\4.6 Level B1 Documentation\B1-2-5 Road Upgrade & Maintenance Strategy\B1-2-5 Road Upgrade and Maintenance Strategy_R3.docx

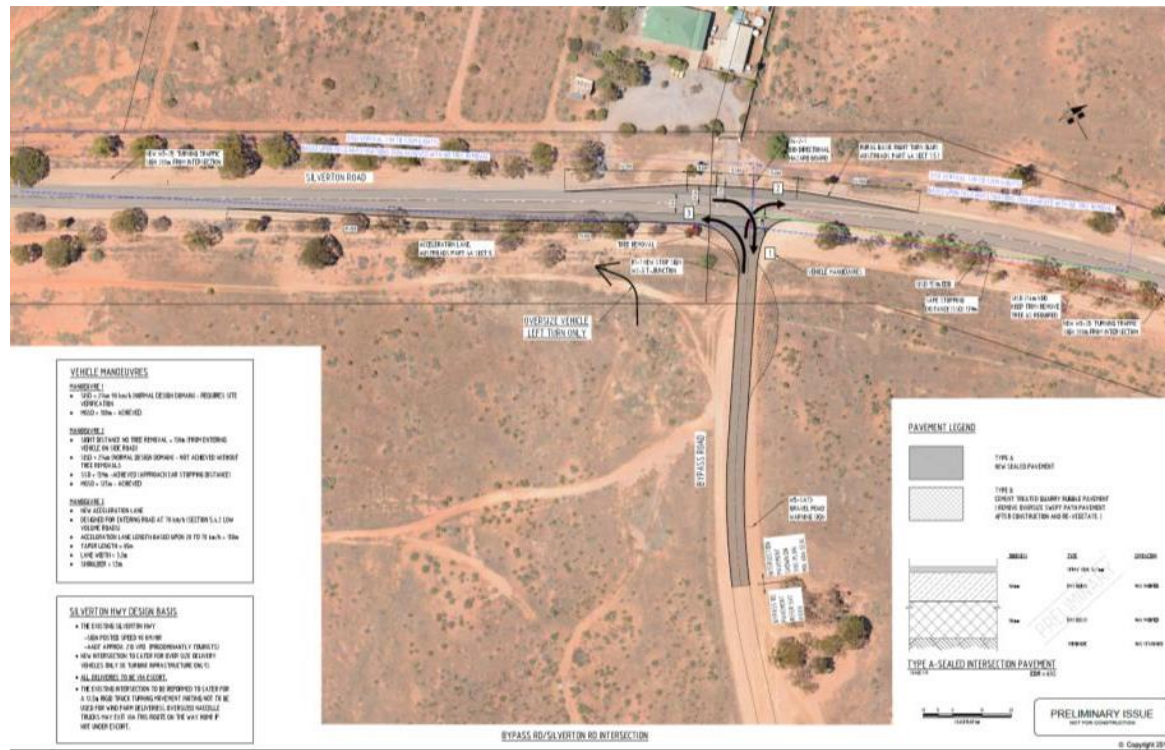
3. Project update

Wind Farm Works



Road Upgrade and Maintenance Strategy

- Short bypass (Silverton Road intersection) (WAD 1)



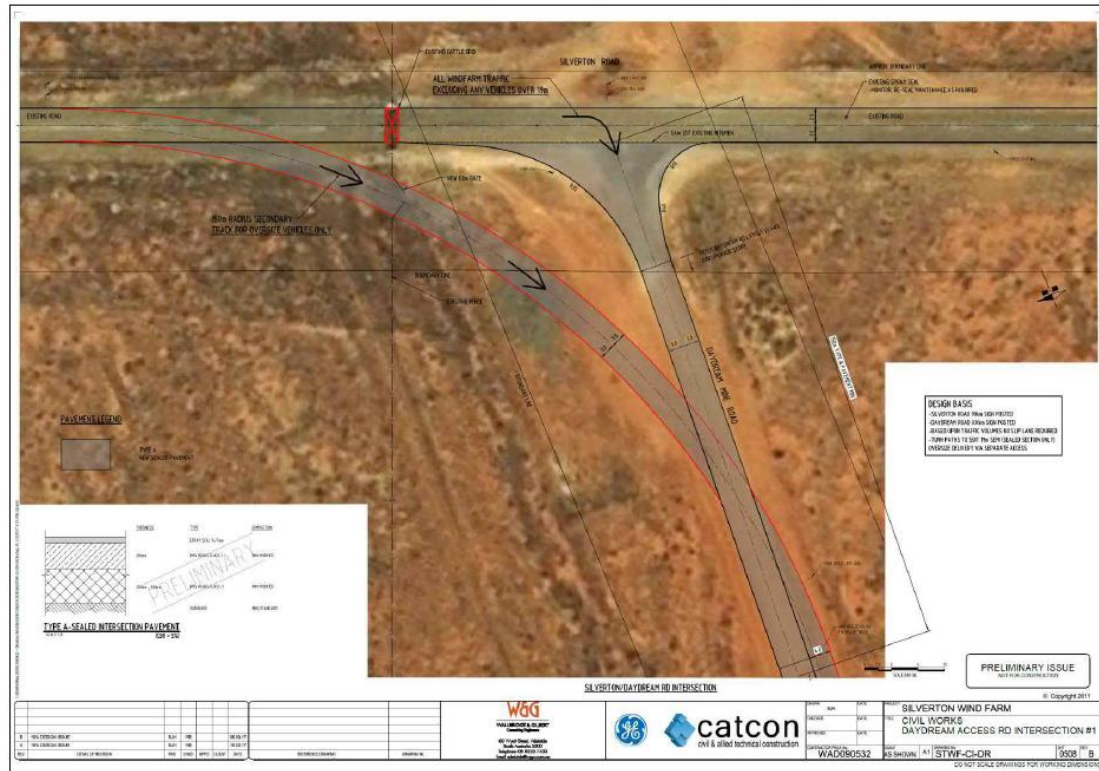
3. Project update

Wind Farm Works



Road Upgrade and Maintenance Strategy

- Silverton Road / Daydream Mine Road intersection (WAD 2)
 - First external roadworks (subject to RMS approval)



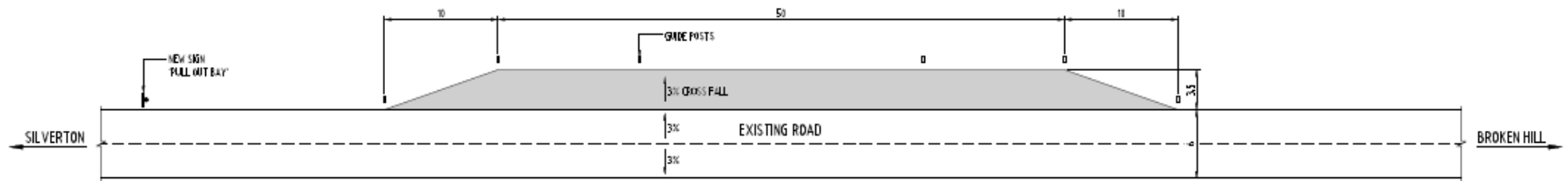
3. Project update

Wind Farm Works

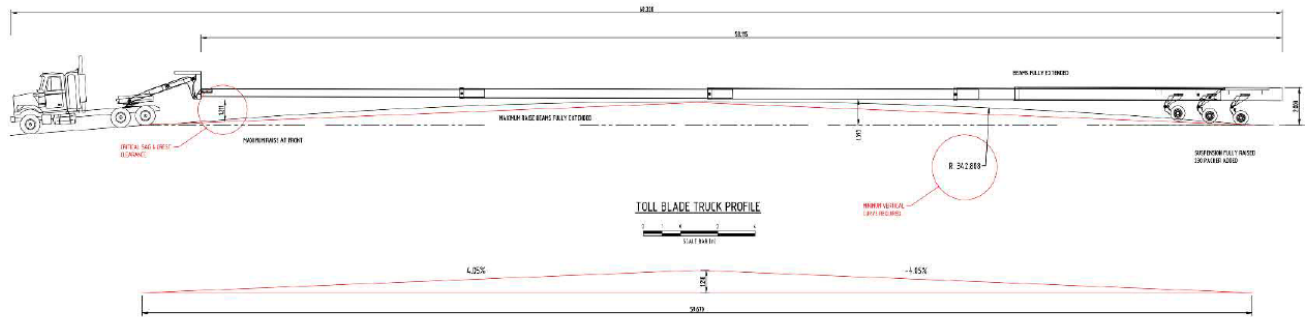


Road Upgrade and Maintenance Strategy

- Silverton Road pull over bays (WAD 4)
- Two pull over bays at approx. 5km apart on Silverton Road between Daydream Mine Road and



SILVERTON ROAD PASSING BAY DETAIL
SCALE 1:100



VERTICAL CLEARANCE/CHANGE IN GRADE - CHECK INTS
(NOTE: VERTICAL CLEARANCE OF 12m CORRELATES TO A MAXIMUM CHANGE IN GRADE OF APPROXIMATELY 8%)

3. Project update

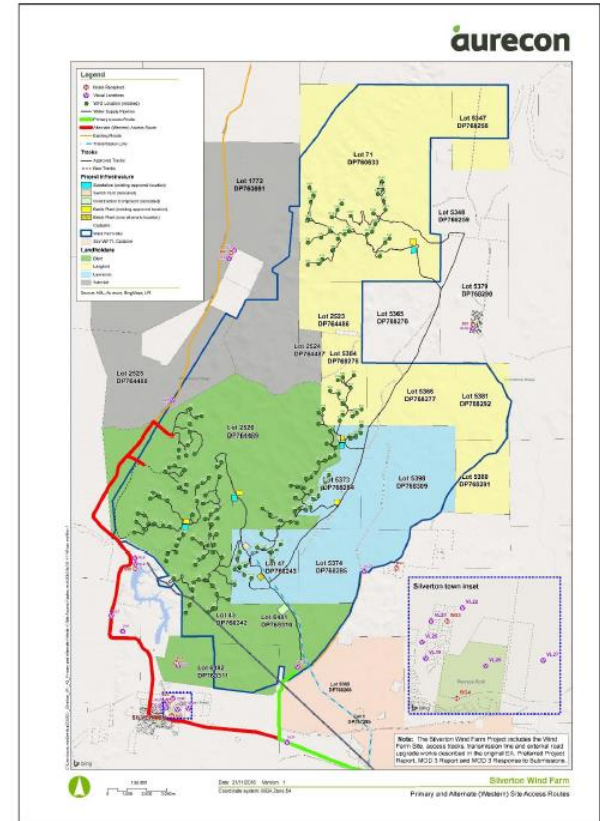
Wind Farm Works



Traffic Management Plan

- GE-CATCON has revised the Traffic Management Plan (revision 4) which was formally accepted by RMS on 24 August 2017, subject to the following:
 - Variable Message Signs to be located west of Daydream Mine Road/Silverton Rd intersection and east of the proposed bypass road intersection with Silverton Rd
- Previous amendments to the TMP are shown below:
 - Alternate (Western) Access Route will only be used for emergencies and/or unavoidable (primary access via Daydream Mine Rd)
 - Use of the Western Access Route would require a separate special permit with RMS and require consultation with the Silverton Village Committee and the CCC.

APPENDIX 7
HEAVY AND OVER-DIMENSIONAL VEHICLE ROUTES



3. Project update

Wind Farm Works



Local Industry Participation

- Industry briefing provided in January 2017 at Silverton and Broken Hill
- Currently ~85 construction workers with approximately 40% from the local area.
- High involvement of local suppliers

Employment Forecast

- Employment opportunities
 - Up to 150 jobs during the peak of construction
 - Up to 10 full time jobs during the operations phase

GE-CATCON Silverton contacts

- WF Procurement: silvertonwf@catcon.com.au
- WF Employment: hr@catcon.com.au



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
 - Avis
 - Barrier Daily Truth
 - Boss Construction
 - Broken Hill Hire & Engineering Services
 - Broken Hill Mini Excavators
 - Broken Hill Nissan
 - Broken Hill Skip Bins
 - Cresswell Drilling
 - Globe Timber Mills & Joinery
 - Goodyear Autocare
 - Hertz
 - Interhealth Broken Hill
 - 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
 - Solcon Trading
 - SouthState Industrial Supplies
 - Tasco Petroleum

3. Project update

Wind Farm Works



Turbine Manufacturing

- Wind Turbine
 - Manufactured in Germany
 - Consists of the Nacelle, Hub and electrical equipment which forms the Down Tower Assembly
 - Nacelles manufactured: 10/58 (~17%)
 - Hubs manufactured: 14/58 (~24%)
- Towers
 - Manufactured in Vietnam
 - Sections fabricated: 275/290 (~95%)
 - First shipment September / October 2017
- Blades
 - Manufactured in Spain
 - Blade sets manufactured: 35/58 (~60%)
 - First shipment for September / October 2017.



3. Project update

Connection Works



TransGrid presentation



P0010959

Silverton Wind Farm Connection

AGL's Community Consultation Committee (CCC)
Presentation

TransGrid Presentation

19 September 2017

3. Project update

Connection Works



- TransGrid's scope of works include the following:
 - Switchbay at existing Broken Hill Substation
 - 25km 220kV Transmission Line
 - 220/33kV Silverton Substation
- TransGrid has engaged the following contractors:
 - Consolidated Power Projects (CPP)
 - NJ Constructions (Line works)
 - Multiworks (Civil Works)



3. Project update

Connection Works



Existing Broken Hill 220kV Substation

- Current Works:
 - Trenching for conduits
 - Excavation for footings
- Works Ahead:
 - Pouring footings
 - Installing High Voltage Equipment
 - Secondary Cabling



Works at existing Broken Hill 220kV Substation

3. Project update

Connection Works



Works at existing Broken Hill 220kV Substation

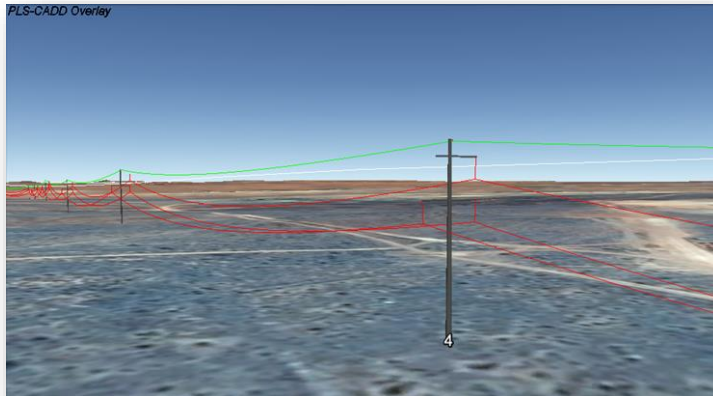
3. Project update

Connection Works



220kV Transmission Line

- Current Works:
 - Excavating footings
- Works Ahead:
 - Pouring footings
 - Installing steel transmission poles
 - Stringing conductor



Typical 220kV Transmission Line Single pole, single circuit arrangement.

3. Project update

Connection Works



Works along new transmission line

3. Project update

Connection Works



220kV Wind Farm Substation

- Current Works:
 - Trenching for conduits
 - Excavation for footings
 - Excavation for transformer bund
- Works Ahead:
 - Pouring footings
 - Installing High Voltage Equipment
 - Secondary Cabling
 - Delivery of transformer



Works at new Silverton Substation

3. Project update

Connection Works



Trenching at Silverton substation

3. Stakeholder Feedback Welcomed

Connection Works



- We are excited to support AGL in delivering this great project and committed to do so in a manner that minimises landowner and community disruption and inconvenience.
- To ensure we are able to address your concerns for the project - we welcome your feedback.
- If you would like to provide feedback or require further information – please visit <https://www.transgrid.com.au> or Freecall 1800 222 537



4. Community relations update

4. Community relations update

Community enhancement program



Community Enhancement Program

AGL will prepare a Community Enhancement Program for the Silverton Wind Farm within 6 months of the commencement of construction, in accordance with condition 18 (schedule 2) of the project approval.

- Silverton Community Fund
 - \$15,000 per year + CPI (life of project)
- Solar Silverton Program
 - 5kW solar PV for leaseholder and residences within 10 km of project.
- Water tank program
- Mobile reception program
 - Contribute up to \$50,000 for mobile reception improvement works



4. Community relations update

Community enhancement program



Solar Silverton Program

- AGL has completed preliminary consultation with Silverton residents
 - Apr-May 2017
- AGL Solar has completed desktop assessment of local capability
 - Four local Clean Energy Council (CEC) accredited installers
 - AGL is meeting with these four local installers to understand their availability
- AGL Solar will need to further inspect the Silverton property to assess the following:
 - Structural → condition of roof
 - Hazardous materials → No asbestos
 - Electrical → condition of switchboard
- Installation will depend upon the property inspection and availability of local installers.



4. Community relations update

Community enhancement program



Water Tank Program

- AGL has progressed quotes for water tanks with potential supplier and installers (plumbers)
- AGL will need to arrange for property inspections to assess the following:
 - Structural → ground condition
 - Connection → roof drainage
- Installation will depend upon property inspections and availability of local suppliers and installers



4. Community relations update

Community enhancement program



Mobile Reception Program

- AGL has been working with Telstra on mobile reception coverage options in Silverton, and have identified a 4GX solution
 - 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
- The Silverton Village Committee Inc. held a meeting on Thursday, 31 August 2017 to discuss the proposed solution



Proposed 4G small cell location



A typical 20m monopole with an omni antenna configuration

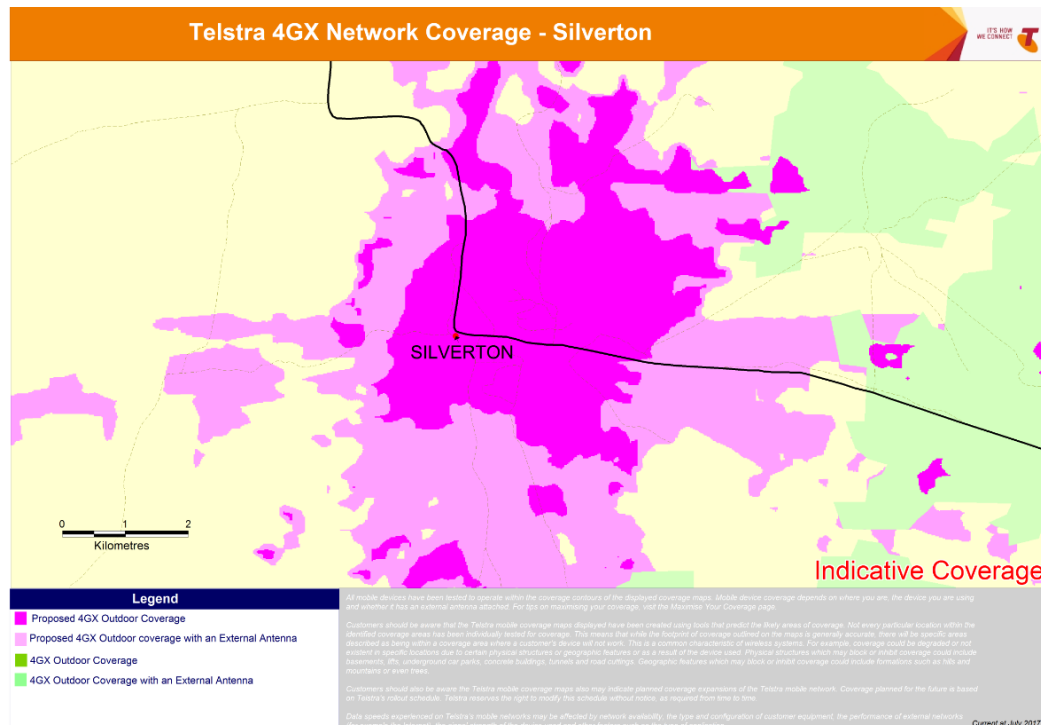
4. Community relations update

Community enhancement program



Mobile Reception Program

- The coverage predications below provide and 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 improve 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.

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



4. Community relations update

Community engagement



Silverton Information Centre

- AGL will be utilising the old butchers shop in Silverton during the construction of the wind farm to provide project information and updates

Community information

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

- P: 1800-039-600
- E: AGLcommunity@agl.com.au
- W: <https://www.agl.com.au/about-agl/how-we-source-energy/renewable-energy/silverton-wind-farm>

Construction information

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



- Blasting
- Visual impact assessment

5. Topics of interest

5. Topics of interest

Site access road blasting



Blasting

GE-CATCON has undertaken low powder blast in accordance with condition 11 and 12 (schedule 3) of the project approval.

- Similar to the daily 7:45pm blast in Broken Hill
- Blast will be designed, monitored and recorded
- Strict access controls will be in place around the blast site
- Further blasting may be undertaken depending on the requirements for excavation and the quality of the rock



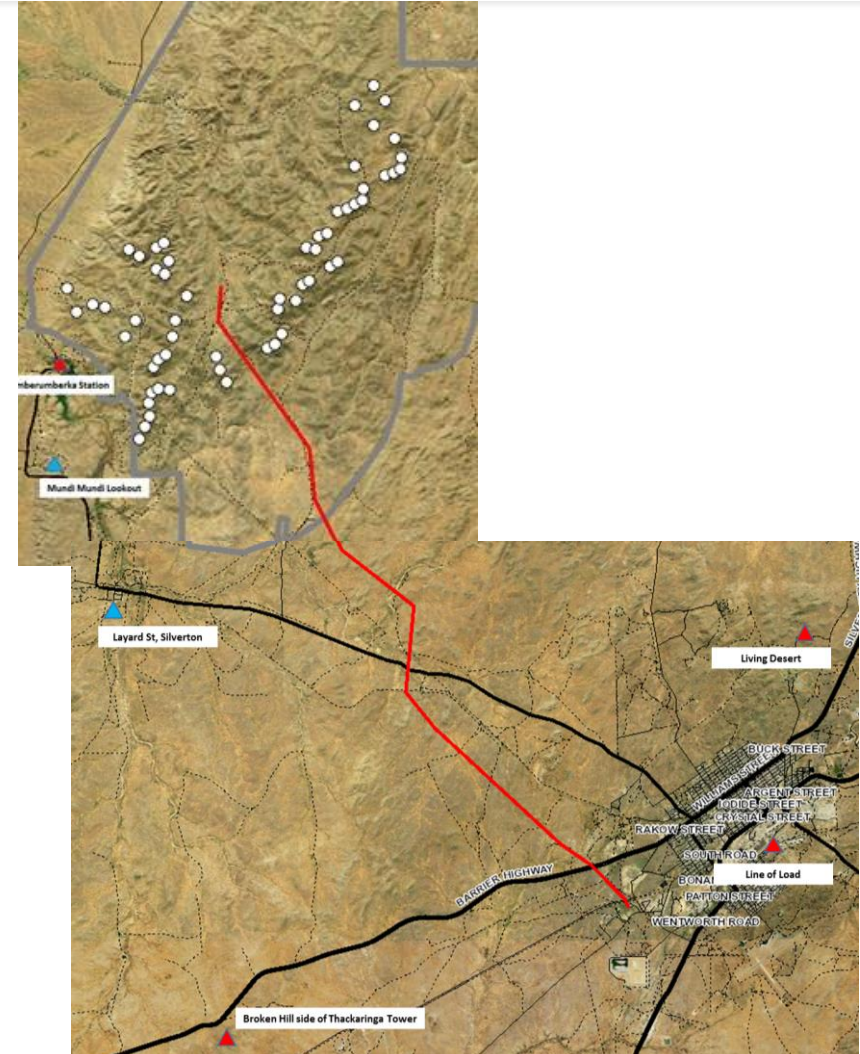
5. Topics of interest

Visual impact assessment



Silverton Wind Farm

- Green Bean Design has prepared photomontages from the following six locations (developed with the community):
 - Silverton township
 - Mundi Mundi lookout
 - Umberumberka House
 - Desert Sculpture (Living Desert)
 - North Silverton
 - Thackaringa Tower (Broken Hill side)
- Photomontages have been developed in accordance with Wind Energy: Visual Assessment Bulletin prepared by NSW DPE
 - 120 degree photomontage provides a broad view from the location.
 - 60 degree photomontage provides a more narrower / “zoomed in” view.
 - Both images show the correct size relative to the landscape



5. Topics of interest

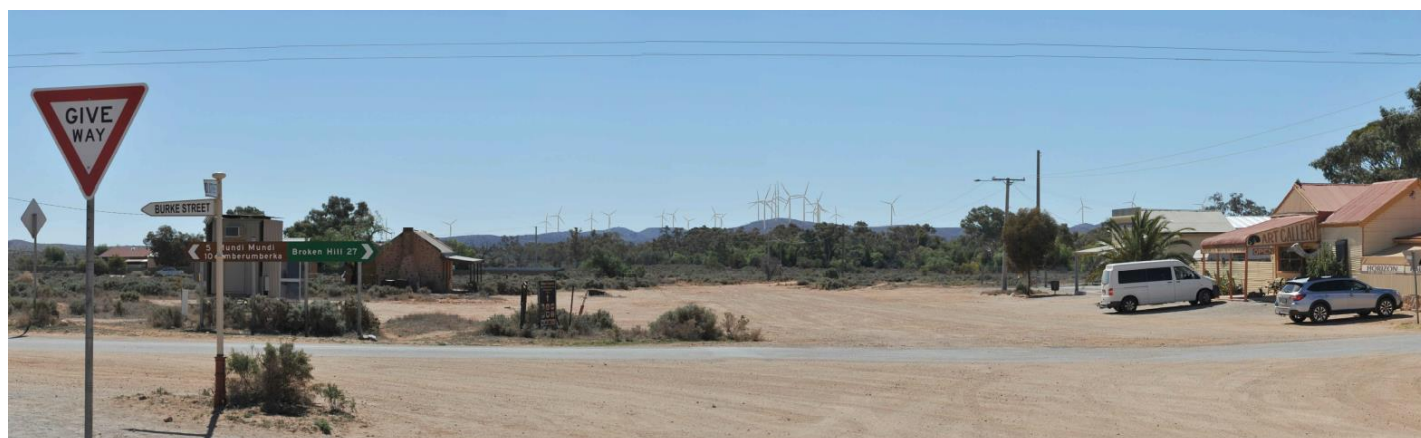
Visual impact assessment



Photomontage – view NW to ENE from Layard Street



120 degree view



60 degree view

5. Topics of interest

Visual impact assessment



Photomontage – view NNW to ENE from North Silverton



120 degree view



60 degree view

5. Topics of interest

Visual impact assessment



Photomontage – view SW to NW from Living Desert Sculpture Park



120 degree view



60 degree view

5. Topics of interest

Visual impact assessment



Photomontage – view NW to EN from Thackaringa Tower



120 degree view



60 degree view

5. Topics of interest

Visual impact assessment



Photomontage – view NE to SSE from Umberumberka



120 degree view



60 degree view

5. Topics of interest

Visual impact assessment



Photomontage – view NW to ENE from Mundi Mundi Lookout



120 degree view



60 degree view

5. Topics of interest

Broken Heel Festival



Diamond stilettos sponsor over the Broken Heel Festival

- AGL had a local presence, with the Community Relations team attending the parade and weekend activities.





6. Other business

Silverton Wind Farm

Community Consultative Committee (CCC)

- Next meeting
 - Thursday, 23 November 2017
 - Time: 6-8pm
 - Silverton Municipal Chambers, Silverton



Next meeting

Contact

AGL Energy

Silverton Wind Farm

1800-039-600

AGLcommunity@agl.com.au