

# Silverton Wind Farm

Community Consultative Committee  
Meeting No.CCC-022

Thursday, 25 May 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
- Horses and wind  
farms

6

Other  
business



# 1. Welcome

A decorative graphic element at the bottom of the slide, consisting of a blue gradient shape that rises from the left and curves to the right, resembling a stylized wave or a hill. The color transitions from a dark blue on the left to a lighter cyan on the right.

## 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 – 3/17
2.21.03	AGL to follow up with Bob Watson to confirm receipt of future minutes.	Closed	KL – 3/17
3.21.15	CCC member noted that Belmont Road is being used and requested drivers slow down. CATCON confirmed that a local subcontractor is based in Silverton and will action this request.	Open	PB – 4/17
4.21.09	CCC advised that the NSW State Government was recently in the local area in relation to telecommunication works. AGL to liaise with Hon Kevin Humphries MP, local Member for Barwon.	Open	AGL 5/17

- 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

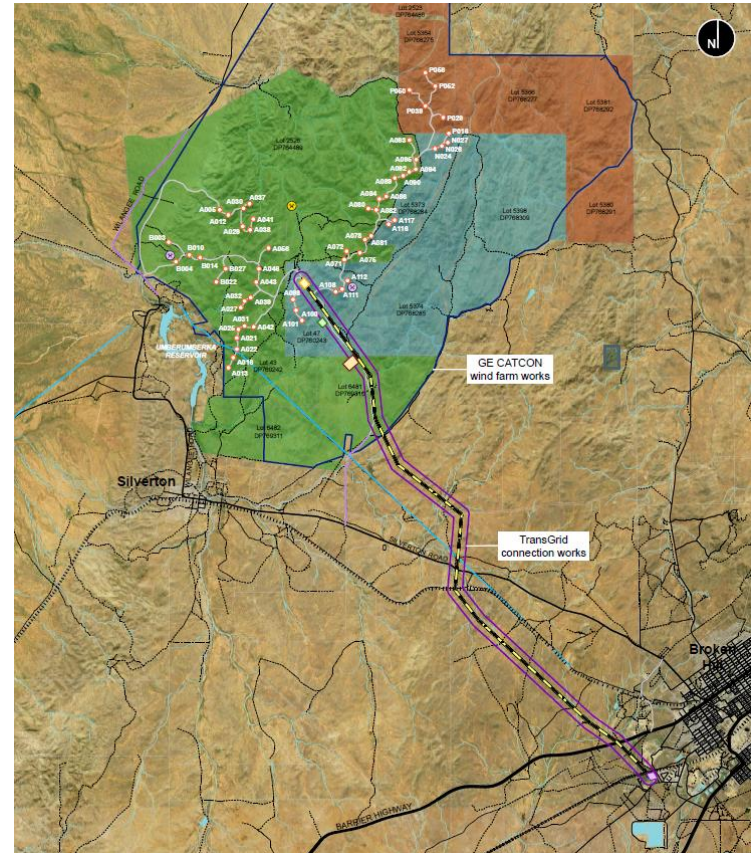
## Silverton Wind Farm



### 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>





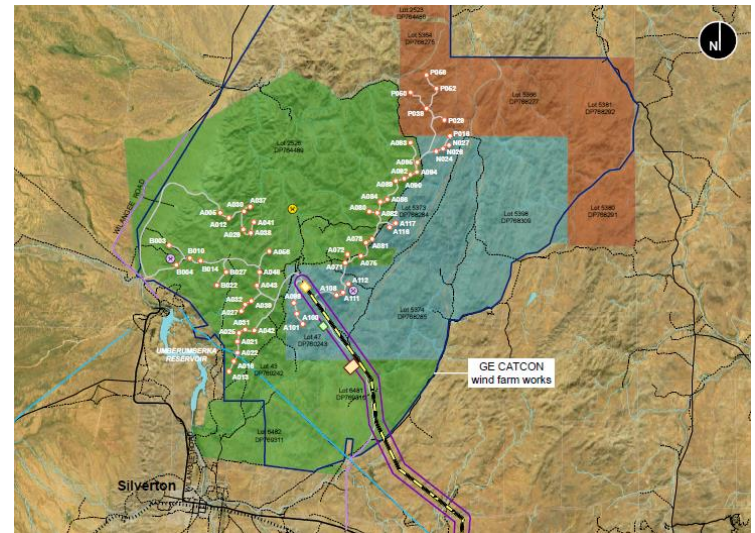
# 3. Project update

## 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
- Pre-construction minor works commenced on 4 April 2017
- Construction works commenced on 11 May 2017



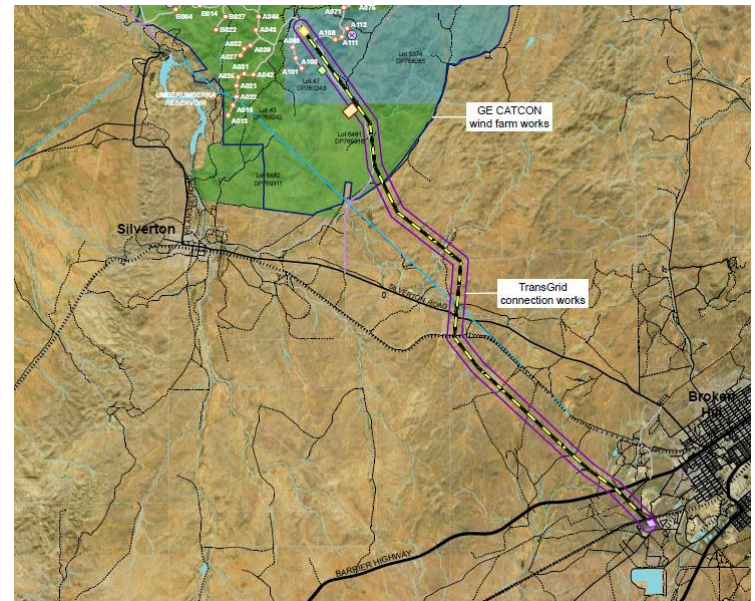
# 3. Project update

## 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)



# 3. Project update

## Silverton Wind Farm



### Industry briefing

- AGL together with GE-CATCON conducted an industry briefing on Tuesday, 31 January 2017 at Silverton and Broken Hill
  - Both sessions were well attended by local industry and people interested in employment
- Contractor will be developing a local industry participation plan
- 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](mailto:silvertonwf@catcon.com.au)
  - WF Employment: [hr@catcon.com.au](mailto:hr@catcon.com.au)





# 3. Project update

## Wind Farm Works



### Pre-construction minor works

- GE-CATCON commenced pre-construction minor works on 4 April 2017 and consisted of:
  - Clearing of initial road way to temporary construction facilities
  - Construction of the site compound facilities.

### Construction works

- GE-CATCON commenced construction works on 11 May 2017 which consists of:
  - Extending the site access road ~8km to the wind farm 220kV substation (TransGrid interface)
  - Construction crew

*Currently ~25 construction workers with just under 40% from the local area.*





# 3. Project update

## Wind Farm Works



### Construction works

- Progress photos



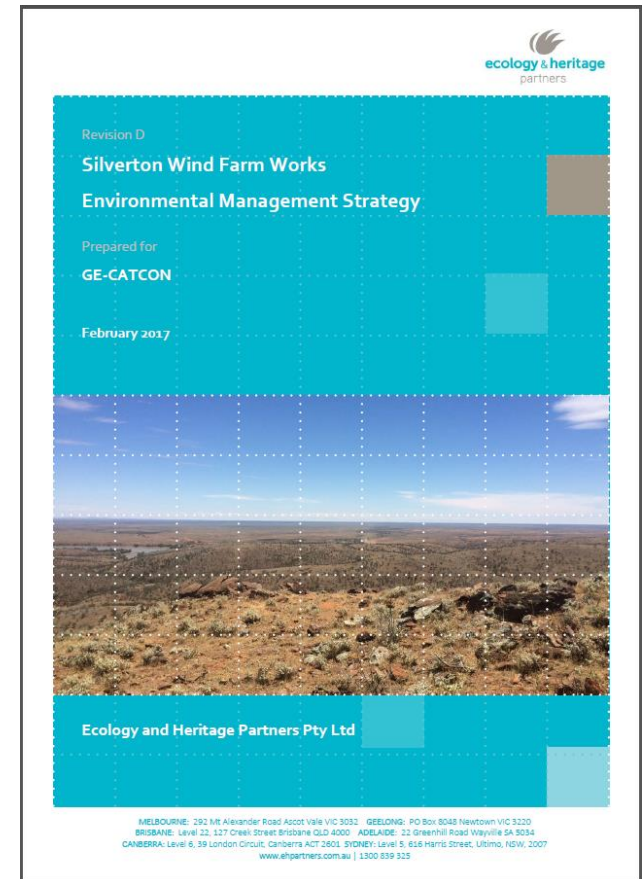
# 3. Project update

## Wind Farm Works



### Wind Farm Environmental Management Strategy and Plans

- GE-CATCON's Environmental Management Strategy for the Wind Farm Works and the relevant plans was approved by the Secretary on 5 May 2017.
- The following plans have been prepared in consultation with relevant government agencies and stakeholders:
  - Biodiversity Management Plan
  - Heritage Management Plan
  - Road Upgrade and Maintenance Strategy (conditional)
  - Traffic Management Plan (conditional)



# 3. Project update

## Wind Farm Works



### Road Upgrade and Maintenance Strategy

- GE-CATCON has developed in accordance with condition 24 (schedule 3) of the project approval:
  - Silverton Road upgrade
  - Silverton Road / Daydream Mine Road intersection
  - Daydream Mine Road upgrade
  - Daydream Mine Road / Site Access intersection
  - Short bypass (improvement to project approval)
- Strategy has been agreed with Roads and Maritime Services (RMS)

**SILVERTON WIND FARM**

Energy in action! **STAGL**

**catcon**  
civil & infrastructure construction

**ROAD UPGRADE AND MAINTENANCE STRATEGY**

**Project Name:** Silverton Wind Farm

**Level B1 Doc No.:** B1-2-5

CURRENT REVISION		
Revision:	Reason for Revisions:	Date of Revision
C	For Review	
<b>Prepared by:</b>	C. Patterson	17.03.17
<b>Reviewed by:</b>	P. Busolin	21.03.17
<b>Approved by:</b>		

Doc No: B1-2-5 | Rev: C | Rev Date: 17.03.17 | Authorised by: Project Manager | Page 1 of 22  
N:\2-Group Operations\Projects\Uds: BS-900\2016 BS1 - Silverton Wind Farm\4.3 Document Control\4.6 Level B1 Documentation\B1-2-5 Road Upgrade & Maintenance Strategy\B1-2-5 Road Upgrade and Maintenance Strategy\_B1.docx

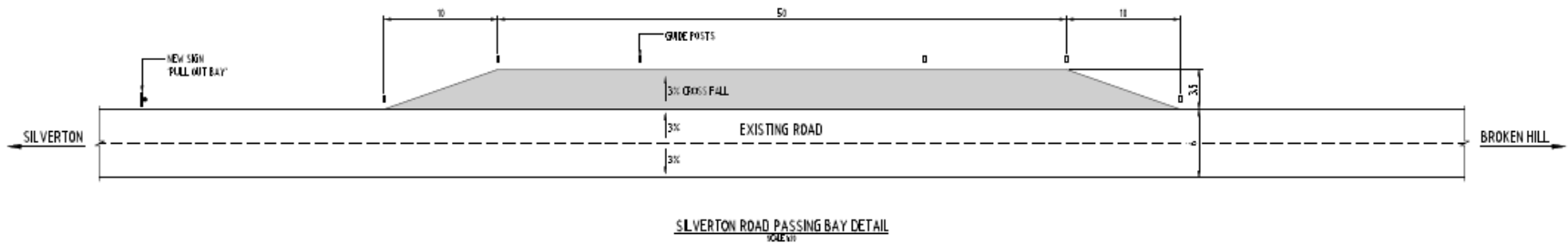
# 3. Project update

## Wind Farm Works



### Road Upgrade and Maintenance Strategy

- Silverton Road upgrade will include two pull over bays at approx. 5km apart





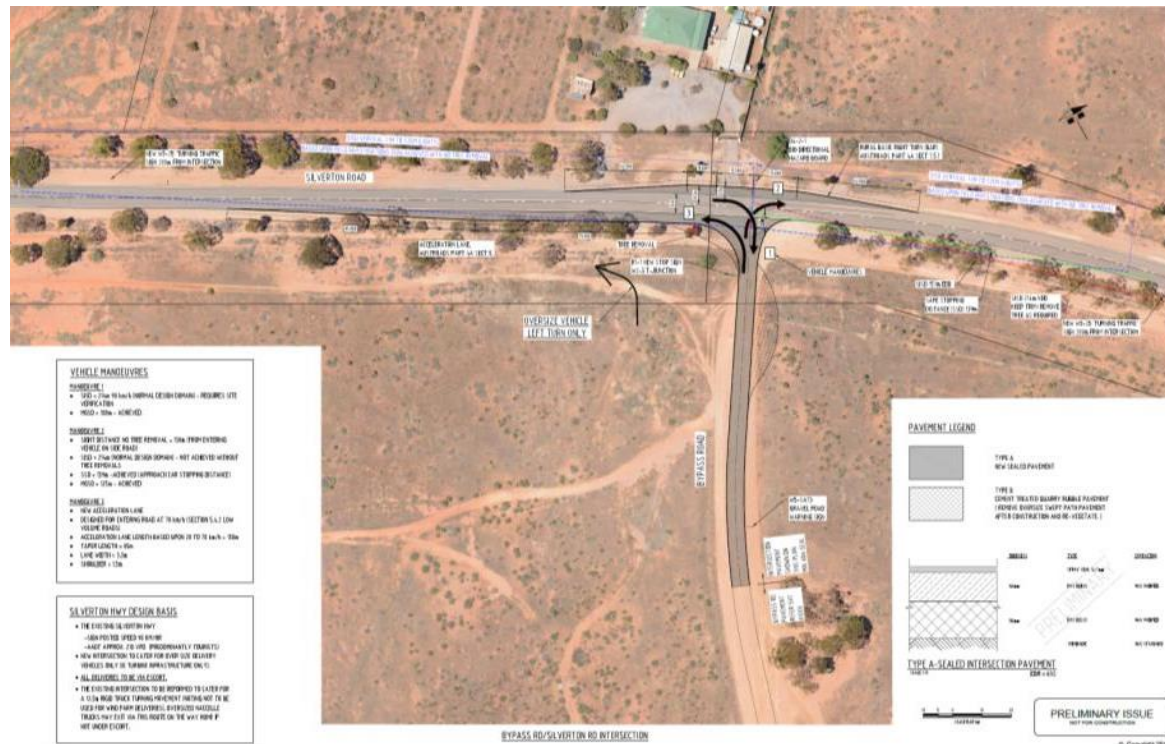
# 3. Project update

## Wind Farm Works



### Road Upgrade and Maintenance Strategy

- Short bypass (Silverton Road intersection)



# 3. Project update

## Wind Farm Works

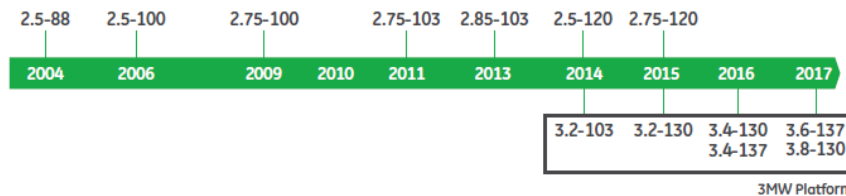


### Type wind turbine – GE 3.43-130

- Type Wind Turbine is installed in Wieringermeer, Holland (shown in photo).
- Nameplate of 3.43 MW with a 130m rotor and hub height of 110m
- The 3MW platform machines are an evolution of the 2.5MW turbine, developed in 2004.
- The GE 3.4-130 has up to 30% higher Annual Energy Production (AEP), compared to its predecessor the 3.2-103.

### Building Upon Proven Technology

Model introduction in Europe



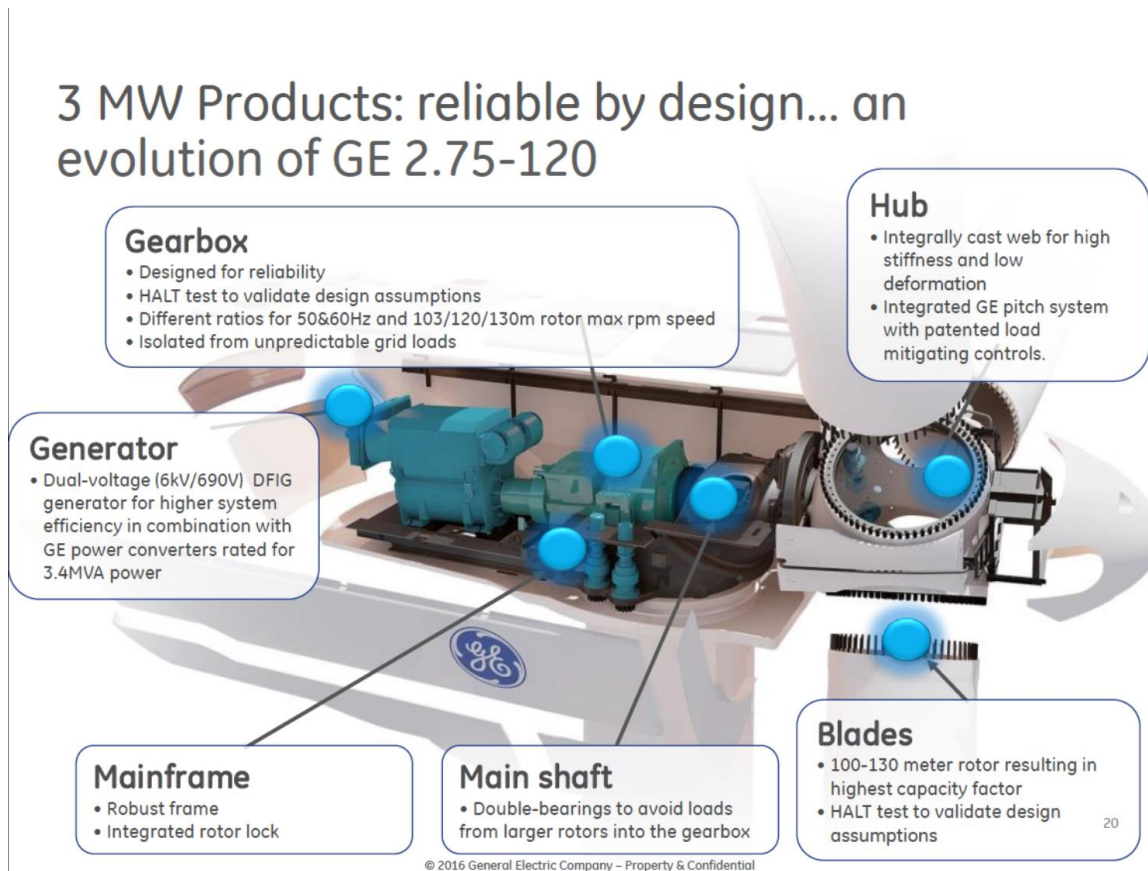
# 3. Project update

## Wind Farm Works



### Wind turbine GE 3.43-130

- Inside the GE 3.43-130 wind turbine



# 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
  - Subcomponents are being purchased and transported to the GE assembly factory. Assembly of these components is planned for July 2017, with the first shipment around September 2017.
- Towers
  - Manufactured in Vietnam
  - Procurement has begun. The tower supplier is preparing for the manufacturing, which is planned for June 2017.
  - The first shipment around October 2017
- Blades
  - Manufactured in Spain
  - The blade manufacturing has begun. The blades are 63.7m with the first shipment expected to around September 2017.



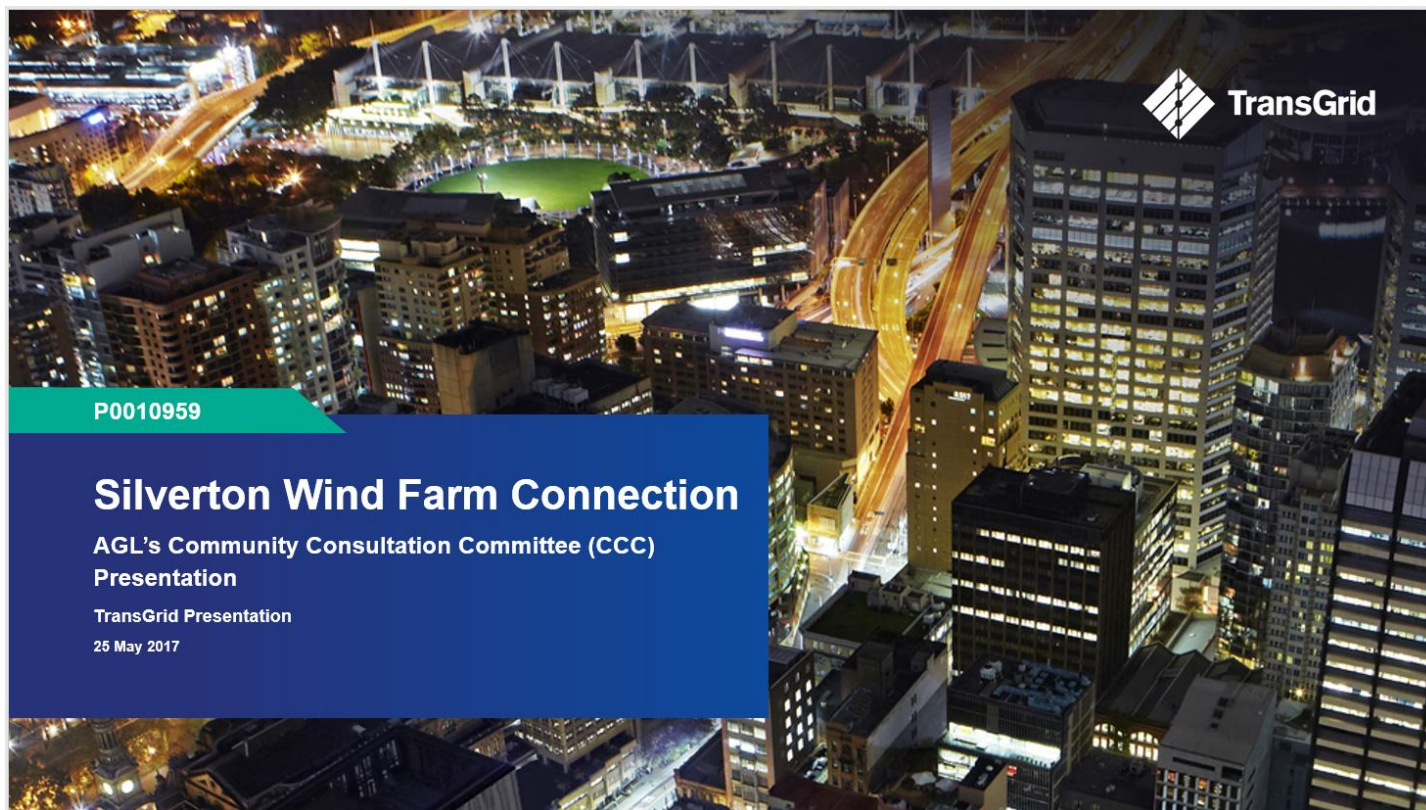


# 3. Project update

## Connection Works



### TransGrid presentation



# 3. Project update

## Connection Works



- On March 2017 TransGrid awarded the contract to Consolidated Power Projects (CPP) to build the Silverton Wind Farm connection works and perform the role of Principal Contractor for TransGrid.
- The connection works include the following:
  - Switchbay at existing Broken Hill Substation
  - ~25km 220kV Transmission Line
  - 220/33kV Silverton Substation



# 3. Project update

## Connection Works



### Existing 220kV Substation

- The Point of Connection (POC) for the Silverton Wind Farm will be in TransGrid's existing 220kV substation in Broken Hill.
- The scope of works includes:
  - Foundations for electrical equipment / bay.
  - 220kV circuit breaker and associated high voltage equipment.
  - Landing pole for 220kV overhead line connection
  - Secondary systems (i.e. protection, control & metering)



TransGrid's existing Broken Hill 220kV Substation.



# 3. Project update

## Connection Works



### Existing 220kV Substation Look Ahead

Mobilisation & Site Establishment – Mid June 2017

Location of new 220kV switch bay



Location of the new 220kV Switchbay



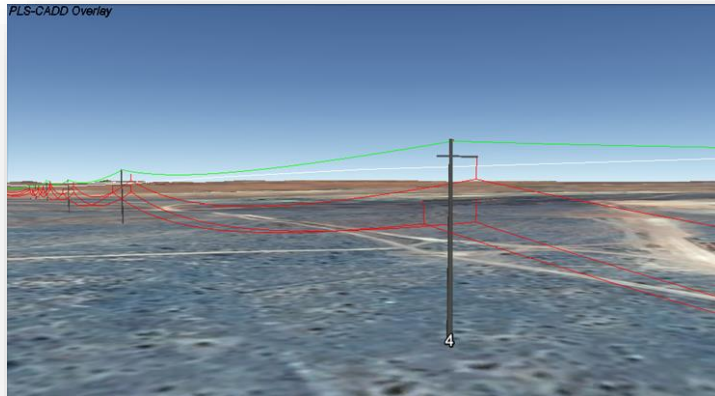
# 3. Project update

## Connection Works



### 220kV Transmission Line

- The Silverton Wind Farm is connected to the National Electricity Market (NEM) via the ~25km of 220kV transmission line to the Point of Connection (POC).
- The scope of works includes:
  - Single galvanized steel poles and associated footings
  - Three phase conductor and Optical Ground Wire (OPGW)
  - Insulators



220kV Transmission Line Design from Broken Hill Substation



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

# 3. Project update

## Connection Works



### 220kV Transmission Line Look Ahead

- Survey and pegging of pole locations – Mid June 2017
- Clearing of easements – Late June 2017
- Commence structure foundation construction – late July 2017



220kV Transmission Line route from TransGrid's existing Broken Hill 220kV substation to new Silverton Wind Farm 220kV Substation

# 3. Project update

## Connection Works



### 220kV Wind Farm Substation

- The Silverton Wind Farm is transformed to the 220kV network voltage via the 220kV wind farm substation.
- The scope of works includes:
  - Bunded transformer foundation
  - 220/33kV power transformer
  - 220kV Switchbay
  - Combined Secondary Systems & Auxiliary Services building (SSB/ASB)



Typical Secondary Systems Building (SSB)

Typical bunded transformer at 220/22kV





# 3. Project update

## Connection Works



### Silverton 220kV Substation Look Ahead

- Bulk earth works – Early June 2017
- Mobilise to Site – Early July 2017
- Detailed civil works (footings & foundations) – Mid July 2017



Typical 220kV switch bay

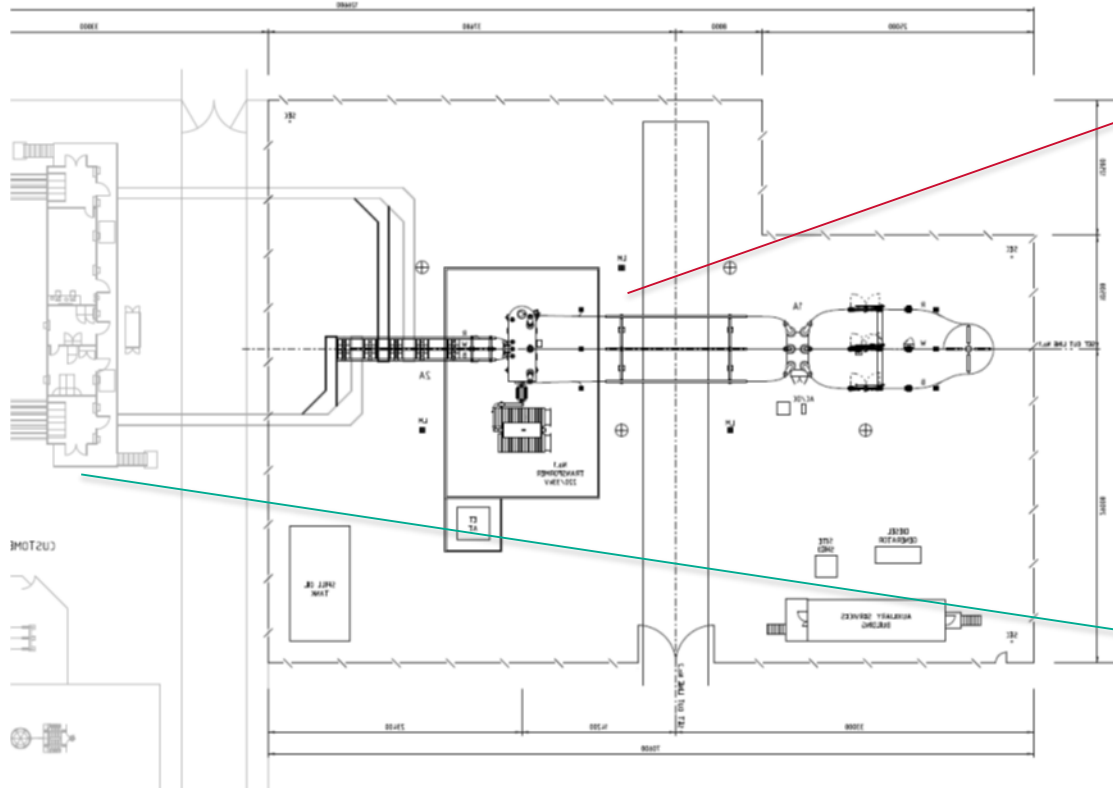


Control, protection and metering panels inside SSB



# 3. Project update

## Connection Works



220kV Silverton Substation Preliminary Design to be constructed by TransGrid

33kV Wind Farm collector substation to be constructed by GE-CATCON

# 3. Project update

## Connection Works

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- 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

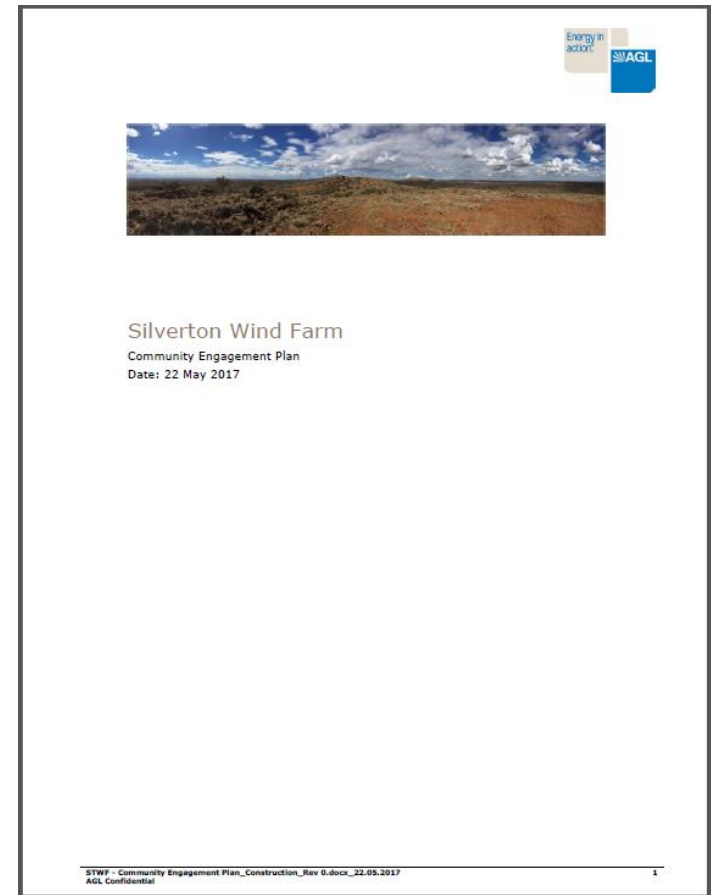
# 4. Community relations update

## Community engagement plan



### Community Engagement Plan

- AGL has finalised the Community Engagement Plan which will be available on our project website under “community matters”
- <https://www.agl.com.au/about-agl/how-we-source-energy/renewable-energy/silverton-wind-farm/community-matters>
- The Community Engagement Plan, includes
  - Community engagement commitments
  - Communication and engagement objectives
  - Engagement activities
  - Enquiries and complaints management
  - Review and updating





# 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.
  - Initial community consultation – 29 March 2017
- Water tank program
- Mobile reception program
  - Contribute up to \$50,000 for mobile reception improvement works



# 4. Community relations update

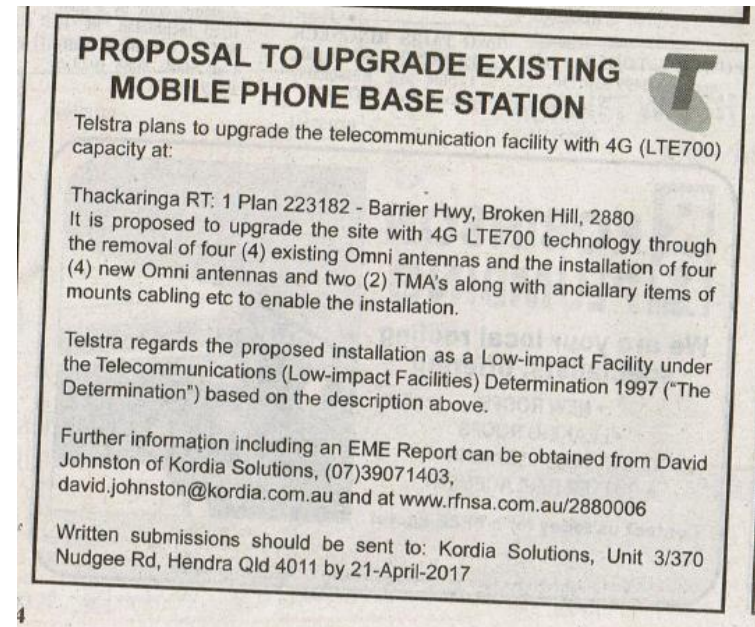
## Mobile reception program



### Mobile Reception Program

AGL is progressing feasibility studies with Telstra based on their existing infrastructure. The Black Spot Programme is the Australian Government's initiative to extend mobile phone coverage and competition in regional Australia.

- Mobile Black Spot Programme
  - Silverton has been identified as a “community reported black spot”.
  - <https://www.communications.gov.au/what-we-do/phone/mobile-services-and-coverage/mobile-black-spot-program>
- Thackaringa Tower
  - Telstra plans to upgrade the telecommunications facility with 4G



# 4. Community relations update

## Mobile reception program



### Thackaringa Tower

3G Coverage from Thackaringa Tower – at this stage only Telstra just covers Silverton

<https://www.cellmapper.net/map?MCC=505&MNC=1&type=UMTS&latitude=-31.987521358306168&longitude=141.23241081347658&zoom=12&showTowers=true&clusterEnabled=true&tilesEnabled=true&heatMapEnabled=false&showOrphans=false&showNoFrequencyOnly=false&showFrequencyOnly=false&showBandwidthOnly=false&DateFilterType=FirstSeen&showHex=false&bands=0,3,7,8,10,28&showVerifiedOnly=false&showUnverifiedOnly=false&showLTECAOnly=false&showBand=0>





# 4. Community relations update

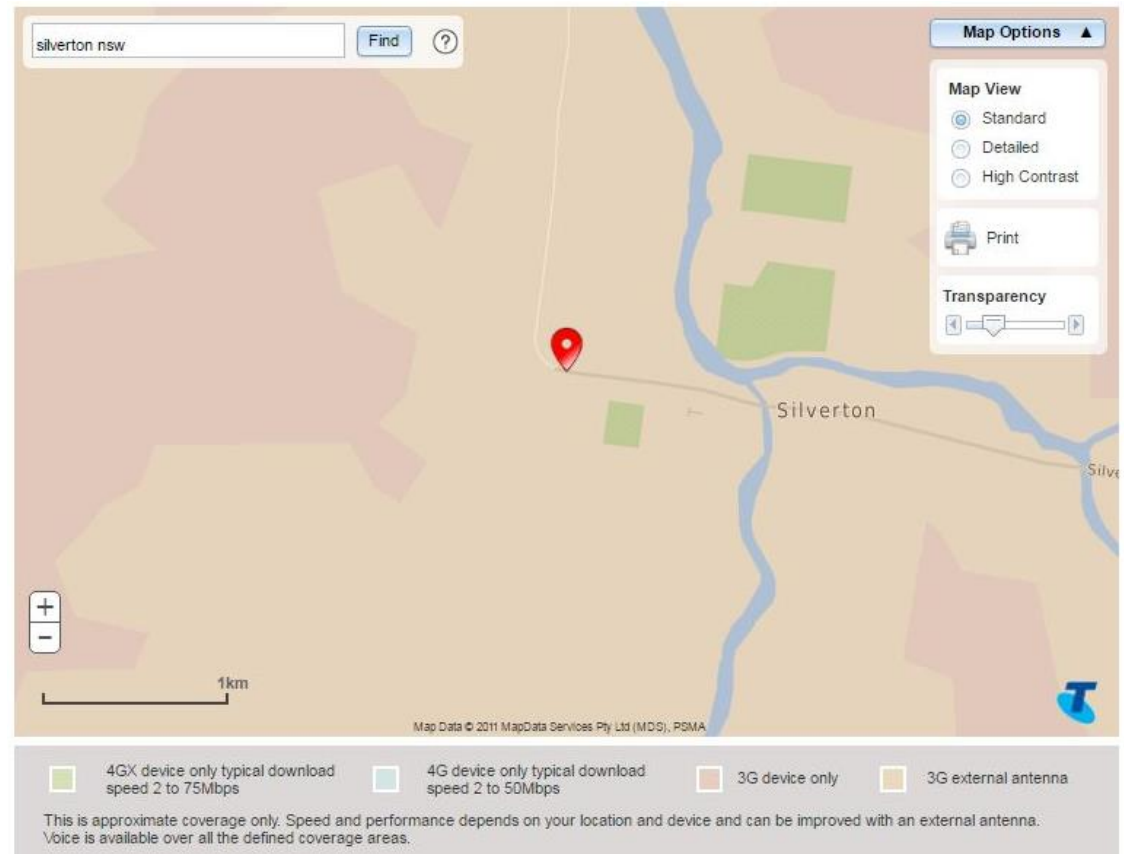
## Mobile reception program



### Existing Telstra Coverage

3G and 4G

- <https://www.telstra.com.au/regional-services/regional-coverage>





# 4. Community relations update

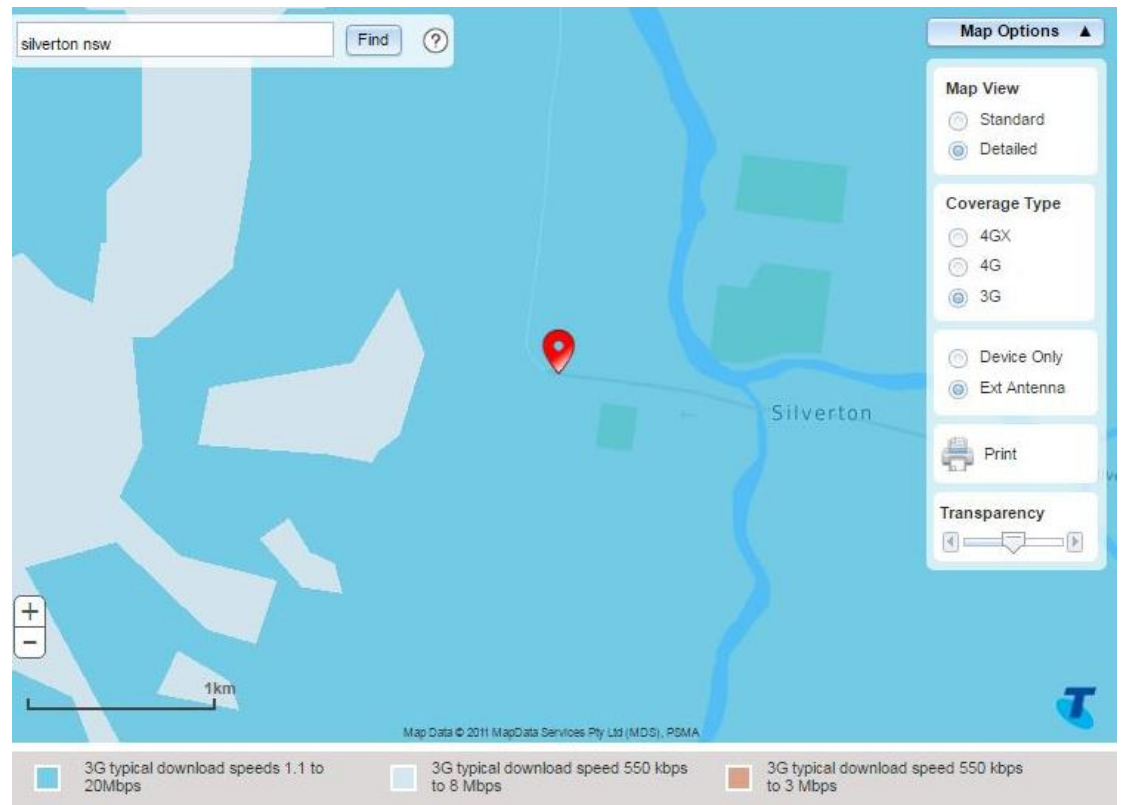
Mobile reception program



## Existing Telstra Coverage

3G and 4G with external antenna

- <https://www.telstra.com.au/regional-services/regional-coverage>



# 4. Community relations update

Mobile reception program



## Existing Optus Coverage

3G and 4G

- <http://www.optus.com.au/shop/mobile/network/coverage?sid=mobilecoverage:from:mobilenetwo rks:fy2018>



# 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](mailto: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.





# 4. Community relations update

## Community engagement



### Signage

- Project signboard has been erected at the site entry

### Construction notifications

- Notification will be provided through different means depending on the type of works and scope of works
  - Phone calls
  - E-mail distribution
  - Website
  - Community Consultative Committee (CCC)
  - Electronic noticeboard (Silverton Information Centre)

### Site tours

- Planned site tours will be arranged during the construction subject to site works



- Blasting
- Visual impact assessment
- Horse and wind farms

5. Topics of interest

# 5. Topics of interest

## Site access road blasting



### Blasting

GE-CATCON is planning to undertake a 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
- Blast will be undertaken about 8km from the site access
- Planned to undertake blast next week

<https://wn.com/blasting>



# 5. Topics of interest

## Visual impact assessment



### Modification 3

- AGL is proposing to prepare photo montages of the planned Silverton Wind Farm showing the 58 wind turbines – similar to the photo shown below





# 5. Topics of interest

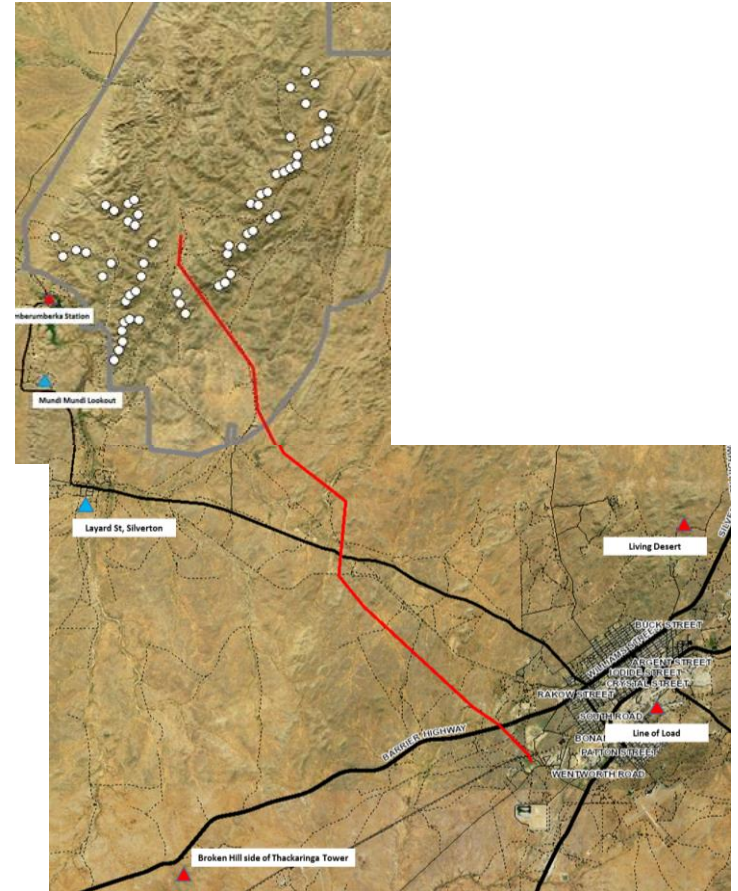
## Visual impact assessment



### Silverton Wind Farm

AGL is progressing an engagement of with Green Bean Design to prepare photomontages – considering the following locations developed with the community

- Silverton township
- Mundi Mundi lookout
- Umberumberka House
- Desert Sculpture (Living Desert)
  - Line of Load
- North Silverton
- Thackaringa Tower (Broken Hill side)



# 5. Topics of interest

## Horses and wind farm



### Delabole Wind Farm

- Delabole Wind Farm was the UK's first commercial wind farm, established in 1991. A horse stud farm and riding centre operates at the wind farm
- Originally the wind farm consisted of 10 turbines, a few years ago these were replaced with four new technology turbines which also increased the generation capacity output of the wind farm.
- Good Energy owns Delabole Wind Farm and we are looking to establish contact
  - <https://www.goodenergy.co.uk/our-energy/our-energy-farms/our-wind-farms/delabole-wind-farm/>





## 6. Other business

## **Silverton Wind Farm**

### **Community Consultative Committee (CCC)**

- Next meeting
  - Date
  - Time
  - Location



Next meeting



## Contact

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AGL Energy

Silverton Wind Farm

1800-039-600

[AGLcommunity@agl.com.au](mailto:AGLcommunity@agl.com.au)