

# Narrabri Coal Seam Gas Utilisation Project (MP 07\_0023)

## Modification 4



## 1. Introduction

### 1.1. Background

The Narrabri Coal Seam Gas (CSG) Utilisation Project is located within Petroleum Assessment Lease (PAL) 2 and at the Wilga Park Power Station in the Narrabri region of NSW. Santos NSW (Eastern) Pty Ltd (Santos), the operating subsidiary of the former Eastern Star Gas Ltd (ESG) now owned by Santos Limited, is the operator of PAL 2 and adjoining tenements including Petroleum Exploration Licence (PEL) 238 and Petroleum Production Lease (PPL) 3. Santos NSW (Narrabri Power) Pty Ltd is the operator of Wilga Park Power Station.

Wilga Park Power Station was originally constructed and operated pursuant to a development consent granted by Narrabri Shire Council on 14 November 2002 and subsequent modifications. The consent and modifications allowed the power station to operate up to a capacity of 12 megawatts using gas extracted from the Coonarah Gas Field in PPL 3.

On 2 December 2008 the Minister for Planning approved the Narrabri CSG Utilisation Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (MP 07\_0023).

The approved project includes:

- construction and operation of gas gathering systems at the Bibblewindi and Bohena Coal Seam Gas Pilots
- construction and operation of gas compression facilities at the Bibblewindi and Bohena Coal Seam Gas Pilots
- construction of an approximately 32 kilometre buried gas flow line between the Bibblewindi and Bohena Pilot and the Wilga Park Power Station; and
- the staged expansion and operation of the Wilga Park (base load) gas-fired power station from a capacity of 12 megawatts to 40 megawatts, fuelled by coal seam gas extracted from the Bibblewindi and Bohena Coal Seam Gas Pilots.

Construction of works the subject of the approval commenced in 2009. Further works continued during 2010-2012. The works which have been undertaken under the approval to date include:

- construction of the gas gathering systems at the Bibblewindi and Bohena CSG Pilots
- construction of the gas compression facilities at the Bibblewindi and Bohena CSG Pilots
- construction of the 32 kilometre buried gas flow line between the Bibblewindi and Bohena pilots and the Wilga Park Power Station
- installation of 4 x 3MW gas generators at Wilga Park Power Station together with switch room, gas conditioning skid, auxiliary transformers, ventilation fans, substation upgrade and other related equipment.

The following modifications to the Narrabri CSG Utilisation Project have been approved:

#### Modification 1:

The Minister for Planning approved a modification to the Narrabri CSG Utilisation Project on 11 February 2011 (MP 07\_0023 MOD 1). The modification changed condition of approval (CoA) 2.34 relating to the submission date for the compensatory habitat package required.

#### Modification 2:

The Planning Assessment Commission approved a further modification to the project on 14 March 2012 (MP 07\_0023 MOD 2) allowing the temporary use of the gas flow line to transfer produced water. The approval for this modification allowed the transfer of water until 28 February 2013.

### Modification 3:

The Planning Assessment Commission approved a further modification to the project on 18 July 2014 (MP 07\_0023 MOD 3) allowing:

1. Installation of a riser on the existing buried gas flow line which would allow materials (gas and liquids) to be diverted to the Leewood Produced Water Facility;
2. Use of the gas flow line to transfer liquids (including fresh water, produced water and brine) between the Tintsfeld ponds and the Bibblewindi Water Transfer facility and to the Leewood Produced Water Facility; and
3. Use of coal seam gas from existing or future wells within PAL 2 or PPL 3 at the Wilga Park Power Station.

As part of the modification approval the following additional condition was imposed:

1.4A Gas may only be received for use at the Wilga Park Power Station from wells located within Petroleum Assessment Lease 2:

- a) for a period of 3 years from the date of approval of Modification 3, in the case of any existing well; and
- b) for a period of 3 years from the date of commencement of such receipt, in the case of any well which is drilled following the date of approval of Modification 3.

*Note: The purpose of this condition is to ensure that the supply of gas to the power station arising from gas flow appraisal at exploration and/or appraisal wells is limited to a reasonable period. Supply of such gas to the power station from wells located within a Petroleum Assessment lease for longer periods would require further modification to this approval.*

## **1.2. Proposed modification**

Santos requests modifications to the project approval for the Narrabri CSG Utilisation Project under section 75W of the EP&A Act, on behalf of the titleholders of PAL 2 and PEL 238 - Santos NSW Pty Ltd and EnergyAustralia Narrabri Gas Pty Ltd, and the operator of Wilga Park Power Station, Santos NSW (Narrabri Power) Pty Ltd.

Santos is seeking approval for the following modification allowing:

Use of coal seam gas from existing or future wells within PEL 238 at the Wilga Park Power Station consistent with the recent amendment to the *Petroleum (Onshore) Regulation 2007*. This would be in addition to the currently approved use of gas from pilots within PAL 2 and PPL 3.

## **2. Site and context**

### **2.1. Project site**

The project site, to which the major project approval (MP 07\_0023) applies, is located within PEL 238 and PAL 2. PEL 238 encompasses a 7916 km<sup>2</sup> area overlying Narrabri and the Pilliga Forest to the south of Narrabri. PAL 2 is located in the centre of PEL 238 and covers a 267 km<sup>2</sup> area.

This modification application applies to any existing or future approved pilot wells within PEL 238. See Figure 1 below.

## **2.2. PEL 238 CSG Pilot Wells**

The following is a list of existing and approved CSG pilot wells located within PEL 238:

- Dewhurst 22-25 Pilot (Dewhurst 6, 22, 23, 24 and 25)
- Dewhurst 26-31 Pilot (Dewhurst 26, 27, 28, 29. Construction has commenced for wells 30 and 31)
- Dewhurst 13-18H Pilot (Dewhurst 13, 14, 15, 16H, 17H and 18H)
- Tintsfeld CSG Pilot (Tintsfeld 2, 3, 4, 5, 6 and 7)
- Dewhurst 9 and 10 pilot wells
- Wilga Park 1 and 3 pilot wells
- Brigalow Park 1

As exploration and appraisal continues within PEL 238 and PAL 2, approval for installation of additional pilot wells and supporting infrastructure may be sought.



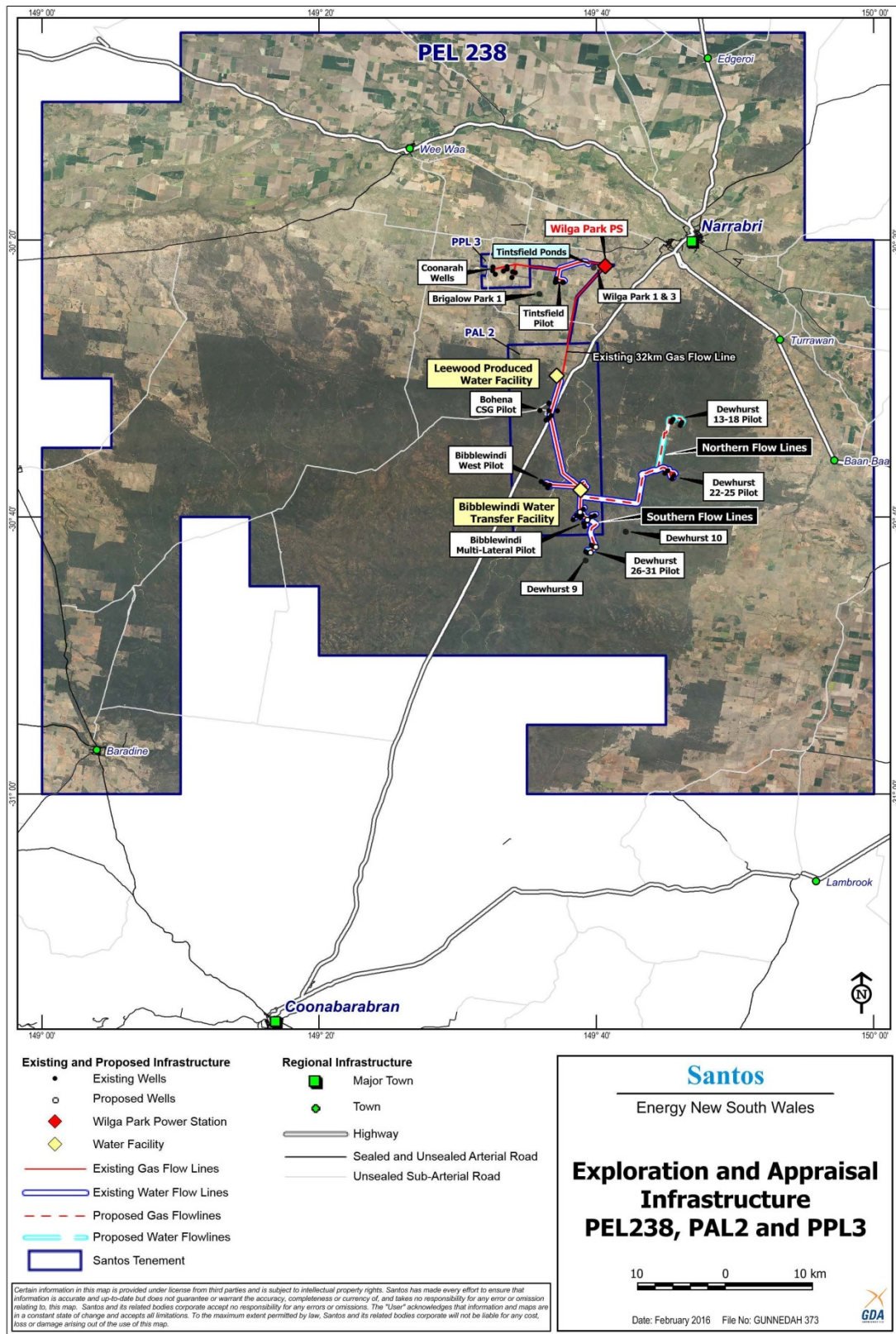


Figure 1: PEL 238 pilot wells and associated infrastructure.

### 3. Modification description

#### 3.1. Use of coal seam gas from existing or future wells within PEL 238 at the Wilga Park Power Station

Santos is seeking to modify the existing Wilga Park approval to enable the use of natural gas extracted from coal seams from existing or future wells within PEL 238 at the Wilga Park Power Station. This request is consistent with recent changes to the *Petroleum (Onshore) Regulation 2007* which enables the beneficial use of natural gas from petroleum exploration lease areas subject to relevant thresholds and criteria.

The existing approval (MP 07-0023) for Wilga Park gas fired power station currently limits its operation to the use of natural gas extracted from coal seams within PAL 2 and PPL 3. The modification would expand this to include the use of natural gas extracted from PEL 238.

Minor piping modifications and operational preparations would be undertaken to allow the natural gas to be directed to and used within the power station.

### 4. Justification for modification

The proposed modification would enable gas from all existing and any future CSG wells within PEL 238 to be used to fuel Wilga Park Power Station. This would increase the supply of gas available to the power station. No increase to the approved capacity of the power station beyond 40 megawatts is proposed and therefore this modification would not result in additional noise or air emissions, or environmental impacts beyond those that were considered in the *Narrabri Coal Seam Gas Utilisation Project Environmental Assessment* (the original Environmental Assessment) and the associated assessment documents.

#### 4.1. Government Policy - Amendment to the Petroleum (Onshore) Regulation 2007

The Government recently amended the *Petroleum (Onshore) Regulation 2007* to enable the beneficial use of gas from PELs. In December 2015 the Department of Industry, Resources and Energy announced that the amendments for the beneficial use of gas will allow petroleum prospecting operators to use gas that is released during prospecting operations subject to meeting thresholds and limitations. The objective of the amendment was to deliver on better environmental outcomes by not flaring gas where there is a viable opportunity to use the gas beneficially.

The proposed modification to the development consent reflects government policy enacted through amendments to the *Petroleum (Onshore) Regulation 2007* which enables the beneficial use of gas obtained from petroleum operations within a PEL.

#### 4.2. Environmental Benefits

Beneficially using the gas from CSG pilots within PEL 238 in addition to PAL 2 and PPL 3 to fuel the Wilga Park Power Station would minimise flaring of gas and would help meet the demand for electricity in NSW. This would mean that less power has to be generated elsewhere to satisfy demand. As gas-fired power generation produces less greenhouse gases per unit of energy generated than coal-fired generation, this may result in a net decrease in overall greenhouse gas emissions.

### 5. Planning and approvals

Part 3A of the EP&A Act was repealed on 1 October 2011 but continues to apply to projects approved under that Part. Under section 75W of the EP&A Act, a proponent may request the Minister to modify a project approval issued under Part 3A. This document supports a request for a modification of project approval MP 07\_0023 as outlined above.

Santos will separately seek any other approvals, or modification of approvals for existing and approved pilot wells if required to ensure they comply with the terms and conditions of the *Petroleum (Onshore) Regulations 2007* for the beneficial use of gas.

## 6. Consideration of potential impacts and mitigation

The modification application proposes the use of natural gas extracted from existing or approved CSG infrastructure within PEL 238 within the terms and conditions of the approval for the Wilga Park power station. This natural gas would otherwise be flared to the environment without any beneficial use or benefit.

As only minor pipeline modifications and operational preparations are required to the existing approved infrastructure, it will not result in an increase to the environmental impacts. Any future pilot wells proposed for PEL 238 would be subject to standard planning approvals being obtained.

The ability to use gas from additional pilots within PEL 238 in Wilga Park Power Station where viable would avoid the flaring of gas to the environment, and redirect it to electricity generation helping meet the demand for electricity in NSW and reducing reliance on less efficient energy sources such as traditional coal-fired power stations.

## 7. Conclusion

The proposed modification is minor in nature and will not result in an increase to the environmental impacts of the previously approved project.

Use of CSG from all existing and future CSG wells within PEL 238 would increase opportunities to beneficially utilise gas generated by appraisal activities which would otherwise be required to be flared or vented.

The proposed modifications would also allow the benefits of the project to be more fully realised, including:

- increased reliability of electricity supply to power networks during peak demand periods
- the provision of additional social and economic benefits to the Narrabri local government area
- the continued operation of the Wilga Park Power Station in accordance with the terms and conditions of the approval
- improved environmental outcomes from lower greenhouse gas emissions per unit of energy output when compared to conventional coal-fired power generation.