



Approval

Gloucester Coal Seam Methane Gas Project, Gloucester region, New South Wales (EPBC 2008/4432)

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

proposed action

person to whom the approval is granted AGL Upstream Infrastructure Investments Pty Ltd

proponent's ACN 092 684 010

proposed action To construct, operate and decommission:

- not more than 110 coal seam gas wells and associated infrastructure including gas and water gathering lines;
- a central processing facility (at one of two proposed alternative sites);
- a gas receiving station at Hexham; and
- a pipeline from the central processing facility to the Hexham receiving station;

as described in the referral received on 29 August 2008 and subsequently varied on 1 May 2012 (referral EPBC 2008/4432).

approval decision

controlling provision	decision
wetlands of international importance (sections 16 & 17B)	approve
listed threatened species and communities (sections 18 & 18A)	approve

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 30 November 2062.

decision-maker

name and position The Hon Tony Burke MP
Minister for Sustainability, Environment, Water, Population and
Communities

signature



date of decision 11 February 2013

Conditions attached to the approval

Scope of proposal

1. The person taking the action must ensure that the action is undertaken in accordance with the **finalised assessment documentation** and entirely within the Stage 1 Gas Field Development Area and Pipeline Corridor as identified in Attachments 1 and 2 to the conditions of this approval.
2. The following **disturbance limits** apply to the action:
 - 1000 individuals (loss or damage) in the case of small-flower grevillea (*Grevillea parviflora* subsp. *parviflora*).

Pre-clearance surveys

3. At least three months prior to **clearance of native vegetation** within a defined area, a suitably qualified person with prior written approval of **the department** must undertake pre-clearance surveys for **listed threatened species** (including their habitat) **and communities** within that defined area. Surveys must be undertaken in accordance with current relevant survey guidelines published by **the department**, or best practice if no guidelines are available.

Alternatively, recent surveys undertaken prior to this approval may satisfy this condition if **the department** agrees in writing that they are adequate.

4. Reports must be prepared in relation to any surveys (including but not limited to pre-clearance surveys) by a suitably qualified person with prior written approval of **the department**, and must include information on:
 - a) survey methodology (including reasons for any deviation from relevant survey guidelines if any have been published by **the department**) and habitat definitions / thresholds used;
 - b) results;
 - c) analysis of significant findings (including quality, size and location of any habitat identified); and
 - d) personnel involved and their qualifications.

Survey reports must be published by the person taking the action on their website for the duration of this approval within three (3) months of completion of the corresponding survey, and be provided to **the department** on request.

Alternatively, recent reports prepared prior to this approval may satisfy this condition if **the department** agrees in writing that they are adequate.

Species management plans

5. If a **listed threatened species** (or species habitat) **or community** (other than small-flower grevillea, green and golden bell frog or giant barred frog) is encountered during a pre-clearance survey (or at any other time), prior to any further **clearance of native vegetation** which has been identified as supporting a **listed threatened species** (or species habitat) **or community**, the person taking the action must provide **the minister** with the survey report prepared under Condition 4. **The minister** may direct the person taking the action to prepare a management plan for the **listed threatened species** (or species habitat) **or community**. The plan must be prepared by a suitably qualified person with prior written approval of **the department** and must include:
- a) discussion of distribution and current legal status;
 - b) discussion of key ecological features of the species or community;
 - c) discussion of the biology and reproductive needs of the species (if a species);
 - d) discussion and working definition(s) of "habitat" (if a species), considering:
 - i. habitat function (for example distinguishing where relevant between breeding habitat and foraging habitat); and
 - ii. habitat quality (with reference to both key features and landscape context);
 - e) results of targeted surveys, including quantification of occurrence or habitat extent and a map of the location of the species or community occurrence on the site of the action (or its area of influence);
 - f) description of measures that will be employed to avoid or mitigate impacts on the species or community;
 - g) quantification of any unavoidable impact (expressed as an area in hectares in the case of a community or fauna habitat or number of individuals); and
 - h) a detailed description of measures to **offset** that impact (including in relation to direct **offsets**, size, location, ecological attributes and mechanisms for legal ensuring enduring protection).

Clearance of native vegetation which has been identified as supporting a **listed threatened species** (or species habitat) **or community** may only recommence on the written authorisation of **the minister** or the approval by **the minister** of a species management plan.

Each approved species management plan must be published by the person taking the action on their website, for the duration of this approval, within twenty (20) business days of its approval by **the minister**, and must be implemented.

Green and golden bell frog management

6. A suitably qualified person with prior written approval of **the department** must undertake targeted surveys for the green and golden bell frog (*Litoria aurea*) in all potential habitat within twenty (20) metres of the entire pipeline route and within twenty (20) metres of any proposed infrastructure. Surveys must be undertaken in accordance with current relevant survey guidelines published by **the department**, or best practice if no guidelines are available.

Alternatively, recent surveys undertaken prior to this approval may satisfy this condition if **the department** agrees in writing that they are adequate.

7. A green and golden bell frog management plan must be prepared for each **component of the action** by a suitably qualified person with prior written approval of **the department**. The plan must include:
- a) discussion of distribution and current legal status;
 - b) discussion of key ecological, biological and reproductive needs;
 - c) discussion and working definition(s) of habitat for the species, considering:
 - i. habitat function (for example distinguishing where relevant between breeding habitat and foraging habitat); and
 - ii. habitat quality (with reference to both key features and landscape context);
 - d) results of targeted surveys, including quantification of occurrence and habitat extent and a map of the location of occurrence on the site of the action (and its area of influence);
 - e) description of measures that will be employed to avoid or mitigate impacts;
 - f) quantification of any unavoidable impact (expressed in terms of habitat and individuals) with a detailed description of measures to **offset** that impact (including in relation to direct **offsets**, size, location, ecological attributes and mechanisms for legal ensuring enduring protection);
 - g) measures for the monitoring (using at least eight (8) reference sites), and remediation as required, of impacts of the operation of the gas field on sites of potential habitat, including:
 - i. surface expression of methane gas;
 - ii. water pollution including salinity;
 - iii. water drawdown; and
 - iv. any impacts on surface water; and
 - h) a list of personnel involved in survey and management activities and their qualifications.

The plan must be approved by **the minister** prior to **commencement** of the relevant **component of the action**, and the approved plan must be implemented.

Note: Plans prepared under Conditions 7 and 10 may be combined.

8. Within three (3) months of completion of the risk analysis described in Condition 19, the person taking the action must update the management plan described in Condition 7 to incorporate:
- a) results of the risk analysis;
 - b) additional surveys (undertaken by a suitably qualified person with prior approval of the department, in accordance with current relevant survey guidelines published by **the department**, or best practice if no guidelines are available) wherever either of the hydrogeological models described in Conditions 16 and 18 predict impacts on surface water;
 - c) if necessary, a description of revised measures that will be employed to avoid or mitigate impacts on the species or community; and
 - d) if necessary, revised quantification of any unavoidable impact (expressed as an area in hectares or number of individuals) with a description of measures to **offset** that impact.

The updated plan must be approved by **the minister** prior to the commissioning of the approved central processing facility, and once approved must be implemented.

Giant barred frog management

9. A suitably qualified person with prior written approval of **the department** must undertake targeted surveys for giant barred frog (*Mixophyes iterates*) in all potential habitat within twenty (20) metres of the entire pipeline route and within twenty (20) metres of any proposed infrastructure. Surveys must be undertaken in accordance with current relevant survey guidelines published by **the department**, or best practice if no guidelines are available. Alternatively, recent surveys undertaken prior to this approval may satisfy this condition if **the department** agrees in writing that they are adequate.
10. A giant barred frog management plan must be prepared for each **component of the action** by a suitably qualified person with prior written approval of **the department**. The plan must include:
 - a) discussion of distribution and current legal status;
 - b) discussion of key ecological biological and reproductive needs;
 - c) discussion and working definition(s) of habitat for the species, considering:
 - i. habitat function (for example distinguishing where relevant between breeding habitat and foraging habitat); and
 - ii. habitat quality (with reference to both key features and landscape context);
 - d) results of targeted surveys, including quantification of occurrence and habitat extent and a map of the location of occurrence on the site of the action (and its area of influence);
 - e) description of measures that will be employed to avoid or mitigate impacts;
 - f) quantification of any unavoidable impact (expressed in terms of habitat and individuals) with a detailed description of measures to **offset** that impact (including in relation to direct **offsets**, size, location, ecological attributes and mechanisms for legal ensuring enduring protection);
 - g) measures for the monitoring (using at least eight (8) reference sites), and remediation as required, of impacts of the operation of the gas field on sites of potential habitat, including:
 - i. surface expression of methane gas;
 - ii. water pollution including salinity;
 - iii. water drawdown; and
 - iv. any impacts on surface water; and
 - h) a list of personnel involved in survey and management activities and their qualifications.

The plan must be approved by **the minister** prior to **commencement** of the relevant **component of the action**, and the approved plan must be implemented.

Note: Plans prepared under Conditions 7 and 10 may be combined.

11. Within three (3) months of completion of the risk analysis described in Condition 19, the person taking the action must update the management plan described in Condition 10 to incorporate:
- a) results of the risk analysis;
 - b) additional surveys (undertaken by a suitably qualified person with prior approval of the department, in accordance with current relevant survey guidelines published by **the department**, or best practice if no guidelines are available) wherever either of the hydrogeological models described in Conditions 16 and 18 predict impacts on surface water;
 - c) if necessary, a description of revised measures that will be employed to avoid or mitigate impacts on the species or community; and
 - d) if necessary, revised quantification of any unavoidable impact (expressed as an area in hectares or number of individuals) with a description of measures to **offset** that impact.

The updated plan must be approved by **the minister** prior to the commissioning of the approved central processing facility, and once approved must be implemented.

Small-flower grevillea management

12. The person taking the action must prepare a plan for the management of small-flower grevillea on each **component of the action**. The plan must include:
- a) discussion of preferred habitat of the species, known distribution and current legal status;
 - b) discussion of key ecological features of the species;
 - c) discussion of the biology and reproductive needs of the species;
 - d) a map and **shapefiles** of the location of the species at the site of the action;
 - e) a description of measures that will be employed to avoid or mitigate impacts on the species at the site of the action, specifically addressing the following:
 - i. access, signage and fencing;
 - ii. fire management;
 - iii. browsing management;
 - iv. weed and pathogen management;
 - v. post construction rehabilitation;
 - vi. measures for monitoring and reporting on the health of the population including in particular, survival and recruitment;
 - vii. performance measures and response actions (if performance measures are not met); and
 - f) a list of personnel involved in survey and management activities and their qualifications; and
 - g) an assessment of offset requirements consistent with the *Environment Protection and Biodiversity Conservation Act 1999 Biodiversity Offsets Policy* (October 2012).

The plan must be approved by **the minister** prior to the removal of any small-flower grevillea plants, and the approved plan must be implemented.

Note: Plans prepared under Conditions 12 and 14 may be combined.

13. The person taking the action must secure enduring protection of, and actively manage, habitat suitable for the conservation of small-flower grevillea (the offset site) in accordance with the plans referred to in Conditions 12 and 14.
14. The person taking the action must prepare a plan for the management of small-flower grevillea at the offset site. The plan must include:
 - a) discussion of preferred habitat of the species, known distribution and current legal status;
 - b) discussion of key ecological features of the species;
 - c) discussion of the biology and reproductive needs of the species;
 - d) documentary evidence of enduring protection of the offset site;
 - e) a map and **shapefiles** of the offset site;
 - f) a description of measures that will be employed to establish and / or maintain a population, with reference to:
 - i. access, signage and fencing;
 - ii. fire management;
 - iii. browsing management;
 - iv. weed and pathogen management;
 - v. post construction rehabilitation;
 - vi. propagation methods (if relevant)
 - vii. measures for monitoring and reporting on the health of the population including in particular, survival and recruitment; and
 - viii. performance measures and response actions (if performance measures are not met); and
 - g) a list of personnel involved in survey and management activities and their qualifications.

The plan must be approved by **the minister** prior to the removal of any small-flower grevillea plants, and the approved plan must be implemented.

Note: Plans prepared under Conditions 12 and 14 may be combined.

Conditions for the protection of water resources

15. The person taking the action must comply with Conditions 3.5 to 3.13 and 4.1 to 4.2 of the **state approval conditions**.

Note: It is noted that some of the requirements of **state approval conditions** are similar to requirements under the conditions of this approval. While no unnecessary duplication is intended, where requirements are similar, the conditions of this approval must be met in full.

16. The person taking the action must consult the department on the development of the conceptual hydrogeological model required under Conditions 3.8 and 3.9 of the **state approval conditions**, and must provide a copy of the model to the department within twenty (20) business days of its finalisation.

17. The person taking the action must revise the water balance model to:
- a) take into account the following inputs:
 - i. field-based investigation of the spatial distribution of strata and structures within the project area and the role of faulting and its influence on migration of groundwater and/or gas into surface water systems;
 - ii. investigation of the age, depth and location of groundwater including proximity to known faults and fractures;
 - iii. a baseline investigation of gas occurrence in surface and groundwater;
 - iv. results from pilot testing of the Stratford and Waukivory pilot wells;
 - v. baseline data associated with Phase 1 and Phase 2 studies;
 - vi. information on the assessment of a representative site for fault testing; and
 - b) extend to 1000 metres below ground level;
 - c) ensure that all hydrological inputs and outputs are accounted for (sum to zero); and
 - d) include a list of information sources and statements on confidence, accuracy and precision.

A report on the revised water balance model, including the inputs described in a) above, must be approved by **the minister** prior to the finalisation of the numerical hydrogeological model (refer to Condition 18).

18. The person taking the action must provide **the minister** with a numerical hydrogeological model that explores the pressure at which gas and water may be released and transmitted along faults. The model must be based on the water balance model described in Condition 17 and informed by monitoring data, for example as collected in accordance with Condition 4.1 of the **state approval conditions**.

The model must be approved by **the minister** prior to the commissioning of the approved central processing facility.

Note: It is expected that **the minister** will require the model to be peer-reviewed prior to approval.

19. Within three (3) months of the approval of the numerical hydrogeological model described in Condition 18, or the conceptual hydrogeological model required under Conditions 3.8 and 3.9 of the **state approval conditions** (whichever is the later), the person taking the action must use the models to complete a risk analysis in relation to the following potential impacts on the green and golden bell frog and giant barred frog, and their potential habitats:
- a) surface expression of methane gas;
 - b) water pollution including salinity;
 - c) water drawdown; and
 - d) any impacts on surface water.

20. Prior to undertaking any hydraulic fracturing, the person taking the action must provide **the minister** with the following details on any hydraulic fracturing agents or other reinjected fluids likely to be used under this approval:
- a) estimated number and location (mapped, and expressed in latitude, longitude and depth) of wells where the agent or fluid may be used;
 - b) Chemical Abstracts Service Number;
 - c) typical load;
 - d) typical concentration; and
 - e) toxicity as total effluent toxicity and ecotoxicity, based on methods outlined in the **National Water Quality Management Strategy**.

This information must be updated prior to the first use of any new any hydraulic fracturing agents or other reinjected fluids.

No agents or fluids may be used without the prior written approval of **the minister**.

21. The person taking the action must provide **the department** with a copy of the extracted water management strategy (also known as produced water management strategy) required under **state approval conditions**. If the strategy is not to the satisfaction of **the minister** (and in particular if it does not consider the feasibility and likely effectiveness of reinjection of extracted water), he may require a supplement to be developed, which must be approved by **the minister** prior to **commencement** of the action, and must be implemented.
22. The person taking the action must ensure that no more than 2 megalitres per day (averaged over a twelve month period) of groundwater is extracted. In addition, the person taking the action may only extract sufficient groundwater as is required to undertake the action in accordance with the conditions of this approval.
23. The person taking the action must ensure that any water storage ponds associated with the action are appropriately lined to ensure no leaching of stored waters and designed consistent with a 1 in 100 year flood design standard.
24. The person taking the action must prepare an acid sulphate soils management plan (or plans, based on **components of the action**) to predict, detect, map and manage acid sulphate soils along the entire pipeline route, on and adjacent to the sites of any proposed infrastructure. The plan must be approved by **the minister** prior to **commencement** of the relevant **component of the action**, and must be implemented. The person taking the action must ensure that the plan is updated (at least quarterly) as field work progresses and site specific information becomes available. The plan must also ensure an appropriate regime for reporting water quality monitoring results to the New South Wales Government.

25. The person taking the action must provide **the department** with a copy of the watercourse crossing management strategy required by **state approval conditions**. If the strategy is not to the satisfaction of **the minister**, he may require a supplement to be developed, which must be approved by **the minister** prior to **commencement** of the action, and must be implemented. In particular, it is expected that the strategy should include:
- a) baseline surveys of each crossing to identify any habitat for **listed threatened species and communities**; and
 - b) design details of each watercourse crossing to avoid and mitigate impacts on **wetlands of international importance** and **listed threatened species and communities**.

Standard and administrative conditions

26. Within twenty (20) business days after the **commencement** of the action, the person taking the action must advise **the department** in writing of the actual date of **commencement**.
27. If, at any time after five (5) years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of **the minister**.
28. Unless otherwise agreed to in writing by **the minister**, the person taking the action must publish all **management documents** referred to in the conditions of this approval on their website, within twenty (20) business days of being approved. A **management document** must be published in a specified location or format and / or with specified accompanying text, if requested by **the minister**.
29. If the person taking the action wishes to carry out any activity otherwise than in accordance with a relevant **management document**, the person taking the action must submit to **the department** for **the minister's** written approval a revised version of that **management document**. The varied activity shall not commence until **the minister** has approved the varied **management document** in writing. **The minister** will not approve a varied **management document** unless the revised **management document** would result in an equivalent or improved environmental outcome over time. If **the minister** approves the revised **management document**, that **management document** must be implemented in place of the **management document** originally approved.
30. If **the minister** believes that it is necessary or convenient for the better protection of wetlands of international importance, or listed threatened species and communities, to do so, **the minister** may request that the person taking the action make specified revisions to a **management document** specified in the conditions of this approval and submit the revised **management document** for **the minister's** written approval. The person taking the action must comply with any such request. The revised approved **management document** must be implemented. Unless **the minister** has approved the revised **management document**, then the person taking the action must continue to implement the **management document** originally approved, as specified in the conditions of this approval.

31. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of this approval, including measures taken to implement **management documents** required by this approval, and make them available upon request to **the department**. Such records may be subject to audit by **the department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of this approval. Summaries of audits will be posted on **the department's** website. The results of audits may also be publicised through the general media.
32. **The person taking the action** must:
- a) report any non-compliance with these conditions or a **management document** to **the department** within five (5) business days of the date of the incident;
 - b) discuss with **the department** how the matter may be brought into compliance within a reasonable timeframe; and
 - c) comply with any consequent written direction from **the minister** regarding the matter.
33. By 30 November of each year after the **commencement** of the action, the person taking the action must publish an annual report on their website addressing compliance (including any non-compliance) with the conditions of this approval, including any **management documents**, since the previous compliance report. The report must specifically include the following:
- a) a reconciliation statement comparing impacts on small-flower grevillea against the **disturbance limit** for the species;
 - b) a summary of well activity for the past year, including:
 - i. number and spatial distribution of extant wells (mapped and also expressed in latitude, longitude and depth);
 - ii. identification of which wells are new, continuing, inactive and exhausted since the previous compliance report;
 - iii. information on how many times each well has been hydraulically fractured;
 - iv. information on all hydraulic fracturing agents and other reinjected fluids as per Condition 20;
 - v. information on volumes of gas and water produced by each well; and
 - vi. identification of which wells have been implicated in incidents of non-compliance.
 - c) a forecast of well activity (including hydraulic fracturing) for the coming year.
34. Upon the direction of **the minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of this approval is conducted (at the expense of the person taking the action) and a report submitted to **the department**. The independent auditor and audit criteria must be approved by **the minister** prior to the commencement of the audit. The audit report must address the criteria to the satisfaction of **the minister**.
35. The person taking the action must provide all data and related information from ecological surveys relevant to this approval or otherwise to **matters of national environmental significance**, if requested by **the department**.
36. The person taking the action must provide **the department** with a copy of any management document required under a state government approval, if requested by **the minister**.

Definitions applying to the conditions

Clearance of native vegetation means the complete or partial removal, by any means, of plants native to the site of the action. Note that native vegetation can include grasslands.

Commencement of the action (except in the sense of **substantial commencement**), includes the construction of any infrastructure associated with the proposed action, excluding geotechnical and survey works, signage, fencing, unsealed roads not requiring **clearance of native vegetation**.

Completion of the action includes all rehabilitation and remediation works planned or required under these or any other conditions on approval, noting that this approval expires on 30 November 2062.

The **components of the action** are:

- areas of the Stage 1 Gas Field as defined by the proponent
- the central processing facility (at either of the proposed locations)
- areas of the pipeline route as defined by the proponent

A **disturbance limit** is the maximum impact (expressed as an area or a number of individuals) on wetlands of international importance or listed threatened species and communities that may occur as a direct consequence of the action before specified consequences are triggered. Disturbance limits do not apply to indirect impacts such as impacts of the action on water resources that may affect protected matters.

Management documents are any plans, strategies, reports or other documents required by the conditions of this approval that direct or report on management arrangements for the proposal. To avoid any doubt, multiple management documents (including those required under a state approval) may be combined, provided that the person taking the action, when submitting the documents, explains how they have been arranged.

Matters of national environmental significance are as defined in the EPBC Act, and include **wetlands of international importance**, and **listed threatened species and / or communities**.

National Water Quality Management Strategy is the policies, processes and guidelines in effect at the time of approval that together comprises the National Water Quality Management Strategy.

Offset means "compensate for", and is interpreted in light of the *Environment Assessment and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, October 2012 (or as updated).

Phase 1 refers to a completed desktop study, *Preliminary Groundwater Assessment and Initial Conceptual Hydrogeological Model*. SRK Consulting, 2010.

Phase 2 refers to a detailed groundwater investigation initiated in November 2010, as described in information provided by the person taking the action 1 August 2011.

A **shapefile** is an ESRI Shapefile, containing .shp, .shx and .dbf files and other files capturing attributes including at least the EPBC reference number of the proposal and matters of national environmental significance present at the relevant site. Attributes should also be captured in .xls format.

State approval conditions are those conditions imposed by the NSW Planning Assessment Commission on the Gloucester Coal Seam Gas Project under section 75J of the *Environmental Planning and Assessment Act 1979* and reflected in the corresponding project approval notice signed 22 February 2011.

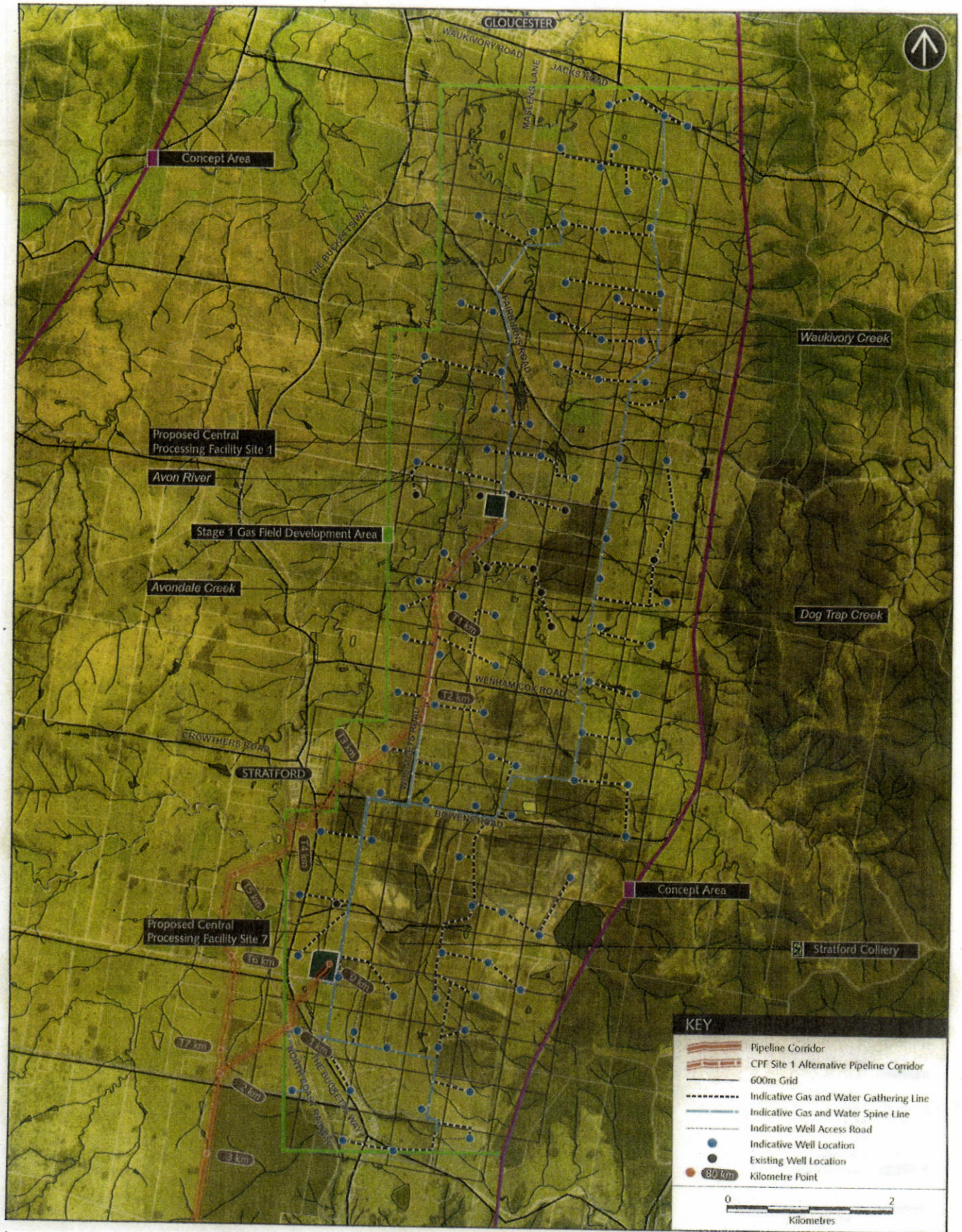
Substantial commencement means the drilling of any wells subject to this approval, to a depth of at least 100 metres.

The department is the Australian Government department administering the **EPBC Act**.

The **EPBC Act** is the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

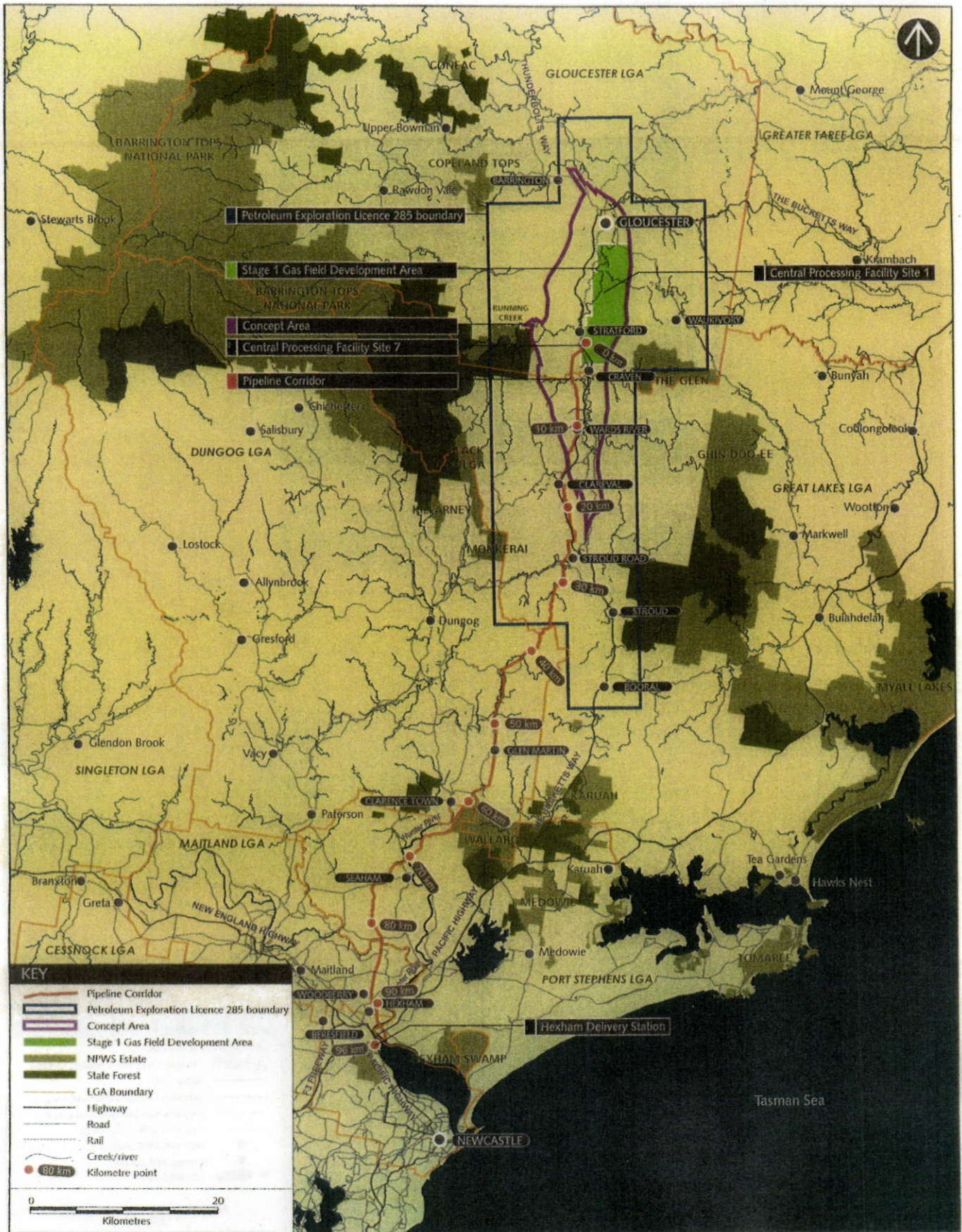
The minister is the Australian Government minister administering the **EPBC Act** and includes delegates of **the minister** as established by a relevant legal instrument.

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AECOM

GLOUCESTER GAS PROJECT - STAGE 1 GFDA



GLoucester GAS PROJECT LOCATION AND PEL 285 BOUNDARY

Attachment 2 – Pipeline Corridor