AEMC - Timelines for new generation in the NEM

- Ver. 3
- 9 December 2008

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Sinclair Knight Merz
ABN 37 001 024 095
590 Orrong Road, Armadale 3143
PO Box 2500
Malvern VIC 3144 Australia
Tel: +61 3 9248 3100
Fax: +61 3 9500 1180
Web: www.skmconsulting.com

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1. Introduction

1.1. General

Sinclair Knight Merz (SKM) has been engaged by the Australian Energy Markets Commission (AEMC) to provide this report into development timelines of new power generation in the Australian National Electricity Market (NEM).

1.2. Background

The background to this study as provided by AEMC is:

The Australian Energy Market Commission (Commission) has been directed by the Ministerial Council on Energy (MCE) to review the impacts on energy market of the proposed Carbon Pollution Reduction Scheme (CPRS) and enhanced national Renewable Energy Target frameworks. The purpose of the Review is to advise the MCE on whether changes to energy market frameworks are warranted, on the basis that they will better promote the market objectives (relating to efficient, secure, safe, and reliability supplies of electricity and gas). The Commission has issued a Statement of Approach about the Review[1].

On 10 October 2008, the AEMC released its Scoping Paper about the Review. The Scoping Paper outlines the key issues which are considered relevant to the Review. A copy of the Scoping paper can be found at www.aemc.gov.au.

Eight broad issues were identified in the Scoping Paper. For the purposes of this proposal, the request is in regards to Issue 2 – adequacy of generation capacity in the short term. The hypothesis for this issue which is being explored is that delays to generation investment due to current uncertainty on the future climate change related policy settings, and timescales required to commission new investment, could result in a transitional problem in respect of the adequacy of generation capacity.

Therefore, the purpose of this consultancy is to provide information on the current timelines associated with new gas-fired investment, including the availability of sites, the timelines for site approval, and the timelines for ordering and commissioning new generation plant and associated investments.

[1] *AEMC's Review – implications for energy markets of climate change policy - An introductory overview, 25 August 2008, http://www.aemc.gov.au/electricity.php?r=20080822.183804*

1.3. Scope

The AEMC's scope for this assignment is:

The consultancy should advise on:

- *describe the clearances and approvals required for a site to be used for investment in new generation capacity.*
- *the timelines for the above approvals to be received*
- *factors affecting the timelines for site approvals and for commissioning new plant.*

Some generators or other potential investors may have sites available with some degree of existing clearances and approvals. The consultant should provide advice on the extent to which those sites are likely to be available and the impact on the time required to commission new capacity.

Following site approvals and the decision to make an order [for plant equipment], the consultant should advise on timelines for:

- *the order to become active*
- *delivery of the plant*
- *site preparation*
- *connection to gas and electricity networks, and*
- *plant commissioning and progress to full operations.*

The consultant should provide indicative timelines and if information can be obtained on actual investments that have taken place, this should be included and identified. The consultant should also indicate factors which may increase or reduce the time required.

Based on the above assessments the consultant should provide indicative timelines for commissioning of new investment, taking account of the need for site approvals, manufacture and construction of the plant and associated investments.

The AEMC is seeking a report of 20-30 pages which summarises these issues. It anticipates that this analysis will be combined with the most recent projections in the Statement of Opportunities (SOO)/Annual National Transmission Statement (ANTS) for the National Electricity Market (NEM)[2] and with analysis of factors affecting investment decisions (including the impact of policy uncertainty) to form views on the extent to which there may be a short term and transitional impact on generator response to investment opportunities.

In clarification of the scope the following are noted:

- Only the NEM part of Australia is relevant to the present study,
- AEMC's focus in this study is generation capacity in the short term and risks to the supply/demand balance if there is a delay in investment due to policy uncertainty.

[2] *NEMMCO is due to release the SOO/ANTS on 30 October 2008. This will provide an updated projection of the supply demand position*

- The assessment of that risk will be heavily influenced by NEMMCO's 2008 SOO/ANTS. The 2008 SOO/ANTS provides projections of the supply/demand position. AEMC are seeking advice on timelines for new investment in response to any projected tight supply/demand position.
- Given this focus the scope covers:
  - plant capable of responding reasonably rapidly to a short term problem of generation adequacy. The AEMC anticipates (and SKM agrees) that this will be gas-fired plant. AEMC do not want a wide ranging report on timelines for a long list of possible generation technologies.
  - the report should consider baseload/intermediate duty plant as well as peaking plant. Considering this and the above matters SCGT and CCGT plants are the object of this review.
  - the report should not address demand side responses

2. Steps required to develop a project

This review considers the timelines for project development of SCGT and CCGT plants in the NEM. This is the period from project inception through to the commercial operation date (COD)[3].

In general, new power station projects in the NEM can be delivered by either of two financing approaches:

1) Project financed (off-balance sheet), or
2) Corporate financed (on-balance-sheet).

In the project development phases there are some differences in tasks and timings between these two approaches which can make them more suitable in different situations depending on who the developer is, the size of the project and the risks of the project. For example SCGT plants tend to be more suited to on-balance-sheet financing and base load plants can either be on-balance-sheet or off.

To illustrate the processes required, the following are the general areas of project development for a project financed, merchant plant project (on-balance-sheet projects tend to be a sub-set of this list):

- Project inception/concept,
- Preliminary siting study and pre-feasibility study,
- Detailed siting study and land tenure acquisition,
- Detailed feasibility assessment (on-going to Financial Closure),
- Approvals,
- Negotiation of fuel supply agreements,
- Specification/documentation, tendering and negotiations of plant EPC or EPCM delivery,
- Negotiations and contracts for connections (typ. gas, electricity & water/wastewater). This includes the connection enquiry and connection application processes in the NER.
- Negotiation and contracts for other agreements,
- Depending on the arrangements there may be negotiations on an initial short or long term off-take agreement (PPA),
- Information Memorandum and negotiations for debt provider or syndicate (project financed case),

[3] Following the commercial operation date SKM usually consider that there is an availability build-up period of a couple of years before the new power station units are likely to be achieving their long-term availabilities (due to the "teething" period. This is more so for a CCGT plant than a SCGT plant considering the differences in complexity). While this process occurs subsequent to COD it should not be ignored when considering the reliability of the system served by generation plant..

- Due diligence reviews (project financed case),
- Internal approvals,
- Financial Closure (project financed case) or Final Investment Decision,
- Notice to proceed to contractors,
- Plant construction and commissioning, and
- COD.

3. Timetables

3.1. Introduction

Summary timelines for "typical" duration projects are shown below.

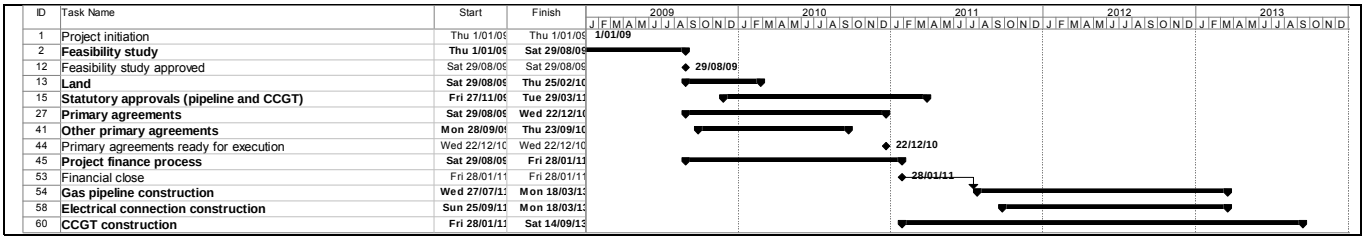
More detailed versions of these timelines are provided in Appendix B.

Timelines are presented without differentiating between States' processes. Only the approvals processes are different and these are not different to any great extent compared with the inherent uncertainty within approvals timings.

3.2. Timelines for a "typical" CCGT

A summary of the timeline for a typical CCGT development is shown in Figure 1.

- **Figure 1 Summary program, typical CCGT**



The process can be divided into three primary sections reflecting the critical path activities with the development:

- The inception stage comprising the pre-feasibility studies, siting studies and land tenure acquisition,
- The approvals stage, and
- The construction stage.

This timeline is from a "standing start", that is it includes project inception.

As noted below in Section 3.4, the inception process is generally invisible to the public domain and may also be somewhat continuous in that some developers are continuously engaged in project inception. At any given time there are a number of different developers in the inception phase of SCGT and CCGT plants in the NEM.

These inception processes are shown to take approximately a year however the timing varies greatly. For a brownfields expansion of an existing station this set of activities can be greatly reduced. Refer to Section 5.6.

The development phase for a large CCGT project will most often involve an Environmental Impact Assessment process and this process is generally on the critical path for project development.

In most jurisdictions this process typically occupies 12 to 18 months[4] depending on the number of affected stakeholders and the extent of the environmental impact of the project proposal. These processes tend to contain regulated steps including several statutory periods for public commentary and engagement with the approval process. Obtaining downstream approvals and licenses generally take additional time (eg up to 6 months). A developer would be typically expected to wait until the downstream approvals are in-hand only if material risk of the downstream approvals not being granted, despite the EIS approval, were anticipated. This risk should become evident during the EIS approvals process time. As noted in Section 4.4.2, this risk has now been significantly reduced in NSW.

Because of the diversity of jurisdictional processes and issues potentially involved, the approvals processes are described in more detail in Section 4.

An ideal power station site would be located at the juncture of an electricity transmission system and a suitable sized gas transmission pipe. This would avoid the land access and approvals process times necessary for these elements.

It has generally been the case that approvals processes for new EHV electricity transmission lines are far more difficult than the approvals processes for a gas transmission line. Consequently, it is generally the case that project developments are closer to the electricity system and the gas is brought to the site via a relatively longer gas lateral (pipeline).

Gas transmission pipelines nevertheless require approval processes not dissimilar to those required for a power station although potentially with an impact over more area and also upon more stakeholders than the power station itself. Rights for land access are generally provided within either the gas pipeline approval process or the relevant EIA process. The construction process (including detailed design, procurement, shop construction, delivery, site construction, commissioning and testing processes) generally cannot proceed until the relevant major contractor(s) receive a Notice to Proceed. Such a notice is generally only issued upon Financial Closure (project finance) or Final Investment Decision. This milestone is thus a key transition point in project development.

[4] 12 to 18 months typically covers gaining the main State EIA approval. Commonwealth and downstream environmental and planning approvals generally take another 3-6 months

Construction of a 400MW class CCGT would presently be expected to take 32 months. These units are based on the larger and more efficient "F" class gas turbine technology. This would generally be considered to be the economical configuration in the larger NEM States although in S.A. and Tasmania smaller unit sizes are historically considered more appropriate. Smaller units, based on "E" class gas turbine technology have a slightly shorter delivery timetable.

A discussion regarding some of the current factors impacting large gas turbine plant construction is provided in Section 5.11.

Thus on a typical project applying midrange times for each step, the current development time from the start of approvals processes to commercial operation is approximately 4 years at the present time. The project proponent will generally have worked on the plant development for approximately another year out of the public sphere prior to the approvals processes commencing.

The approvals for most projects can have typical timing variations of ± 3 months however it should be recognised that greater variations are not especially uncommon. Some projects also fail to achieve approval. Variations in construction time for the basic power plant primarily depend on global market factors. Construction times are presently at historically long levels. This may abate under the impacts of a global economic slowdown however manufacturers' order books are understood to be full well into the future. Hence in considering the next few years of the NEM, expecting a substantial shortening of lead times would be considered optimistic.

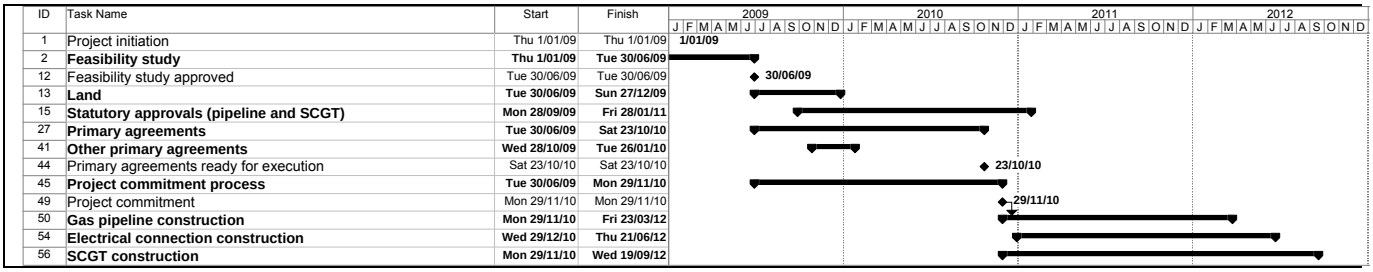
Steps not generally on the critical path for development are shown in Appendix B. These include the proponent's own detailed feasibility assessments and financial/commercial structural development processes. These processes differ, depending on the developer and whether the project is project financed or corporate financed (off balance sheet or on balance sheet) however since these tasks are not on the critical path unless they are prolonged or the approvals time is shorter than normally expected, these differences don't change the project development time.

Note that many companies have revised their internal approvals processes for large capital projects to incorporate many of the tasks formerly only undertaken for project financed projects. This includes such tasks as due diligence reviews.

3.3. Timelines for a "typical" SCGT

A summary of the timeline for a typical SCGT development is shown in Figure 2. The timeline is drawn on the assumption of a 1 January 2009 initiation.

Figure 2 Summary program, typical SCGT



ID	Task Name	Start	Finish
1	Project initiation	Thu 1/01/09	Thu 1/01/09
2	**Feasibility study**	**Thu 1/01/09**	**Tue 30/06/09**
12	Feasibility study approved	Tue 30/06/09	Tue 30/06/09
13	**Land**	**Tue 30/06/09**	**Sun 27/12/09**
15	**Statutory approvals (pipeline and SCGT)**	**Mon 28/09/09**	**Fri 28/01/11**
27	**Primary agreements**	**Tue 30/06/09**	**Sat 23/10/10**
41	**Other primary agreements**	**Wed 28/10/09**	**Tue 26/01/10**
44	Primary agreements ready for execution	Sat 23/10/10	Sat 23/10/10
45	**Project commitment process**	**Tue 30/06/09**	**Mon 29/11/10**
49	Project commitment	Mon 29/11/10	Mon 29/11/10
50	**Gas pipeline construction**	**Mon 29/11/10**	**Fri 23/03/12**
54	**Electrical connection construction**	**Wed 29/12/10**	**Thu 21/06/12**
56	**SCGT construction**	**Mon 29/11/10**	**Wed 19/09/12**

Many of the inception and approvals processes for an SCGT are the same, or similar, as for a CCGT.

SCGT plants sell capacity in the market rather than energy and are often developed or sponsored by retailers to hedge their own market positions. The sizes of cashflows associated with SCGT projects (both capex and recurrent) are much smaller than a CCGT plant (consider for example that a SCGT would typically run less than 10% capacity factor and a CCGT plant would typically run more than 50% capacity factor). Feasibility study processes and decisions regarding market need are thus simpler for a SCGT than a CCGT.

Siting investigations and land tenure access nevertheless are required.

In the approvals stage, if the EIS processes are followed then in general the process time is similar to the CCGT case, especially if a significant gas lateral is required.

Most SCGT plants are based on smaller gas turbine units than the larger CCGT plants (using "E" class technology instead of "F" class) and the construction and commissioning processes do not have to accommodate the more complex boilers, steam turbine generators and balance of plant in CCGT plants.

Consequently the construction time of a SCGT is less and is presently expected to be 22 months.

Thus from the start of the development approvals process to commercial operation is presently typically 3 years.

Comments in Section 3.2 above regarding uncertainties also apply to SCGT processes.

SCGT projects provide more scope for shorter timeframes due to alternative processes as discussed in Section 5 than a CCGT development.

3.4. When projects become public

The inception phase tasks are generally done confidentially. Knowledge that the developer is interested in a development is commercially sensitive in the electricity market and could also hinder negotiations for securing land tenure for the power station site.

Acquisition of the relevant land, or gaining an option or easement over the relevant land is a key step because, to a large extent, the developer gains a franchise over the project at this time.

Approvals processes for the power station cannot commence without the land-holder's approval[5] and hence gaining tenure over the land is a key milestone in the project's life.

The approvals processes are public however and developers engage in stakeholder consultation.

Many proponents have an almost continuous process of conceiving and investigating development opportunities.

Hence projects typically enter the public domain at the start of the approvals process.

3.5. Project hold-point with approvals in-hand

The approvals processes represent a significant development time that is also subject to a large amount of uncertainty regarding timing and outcome.

The costs of gaining land tenure and approvals, while significant, are much lower than the capital cost of the powerplant itself (generally millions of dollars rather than hundreds of millions).

Thus there is a natural hold-point within power project development whereby developers seek to have permitted sites ready to commence the final stages of development when market conditions are seen to become attractive.

Approvals are not granted indefinitely however and if construction is not commenced within a set timeframe (generally 2 years in Victoria) the approvals will lapse or require some form of extension process (which opens up the prospect of delays or refusal if environmental, social, political or legal factors have subsequently changed).

While a developer may have maintained general discussions with EPC or EPCM contractors, the validity of tenders for plant construction tend to be only weeks or at most a small number of months.

[5] The various Pipeline Acts allow for Ministerial authority to survey and investigate the potential gas pipeline corridor. Most developers would nevertheless prefer to have the landholders' consent.

Consequently, upon deciding to re-activate a project that has been held, a developer would typically require some extra time (say 3 to 6 months) before the construction process can be considered to have begun (via a notice to proceed to the contractor). Alternatively a commitment may be made very quickly to a particular gas turbine generator (and boiler and steam turbine in a CCGT case) to get these long-lead time items in-process and to subsequently resolve the other requirements of the project (which would then logically be an EPCM style delivery). This involves extra risk to the developer but would be quicker.

4. Development approvals processes

4.1. Introduction

Development approvals processes can be of long duration and can also have a high degree of uncertainty as to project timing or the possibility of consent refusal.

In general terms there may be a Commonwealth approvals process to be followed and in all cases a State approval process must be followed.

While the state processes contain strong similarities and the timing between state processes can also be similar, there are sufficient jurisdiction-specific aspects to warrant a review of the expected processes in each NEM state (note the ACT has not been included in this review).

It should be noted that the following advice on approvals is general in nature and the approvals process, risks and timeframes may vary depending on the specific nature and location of the proposed development

4.2. Commonwealth

The Commonwealth's standing within the approvals process primarily derives from the external affairs power granted under the Constitution (s51 (xxix)).

The Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) is administered by the Commonwealth Department of the Environment, Water, Heritage and the Arts (formerly the Department of Environment and Water Resources). Under the EPBC Act, approval from the Commonwealth Minister for the Environment is required for any action that may have a significant impact on matters of national environmental significance. Matters of national environmental significance include, without limitation, World Heritage areas, national heritage places, wetlands of international importance (Ramsar wetlands), ecological communities listed in the EPBC Act, migratory species listed in the EPBC Act, nuclear actions and actions affecting the Commonwealth marine environment.

Assessment bilateral agreements are in place between the Commonwealth and the following NEM states:

- SA,
- NSW,
- Queensland, and
- Tasmania.

A draft agreement between the Commonwealth and Victoria has recently been on public exhibition[6] and it is anticipated that the agreement will be finalised in early 2009. As there is presently no bilateral agreement between the Commonwealth and Victorian governments to allow the assessment processes under the *Environment Effects Act 1978* to be automatically accredited under the EPBC Act, a separate assessment process may be required if the proposed action is determined as "controlled action."

In January 2007, the Commonwealth and NSW governments signed a bilateral agreement to allow the assessment processes under Parts 3A, 4 and 5 of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) to be automatically accredited under the EPBC Act. The bilateral agreement applies to matters that are determined to be 'controlled actions' by the Commonwealth Government and means that a separate assessment process is not required.

In late 2005, a bilateral agreement between the Commonwealth of Australia and the State of Tasmania was enacted in relation to this particular legislation. The purpose of the legislation is to minimise the duplication of environmental impact assessment processes, to provide a coordinated approach to developers, and for the Commonwealth to rely primarily on the Tasmanian assessment process. Should the *EPBC Act* be triggered, and the bilateral agreement allows assessment under the Tasmanian approvals process, approximately 2.5 months would be added to the approvals timeframe following state determination.

There are exemptions to this bilateral agreement and the project will need to be reviewed at the Notice of Intent stage to establish, firstly if the EPBC is triggered and secondly, if the bilateral agreement will take precedence.

The bilateral agreement between Queensland and the Commonwealth came into effect in August 2004.

The aim of assessment bilateral agreements is to reduce duplication of environmental assessment and regulation between the Commonwealth and states/territories. Bilateral agreements allow the Commonwealth to 'accredit' particular state/territory assessment processes. In effect, bilateral agreements allow the Commonwealth to delegate to the states/territories the responsibility for conducting environmental assessments under the EPBC Act.

If a proposed action is covered by an assessment bilateral, then that action is assessed under the accredited state/territory process. After assessment, the proposed action still requires approval from the (Federal) Minister under the EPBC Act.

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[6] the deadline for public comment closed on 10/11/08

The Commonwealth may also have an interest if the proposed site is located in an area with aviation operations. An aviation hazard referral to Civil Aviation Safety Authority (CASA) under the *Civil Aviation Act 1988* may be required.

4.3. Queensland

4.3.1. Project Approvals

State approvals expected to be required for a power project in Queensland are:

- **Petroleum and Gas (Production and Safety) Act 2005**

Petroleum and gas activities in Queensland are regulated by the Department of Mines and Energy (DME) under the *Petroleum and Gas (Safety and Production) Act 2004* (P&G Act). Under the P&G Act, a gas transmission pipeline requires a Point to Point Pipeline Licence (PPL). The requirements for a PPL are defined under Part 2 of Chapter 4 of the Act, and include the requirement to gain a relevant environmental authority and undertake Public Notification as part of the licence application.

Under the *Environmental Protection Act 1994* (see below), a gas transmission pipeline is considered an Environmentally Relevant Activity (ERA) and thus requires an Environmental Authority (EA). The EA is required prior to the granting of a pipeline licence under the P&G Act.

The conditions imposed from the EIS (see below) and EA (see below) are generally incorporated into the PPL conditions.

- **Integrated Planning Act 1997**

The *Integrated Planning Act 1997* (IP Act) provides the framework for Queensland's planning and development assessment system and establishes instruments including:

  - the Integrated Development Assessment System (IDAS), which integrates development assessments by local and state governments over a range of legislation;
  - State planning policies;
  - Regional planning; and
  - Infrastructure planning.

Under the IP Act, the development of a power station would constitute a 'Material Change of Use' of premises involving an Environmentally Relevant Activity (ERA) and thus be assessable under the Act. ERAs are defined under the *Environmental Protection Act 1994*. As an assessable development, a Development Application (DA) is required.

The development of a power station is also likely to be classified as an 'Impact Assessable' development under a local planning scheme and thus the DA would be subject to Public Notification.

The DA would also likely incorporate EA's required for ERAs under the EP Act, as well as possibly other approvals (e.g. waterway crossing permit under the *Water Act 2000*).

Under IDAS, DA's are administered through an Assessment Manager, which is generally local government. In the case of the EA for the gas pipeline, as this is likely to cross multiple local government jurisdictions, the EA would most likely not be included in the DA but instead be issued directly by the EPA.

Under Schedule 9, Table 5 of the IP Act, all aspects of gas pipelines that are authorised under the P&G Act are exempt from assessment against a planning scheme and thus no DA is required.

As discussed below, a major power station and gas pipeline may require an Environmental Impact Statement under the *State Development and Public Works Organisation Act 1971*. If an EIS is required for the development, this fulfils the requirements for referral and public notification under the IP Act. The EIS conditions, as specified in the

- **State Development and Public Works Organisation Act 1971**

The *State Development and Public Works Organisation Act 1971* (SDPWO Act) provides for the environmental impact assessment of a 'Significant Project' as declared by the Coordinator General. The SWPWO Act is administered by the office of the Coordinator General, within the Department of Infrastructure and Planning. The environmental impact assessment is termed an Environmental Impact Statement (EIS) and is subject to Public Notification.

The declaration of a project as a 'Significant Project' is subject to one or more of the following criteria being met:

- complex approval requirements, including local, state and federal Government involvement;
- a high level of investment in the state;
- potential effects on infrastructure and/or the environment;
- provision of substantial employment opportunities; and/or
- strategic significance to a locality, region or the state.

It is likely that a large scale power station/gas pipeline would be declared a 'Significant Project' under the Act and thus require an EIS. An EIS under the SDPWO Act would fulfil the requirements for information, referral and public notification stages of a DA for a power station under the IP Act. The EIS would also provide the environmental risk, environmental management plan and public notification requirements for the EA for a gas pipeline under the EP Act. The EIS conditions, as specified in the Coordinator General's Report, would be incorporated into the conditions of the DA and EA.

A smaller scale power station/pipeline with a low environmental and social footprint/sensitivity may not be declared a Significant Project under the SDPWO Act. If not declared a Significant Project, the power station would still likely require a DA under the IP Act and the gas pipeline an EA under the EP Act. In the absence of an EIS, it is considered likely that some form of environmental impact assessment would be required to compliment the DA for the power station so that the Assessment Manager has adequate information to process the DA. Similarly an impact assessment and environmental management plan would be required for the EPA to process the EA for the gas pipeline.

- **Environment Protection Act 1994**

Under the *Environmental Protection Act 1994* (EP Act), certain activities are defined as 'Environmentally Relevant Activities' (ERA's) and thus require an Environmental Authorisation (EA). The following aspects of a power station and gas pipeline are likely to be classified as ERA's and thus require EA's:

- Chemical storage – ERA 7
- Petroleum product storage (> 10 kL) – ERA 11
- Power station of capacity 10MW or more – ERA 18
- Gas transmission pipeline – ERA 21

As the power station is likely to be assessable under a planning scheme and thus require a DA under the IP Act, the application for the EA's would be included as part of the DA and the approval process administered by local government as the Assessment Manager.

As noted above, the gas pipeline would be licensed under the P&G Act and thus not require a DA under the IP Act. Instead, an EA application for the gas pipeline as an ERA would be prepared and submitted to the EPA under Chapter 4A of the EP Act. The EA application requires the following:

- Information on the environmental risks;
- An environmental management plan; and
- Public notification.

The above requirements would be fulfilled by an EIS under the SDPWO Act. The granting of the EA for the gas pipeline is a requirement for the gas pipeline licence under the P&G Act.

- **Aboriginal Cultural Heritage Act 2003**

The *Aboriginal Cultural Heritage Act 2003* is administered by the Queensland Department of Natural Resources and Water (DNRW).

Section 23 of the Act establishes a duty of care that proponents take all reasonable and practicable measures to ensure that their activities do not impact on cultural heritage. Under Section 23, duty of care is demonstrated if the proponent acts in accordance with a Cultural Heritage Management Plan (CHMP). Under Section 87 of the Act, any development requiring an EIS requires the development of a CHMP. Section 87 further states that any authorities for such a project (including licences, permits or other approvals) must not be made prior to an approved CHMP being in place, or else be made subject to the condition that the development will not proceed until an approved CHMP is in place.

- **Water Act 2000**

Under Part 8 of the *Water Act 2000*, a Riverine Protection Permit is required for the crossing of a watercourse where this involves the destruction of vegetation, excavation or placement of fill within the watercourse. Riverine Protection Permits are administered by DNRW. As the gas pipeline would not be subject to a DA under the IP Act, the Riverine Protection Permit would not be incorporated into a DA but would require a separate application to DNRW.

The *Water Act 2000* also requires a licence to take water from sub artesian aquifers (for other than stock or domestic purposes), or for works that interfere with the flow of water (e.g. a stream diversion).

- **Vegetation Management Act 1999**

Under the *Vegetation Management Act 1999* (VM Act), a permit is generally required for the clearing of remnant vegetation. The VM Act is administered by the DRNW.

- **Nature Conservation Act 1992**

Under the *Nature Conservation Act 1992* a permit is required for the taking or destruction of certain listed flora and fauna species. The Act is administered by the DNRW.

- **Heritage Act 1992**

The *Heritage Act 1992* provides for the conservation and protection of places and items of historical and/or non-indigenous cultural heritage, i.e., all places that derive from the post-settlement history of Queensland. Under this Act, places and items must be entered into a Queensland Heritage Register in order to be protected. The Act is administered by the DNRW.

In practice, the protection of historic cultural heritage is addressed through the EIS or DA process.

4.3.2. Approvals Process and Timeframe

There are two alternatives to the key approvals required for a power station and gas pipeline. These are as follows:

1) **EIS for larger power stations/pipelines**. The development may be declared a 'Significant Project' and thus be subject to an EIS under the SDPWO Act. Once the Coordinator General approves the project and sets conditions, a DA would lodged with local government. The DA would address the MCU and planning scheme under the IP Act, as well as the ERA's under the EP Act. The EIS would fulfil the agency referral and public notification requirements of the DA, so the DA process would be relatively quick. Separate EIS's may be prepared for the power station and pipeline.
2) **DA for smaller power stations**. If the development is not declared a 'Significant Project' under the SDPWO Act then it will still require a DA under the IP Act. In this case, an impact assessment document would be prepared to accompany the DA document. The DA would address the MCU and planning scheme under the IP Act, as well as the ERA's under the EP Act. The DA would be subject to agency referral and public notification and so would take longer than if it followed an EIS.

Once the EIS or DA has been approved, the other approvals are relatively straightforward to be issued, including:

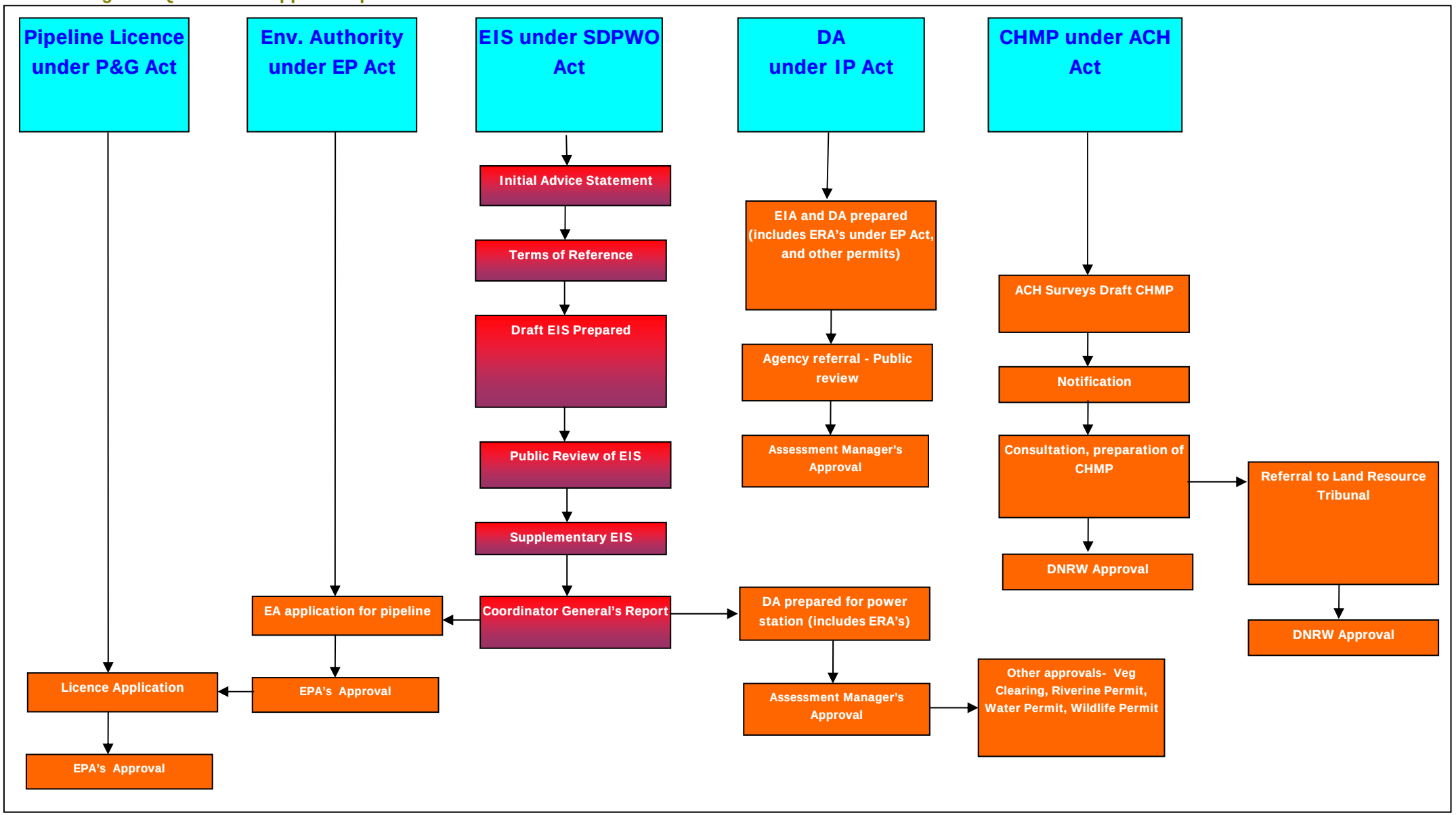
- pipeline EA and licence;
- riverine protection permit;
- water permit for groundwater extraction or surface water obstruction; and
- vegetation clearing permit.

The timeframe for an EIS under the SDPWO Act is in the order of 12 to 18 months, including preparation of the EIS document and public consultation. Once the EIS has been approved, the timeframe for other approvals (including the DA, EA, licence and other permits) is a few months.

The timeframe for a DA under IP Act that includes agency referral and public notification is in the order of 9 to 12 months, including preparation of an impact assessment document to accompany the DA. This does not include appeals to the DA decision, which would take the development to the Planning and Environment Court and may take 12 to 24 months to resolve.

CHMPs have a timeframe in the order of 6 to 9 months, however the timeframe can be significantly increased depending on the extent of consultation required and whether disputes lead to the project being referred to the Land Resources Tribunal. If there is a dispute over the CHMP then the project may be referred to the Land Resources Tribunal, which may take further time in the order of 6 months to reach agreement. As a pipeline is likely to require more time to survey, consult and to reach agreement, separate CHMPs may be prepared for the pipeline and power station.

- **Figure 3 Queensland approvals processes**



SINCLAIR KNIGHT MERZ

4.4. NSW

4.4.1. Introduction

The principal legislation controlling development in NSW is the *Environmental Planning and Assessment Act 1979* (EP&A Act), which is administered by the Department of Planning (DoP). The EP&A Act, in conjunction with environmental planning instruments made pursuant to the Act, establishes the environmental assessment and planning approval requirements for all development proposals in NSW and specifies the relevant consent or approval authority.

All development proposals in NSW are assessed and approved under either Part 3A – Major infrastructure and other projects; Part 4 – Development assessment or Part 5 – Environmental assessment. Part 4 of the EP&A Act applies to most development proposals in NSW, whereby a development application needs to be prepared and local council is the consent authority. Part 5 applies to development proposals that do not require consent under Part 4 and generally relates to development by public authorities. Part 3A of the EP&A Act applies to projects that are declared major projects and, as described below, would include most gas-fired power station developments.

4.4.2. Application of Part 3A of the EP&A Act

Part 3A of the EP&A Act applies to development that is declared to be a Part 3A project by a State Environmental Planning Policy or by order of the Minister for Planning. *State Environmental Planning Policy (Major Projects) 2005* identifies certain development to which Part 3A applies and includes:

> *Development for the purpose of a facility for the generation of electricity or heat of their co-generation (using any energy source, including gas, coal, bio-fuel, distillate and waste and hydro, wave, solar or wind power), being development that:*
> *a) Has a capital investment value of more than $30 million, or*
> *b) Has a capital investment value of more than $5 million and is located in an environmentally sensitive area of State significance.*

In addition, as of 26 February 2008, all new power stations in NSW with a generation capacity greater than 250MW have been declared as 'critical infrastructure' under Part 3A of the EP&A Act. This declaration applies to all project applications for power stations lodged prior to 1 January 2013, irrespective of fuel source and whether the plant provides peaking, intermediate or base load generation. The declaration has been made in an attempt to secure the State's future energy needs by providing the power generation industry with a robust and predicable planning process regarding the development of new power generation facilities.

The declaration of critical infrastructure projects removes the applicability of environmental planning instruments (other than State Environmental Planning Policies that apply directly to the project) and excludes third-party appeals. Whilst there are some differences which apply to the assessment of projects declared to be critical infrastructure projects under Part 3A, the environmental assessment process is the same as that which applies to other Part 3A projects.

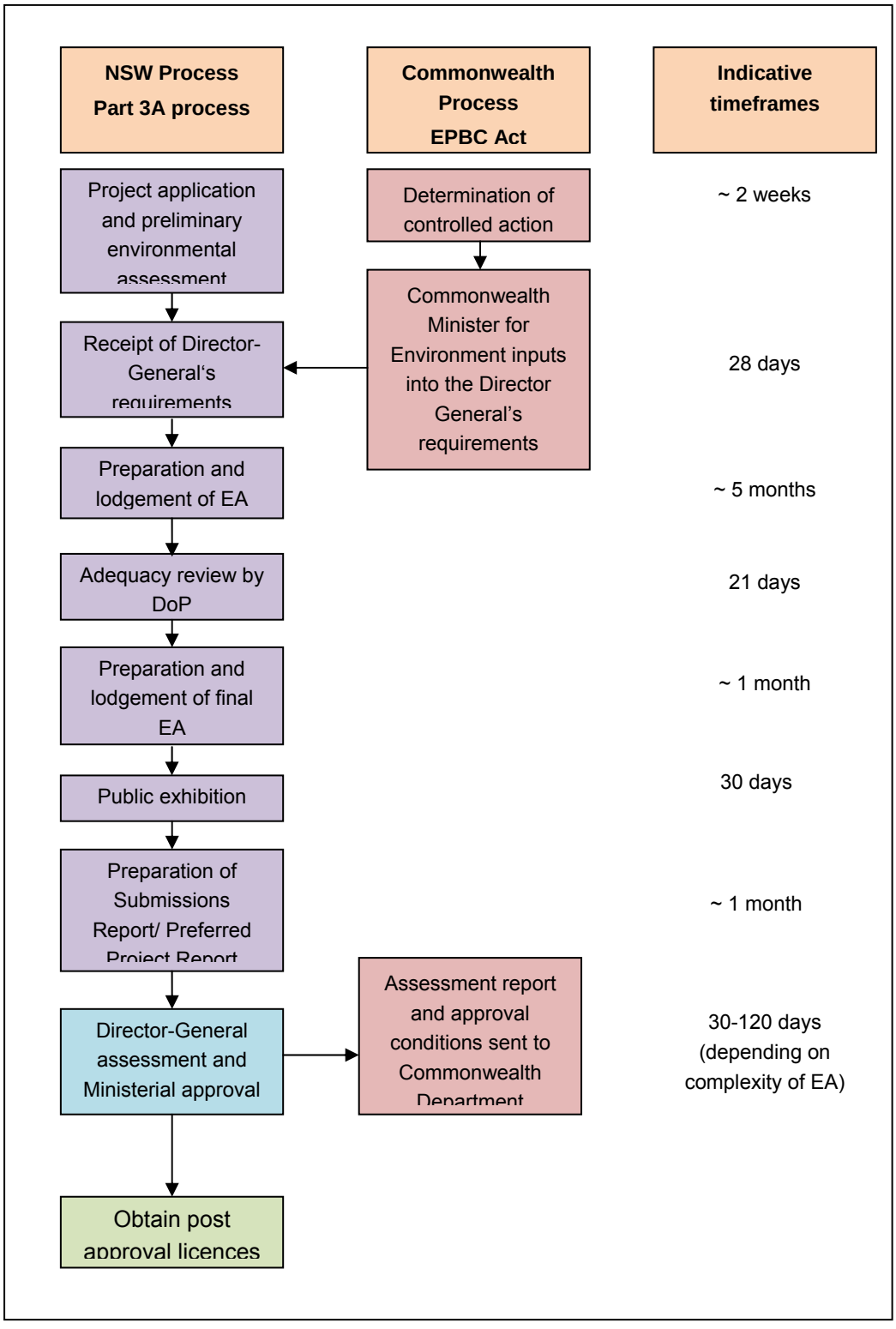
4.4.3. Approvals process under Part 3A

Part 3A of the EP&A Act outlines the key steps for assessment and approval of such major infrastructure and other projects in NSW. The Minister for Planning is the approval authority for all projects assessed under Part 3A. Part 3A of the Act provides for project assessment and approval and/or concept assessment and approval. A detailed description of the project is not required for a concept plan and is therefore suitable for projects where the specifics would be defined more accurately or altered at the subsequent project approval stage or where construction would not begin within the short term. Irrespective of whether project or concept approval is obtained, the assessment and approval process under Part 3A of the Act generally includes the following three stages:

- Project Application and Environmental Assessment (EA);
- Exhibition, consultation and review; and
- Director-General's assessment and Ministerial determination.

The approval process under Part 3A is illustrated in the flowchart and outlined in Figure 4 below.

- **Figure 4 NSW approvals processes under Part 3A**



Project Application and Environmental Assessment

The proponent of a major infrastructure project under Part 3A of the Act must submit a Project Application to the Department of Planning. Information in the application is used to determine whether Part 3A of the Act applies. Under the provisions of section 75E(2) of the Act, the application must include a description of the proposal and any other matters required by the Director-General. This would normally include a preliminary environmental assessment to accompany the Project Application.

The *Preliminary Assessment Guidelines* (Department of Planning 2005) provide a detailed method for undertaking the preliminary assessment setting out a systematic process of identifying and ranking environmental issues to provide the basis for the environmental assessment requirements for the proposed development. The preliminary environmental assessment is predominantly a desktop study which also identifies any likely environmental constraints on the site to assist in the formulation of the proposal.

The Department of Planning consults all relevant government agencies and local councils during the preparation of the environmental assessment requirements under section 75F(2) of the Act. The Director-General of the Department of Planning then issues the environmental assessment requirements for the proposal. These must be consistent with the guidelines and are publicly available on the Department's web site. The requirements nominate the general contents of the Environmental Assessment, key issues to be addressed, the level of assessment required and the form and contents of the documentation. Based on our previous experience on gas-fired power stations, it is anticipated that the key environmental issues contained in the Director-General's requirements would relate to:

- Noise;
- Air quality and greenhouse gases;
- Aviation issues (only if an airport/aerodrome is located nearby);
- Flora and fauna;
- Heritage;
- Landscape and visual issues;
- Traffic and access; and
- Hazard and risk.

The relevant key environmental issues would be identified through the preliminary environmental assessment and confirmed by the Director-General's assessment requirements. Each of the key environmental issues would need to be addressed in the Environmental Assessment, in accordance with the methodology identified in the Director-General's requirements. In general, it would be expected that the following may need to be undertaken as part of the Environmental Assessment:

- Noise modelling: to determine the noise impacts resulting from the operation of the power station;
- Air quality and greenhouse gas assessment: to predict the air quality impacts and greenhouse gas emission potential of the proposal;
- Plume rise assessment: to determine any aviation hazards that may arise as a result of the project. The Civil Aviation Safety Authority requires the proponent of a facility with an exhaust plume that has an average vertical velocity exceeding the limiting value of 4.3 metres/second at an aerodrome Obstacle Limitation Surface (OLS) or at 110 metres above ground level anywhere else, to be assessed for the potential hazard to aircraft operations;
- Flora and fauna surveys: to determine whether any State or nationally threatened species, communities or migratory species would be significantly affected by the proposal;
- Heritage assessment: prepared in accordance with agency guidelines to identify any impacts arising from the proposal on items or places of indigenous and non-indigenous heritage significance;
- Visual impact assessment: to determine the impact the proposal will have on the visual landscape;
- Traffic and transport study: to assess the traffic impacts the proposal would place on the local and regional road network, with emphasis on construction traffic; and
- Preliminary hazard analysis: in accordance with State Environmental Planning Policy 33 to identify risks and hazards associated with the project and demonstrate that the development is not hazardous or offensive.

The Environmental Assessment also contains a draft Statement of Commitments indicating the measures that will be undertaken to minimise impacts on the environment should the proposed development be approved. These will provide the basis for the conditions of approval.

Exhibition, consultation and review

Prior to exhibition, the adequacy of the assessment is considered by the Director-General. Additional information may be required at this stage. When considered to be adequate, the Environmental Assessment is exhibited for a minimum of 30 days during which time written submissions are invited.

Copies of the submissions are sent to the proponent and any other relevant public authority, such as the Department of Environment and Climate Change. The Director-General may require the proponent to respond to issues raised in a Submissions Report and/or a Preferred Project Report, which outlines any changes to the proposal to minimise its environmental impact and any revised Statement of Commitments.

Assessment and determination

The third stage comprises the Director-General's assessment and the Ministerial determination of the proposal. The Director-General prepares a report on the proposal for the Minister for the purposes of the Minister's consideration of the granting of approval to carry out the project. The Director-General's report includes, among other things, the Environmental Assessment conducted by the proponent, a statement relating to compliance of the Environmental Assessment with the Director-General's requirements, any advice provided by pubic authorities and any environmental assessment undertaken by the Director-General. The Minister will approve or reject the carrying out of the proposed development having regard to the Director-General's report. In giving approval, the Minister may determine to modify the proposal or impose conditions of approval including a requirement that the proponent complies with any obligations in its Statement of Commitments.

As part of the recent planning reforms, the Planning Assessment Commission has been established to assess a large proportion of Part 3A projects, as delegated by the Minister for Planning. However, the Minister is not able to delegate critical infrastructure and other key projects of State significance. The assessment process for Part 3A projects has not changed as part of the reforms.

4.4.4. Relationship between Part 3A approval and other legislation

Approval of a project under Part 3A of the EP&A Act removes the need for some approvals and licences under other NSW environmental legislation. In addition, for approval requirements that still apply under Part 3A, the conditions of such approvals must be consistent with the Part 3A approval and as such cannot be refused.

Legislation that does not apply to projects approved under Part 3A

Under section 75U(1) of the EP&A Act, the following relevant authorisations are not required for a project approved under Part 3A:

- A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994* to carry out dredging or reclamation works, harm marine vegetation and block fish passages;
- An approval under Part 4 or an excavation permit under section 139 of the *Heritage Act 1977*;
- A permit under section 87 or a consent under section 90 of the *National Parks and Wildlife Act 1974* to destroy or remove Aboriginal objects;

- An authorisation referred to in section 12 of the *Native Vegetation Act 2003* (or under any Act to be repealed by that Act) to clear native vegetation;
- A permit under Part 3A of the *Rivers and Foreshores Improvement Act 1948* to excavate within 40 metres of protected waters;
- A bush fire safety authority under section 100B of the *Rural Fires Act 1997*; and
- A water use approval under section 89, a water management work approval under section 90 or an activity approval under section 91 of the *Water Management Act 2000*.

It is important to note, however, that even though the above legislative approvals do not apply to a Part 3A project, the proponent must still operate in accordance with the objectives of the relevant legislation. As such, in approving a project under Part 3A of the Act, the Department of Planning may place certain conditions on an approval to ensure it is carried out in accordance with the objectives of other environmental legislation.

Legislation that must be applied consistently to projects approved under Part 3A

Under section 75V of the EP&A Act, certain authorisations cannot be refused for a project approved under Part 3A if such authorisations are necessary for carrying out that project. That is, it may still be necessary to apply for an approval; but the agencies responsible for issuing such approvals cannot refuse to issue them. Furthermore, the conditions of any such approvals must be substantially consistent with the Part 3A approval. Of specific relevance to power generation projects, the legislation that must be applied consistently is as follows:

- An environment protection licence under section 48 of the *Protection of the Environment Operations Act 1997*;
- A consent under section 138 of the *Roads Act 1993*; and
- A licence under the *Pipelines Act 1967*.

Requirements under the Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (PEO Act) is administered by the Department of Environment and Climate Change (DECC) and provides for the regulation of pollution (water, air and noise), waste transport and disposal, and littering. As a means of regulating pollution, environment protection licences may be issued under the Act for the following purposes:

- Scheduled development work;
- Scheduled activities (premises-based);
- Scheduled activities (non-premises based); and
- Non-scheduled activities (to regulate water pollution).

It is a mandatory requirement under the PEO Act to obtain an environment protection licence for scheduled development work and scheduled activities as listed in Schedule 1 to the Act (PEO Act ss.47-49). Premise-based activities that require environmental protection licences include electricity generating works that supply or are capable of supplying more than 30 megawatts of electrical power. As such, it is likely that a gas-fired power station would constitute a premise-based scheduled activity and would require an environmental protection licence under section 48 of the Act. Prior to commissioning of the proposed development, the proponent would need to obtain an environment protection licence from DECC.

Requirements under the Roads Act 1993

The *Roads Act 1993* provides for the regulation of the carrying out of various activities on public roads. Under section 138 of the Act, a person must not:

(a) erect a structure or carry out a work in, on or over a public road, or
(b) dig up or disturb the surface of a public road, or
(c) remove or interfere with a structure, work or tree on a public road, or
(d) pump water into a public road from any land adjoining the road, or
(e) connect a road (whether public or private) to a classified road,
otherwise than with the consent of the appropriate roads authority.

In the event that the proposed development requires works within or on roadways, as defined under section 38 of the Act, the proponent would need to obtain consent from the appropriate roads authority for that component of the work. The RTA is the roads authority for classified roads. Local councils are the roads authorities for all other public roads.

Requirements under the Pipelines Act 1967

The *Pipelines Act 1967* is administered by the Department of Water and Energy (DWE) and DECC. The Act was enacted to meet the need for efficient and economical transportation of petroleum and natural gas products over long distances. Under the *Pipelines Act 1967*, any person who wishes to construct and operate a prescribed pipeline for the purposes of conveying oil, gas or petroleum, must do so under an authorisation or licence. Therefore, an application for a pipeline licence will need to be made to DWE/DECC under section 12 of the Pipelines Act.

4.4.5. Indicative approval timeframes

The stages of project approval under Part 3A of the EP&A Act, and associated indicative timeframes for each stage, are outlined below:

Project Approval Stage	Indicative timeframe
Preparation of the Preliminary Environmental Assessment (PEA) and lodgement of Project Application and PEA to DoP	~2 weeks
Planning Focus Meeting and receipt of Director-General's requirements	Statutory requirement of 28 days
Preparation and lodgement of draft Environmental Assessment (EA) and Statement of Commitments to DoP	~ 5 months
DoP adequacy review	Statutory requirement of 21 days, although in reality its generally closer to 2 months
Preparation and lodgement of final EA and Statement of Commitments	~ 1 month
Public exhibition	Statutory requirement for a minimum of 30 days, although controversial and other such projects can be on exhibition for longer
Preparation of Submissions Report/ Preferred Project Report	1 month, assuming no further work is required
Director-General prepares Assessment Report and Minster's approval	Statutory requirement of 30-120 days, depending on complexity of EA and approval process. This will be detailed in the Director-General's requirements.
Obtaining post approval licences	~ 6 months
Total timeframe	**~ 18-22 months**

Assumptions: The concept design for the project has been finalised prior to start of approvals process.
Referral to Commonwealth Minister for the Environment under the Environment Protection and Biodiversity Conservation Act is not required.

4.4.6. Factors likely to affect indicative approval timeframes

There are a range of factors that have the potential to affect the indicative approval timeframes outline above. These generally include the following:

- Where public exhibition occurs around holiday periods (especially Christmas/New Year), it is likely that the Department of Planning extend the exhibition period beyond the minimum 30 days. In addition, the Minister for Planning can extend the exhibition period at his/her discretion.
- As stated above, there are statutory requirements for the Department and Director-General to carry out their activities (i.e. preparation of Director-General's requirements, adequacy review and preparation of Assessment Report). However, there are no penalties for not adhering to these timeframes and these timeframes are sometimes not met.

- Using past experience on similar projects, there is the potential for the Director-General's requirements to be predicted at the Proposal phase. However, in some exceptional circumstances, the Director-General's requirements may not have been adequately predicted and/or requirements can be more onerous than expected. This has the potential to add to the time required to prepare the Environmental Assessment documentation. Should the Director-General's requirements be unrealistic and/or impractical, there might be the need to enter into negotiations with the Department of Planning and other government agencies.
- The level of community and stakeholder objection has the potential to affect approval timeframes, especially where a change in project scope is required to adequately address public submissions.
- Finally, government politics and the timing of elections etc also have the potential to result in delayed responses and approvals from the Department of Planning and Planning Minister.

4.5. Victoria

4.5.1. Project approvals

The principal legislation controlling development in Victoria is the *Environment Effects Act 1978*, which is administered by the Department of Planning and Community Development (DPCD). Under the Act, any project that could have significant effects on the environment should be referred to the Minister for Planning for determination as to whether an Environment Effects Statement (EES) is required or not. The details of the EES requirements and process are detailed in Appendix A.

The following key downstream approvals application will be generally exhibited in conjunction with the EES.

- EPA Works Approval under the *Environment Protection Act 1970*
- Planning permit under the *Environment and Planning Act 1987*
- Licence to Construct and Operate a Pipeline under the *Pipeline Act 2005*
- Cultural Heritage Management Plan under the *Aboriginal Heritage Act 2006;*

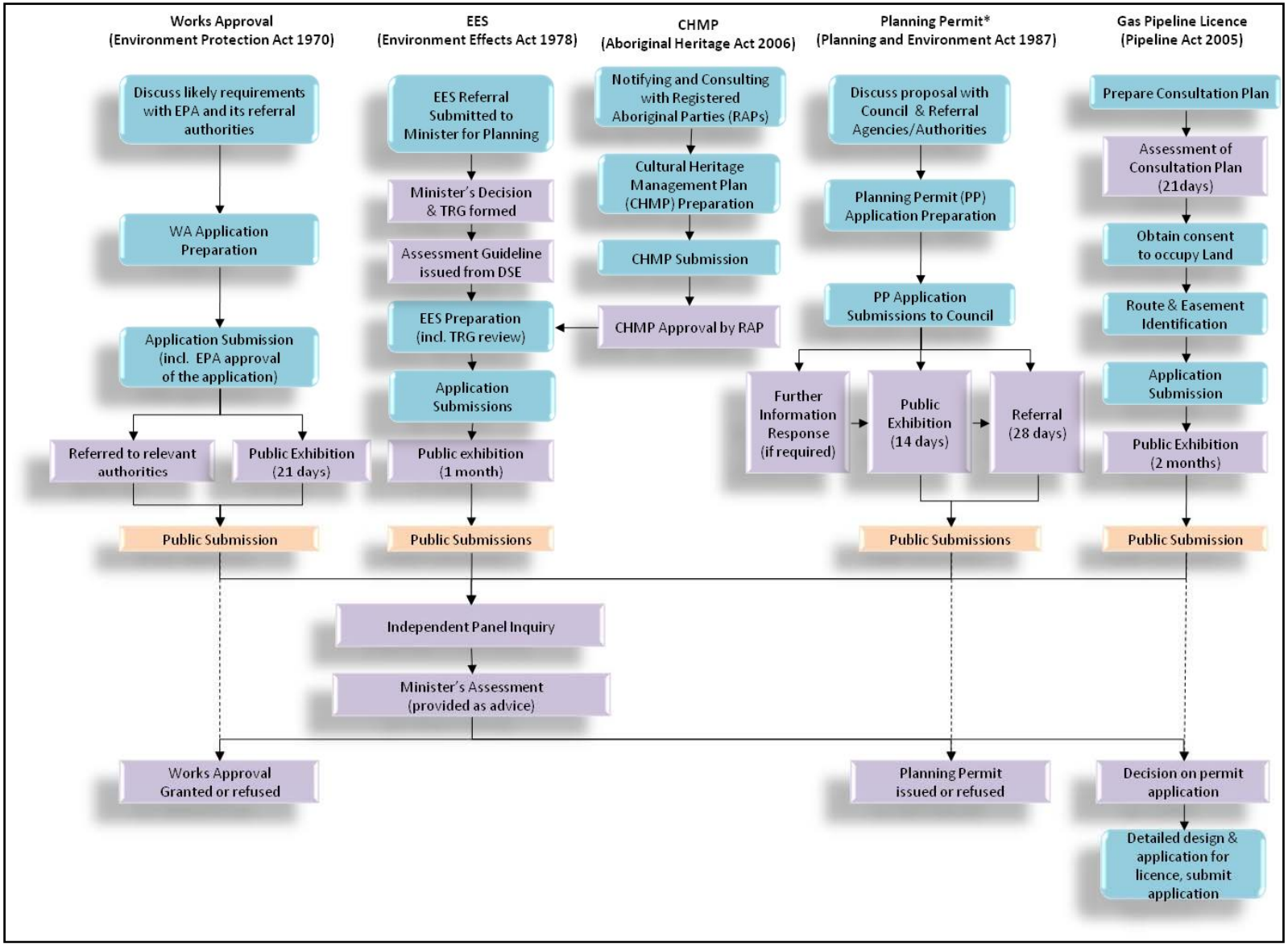
Appendix A contains the details on these key downstream approvals and the likely coordinated approvals processes between the EES and these key downstream approvals is illustrated in Figure 5.

In addition, Appendix A also presents the information on permits to remove or destroy protected flora and fauna under the *Flora and Fauna Guarantee Act 1988.* All native vegetation removal requires a planning permit.

There are other secondary approvals which are not detailed further in this report. They include, but are not limited to:

- Consent to undertake any works to a place listed on the Victorian Heritage Register or the Victorian Heritage Inventory under the *Heritage Act 1995*;
- Permit to damage, destroy or relocate wildlife under the *Wildlife Act 1975*;
- Road Access Works Permit to undertaken works in road reserves under the *Road Management Act 2004*;
- Approval for buildings and works and to occupy permanently or temporarily reserved Crown land (on a permanently or temporarily basis) under the *Crown Land (Reserves) Act 1985*;
- Approval for buildings and works and to occupy permanently or temporarily unreserved Crown land (on a permanent or temporary basis) under the *Land Act 1958*; and
- Works on Waterways Permit under the *Water Act 1989*.

Figure 5 Overview of Victorian approvals processes



4.5.2. Indicative timelines

Timelines for the anticipated Victorian processes are shown in the Table in Appendix A.

Allowing for the time to undertake the necessary studies and prepare the applications, and the timeframes of the approvals processes, the timings are similar to those of other jurisdictions noted, that is 12 to 18 months for EES approvals plus a couple of extra months for downstream approvals.

4.6. South Australia

4.6.1. Introduction

A new gas-fired power station proposed in South Australia is likely to require the following approvals:

- Development approval under the *Development Act 1993* prior to construction commencing.
- Approval to clear native vegetation under the *Native Vegetation Act 1991* if the power station is proposed in an area of the State where the Act applies[7] and clearance of native vegetation is required to construct the plant.
- A licence to undertake prescribed activities of environmental significance under the Environment Protection Act 1993 prior to operation commencing.

It should be noted that approval to undertake water affecting activities[8] under the *Natural Resources Management Act 2004*, works approval under the *Environment Protection Act 1993* and any impacts on places of state heritage registered under the *Heritage Places Act 1993* are in most cases covered by development approval under the *Development Act 1993*.

[7] Refer to Section 4 of the *Native Vegetation Act 1991*(www.legislation.sa.gov.au)

[8] Water affecting activities include:

- The construction or enlargement of dams or structures to collect or divert water.
- Building of structures, obstructing or depositing solid materials in a watercourse, lake or floodplain, e.g. erosion control, construction of water crossings or dumping material.
- Excavating material from a watercourse, lake or floodplain, e.g. excavating or cleaning soaks, waterholes and on-stream dams.
- Destroying vegetation in a watercourse, lake or floodplain, e.g. removal of reeds.
- Draining or discharging water or brine into a watercourse or lake, e.g. desalination waste, stormwater including urban discharge, drainage and salinity control.
- Drilling, deepening and backfilling wells, bores and groundwater access trenches.
- The use of effluent or water imported to an area for commercial activities, e.g. irrigation.

4.6.2. Anticipated Approvals

4.6.2.1. Development approval under the *Development Act 1993*

There are three potential options for development assessment under the *Development Act 1993* (the Act):

1) **Normal development assessment process**
   The majority of development proposals are assessed under the normal development assessment process. The relevant authority for this process is the local council or Development Assessment Commission[9].

2) **Major Development assessment process (Section 46 of the Act)**
   The Major Development process is considered the most comprehensive assessment process due to the detailed reporting and public consultation requirements. Major Developments are those that the Minister for Urban Development and Planning declares under the *Development Act 1993* to be of major environmental, social or economic importance. Major Developments are generally of state significance and require greater investigation than those assessed under the normal process.

3) **Crown development and public infrastructure assessment process (Section 49 of the Act)**
   Crown development is development undertaken by state government agencies (subject to some exemptions from development approval) and needs to be approved by the Minister responsible for the *Development Act 1993* (Minister for Urban Development and Planning). In addition, a private entity proposing to undertake development of public infrastructure that is sponsored by a state government agency can also be subject to the assessment process under Section 49 of the Act. Under the Act ***public infrastructure*** *means—*
   (a) the infrastructure, equipment, structures, works and other facilities used in or in connection with the supply of water or electricity, gas or other forms of energy, or the drainage or treatment of waste water or sewage;
   (b) roads and their supporting structures and works;
   (c) ports, wharfs, jetties, railways, tramways and busways;
   (d) schools, hospitals and prisons;
   (e) all other facilities that have traditionally been provided by the State (but not necessarily only by the State) as community or public facilities;

[9] The Development Assessment Commission (DAC) is an independent statutory body established under South Australia's *Development Act 1993*. The DAC assesses and determines specified kinds of development applications in South Australia.

Electricity generation infrastructure can be defined as public infrastructure under Section 49 of the Act.

New gas-fired power stations and expansions of existing gas-fired power stations (including expansion of the Quarantine power station by Origin Energy in 2007) have been assessed under the crown development/public infrastructure assessment process in the past.

A flowchart of the crown development/public infrastructure assessment process, incorporating timeframes where possible, is provided in Figure 6.

It should be noted that this assessment process requires the private developer to seek support/sponsorship from a State government agency. The relevant State government agency in this case would be the Office of Major Projects and Infrastructure within the Department for Transport, Energy and Infrastructure.

4.6.2.2. Approval to clear native vegetation under the *Native Vegetation Act 1991*

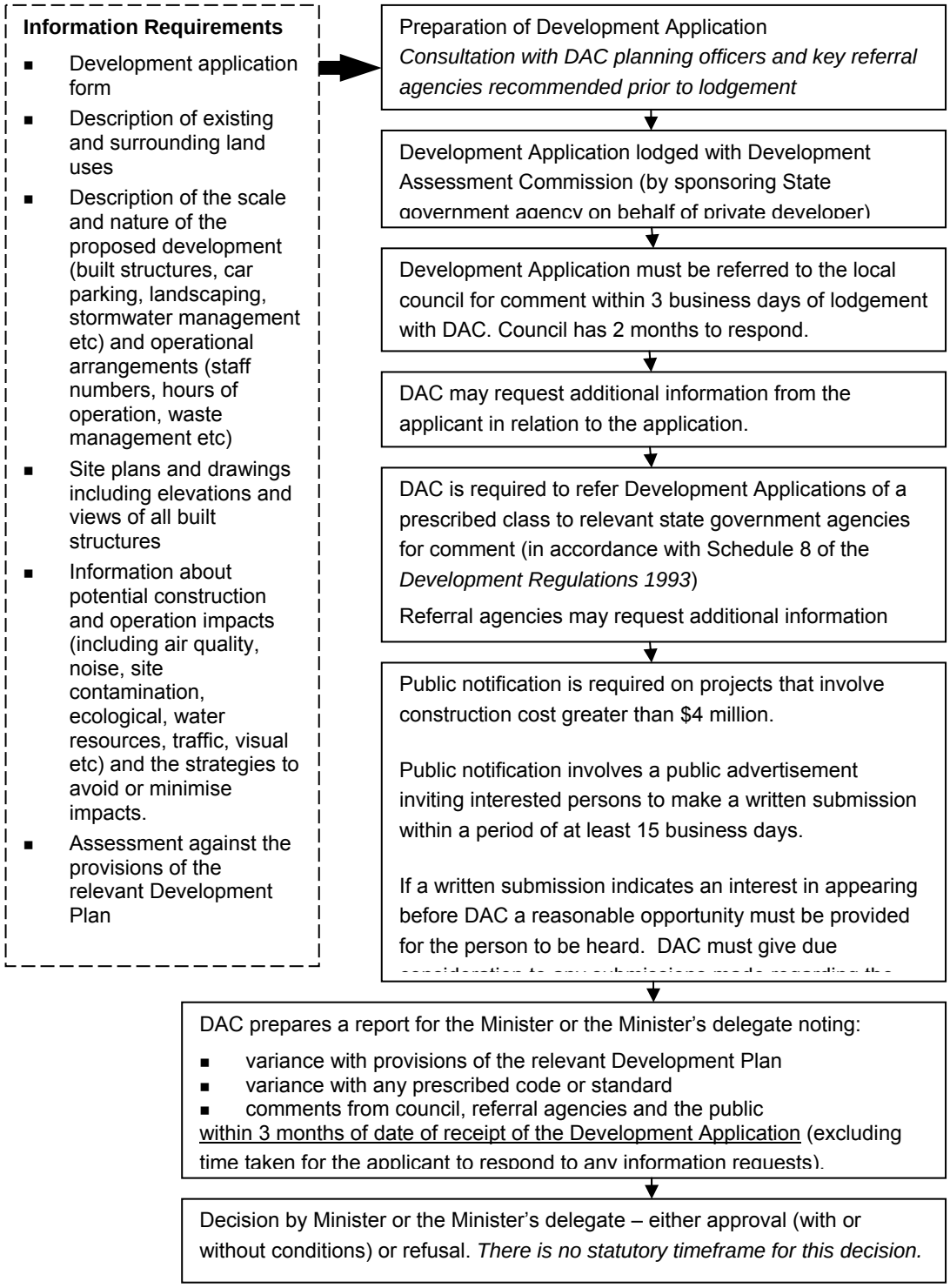
Native vegetation, as defined by the *Native Vegetation Act 1991,* includes any naturally occurring locally indigenous native plants. This covers the full range of native species, from tall trees to small ground covers, native grasses, wetland plants such as reeds and rushes, and marine plants. The plants may comprise natural bushland or they may be isolated plants remaining in a modified setting, such as single trees in pastured paddocks.

When proposing to clear vegetation the first step is to consider whether the vegetation is subject to clearance restrictions under the Act. This depends on the type of vegetation (eg is it native vegetation as defined under the Act), the location of the vegetation (the Act applies to most of the state but some parts of the Adelaide metropolitan area are excluded) and the type of development (some types of development are exempt from clearance restrictions).

Under Section 5(1)(d) of the *Native Vegetation Regulations 2003,* native vegetation may be cleared for the construction or expansion of a building or infrastructure that the Minister for Environment and Conservation has declared to be in the public interest, or for the provision of infrastructure to a building or place. The proponent must utilise a site which minimises clearance and does not contain an intact stratum[10]. Approval for the structure must be obtained under the *Development Act 1993*. In this case, a Significant Environmental Benefit (SEB) and Management Plan are required to be submitted to the Native Vegetation Council (NVC).

[10] Section 3A of the *Native Vegetation Act 1991* defines an 'Intact Stratum' as one comprising vegetation that, in the opinion of the Native Vegetation Council, has not been seriously degraded by human activity (but not degradation that has been caused by fire) during the immediately preceding period of 20 years.

Figure 6 Crown development/public infrastructure assessment process



The SEB is to offset the ecological impacts of the clearance and may include protecting and managing existing remnant native vegetation, restoring degraded native vegetation, revegetating cleared areas or a payment to the Native Vegetation Fund (which the NVC will use to do similar works elsewhere). A Management Plan is a document describing how a SEB will be provided and how the clearance (and onground SEB) will be managed in the future. SEBs are commensurate with the 'ecological footprint' of the proposed clearance.

Clearance of native vegetation to construct a gas-fired power station may be exempt from clearance approval in accordance with Section 5(1)(d) the *Native Vegetation Regulations 2003* if the infrastructure is considered by the Minister for Environment and Conservation to be of public interest.

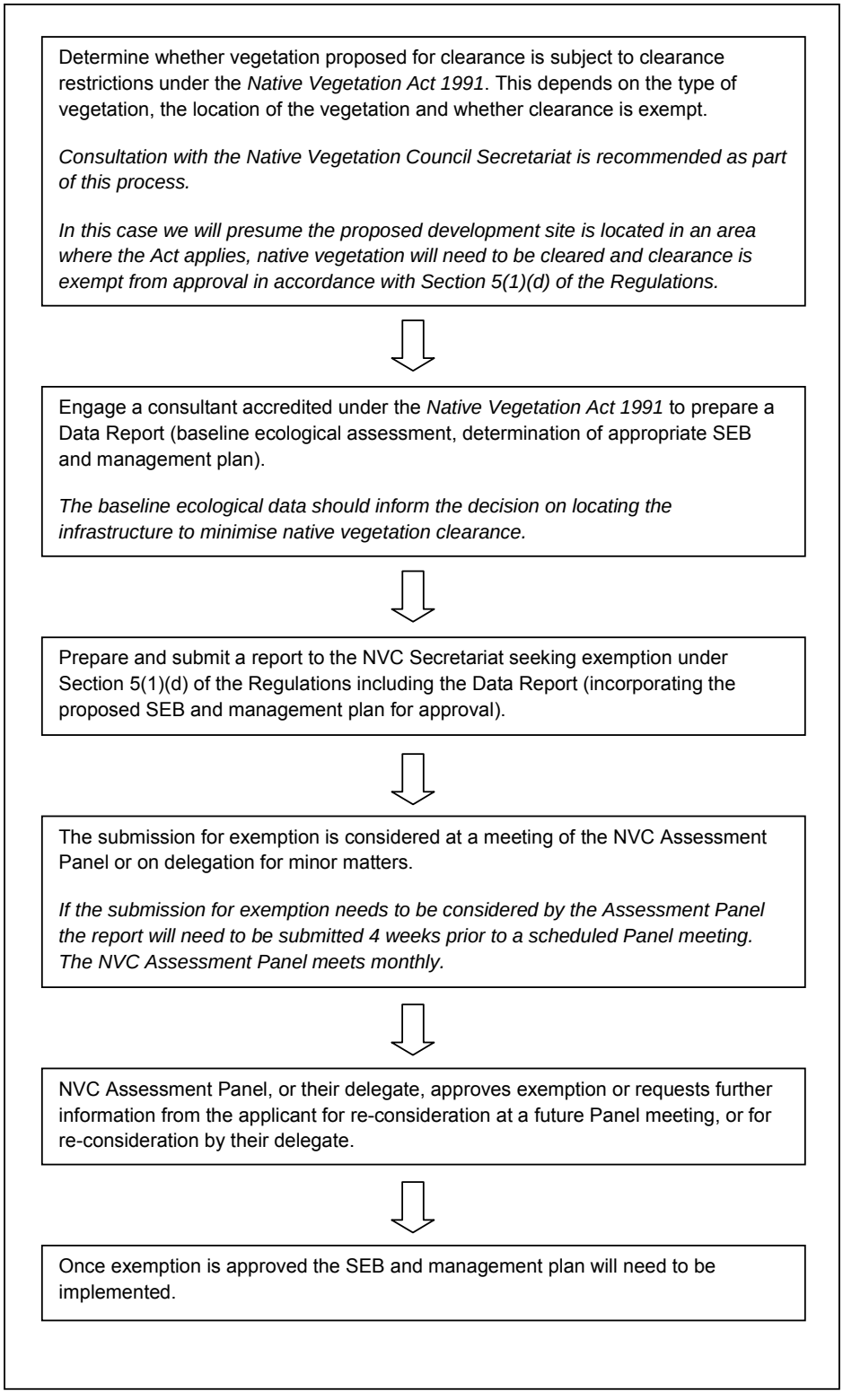
A submission to the NVC will need to establish that clearance of native vegetation associated with construction of a gas-fired power station should be exempt under Section 5(1)(d) of the Regulations by addressing the following criteria:

- the infrastructure is in the public interest
- development approval has been obtained
- the site chosen contains the least significant native vegetation of available site options and avoids areas containing intact stratum of native vegetation
- the building or structure cannot be established without the need to clear some native vegetation
- a commensurate SEB has been determined and a management plan submitted for approval.

A flowchart for seeking exemption from clearance approval is provided in Figure 7.

The timeframe for achieving an exemption under the Act incorporates the time it takes for an accredited consultant to prepare a submission according to NVC guidelines and the time it takes for the NVC to make a decision on the submission for exemption (noting that the NVC Assessment Panel meets only monthly to assess applications and make decisions). There are no statutory timeframes for the NVC to make a decision on an exemption, however if ongoing liaison with the NVC Secretariat has been undertaken during the development of the submission and all information needed to make a decision is provided in the submission a decision will be made in a timely manner by the NVC. An estimated timeframe for gaining an exemption is 3-9 months depending on the nature and scale of the clearance required.

Figure 7 Process to seek an exemption under the *Native Vegetation Act 1991*



4.6.2.3. Licence to undertake prescribed activities of environmental significance under the *Environment Protection Act 1993*

The *Environment Protection Act 1993* (EP Act) provides for the protection of the environment and is administered by the Environment Protection Authority (EPA). Under The EP Act there is a general environmental duty for a person to not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.

Environmental authorisation is required for activities which are classified as prescribed activities of environmental significance under Schedule 1 of the EP Act.

There are three forms of environmental authorisations under the EP Act:

1) **A works approval** – required to carry out works associated with the construction or alteration of a building or structure for use for a prescribed activity of environmental significance; or the installation or alteration of any plant or equipment for use for a prescribed activity of environmental significance.
2) **An exemption** – can be applied for which exempts a person from the application of a specified provision of the EP Act in respect of a specified activity.
3) **A licence** - required to undertake (operate) a prescribed activity of environmental significance.

Environment protection policies are created under the EP Act and provide guidance to determining environmental authorisations and EP Act matters related to development approval (under the *Development Act 1993*).

A works approval is not required to carry out works for which a development approval under the *Development Act 1993* has been issued. For development that involves prescribed activities of environmental significance the development application is referred to the EPA. The relevant assessment authority will be required to either have regard to the EPA's comments or in some cases can be directed by the EPA to approve with conditions or refuse an application. In this way any concerns the EPA has in regard to works associated with the development that involves activities of environmental significance can be assessed as part of the development assessment process.

Activities of environmental significance (from Schedule 1 of the EP Act) which may be associated with development and operation of a gas-fired power station include:

2(1) **Abrasive Blasting,**
3(4) **Activities Producing Listed Wastes -** an activity in which any of the substances or things listed in Part B of Schedule 1 of the EP Act are produced, as or become waste.

8(2) **Fuel Burning -** the conduct of works or facilities involving the use of fuel burning equipment, including flaring (other than flaring at petroleum production, storage or processing works or facilities that do not have a total storage capacity or total production rate exceeding the levels respectively specified in clause 1(5)) or incineration, where the equipment alone or in aggregate is capable of burning combustible matter—

(a) at a rate of heat release exceeding 5 megawatts; or

(b) at a rate of heat release exceeding 500 kilowatts and the products of combustion are used—

(i) to stove enamel; or

(ii) to bake or dry any substance that on heating releases dust or air impurities.

8(7) **Discharges to Marine or Inland Waters -** the conduct of operations involving discharges into marine waters or inland waters where—

(a) the discharges—

(i) raise the temperature of the receiving waters by more than 2 degrees Celsius at any time at a distance of 10 metres or more from the point of discharge; or

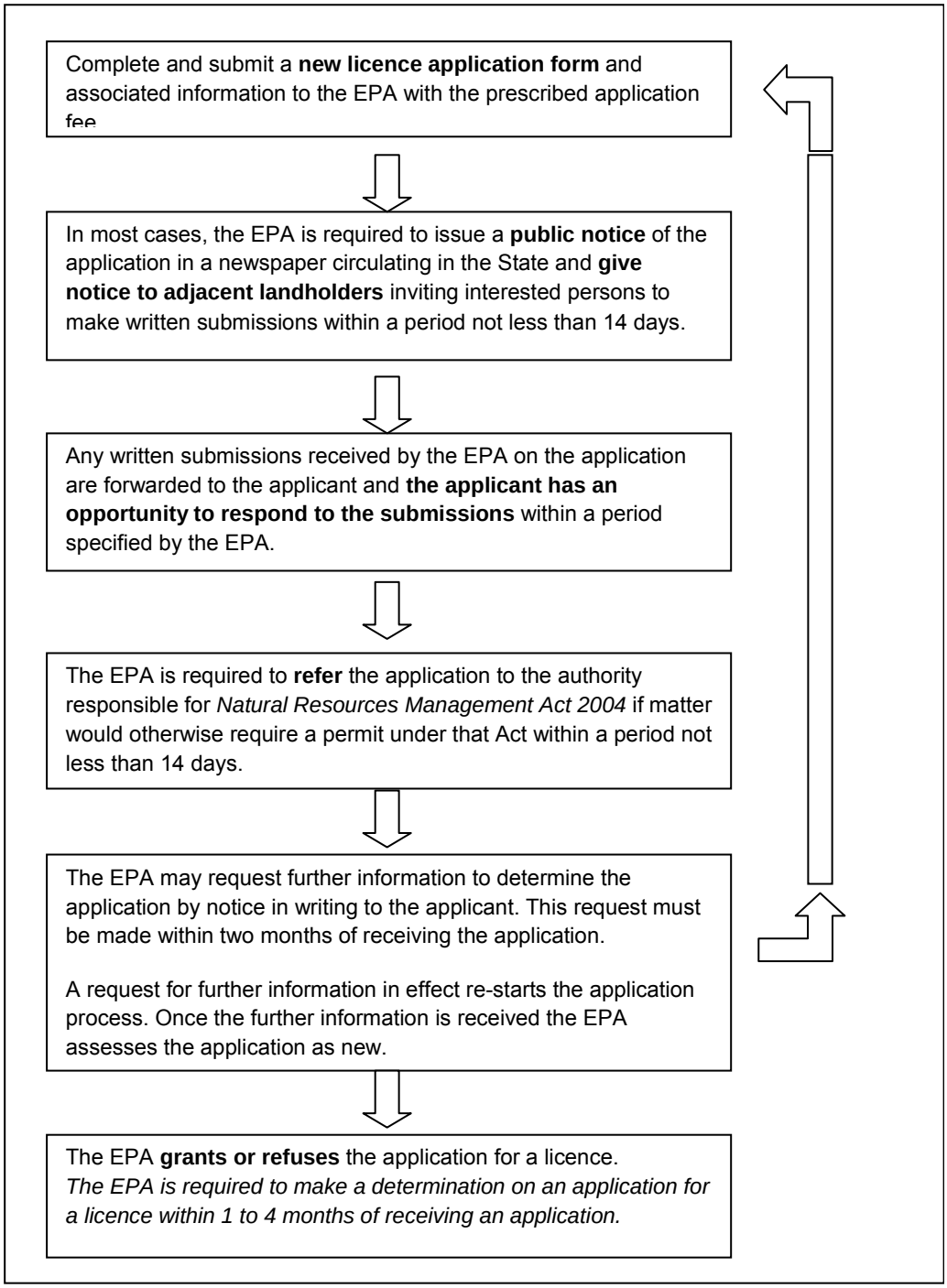
(ii) contain antibiotic or chemical water treatments; and

(b) the total volume of the discharges exceeds 50 kilolitres per day.

Prior to undertaking prescribed activities of environmental significance (eg operating) a gas-fired power station a licence would need to be obtain. A flowchart illustrating the process to apply for a licence is provided in Figure 8.

The EPA is required to make a determination on an application for an environmental authorisation (including a licence) within 1 to 4 months of receiving an application (depending on the specific nature of the application). After this period the applicant may, after giving 14 days notice in writing to the EPA, apply to the Environment, Resources and Development Court for an order requiring the EPA to make its decision on the application within a time fixed by the Court.

- **Figure 8 Process for applying for a licence under the *Environment Protection Act 1993***



4.6.3. Factors which could impact on approvals timeframes

A list of factors which would impact on approval timeframes under each type of approval is provided below.

Development approval

- If all information required by DAC and the referral agencies to assess the development application is not provided they will request further information from the applicant. The statutory timeframe within which DAC is required to submit an assessment report on the application will be extended by the time it takes for the applicant to provide the further information. To mitigate the request for further information it is recommended that the applicant consultants with DAC and referral agencies during the preparation of the development application to ensure all information needs are addressed.
- There is no timeframe within which the Minister or the Minister's delegate must make a decision on a crown development/public infrastructure application so there is a risk this timeframe may be lengthy. As politicians can be swayed by public opinion and concern it is advisable that any applicants for projects which raise community concerns should undertake comprehensive community engagement, in an effort to address and reduce concerns about the proposed development, prior to submitting the development application and throughout the assessment process. A Minister is likely to make a more timely decision on projects that have undertaken effective community engagement and addressed community concerns.

Approval to clear native vegetation

- Early and ongoing liaison with the Native Vegetation Secretariat when seeking an exemption under the *Native Vegetation Regulations 2003* will assist with the timely assessment of the application for exemption.
- Locating the infrastructure in accordance with the criteria under Section 5(1)(d) of the Regulations eg choosing a site that contains the least significant native vegetation and avoids areas containing intact stratum of native vegetation, will assist with reducing the time taken to achieve the exemption.

Licence to undertake prescribed activities of environmental significance

- The EPA may request further information to inform assessment of a licence application. This request can be made up to two months after the EPA has received the application and the request in effect re-starts the application process. Once the further information is received the EPA assesses the application as new. Therefore if a request for further information is issued to the applicant the decision on the licence application can be significantly delayed. This delay can be avoided by early and ongoing liaison with the EPA in relation to information needs and by including all relevant information in the licence application where possible.

4.7. Tasmania

4.7.1. Introduction

The *Environmental Management and Pollution Control Act 1994* (*EMPCA*) is the primary environment protection legislation in Tasmania. The EMPCA is administered by the new Environmental Protection Authority (EPA). The EPA receives professional advice from officers of the Department of Environment Parks Heritage & Arts (DEPHA) through assessments of Development Proposals and Environmental Management Plans (DPEMPs), development and management of Environmental Improvement Programs (EIPs), environmental audits of premises, environmental agreements and reporting of incidents, malfunctions and accidents.

Developments in Tasmania fall under one of three potential categories defined under the *EMPC Act 1994* as specified below.

4.7.2. Levels of Environmental Assessment

4.7.2.1. Level 1

Level 1 activities are those that may cause environmental harm, and require a permit from the Local Government Authority under the *Land Use Planning and Approvals Act 1993*. Level 1 activities are generally smaller industrial-type activities. They are assessed, approved and regulated by councils. There are also a range of other activities which are not classed as Level 1, because they do not require permits from council. They remain the responsibility of councils to regulate.

4.7.2.2. Level 2

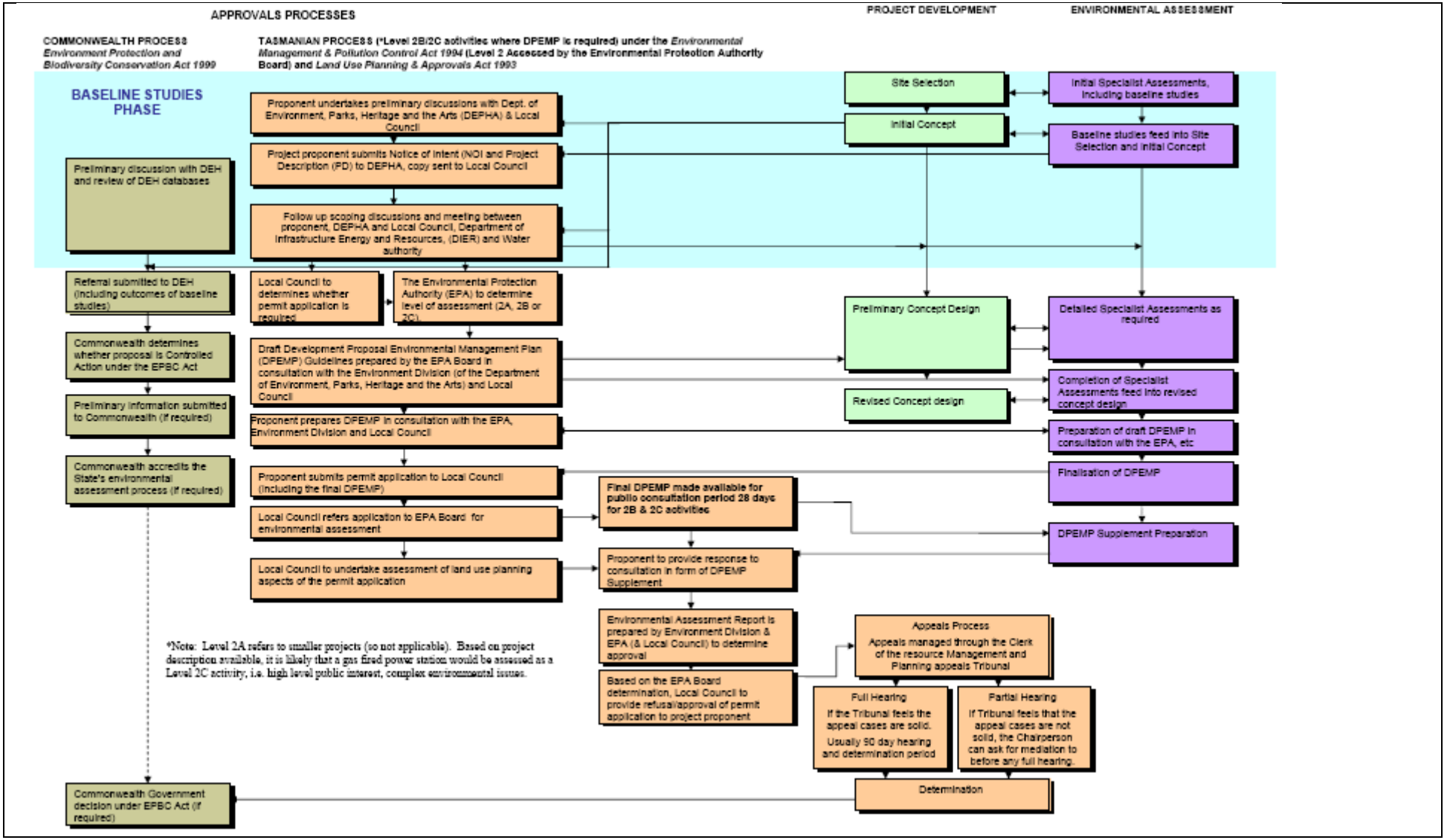
Level 2 activities are those activities included in Schedule 2 of EMPCA and are subject to a formal Environmental Impact Assessment. These are generally larger industries or mining activities, or activities which have a greater potential to cause significant environmental harm. Level 2 activities are assessed, approved and regulated by the DEPHA. Schedule 2 of the EMPCA includes:

> 7(a) Fuel Burning: any process or combination of processes involving the use of fuel burning equipment or incineration and where the equipment alone or in aggregate is capable of burning combustible matter at a rate of one tonne or more per hour.

Level 2 Assessments are further classified into level 2A, 2B or 2C dependent on the level of complexity.

Based on the project description available, it is likely that Gas Fired Power Station Project would be assessed as a Level 2C activity under the *EMPC Act 1994* and *Land Use Planning and Approvals Act 1993*.

Figure 9 GAS FIRED POWER STATION - ENVIRONMENTAL ASSESSMENT AND APPROVALS PROCESSES (LEVEL 2 B or 2C Activities)



4.7.2.3. Level 3[11]

Level 3 activities are those that have been declared "Projects of State Significance" under the *State Policies and Projects Act 1993*. Such activities are assessed by the Resource Planning and Development Commission (RPDC). The assessment report and recommendations are submitted to the Minister for a decision, which must be approved by resolution in both Houses of Parliament. The RPDC can recommend that a Project of State Significance be regulated by a number of agencies.

The declaration of a project of State significance takes a major development proposal outside the planning process established under the *Land Use Planning and Approvals Act 1993*. Part 3 of the *State Policies and Projects Act 1993* sets out the statutory assessment process for a project of State Significance. The Premier is the Minister responsible for administering the Act in respect of projects of State significance.

A project is eligible to be a project of State significance if it possesses at least two of the following attributes:

- Significant capital investment;
- Significant contribution to the State's economic development;
- Significant consequential economic impacts;
- Significant potential contribution to Australia's balance of payments;
- Significant impact on the environment;
- Complex technical processes and engineering designs; and/or
- Significant infrastructure requirements.

The effect of the order declaring a project of State Significance is that all statutory functions of various agencies that would otherwise have been involved in assessing or approving the proposed development vests in the RPDC. All approvals, licences, permits etc that are required to enable the project to proceed are dealt with under the project of State significance process. However, the RPDC's role is not to determine the matter. It is to make recommendations to the government. It is the Government that finally determines whether the project proceeds, and if so, on what terms and conditions.

[11] Source: RPDC Guide to Resource Management and Planning System

It is very difficult to achieve a "Project of State Significance" in Tasmania, and a level 3 activity has an inherent risk that if it is not approved, there is no appeal process. The decision is final. In addition, the approval time may not be any faster that for a level 2 activity.

4.7.2.4. Planning Approval and Permits

The Planning Approval process regulates use and development of land by assessing proposals against council planning schemes and the State's planning legislation, and issuing permits. Planning Approval is managed under the *Land Use Planning and Approvals Act 1993* and administered by the Local Government Authority. If the proposal is classified as a Level 2 activity, the Environment Protection Authority (EPA) will complete a formal Environmental Impact Assessment under the *Environmental Management and Pollution Control Act 1994*, and request addition of specific environmental conditions on the permit.

4.7.2.5. Applicable Legislation and Guidelines

In addition to gaining environmental approval from the EPA and the Local Council, there are a number of other regulations and applicable legislation that must be complied with. A summary of key legislation and regulations is provided below:

- **Table 1 Applicable Legislation and Guidelines**

Municipality of Local Planning Scheme 1991
Land Use Planning and Approvals Act 1993
Aboriginal Relics Act 1975
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
Environment Protection and Biodiversity Conservation Regulations 2000 (Commonwealth)
Environmental Management and Pollution Control Act 1994
Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2004
Environmental Management and Pollution Control (Waste Management) Regulations 2000
State Policy on Air Quality
State Policy on Noise
State Policy on Water Quality Management 1997
National Environment Protection (Air Toxics) Measure
National Environment Protection (Ambient Air Quality) Measure
National Environment Protection (Assessment of Site Contamination) Measure
National Environment Protection (National Pollutant Inventory) Measure
Fire Service Act 1979
General Fire Regulations 2000
Industrial Chemicals (Notification and Assessment) Act 1989 (Commonwealth)
National Parks and Reserves Management Act 2002
Nature Conservation Act 2002
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Commonwealth)
Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995
Public Health Act 1997

Sewers and Drains Act 1954
State Policies and Projects Act 1993
Threatened Species Protection Act 1995
Water Management Act 1999
Tasmanian State Coastal policy 1996
Plumbing Regulations 2004
Sewers and Drains Act 1954
Dangerous Goods Act (and regulations) Act 1998
DPIWE Guidelines for recycled water and sewerage management program

Other (Industry Specific) Legislation
Historic Cultural Heritage Act 1995
Forest Practices Act 1985
Forestry Act 1920
National Parks and Reserves Management Act 2002
National Parks and Reserved Land Regulations 1999
Wildlife Regulations 1999
Pollution of Waters by Oil and Noxious Substances Act 1987
Renewable Energy (Electricity) Act 2000 (Commonwealth)
Renewable Energy (Electricity) Regulations 2001 (Commonwealth)
Water Management Act 1999
Water Management Regulations 1999
Water Management (Safety of Dams) Regulations 2003
Weed Management Act 1999

4.7.3. Likely Environmental Referral Process (Level 2 Assessment)

The referral process is initiated through initial discussions between the proponents, Environment Division (DEPHA) and Local Planning Authority, followed by the submission of a Notice of Intent. A Development Proposal and Environmental Management Plan (DPEMP) is then prepared to satisfy the requirements of the DEPHA (Environment Division) and the planning requirements of the Local Council. The DPEMP may trigger the Commonwealth *EPBC Act* should matters of National Environmental Significance be encountered, which will be an additional review requirement imposed by the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA). Once approval is granted, a permit is issued.

The detailed referral process is provided in Appendix B with minimum and expected timelines identified below.

Table 2 Level 2 Assessment Approvals Timeframe

Activity	Minimum Timeline Cumulative Duration (Completion Date)	Expected Timeline Cumulative Duration (Completion Date)
Preliminary discussion between the proponent, Environment Division (DEPHA) and Planning Authority (Local Council).	1 Month	1 Month
Proponent prepares and submits Notice of Intent (NOI) documentation to DEPHA.	1 Month	1 Month
Development Proposal and Environmental Plan (DPEMP) Project Specific Guidelines developed in consultation between proponent and regulatory authorities. Project Specific Guidelines may be released for public comment on larger projects prior to finalisation.	2 Months NO PUBLIC COMMENT	3 Months 28 day PUBLIC COMMENT
Proponent prepares a DPEMP in consultation with the Environmental Division and Planning Authority	7 Months	9 Months
Permit Application and Referral (DPEMP) submitted to the EMPC Board.	8 Months	10 Months
Request for further information from the proponent (if required).	8 Months	12 Months
Public and agency consultation on permit application (including DPEMP). Public consultation period is generally 28 days for Level 2B and 2C activities. Total consultation period is dependent on the issues raised.	9 Months PUBLIC COMMENT	13 Months PUBLIC COMMENT
Proponent prepares DPEMP Supplement (if required). The DPEMP Supplement is usually a consolidation of the public consultation process and proponent responses.	9 Months	18 Months - dependent on extent of public comment
Environmental Assessment Report prepared by the Environment Division of the DEPHA and provided to the EMPC Board.	10 Months	20 Months

Activity	Minimum Timeline Cumulative Duration (Completion Date)	Expected Timeline Cumulative Duration (Completion Date)
EMPC Board and Planning Authority assessment and determinations.	12 Months	22 Months
Appeals. The granting of a permit may be appealed by any person who made a submission.	**12 Months**	**24 Months**
EPBC Assessment (under bilateral agreement) Commonwealth Department of Environment, Water, Heritage and the Arts.	**14 Months**	**26 Months**

Practically, the formal assessment process has been achieved within 8 months for a recent gas fired based on an proactive community consultative strategy being adopted. Realistically, approvals could take up to 24 months for approval of a Level 2 Assessment based on the site specific environmental issues that would need to be assessed.

The length of the approval process will be largely affected by the following;

1) The level of State Government support.
2) Whether the project is considered as a level 2B or 2C project under the *EMPC Act 1994* and *Land Use Planning and Approvals Act 1993* i.e. a Major Project.
3) Whether the Commonwealth *EPBC Act* is triggered.
4) The level of community submissions during the public comment period.

4.8. Approval Timelines Following Permit Issue

- **Table 3 Approximate Approval Timeframes**

Activity	Expected Timeframe
Forest Practices Plan (pending the availability of a licensed Forest Practices Officer)	1 Month
Threatened Species Protection Act – Permit application to 'take' protected species	1.5 Months
Environmental Protection and Biodiversity Conservation Act – Commonwealth Environment Minister to determine approval and conditions	1 Month

5. Factors affecting development timelines & discussion

5.1. Introduction

The timelines discussed above are those that would be generally expected within an orderly project development process in ordinary circumstances. There are variations in process and circumstance that produce shorter or longer timelines. Some of these circumstances are discussed below.

5.2. Apparent supply/demand balance situations

Where there is an apparent shortage of generation, approving agencies recognise the urgency of some proposed developments and can expedite those approval processes not subject to statutory minimum times (statutory minimum times apply to such things as public notice periods).

5.3. "Fast track" project development

Fast track construction is a technique where some parts of the procurement or construction process are committed before the design of other associated elements is finalised and approved. Design takes place in parallel with these other activities.

At the present time it is the delivery of critical components from manufacturers that is setting the construction/commissioning critical path of these projects. The most critical elements are the gas turbine, steam turbine (for CCGT) and transformers/switchgear for connection of large generators at higher voltages.

These are generally ordered as soon as the project is committed (eg reaches Financial Closure or Final Investment Decision) and hence fast-track construction techniques would not generally shorten the project program.

5.4. Second hand equipment

In the past, second hand powerplant equipment has been used in a bid to shorten the lead time of a project. Plants where second hand gas turbines have been applied include:

- Somerton, Vic
- Hallett, SA
- Valley Peaker, Vic.

The use of second hand gas turbines tends to be opportunistic (depends on what equipment happens to be available in the world at the time). Since it cannot be applied with certainty until the actual time a firm enquiry is ready it would not be recommended that second hand plant is assumed for orderly generation plant development.

Because such units are more relocatable and more numerous, it is usually the case that second hand units are smaller units sizes.

5.5. Smaller equipment

At the present time, delivery times for smaller units are shorter than for larger units. For example GE advise that delivery lead times for gas turbine equipment in the 100 to 250MW class are expected to remain at 14 to 18 months after receipt of order. The shorter lead time (ie approximately 14 months) is for the aeroderivative LMS100 for SCGT, which is approximately 100MW. The longer lead times refer to larger gas turbines.

Selecting smaller units represents a trade-off of various factors for developers. Smaller units have higher specific capital cost ($/kW) and usually lower efficiency (although not necessarily always the case as aeroderivative units such as the LMS100 are relatively high efficiency).

Smaller units also have shorter start times and lower portfolio risk for a power station owner.

The most common current template for SCGT plants in the Australia has been with 160MW class configuration (Mt Stuart, Oakey, Laverton North, Kemerton. Colongra, Braemar 2 etc). This indicates that up to the present time this configuration has represented the best balance of factors in the market.

5.6. Brownfields expansion

A brownfields expansion of an existing power station offers the prospects of reduced approvals times.

Approvals times can be shorter as the character and zoning of the land is already established and changes to local amenity are thus minimised and a planning permit process is sometimes avoided.

Thus locations based on existing and previous power station sites (such as Swanbank F in Queensland and Tallawarra in NSW) may allow shorter approval timelines.

There may already be adequate infrastructure for gas and electricity interconnections, or at least if the existing connections are inadequate the easements for these may be established or more readily expandable than for a greenfields interconnection route.

Because construction time is dominated by the delivery of the primary plant the impact on construction time of a brownfields expansion of the sizes considered in this review would generally be immaterial.

The possibility of brownfields expansions is opportunistic and finite. SKM is not able to comment on other specific individual power station sites that may be possible expansion opportunities (for confidentiality reasons).

5.7. Wet cooled or dry cooled plants

In the case of CCGT plant proposals the method of cooling the steam turbine condenser can impact on approvals times. In particular if the condenser is wet cooled then a source of water must be identified.

The approvals issues invoked are:

- Competition from other potential users of the water,
- Easements and environmental impacts of water supply and wastewater pipelines, and
- Environmental impact of either a thermal plume or a saline discharge on the receiving waters (depending on the water cooling method selected).

The primary alternative to wet cooling is dry cooling of the condenser which reduces the plant's water consumption to modest levels.

Unless a wastewater source is available, it generally appears to be the case that CCGT and coal fired powerplant proponents to the west/inland of the "Great Dividing Range watershed (as extended)" (shown graphically in Figure 10) are tending towards dry cooled CCGT arrangements.

- **Figure 10 Eastern Australian "watershed"**

5.8. Seasonal issues

Some environmental surveys (notably spring flora/fauna surveys) should be undertaken at particular times of the year. If the project timetable does not fit with this aspect and if the issue is important (that is that the site is in a sensitive location), then project delays may result.

5.9. A portfolio of similar projects

A technique applied at times overseas (in larger markets than the NEM[12]) has been to bulk order a number of gas turbine sets in the expectation that they will be required or can be utilised on projects in general. This shortens the lead time on individual projects.

[12] Except perhaps in limited cases and to a limited extent such as Braemar 2 and Uranquinty.

Given the current financial crisis and the small size of the Australian marketplace this is not expected to be relevant in the context of this review.

5.10. Minimum approvals time

While the EIS processes are common in all states, where there is significant stakeholder or environmental impact of a project proposal, it is also possible for some projects to proceed using the Works Approval/Planning Permit pathway (to use the Victorian nomenclature). While there are timetable risks with this pathway (due to the potentially lengthy legal appeals processes open to objectors), where the project does not meet these problems the project can often be approved more quickly along the Works Approval/Planning Permit pathway than with an EIS process.

The decision to require a project to undertake a full EIS process is commonly at the discretion of the relevant minister. Note in the case of NSW, all projects of a size relevant to this review will require an EIS process.

In all cases, an environmental assessment would be expected for powerplant emissions (principally emissions of NOx and CO to the air environment and also noise would be reviewed as a minimum). The timetable to undertake these assessments and gain the approvals then sets the overall approvals time. A reduction in approvals time to approximately 9-12 months is possible, especially if the project is seen as urgent by the Government and approving agencies.

Note that some characteristics of the types of plant that might choose to follow this path may include:

- Simple cycle plant using natural gas fuel. If liquid fuel is available and is used, then it is used only rarely such as for testing and when gas is unavailable,
- Located outside a metropolitan airshed,
- Located away from residential areas,
- Minimum or no significant electricity or gas transmission extensions required,
- Minimum water usage or uses water that is not valuable to other users, and/or
- Projects that are brown field expansions of existing power stations.

5.11. Status of the market

Generally the market for supply of large gas turbine based power plants has been very tight resulting in project (construction phase) lead times extending by approximately 50% over the last 3 to 4 years. The impact of the current "financial crisis" and the economic slowdown that is expected to follow it is yet to be determined however the preliminary indications are that the delivery times have eased by a few months. Main power plant equipment manufacturers still appear to have solid order books for the next couple of years and any further shortening of delivery timeframes would most likely occur over an extended timeframe rather than immediately.

Plant items that are subject to particularly lengthened delivery timeframes in the current and recent market are:

- Transformers,
- HV switchgear,
- Gas turbines,
- Steam turbines, and
- Heat Recovery Steam Generators (boilers for CCGT plants).

6. Current and recent developments

Current proposed scheduled generation projects listed in the SOO 2008[13] are summarised in Table 4. Other projects are summarised in Table 5.

Table 4 Proposed scheduled generation projects (SOO 2008)

Project	State	Proponent	Configuration	Commissioning date suggested	Notes
Swanbank F	Qld	CS Energy	1 x 400MW CCGT	1 Jan 2012	Brownfields expansion, already zoned for power gen. Environmental assessment proceeding. 30 month construction time suggested may be tight in current market.
Darling Downs (Spring Gully)	Qld	Origin	3xFrame 9E CCGT, air cooled	Q1 2010	In construction, first turbine delivered
Braemar 2	Qld	ERM	450MW SCGT (3xSiemens 2000E)	2011-2013	Financial Close 23 July 2008. Asserted COD May 2009. Siteworks commenced Jan 2008, First turbine delivered July 2008
Mt Piper expansion	NSW	Delta			
Bamarang	NSW	Delta	300MW SCGT + CCGT	2011/12	Consented but subject to NSW mini-Budget
Marulan	NSW	Delta			
Colongra	NSW	Delta	667MW SCGT	Nov 2009	In construction
Eraring expansion	NSW	Eraring Energy	Upgrade existing coal plants by 4x60MW	2009-2011	Approved June 2008
Wellington PS	NSW	ERM	4x175MW SCGT	Winter 2010 in SOO.	ERM website construction to commence 2009 and COD early 2011
Tomago	NSW	Macquarie Generation	Up to 500MW SCGT		Planning approval 2003, not approved by Govt Budget, Approvals expiring if construction not commenced
Parkes	NSW	International Power	120-150MW SCGT (3x50MW)		Approvals granted July 2008
Heron Creek	NSW	International	120-150MW		Application for

[13] NEMMCO "Statement of Opportunities, 2008"

Project	State	Proponent	Configuration	Commissioning date suggested	Notes
		Power	SCGT		Development Consent withdrawn 22 Aug 2008 (land tenure)
Buronga	NSW	International Power	120-150MW SCGT (3x40 to 50MW)		Late stages of Approvals. Asserted 6 months build time.
Mortlake	Vic	Origin	2 stages, 1000MW. First stage 550MW SCGT	2010/2011	Committed 4 July 2008. Equipment ordered, 2 x Siemens 4000F.
IDGCC	Vic	HRL	400MW	2011	
Arckaringa	SA	Altona Resources	560MW IGCC	2014	
Port Lincoln upgrade	SA	International Power		2009	
Pelican Point 2	SA	International Power	300MW CCGT		
Tamar Valley PS	Tas	Alinta Energy	CCGT 207MW SCGT 58MW	Winter 2009	
Bell Bay Pulp Mill	Tas	Gunns	173MW	2010/11	

- **Table 5 Other proposed scheduled generation projects**

Project	State	Proponent	Configuration	Commissioning date suggested	Notes
Shaw River	Vic	Santos	400/500MW CCGT expandable to 1500MW	Final Investment Decision end 2009, Commission 2012	Announced 21 Aug 2008

Significantly, in NSW the Government has announced changes to the electricity industry restructuring that had previously been discussed[14]. In statements in November 2008 the government has announced its intention to sell the new generation development sites held by the state owned generators.

The details of the processes and the timetables are not yet known and hence it is not clear what impact these announcements will have on project development timing.

[14] NSW 2008-09 Mini-budget announced 11 Nov. 2008 and press release 1 Nov 2008. Refer http://www.nsw.gov.au/docs/minibudget08/08-09_Mini-Budget.pdf and http://www.nsw.gov.au/InfoItemView.asp?id=C778BFE6-1916-4D5D-A5D6-49B16E7850B3

Appendix A Detailed elements of approvals processes (based on Victoria)

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
COMMONWEALTH								
EPBC Referral (excl. Impact Assessment)	Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Department of Environment, Water, Heritage and the Arts (DEWHA)	3 months (if assessment required, 12-18 months)	√	√	√	The EPBC Act makes provision for the assessment of actions that are likely to have a significant impact on a matter of National Environmental Significance (NES) or other protected matters or are located on Commonwealth land. An action includes a project, development, undertaking, activity, or series of activities. An action that is likely to have an impact on a matter of NES requires approval from the Australian Government Minister for the Environment, Heritage and the Arts (DEWHA), unless the action is otherwise exempt. A referral to the Minister is required under the Act if the action is likely or has the potential to have a *significant impact* on a matter of NES. The Minister must determine whether the proposed development is a *controlled action*[16] or not. The purposed of the Referral process is to determine whether a proposed action will need formal assessment and approval under the EBPC Act and if so, what type of assessment needs to be taken. In the Referral, the proponent is required to identify all available information about the proposed action and mitigation measures to be put in place. Following the receipt of a valid referral, the Minister decides if the proposed action triggers the matters	▪ The Ministerial decision can be delayed beyond 4 weeks if he/she considers that the referral does not have sufficient information

[15] PS = Power Station, GP = gas pipeline, WP = Water pipeline (if applicable)

[16] Actions subject to the assessment and approval process under the EPBC Act

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							protected by the EPBC Act and requires a formal assessment and approval. As part of the assessment, the Referral is exhibited to the public, providing an opportunity for relevant Commonwealth, State and Territory government ministers and members of the public to comment on the proposed action. If the proposed action is considered as controlled action, Approval is not required if the action is taken in accordance with the Referral. The action will be subject to any state or local government requirements. If the proposed action is not likely to be significant if undertaken in a particular manner, approval is not required, but need to satisfy the conditions set by the Minister. If the project is determined as a controlled action, the proponent needs to go through a separate assessment process as the Victorian assessment process is currently not accredited under a bilateral agreement. Various methods will be used to assess controlled actions depending on a range of considerations and the nature of the proposed action, including: ▪ accredited assessment (e.g. bilateral agreements) ▪ assessment on referral information (assessment undertaken solely on the information provided in the referral form) ▪ assessment on preliminary documentation (referral form and any other relevant material identified by the Minister as being necessary to adequately assess a proposed action) ▪ assessment by Environmental Impact Statement (EIS) or Public Environment Report (PER) ▪ assessment by public inquiry	

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							Following the assessment, the Minister will decide whether or not to approve the controlled action and conditions to the proponent. The progress of the approved project will be closely monitored by the DEWHA to ensure compliance with approval conditions and the Referral.	
Aviation Hazard Referral	Civil Aviation Act 1988 Civil Aviation Safety Regulations 1998 Airports (Protection of Airspace) Regulations 1996	Civil Aviation Safety Authority (CASA) Department of Transport and Regional Services (DOTARS)	5 months	√			Under the *Civil Aviation Act 1988* and *Civil Aviation Safety Regulations 1998*, CASA and aerodrome operators must be notified of any obstructions that may pose a risk to aviation safety, which is also considered to include exhaust plumes from power stations. Under CASA's Advisory Circular AC 139-05(0) *Guidelines for Conducting Plume Rise Assessments* (June 2004), any plume with an average upward velocity of more than 4.3 m/s at the Obstacle Limitation Surface (OLS) (if in the vicinity of an aerodrome, otherwise at 110 metres above ground level), is required to be subject to an aviation hazard assessment. It should be noted that development or changes to exhaust plumes in the vicinity of major airports may also need to satisfy the requirements of the *Airports (Protection of Airspace) Regulations 1996*, which are administered by the Department of Transport and Regional Services (DOTARS). This potential requirement will need to be discussed with CASA. The following process is recommended to satisfy CASA requirements (the latest risk-based approach) for the aviation hazard assessment: 1. Consult with CASA regarding the project characteristics, timeframe, the other approvals required; e.g., works approval, and the requirement for a hazard assessment; 2. Undertake a plume rise assessment in accordance with AC 139-05(0); 3. Undertake evaluation and assessment of	

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							aeronautical impact on OLS and Pans-Ops surfaces over and within the vicinity of the project site; 4. Prepare aeronautical impact assessment and risk analysis report 5. Prepare application and submission 6. CASA will then determine whether the exhaust plume constitutes a 'hazardous object' under the *Civil Aviation Safety Regulations 1998*, and depending on the degree of risk may declare a Danger Area to be established (required amendment of aeronautical charts) or an amendment to an existing instrument approach and/or departure procedure. Developer may incur a CASA fee if an amendment of aeronautical charts is required as a result of the aviation hazard assessment.	
VICTORIAN								
EES Referral and EES	Environment Effects Act 1978	Department of Planning and Community Development (DPCD)	18 months	√	√	√	The requirement for an Environment Effects Statement (EES) is defined under the *Environment Effects Act 1978* and the Ministerial Guidelines developed under *Section 10* of the Act. Under the Act, any project that could have significant effects on the environment should be referred to the Minister for Planning for determination as to whether an EES is required or not. The project may be referred by the proponent or by a decision maker (e.g. the EPA or Council, who are responsible for certain project approvals). The requirement for a referral to the Minister is based on a range of referral criteria, which include individual potential environmental effects (any one of which would trigger a referral) as well as a combination of environmental effects (which trigger a referral if two or more are present). An excerpt from the *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* is provided in Appendix D, which shows the range of criteria that should trigger a referral.	▪ Strong rejection from land owners to access to their properties for surveys ▪ Strong community and stakeholder objection, especially where a change in project scope is required to adequately address public submissions ▪ The flora and fauna survey must include surveys over the spring period, If additional ecological survey is required to cover spring

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							The following process is recommended for the EES referral: 1. Consult with the DPCD regarding the proposed project characteristics, timeframe, the extent of assessment required for other approvals (e.g. Works Approval) and whether an EES referral is required; 2. Prepare a referral document supported by a desktop environmental assessment, with commitment to detailed studies as required in the Works Approval. 3. Submit the Referral document to the DPCD. Should an EES be determined as necessary, then the following process would occur: 1. Minister appoints a Technical Reference Group (TRG), comprising Government stakeholders; 2. The DPCD, with input from the TRG, develop a scope for the EES; 3. The EES scope is subject to public review and finalised; 4. The proponent prepares the EES, including detailed technical studies; 5. The EES is reviewed by the DPCD and TRG and finalised; 6. The EES is subject to public review; 7. The Minister for Planning appoints an Independent Panel who conduct public hearings and submit a panel report to the Minister for his consideration; and 8. The Minister makes his assessment of the project based on the inquiry findings.	season, it could cause the delay in panel hearing process. ▪ Where public exhibition occurs around holiday periods (especially Christmas/New Year), it is likely that the Department of Planning extend the exhibition period. ▪ There are statutory requirements for the DPCD, the Panel and the Minister to carry out their activities (i.e. preparation of assessment guideline, adequacy review of EES). Therefore, there are no penalties for not adhering to target timeframes and these timeframes are sometimes not met.
EPA Works Approval and	Environmental Protection Act 1970 and ancillary regulations and	Victorian Environmental Protection Authority (EPA)	7 months	√			The Section 19A of *Environment Protection Act 1970* (the EP Act) requires that before prescribed industries or processes are established (that is, if a premise will	▪ Where public exhibition occurs around holiday periods

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
Licence	policies, including: ▪ *Environmental Protection (Scheduled Premises and Exemptions) Regulations 2007;* ▪ *State Environment Protection Policy (Air Quality Management);* ▪ *State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade)* for the Melbourne Metropolitan Region*;* ▪ *Environment Protection Authority Draft Policy No N-3 "Noise from Industry in Regional Victoria"* for the area outside of Melbourne Metropolitan Region; ▪ *State Environment Protection Policy (Waters of Victoria); and* ▪ *State Environment Protection Policy (Groundwaters of Victoria).*						become a scheduled premise under the *Environmental Protection (Scheduled Premises and Exemptions) Regulations 2007* ('the Regulations')), the proponent wishing to establish that industry must have a Works Approval from the EPA. A Works Approval is also required where modification of plant, equipment or process (including the installation of new plant at the site) are planned at a Scheduled Premises that will have an effect on the waste discharged (i.e. air, water/land discharges, landfills, noise emissions, industrial wastes and biomedical wastes) to the environment. Licences are required for all scheduled premises, unless the premise is exempted in the Regulations. Licences cover the actual operation of the site and set operating, waste discharge limits and waste acceptance conditions as appropriate. The following process is anticipated for the preparation of Works Approval application: 1. Consult with the EPA regarding the project characteristics, timeframe, the other approvals required (e.g. planning permit), and the extent of technical studies required for the works approval. 2. Undertake the technical studies. It is anticipated that at least the following technical studies will be required: - noise assessment, including noise monitoring and modelling; - air quality assessment, including modelling; and - energy efficiency and greenhouse gas reduction assessment. 3. Prepare the Works Approval application, incorporating the findings of the technical studies. 4. Submit the draft Works Approval application to the EPA and finalise based on their comments. 5. The Works Approval application is subject to	(especially Christmas/New Year), it is likely that the Department of Planning extend the exhibition period. ▪ If EES is not required for the project, Works Approval can be subject to appeals, either by the proponent (e.g. if the works approval is rejected) or by a third party (e.g. a neighbouring premises or member of the public), in which case the project would be referred to the Victorian Civil and Administrative Appeals Tribunal (VCAT). VCAT would then make a binding decision on the matter based on either mediation or hearings involving the EPA, proponent and any third party appellants.

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							public and agency (e.g. Council, CASA) review. The EPA consolidates public and agency submissions and may require a response or more information from Developer. The EPA makes its assessment based on the Works Approval application, public submissions and Developer's response/information, and issues or rejects the Works Approval.	
Licence to Construct and Operate a Pipeline	Pipelines Act 2005 Pipelines Regulations 2007	Minerals and Petroleum Division, a division of the Department of Primary Industries (DPI)	12 months		√		To construct and operate a new pipeline, one must be the holder of a Licence to Construct and Operate a Pipeline. The application process follows this sequence: 1. Prepare a consultation plan and submit it for approval; 2. Minister for Energy and Resources must within 21 days after receiving a consultation plan decide whether or not to approve the consultation plan; 3. Give written notice to each owner and each occupier of land and, if the land is Crown land, the Crown Land Minister of the proponent's intention to enter that land for the purpose of any survey for the purpose of the proposed pipeline. 4. Undertake route definition process and identify required easement 5. Give notice to owners and occupiers of land in pipeline corridor before applying for a licence to construct and operate a pipeline 6. A written application for a licence is made to the Minister. 7. Where an EES is required, the application will be exhibited concurrently. 8. The Minister determines an application for licence within 28 days after the last of the following occurs: ▪ The receipt of a request ▪ The receipt of the report of the panel (if applicable) ▪ The receipt of the assessment of the Environment Effects Minister	▪ If the proponent is required to submit a new consultation plan to the Minister for approval or submit amendments to the consultation plan to the Minister for approval. ▪ Where public exhibition occurs around holiday periods (especially Christmas/New Year), it is likely that the Department of Planning extend the exhibition period. ▪ Strong rejection from land owners to access to their properties for surveys ▪ Strong community and stakeholder objection,

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							(if an Environment Effects Statement is required) ▪ The completion of any relevant procedure under the Native Title Act 9. If an assessment is not required under *Environment Effects Act 1978,* the Minister determines if the proposed pipeline raises significant environmental, social or safety risks within 28 days after the submission. if so, the submission will be referred to a panel for a hearing. The report of a panel and its recommendation must be forwarded to the Minister within 60 days after the submissions were referred to the panel. Land regulations that apply are: 1. Licence to Construct and Operate a Pipeline will not be granted for pipeline on wilderness Crown land 2. Consent under *National Parks Act 1975* is required to construct pipeline in national park 3. Consent under the Native Title Act is required if there is a native title holder in relation to land in the proposed route of the pipeline 4. Pipeline must be constructed to the satisfaction of the relevant authorities if pipeline runs along or crosses over or under a railway, road infrastructure or electrical apparatus Before the commencement of construction and operation of a pipeline can begin, the proponent must have all of the following documents: • Environment Management Plan accepted by the Minerals and Petroleum Regulation Branch • Safety Management Plan accepted by Energy Safe Victoria • Consent to Operate a Pipeline from Energy Safe Victoria.	especially where a change in project scope is required to adequately address public submissions

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
Planning Permit	Planning and Environment Act 1987	Councils	6 months	√		√	Planning permit/s requirements are set out within the planning scheme applicable to a specific site. Planning schemes apply common land use terms, zones and overlays across Victoria (with minor modification applying to specific areas). The types of use and development typically associated with gas fired power stations generally require planning permits as follows: ■ The use of land for a water pipeline to distribute water to a power generation facility for cooling and other purposes (*Minor Utility Installation*) in selected zones such as those with identified environmental and recreational values (i.e. Public Conservation and Resource Zone and Public Parks and Recreation Zone). ■ To use land to transmit or distribute gas or for saline waste outlets *(Utility Installation).* ■ To construct a building or to construct or carry out works associated with a *Utility Installation* in selected zones. ■ To remove, destroy or lop native or vegetation. ■ To create or vary access arrangements to a Road Zone, Category 1 (Main Roads). ■ To create, vary or remove an easement or restriction or vary or remove a condition in the nature of an easement in a Crown grant. ■ For roadworks in some zones and overlays. ■ To subdivide land. Section 85 of *Pipelines Act 2005* states that where a licence is issued under the *Pipelines Act 2005* for the construction and operation of a pipeline used for conveyance of natural gas, no planning permit is required for the use or development of land or the doing or carrying out of any matter or things for the purpose of the pipeline. Planning permits or planning scheme amendments are typically used as approval mechanisms for large	▪ Delays in Cultural Heritage Management Plan (CHMP). Where a CHMP is required, a statutory authorisation (planning permit) will not be issued without a CHMP ▪ Under the standard approval process, a planning permit application can be subject to appeals, in which case the project would be referred to the Victorian Civil and Administrative Appeals Tribunal (VCAT). VCAT would then make a binding decision on the matter based on either mediation or hearings involving the proponent and any third party appellants

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							infrastructure projects including gas fired power stations. The type of approval mechanism is dependent on the zoning and overlays which apply to the land, the nature and impact of the use and development and the significance of the project. This would need to be determined in consultation with the Department of Planning and Community Development and local Councils and give consideration to the need for an integrated planning and environmental assessment process. Federal environmental approval may also be required in some cases. The following tasks would be required to determine the most appropriate planning approval mechanism for a gas fired power station and associated infrastructure: 1) Review relevant Planning Scheme and identify the potential planning permit requirements. 2) Identify and review planning legislation, policy and strategies relevant to the area and the proposed new power station and associated infrastructure. 3) Identify and review current certificates of title and any relevant Crown land particulars for the project site to confirm if there are any encumbrances, registered restrictions or agreements that require management. 4) Inspect the site and meet the relevant Council/s to discuss the project, the approvals process, technical reports required and project timelines. 5) Meet relevant agencies and responsible authorities to discuss the project, the approvals process, technical reports being undertaken and the project timelines. A planning application would need to be prepared and responses made to any requests for further information by Council/s or any other relevant agencies or responsible authorities. The assessment process would most likely involve a public submission	

Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							process and an inquiry process by an independent panel. Planning approval process could either be subject to the standard approval processes or could be subject to ministerial intervention.	
Cultural Heritage Management Plan (CHMP)	Aboriginal Heritage Act 2006 Aboriginal Heritage Regulations 2007	Aboriginal Affairs Victoria; DPCD	6 months	√	√	√	Division 1 of the *Aboriginal Heritage Regulations 2007* (Regulation 6) prescribes that a CHMP is required for an activity if: a) all or part of that activity area is defined as an area of **cultural heritage sensitivity**; and b) all or part of the activity is a **high impact activity.** Under the Regulations, a **high impact activity** is defined as the construction and/or carrying out of works on land for an industry and/or land used to generate electricity if those works include the grading, excavation or digging of the topsoil or surface rock layer by machinery. This includes all associated activities, such as access roads, pipelines, plant movement, lay down areas, etc. Under the Act, a CHMP is also required for an activity, regardless of points a) and b) above, if: c) any part of the activity requires an Environment Effects Statement (EES). Under the Regulations, a CHMP is not required for an activity (except if an EES is required) if significant ground disturbance has occurred in **all areas of cultural heritage sensitivity**. The following process is recommended to satisfy requirements of a cultural heritage management plan: 1. Developer decides that a CHMP is required after checking the Regulations and any published guidelines. 2. Developer engages Cultural Heritage Advisor to prepare the CHMP as appropriate.	▪ If at the end of 30 days the RAP decides not to evaluate the plan another 30 days is required for AAV to evaluate the plan ▪ If the CHMP is found not to comply with the Aboriginal Heritage Act and/or Regulations then delays will be incurred.

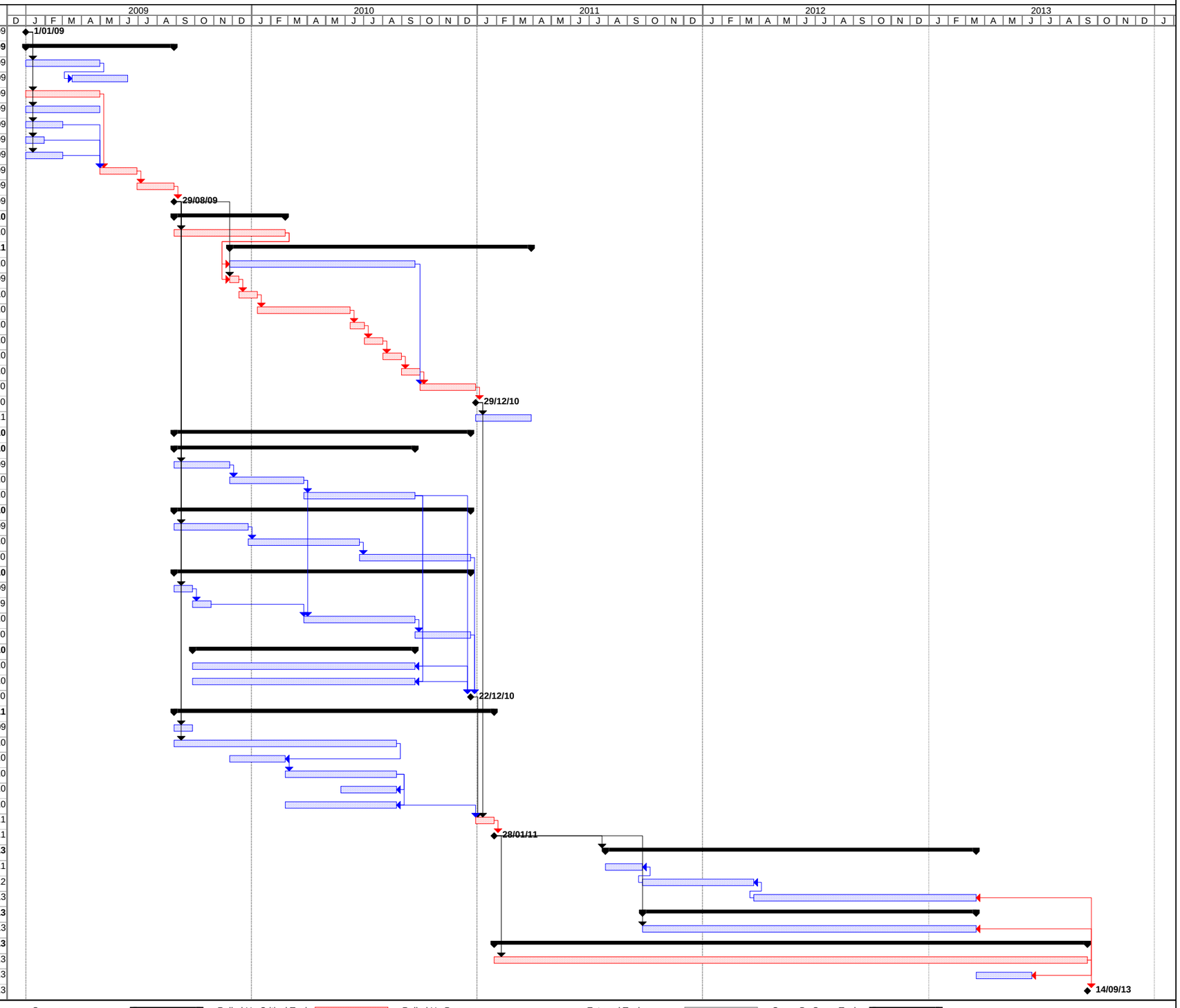
Approvals	Relevant Act	Administrator	Duration	Relevant Components[15]			Requirement and Process	Factors likely to affect indicative approval timeframes
				PS	GP	WP		
							3. Developer notifies the Secretary, DVC and any relevant Registered Aboriginal Party (RAP). 4. RAP Responds to developer (within 14 days) and elects to evaluate the CHMP. If there is no RAP then the CHMP will be evaluated by AAV. 5. Developer prepares CHMP. 6. The proponent submits finished CHMP and prescribed fee to RAP for evaluation. If there is no RAP the developer will submit the CHMP to AAV for evaluation and there will be no fee. - RAP (or AAV) then has 30 days to review CHMP and to notify developer of any decision; OR - If RAP refuses to approve the Plan, the developer is able to appeal at VCAT 7. Developer provides a copy of CHMP in support of application to Local Council for planning permit or approval. - Local Council able to decide whether to grant or refuse a planning permit or approval; OR - Developer submits application to Local Council without an approved CHMP. 8. Local Council advises that it is a prescribed activity on sensitive land and that it cannot make a planning decision without an approved CHMP.	
Protected Flora or Fauna Removal Permit	Flora and Flora Guarantee Act 1988 (FFG Act)	Department of Sustainability and Environment (DSE)	No statutory time frame for processing of FFG permits	√	√	√	Under the FFG Act, a permit is required to take (except for the purpose of controlling), trade in, keep, move or process Protected Flora. Protected floras are: ▪ plant taxa (species, subspecies or varieties) listed as threatened under the FFG Act ▪ plant taxa belonging to communities listed as threatened under the FFG Act ▪ plant taxa which are not threatened but require protection for other reasons. On private land, a FFG protected flora permit is only required for the commercial harvesting of sphagnum moss, tree-ferns and grasstrees. However, it is still recommended to confirm with the DSE and a relevant local council before proceeding.	

Appendix B Typical Gantt charts

AEMC Timelines for power station development - CCGT

SINCLAIR KNIGHT MERZ

ID	Task Name	Start	Finish
1	Project initiation	Thu 1/01/09	Thu 1/01/09
2	**Feasibility study**	**Thu 1/01/09**	**Sat 29/08/09**
3	Gas pipeline route corridor	Thu 1/01/09	Fri 1/05/09
4	Gas pipeline concept design	Tue 17/03/09	Mon 15/06/09
5	Power station concept design & optimisation	Thu 1/01/09	Fri 1/05/09
6	Investigate pipeline land access and survey, prelim consultation	Thu 1/01/09	Fri 1/05/09
7	Investigate water & wastewater options	Thu 1/01/09	Mon 2/03/09
8	Preliminary fuel cost assessment	Thu 1/01/09	Sat 31/01/09
9	Preliminary electricity market assessment	Thu 1/01/09	Mon 2/03/09
10	Feasibility assessment	Fri 1/05/09	Tue 30/06/09
11	Mngt & Board approval for next stage	Tue 30/06/09	Sat 29/08/09
12	Feasibility study approved	Sat 29/08/09	Sat 29/08/09
13	**Land**	**Sat 29/08/09**	**Thu 25/02/10**
14	Identify PS site & procure land or option over land	Sat 29/08/09	Thu 25/02/10
15	**Statutory approvals (pipeline and CCGT)**	**Fri 27/11/09**	**Tue 29/03/11**
16	Stakeholder consultation (note: continuing)	Fri 27/11/09	Thu 23/09/10
17	Applic. & Preliminary assessment/initial advice	Fri 27/11/09	Sat 12/12/09
18	Terms of Reference	Sat 12/12/09	Mon 11/01/10
19	Prepare EER/EIS/EES	Mon 11/01/10	Thu 10/06/10
20	Adequacy review	Thu 10/06/10	Fri 2/07/10
21	Prepare & lodge final	Fri 2/07/10	Sun 1/08/10
22	Public exhibition	Sun 1/08/10	Tue 31/08/10
23	Submissions, reports	Tue 31/08/10	Thu 30/09/10
24	Departmental & Ministerial review	Thu 30/09/10	Wed 29/12/10
25	Project approved	Wed 29/12/10	Wed 29/12/10
26	Downstream approvals	Wed 29/12/10	Tue 29/03/11
27	**Primary agreements**	**Sat 29/08/09**	**Wed 22/12/10**
28	**EPC Contractor Selection CCGT**	**Sat 29/08/09**	**Thu 23/09/10**
29	Tender docs	Sat 29/08/09	Fri 27/11/09
30	Tender process	Fri 27/11/09	Sat 27/03/10
31	Negotiate EPC (Includes Design Development)	Sat 27/03/10	Thu 23/09/10
32	**EPC/M Contractor Selection - Gas Pipeline Development**	**Sat 29/08/09**	**Wed 22/12/10**
33	Tender docs	Sat 29/08/09	Sun 27/12/09
34	Tender process	Sun 27/12/09	Fri 25/06/10
35	Negotiate & agree	Fri 25/06/10	Wed 22/12/10
36	**Connection agreement**	**Sat 29/08/09**	**Wed 22/12/10**
37	Register as an Intending Participant	Sat 29/08/09	Mon 28/09/09
38	Connection enquiry	Mon 28/09/09	Wed 28/10/09
39	Connection Application & Offer to Connect	Sat 27/03/10	Thu 23/09/10
40	Connection agreement	Thu 23/09/10	Wed 22/12/10
41	**Other primary agreements**	**Mon 28/09/09**	**Thu 23/09/10**
42	Fuel supply agreement(s)	Mon 28/09/09	Thu 23/09/10
43	Initial offtake agreement(s)	Mon 28/09/09	Thu 23/09/10
44	Primary agreements ready for execution	Wed 22/12/10	Wed 22/12/10
45	**Project finance process**	**Sat 29/08/09**	**Fri 28/01/11**
46	Form project development vehicle/entity	Sat 29/08/09	Mon 28/09/09
47	Financial model & financing concept	Sat 29/08/09	Tue 24/08/10
48	Debt IM and draft agreements	Fri 27/11/09	Thu 25/02/10
49	Debt syndication and financial engineering	Thu 25/02/10	Tue 24/08/10
50	Due diligence	Wed 26/05/10	Tue 24/08/10
51	Debt & equity agreements	Thu 25/02/10	Tue 24/08/10
52	Mngt and Board approval to close	Wed 29/12/10	Fri 28/01/11
53	Financial close	Fri 28/01/11	Fri 28/01/11
54	**Gas pipeline construction**	**Wed 27/07/11**	**Mon 18/03/13**
55	Pipeline construction approval application	Wed 27/07/11	Sun 25/09/11
56	Pipeline Licence	Sun 25/09/11	Fri 23/03/12
57	Pipeline construction & completion	Fri 23/03/12	Mon 18/03/13
58	**Electrical connection construction**	**Sun 25/09/11**	**Mon 18/03/13**
59	Substation and connection construction & completion	Sun 25/09/11	Mon 18/03/13
60	**CCGT construction**	**Fri 28/01/11**	**Sat 14/09/13**
61	Construct & commission CCGT	Fri 28/01/11	Sat 14/09/13
62	Generator Registration & Generator Licence	Mon 18/03/13	Sun 16/06/13
63	Commercial operation CCGT	Sat 14/09/13	Sat 14/09/13



Project: AEMC Timelines for power sta
Date: Wed 19/11/08

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By SummTask
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Critical Task

AEMC Timelines for power station development - SCGT

ID	Task Name	Start	Finish
1	Project initiation	Thu 1/01/09	Thu 1/01/09
2	**Feasibility study**	**Thu 1/01/09**	**Tue 30/06/09**
3	Gas pipeline route corridor	Thu 1/01/09	Fri 1/05/09
4	Gas pipeline concept design	Tue 17/03/09	Mon 15/06/09
5	Power station concept design & optimisation	Thu 1/01/09	Sat 31/01/09
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7	Investigate water & wastewater options	Thu 1/01/09	Thu 1/01/09
8	Preliminary fuel cost assessment	Thu 1/01/09	Thu 1/01/09
9	Preliminary electricity market assessment	Thu 1/01/09	Mon 2/03/09
10	Feasibility assessment	Mon 2/03/09	Fri 1/05/09
11	Mngt & Board approval for next stage	Fri 1/05/09	Tue 30/06/09
12	Feasibility study approved	Tue 30/06/09	Tue 30/06/09
13	**Land**	**Tue 30/06/09**	**Sun 27/12/09**
14	Identify PS site & procure land or option over land	Tue 30/06/09	Sun 27/12/09
15	**Statutory approvals (pipeline and SCGT)**	**Mon 28/09/09**	**Fri 28/01/11**
16	Stakeholder consultation (note: continuing)	Mon 28/09/09	Sun 25/07/10
17	Applic. & Preliminary assessment/initial advice	Mon 28/09/09	Tue 13/10/09
18	Terms of Reference	Tue 13/10/09	Thu 12/11/09
19	Prepare EER/EIS/EES	Thu 12/11/09	Sun 11/04/10
20	Adequacy review	Sun 11/04/10	Mon 3/05/10
21	Prepare & lodge final	Mon 3/05/10	Wed 2/06/10
22	Public exhibition	Wed 2/06/10	Fri 2/07/10
23	Submissions, reports	Fri 2/07/10	Sun 1/08/10
24	Departmental & Ministerial review	Sun 1/08/10	Sat 30/10/10
25	Project approved	Sat 30/10/10	Sat 30/10/10
26	Downstream approvals	Sat 30/10/10	Fri 28/01/11
27	**Primary agreements**	**Tue 30/06/09**	**Sat 23/10/10**
28	**EPC Contractor Selection SCGT**	**Tue 30/06/09**	**Tue 26/01/10**
29	Tender docs	Tue 30/06/09	Sat 29/08/09
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33	Tender docs	Tue 30/06/09	Wed 28/10/09
34	Tender process	Wed 28/10/09	Mon 26/04/10
35	Negotiate & agree	Mon 26/04/10	Sat 23/10/10
36	**Connection agreement**	**Tue 30/06/09**	**Sun 25/07/10**
37	Register as an Intending Participant	Tue 30/06/09	Thu 30/07/09
38	Connection enquiry	Thu 30/07/09	Sat 29/08/09
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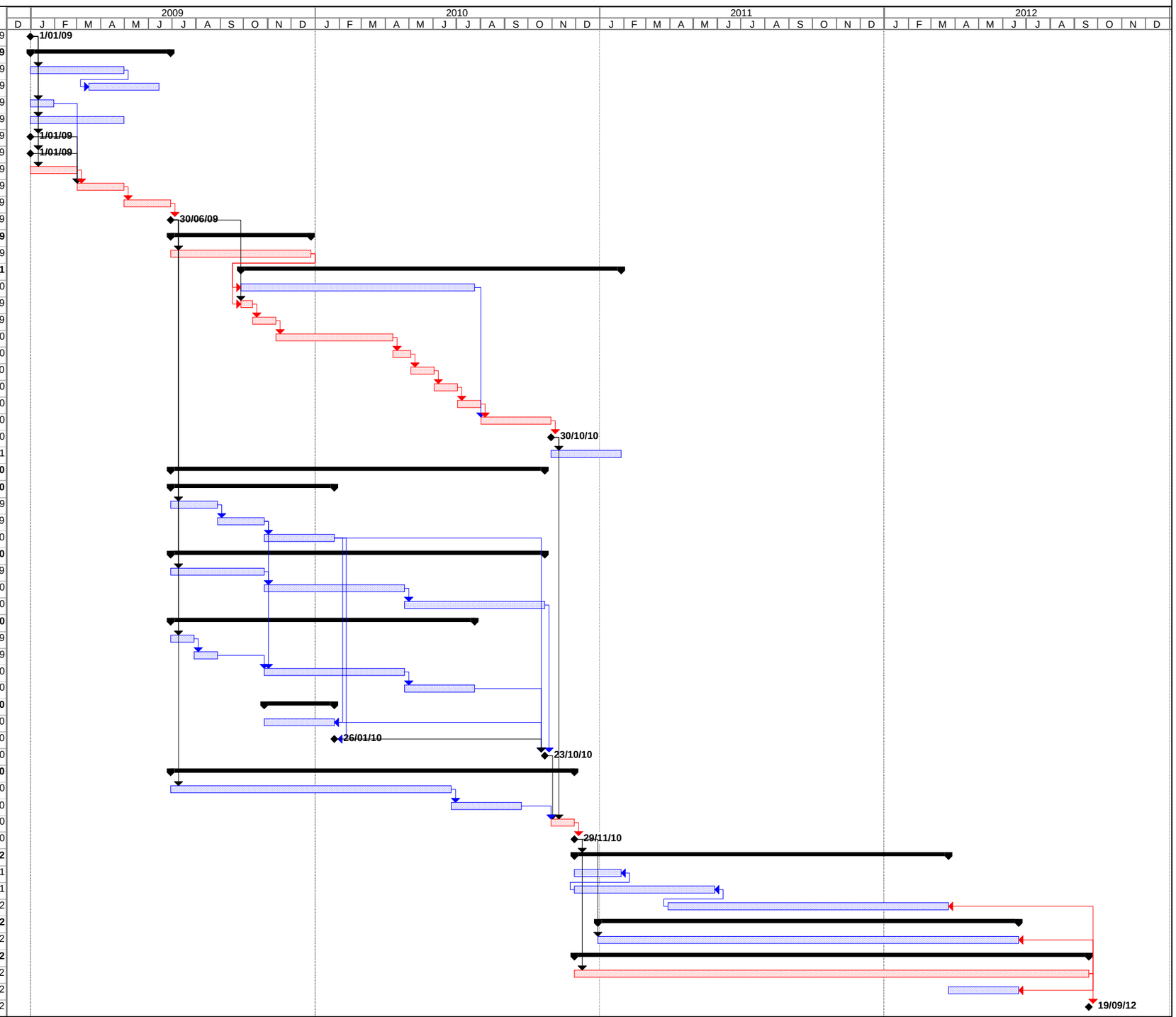
43	Initial offtake agreement(s)	Tue 26/01/10	Tue 26/01/10
44	Primary agreements ready for execution	Sat 23/10/10	Sat 23/10/10
45	**Project commitment process**	**Tue 30/06/09**	**Mon 29/11/10**
46	Financial model & funding/development concept	Tue 30/06/09	Fri 25/06/10
47	Due diligence (internal)	Fri 25/06/10	Thu 23/09/10
48	Mngt and Board approval to close	Sat 30/10/10	Mon 29/11/10
49	Project commitment	Mon 29/11/10	Mon 29/11/10
50	**Gas pipeline construction**	**Mon 29/11/10**	**Fri 23/03/12**
51	Pipeline construction approval application	Mon 29/11/10	Fri 28/01/11
52	Pipeline Licence	Mon 29/11/10	Sat 28/05/11
53	Pipeline construction & completion	Tue 29/03/11	Fri 23/03/12
54	**Electrical connection construction**	**Wed 29/12/10**	**Thu 21/06/12**
55	Substation and connection construction & completion	Wed 29/12/10	Thu 21/06/12
56	**SCGT construction**	**Mon 29/11/10**	**Wed 19/09/12**
57	Construct & commission SCGT	Mon 29/11/10	Wed 19/09/12
58	Generator Registration & Generator Licence	Fri 23/03/12	Thu 21/06/12
59	Commercial operation SCGT	Wed 19/09/12	Wed 19/09/12



Project: AEMC Timelines for power sta
Date: Tue 18/11/08

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By SummTask
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Critical Task

Sinclair Knight Merz

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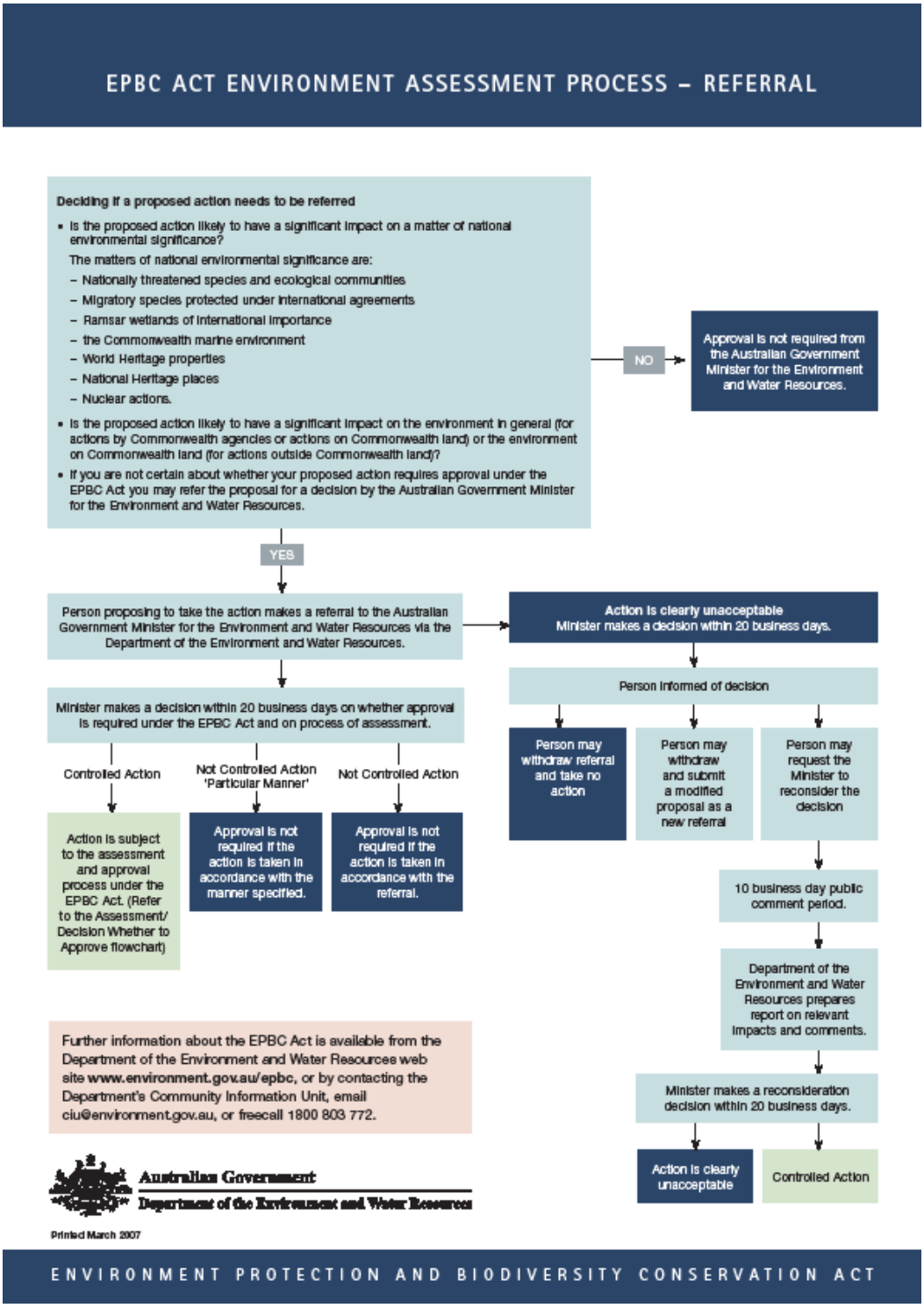
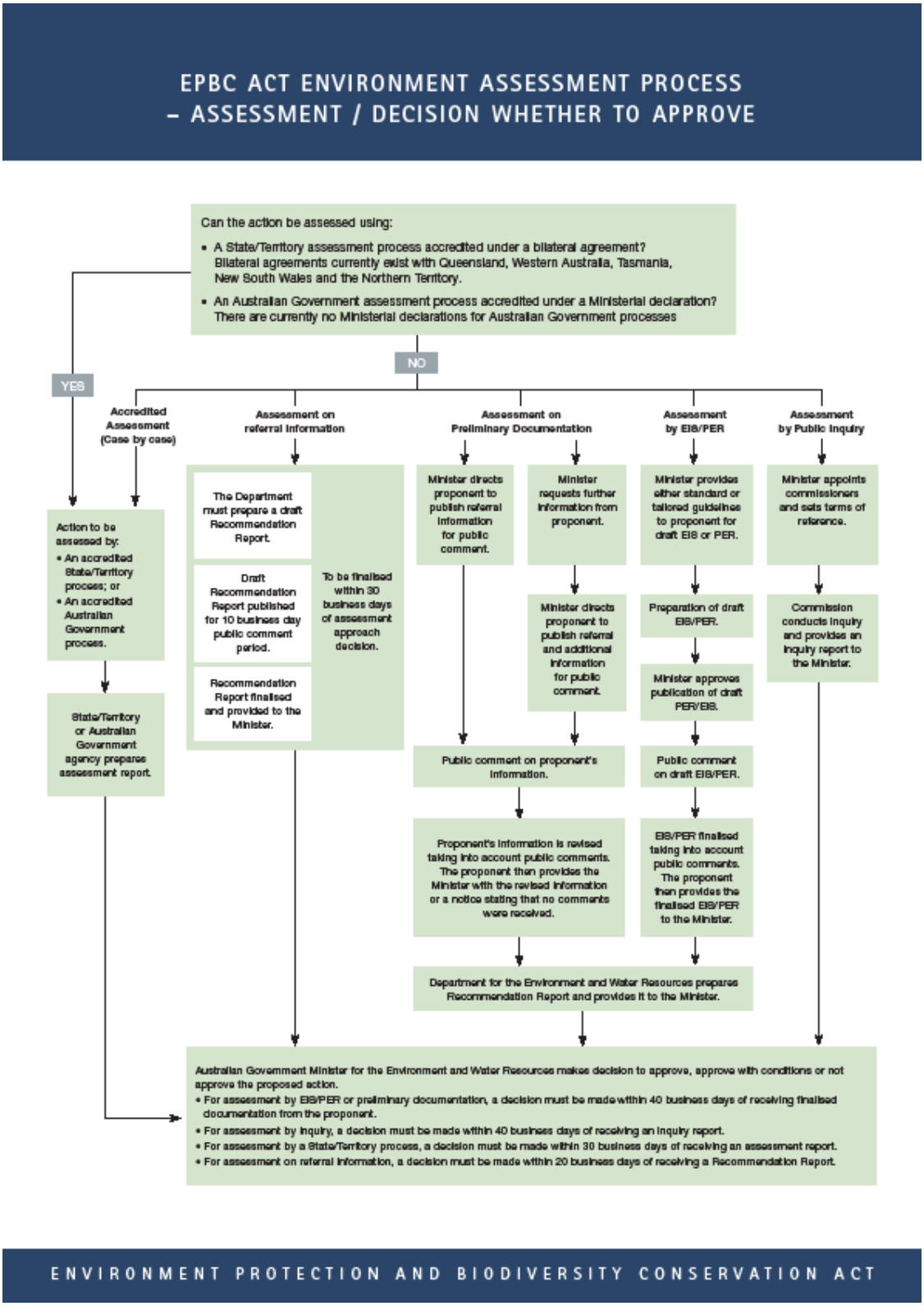
Appendix C EPBC Act Environment Assessment Process – Referral




EPBC ACT ENVIRONMENT ASSESSMENT PROCESS
– ASSESSMENT / DECISION WHETHER TO APPROVE
Can the action be assessed using:
• A State/Territory assessment process accredited under a bilateral agreement? Bilateral agreements currently exist with Queensland, Western Australia, Tasmania, New South Wales and the Northern Territory.
• An Australian Government assessment process accredited under a Ministerial declaration? There are currently no Ministerial declarations for Australian Government processes
YES
NO
Accredited Assessment (Case by case)
Assessment on referral information
Assessment on Preliminary Documentation
Assessment by EIS/PER
Assessment by Public Inquiry
Action to be assessed by:
• An accredited State/Territory process; or
• An accredited Australian Government process.
State/Territory or Australian Government agency prepares assessment report.
The Department must prepare a draft Recommendation Report.
Draft Recommendation Report published for 10 business day public comment period.
Recommendation Report finalised and provided to the Minister.
To be finalised within 30 business days of assessment approach decision.
Minister directs proponent to publish referral information for public comment.
Minister requests further information from proponent.
Minister directs proponent to publish referral and additional information for public comment.
Public comment on proponent's information.
Proponent's information is revised taking into account public comments. The proponent then provides the Minister with the revised information or a notice stating that no comments were received.
Minister provides either standard or tailored guidelines to proponent for draft EIS or PER.
Preparation of draft EIS/PER.
Minister approves publication of draft PER/EIS.
Public comment on draft EIS/PER.
EIS/PER finalised taking into account public comments. The proponent then provides the finalised EIS/PER to the Minister.
Minister appoints commissioners and sets terms of reference.
Commission conducts inquiry and provides an inquiry report to the Minister.
Department for the Environment and Water Resources prepares Recommendation Report and provides it to the Minister.
Australian Government Minister for the Environment and Water Resources makes decision to approve, approve with conditions or not approve the proposed action.
• For assessment by EIS/PER or preliminary documentation, a decision must be made within 40 business days of receiving finalised documentation from the proponent.
• For assessment by inquiry, a decision must be made within 40 business days of receiving an inquiry report.
• For assessment by a State/Territory process, a decision must be made within 30 business days of receiving an assessment report.
• For assessment on referral information, a decision must be made within 20 business days of receiving a Recommendation Report.
ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT

Appendix D Victorian EES Referral Criteria

Referral criteria: individual potential environmental effects

Individual types of potential effects on the environment that might be of regional or State significance, and therefore warrant referral of a project, are:

- potential clearing of 10 ha or more of native vegetation from an area that:
  - is of an Ecological Vegetation Class identified as endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or
  - is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and
  - is not authorised under an approved Forest Management Plan or Fire Protection Plan
- potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria
- potential long-term change to the ecological character of a wetland listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'
- potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term
- potential extensive or major effects on the health, safety or well-being of a human community, due to emissions to air or water or chemical hazards or displacement of residences
- potential greenhouse gas emissions exceeding 200,000 tonnes of carbon dioxide equivalent per annum, directly attributable to the operation of the facility.

Referral criteria: a combination of potential environmental effects

A combination of *two or more* of the following types of potential effects on the environment that might be of regional or State significance, and therefore warrant referral of a project, are:

- potential clearing of 10 ha or more of native vegetation, unless authorised under an approved Forest Management Plan or Fire Protection Plan
- matters listed under the *Flora and Fauna Guarantee Act 1988*:
  - potential loss of a significant area of a listed ecological community; or
  - potential loss of a genetically important population of an endangered or threatened species (listed or nominated for listing), including as a result of loss or fragmentation of habitats; or
  - potential loss of critical habitat; or
  - potential significant effects on habitat values of a wetland supporting migratory bird species
- potential extensive or major effects on landscape values of regional importance, especially where recognised by a planning scheme overlay or within or adjoining land reserved under the *National Parks Act 1975*
- potential extensive or major effects on land stability, acid sulphate soils or highly erodible soils over the short or long term
- potential extensive or major effects on beneficial uses of waterbodies over the long term due to changes in water quality, streamflows or regional groundwater levels
- potential extensive or major effects on social or economic well-being due to direct or indirect displacement of non-residential land use activities
- potential for extensive displacement of residences or severance of residential access to community resources due to infrastructure development
- potential significant effects on the amenity of a substantial number of residents, due to extensive or major, long-term changes in visual, noise and traffic conditions
- potential exposure of a human community to severe or chronic health or safety hazards over the short or long term, due to emissions to air or water or noise or chemical hazards or associated transport
- potential extensive or major effects on Aboriginal cultural heritage
- potential extensive or major effects on cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995*.

Appendix E Tasmanian Level 2 Environmental Approval Process Guidelines

Tasmania

Source: Department of Environment, Parks, Heritage and the Arts

[Last updated: 14 September 2005]

E.1 Introduction

This guide has been prepared to provide general information to project proponents and the community on the environmental impact assessment process for level 2 activities.

An activity listed in schedule 2 of the *Environmental Management and Pollution Control Act 1994* (*EMPC Act*) is defined as a 'level 2 activity'.

E.2 Assessment of a proposed level 2 activity

Most proposed level 2 activities will require an application for a permit under the *Land Use Planning and Approvals Act 1993* (*LUPA Act*). Whether or not a permit application is required will be determined by the planning authority (Council).

Once a permit application is submitted for a level 2 activity, the planning authority must refer the application to the Board of Environmental Management and Pollution Control (EMPC Board) for environmental assessment. The EMPC Board's assessment must be undertaken in accordance with the Environmental Impact Assessment Principles defined in the *EMPC Act*. The planning authority will undertake an assessment of land use planning aspects of the permit application.

If a permit application is not required, the project proponent must refer the level 2 activity to the EMPC Board for environmental assessment.

An outline of the EMPC Board's assessment process is attached to this guide.

The Environment Division of the Department of Primary Industries, Water and Environment provides advice and recommendations to the EMPC Board in relation to particular environmental assessments and administers the assessment process on its behalf.

E.3 Notice of Intent

For most potential level 2 activities, the submission of a Notice of Intent (NOI) is required prior to the submission of the permit application. The NOI is prepared by the project proponent and provides a brief outline of the proponent, proposed project and the project location to the EMPC Board. This information enables a determination to be made on whether or not the project will require assessment by the EMPC Board, and the likely level of assessment.

E.4 Level of assessment

The Director of Environmental Management will determine the level of assessment – that is, whether the project will be assessed as a level 2A, 2B or 2C activity.

Most projects will be assessed as level 2B activities.

Level 2A activities are generally small scale projects with potential local environmental impacts that are minor in scale or consequence and which can be readily avoided or mitigated through management measures. Level 2A activities would be unlikely to generate any significant public interest.

Level 2C activities are generally projects which are likely to generate a high level of public interest, involve a complex or multi-jurisdictional assessment process and/or involve significant multidisciplinary or complex environmental issues.

The assessment documentation and public consultation requirements vary for each of the three levels of assessment.

E.5 Assessment documentation – EER/DPEMP

Environmental assessment of the activity will not proceed until the required documentation is submitted to the satisfaction of the EMPC Board.

For some smaller projects (level 2A activities), the preparation of an Environmental Effects Report (EER) will be required. The EER provides information on the proponent, project, potential environmental impacts and their management. An EER can generally be prepared by the proponent.

For most projects (level 2B and level 2C activities), a Development Proposal and Environmental Management Plan (DPEMP) will be required. The DPEMP should provide details of the project, describe the existing environment in the vicinity of the project site, identify all significant environmental, social and economic effects associated with the project and detail proposed measures to avoid or reduce potential adverse effects. A DPEMP will generally be prepared by an environmental consultant.

The DPEMP/EER should be prepared in consultation with the Environment Division and the planning authority prior to the submission of the permit application.

E.6 Guidelines

The EMPC Board has prepared Guidelines for preparing an Environmental Effects Report and General Guidelines for the preparation of a DPEMP. In addition, DPEMP Project Specific Guidelines identifying the key issues for the project will be prepared for use in conjunction with the DPEMP General Guidelines. Project Specific Guidelines are prepared following the submission of a Notice of Intent. For larger projects, draft Project Specific Guidelines may be released for public comment prior to being finalised.

E.7 Public consultation

Once satisfactory documentation has been received, the permit application and supporting documentation (including the EER or DPEMP) will be made available for public inspection, and submissions invited. Notice of the availability of the documents and how to make submissions is published in relevant newspapers and on the Environment Division web site.

The public consultation period is generally 28 days for level 2B and level 2C activities, and generally 14 days for level 2A activities. A public consultation exclusion period applies over the Christmas/New Year period.

The proponent is required to provide copies of the DPEMP to the public upon request during the consultation period at a nominal cost.

E.8 Supplementary information

Once public submissions have been received and considered, the proponent will be asked to provide a response to all relevant public submissions. This generally takes the form of a DPEMP/EER Supplement.

E.9 Determination

An Environmental Assessment Report is prepared by the Environment Division containing recommendations on the project to the EMPC Board. The recommendations are based on the assessment of the proponent's documentation, public submissions and other specialist advice.

The EMPC Board will consider the report recommendations and make a determination on whether the project should be approved, and if so, under what conditions.

The Board then either directs the planning authority to refuse to grant the permit, or notifies the planning authority of the conditions that must be contained in a permit, if a permit is granted by the authority.

The Environmental Assessment report is published on the Environment Division website, and a copy provided to the proponent and those who made public submissions.

E.10 Appeals

The permit applicant and any person who made a submission (under section 57(5) of the *LUPA Act*), may appeal against the granting of the permit.

E.11 Fees

A once-off fee is payable for the assessment of a level 2 activity, and an annual fee is payable with respect to any permit granted. The amount of the fees will vary depending on the activity. The Environment Division and the planning authority can advise of applicable fees.

E.12 EPBC Act

In addition to Tasmanian requirements, the Commonwealth Government may also have a role in the environmental assessment and approval of the project.

Under the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*), Commonwealth approval is required for an action which has, will have, or is likely to have, a significant impact on a matter of national environmental significance. The matters of national environmental significance are World Heritage properties, National Heritage Places, wetlands of international importance (Ramsar wetlands), nationally listed threatened species and communities, nationally listed migratory species, Commonwealth marine areas, and nuclear actions.

Information on the *EPBC Act* can be obtained from the Commonwealth Department of the Environment and Heritage's website at www.deh.gov.au/epbc or by calling 1800 803 772.

E.13 Contacts

For more information contact:

Environment Division

Department of Environment Parks Heritage & Arts

Telephone: 1300 368 550

Email: environment.info@dpiwe.tas.gov.au

Web: www.dpiwe.tas.gov.au/environment

The State Government IRIS website provides a general overview of the environment and planning assessment process (www.iris.tas.gov.au/environment.html).

Appendix F Tasmanian Level 2 Environmental Impact Assessment: Role of the Board and Council

Source: Environment Protection Authority

[Last updated: August 2008]

F.1 Background

Section 25(1) of the *Environmental Management and Pollution Control Act 1994* (the EMPC Act) requires a planning authority (Council) to refer all level 2 development applications (and development applications that are co-located with a level 2 activity) to the Board of the Environment Protection Authority ('the Board') for assessment under the EMPC Act (unless the development is an 'ancillary' use).

Section 24(1) also allows the Board to 'call in' any level 1 development application being assessed by Council, and to assess it as if it were a level 2 activity.

Typically the Board will have assumed responsibility for the environmental impact assessment process well in advance of submission of a development application to Council. For an outline of the Board's assessment process please refer to the document '*Environmental Impact Assessment – A Guide*' available on the internet at www.epa.tas.gov.au/assess_guidance.html.

Section 25(2)(a) of the EMPC Act states that the Board is to conduct its assessment of the permit application for the project in consultation with the planning authority. As such, it is anticipated that there will be coordination between Council's planning assessment and the Board's environmental assessment.

F.2 Legislative Requirements

Section 25(2) of the EMPC Act states that Council must not advertise a level 2 development application until it has received written notice under section 27G(1) from the Director, Environment Protection Authority ('the Director') that the Board has received sufficient information to satisfy the requirements of section 74(3) of the EMPC Act.

NOTE: Section 27G(2) specifies the relevant periods for submission of public representations, including a period of 42 days for Class 2C assessments, which overrides the maximum period set by s.57(5) of LUPAA (refer section 27G(3)).

Section 27G(4) requires that Council must, within 7 days of the end of the public consultation period, provide the Board with copies of representations received under section 57(5) of the *Land Use Planning and Approvals Act 1993* (LUPA Act).

Section 25(2) also provides that -

- The period referred to in section 54(1) of the LUPA Act (for requesting additional information from the applicant) is extended to 42 days;
- Section 57(6) of the LUPA Act (relating to time limits) does not apply;
- Council, not withstanding any enactment to the contrary, is not required to assess any matter addressed in the Board's assessment; and
- If, despite the above, Council does its own assessment of a matter addressed in the Board's assessment, it is not entitled to recover the cost of its assessment from the applicant, the Crown or any other person.

Section 25(8D) requires that council must come to a decision on the permit application within 42 days of receipt of the Board's decision (unless a further period has been agreed under s.57(6A) or 58(2A), or unless a requirement for additional information under section 54 has not been satisfactorily met).

The Board is required to undertake its assessment of the project in accordance with the Environmental Impact Assessment Principles specified in section 74 of the EMPC Act, and the assessment is to be conducted in accordance with the process and timeframes specified for each of three defined "classes" of assessment (refer sections 27A through 27K). The document '*Environmental Impact Assessment – A Guide*' available on the internet at www.epa.tas.gov.au/assess_guidance.html incorporates a summary of the Board's guidelines for determining the class of assessment.

The Board must notify Council of the class of assessment at the same time it notifies the applicant (refer section 27C).

F.3 Scope of Board Assessment

Based on previous projects, it is anticipated that the Board will undertake a comprehensive assessment of the following issues:

- Effects on biodiversity and conservation values;
- Effects of liquid waste emissions;
- Effects on groundwater;
- Effects on marine and coastal matters;
- Effects of noise emissions;

- Effects on local and regional air environment;
- Solid and controlled waste management issues;
- Dangerous goods management issues;
- Environmental effects associated with hazard events;
- Environmental effects of infrastructure and off-site ancillary facilities, including the environmental effects of traffic movements (ie noise, dust, vibration) directly related to the activity;
- Physical aspects of cultural heritage (aboriginal and European).

If required by the Director of Public Health, the Board's assessment must also include an assessment of the impact of the project on public health. For example, this may cover issues such as public health issues relating to traffic movements and hazard events. The Board would rely on the advice of the Director of Public Health with respect to any assessment of public health impacts.

Cultural heritage is covered by separate legislation (*Australian Heritage Commission Act 1975* (Cth), *Historic Cultural Heritage Act 1995* and *Aboriginal Relics Act 1975*). Nevertheless, the Board typically undertakes a general assessment of cultural heritage issues and, based on the advice of the Tasmanian Heritage Council or the Tasmanian Heritage Office, may impose conditions relating to physical aspects of cultural heritage and/or make recommendations to Council in relation to these issues.

The Board's assessment does not cover occupational health and safety issues in the workplace.

The Board would not normally carry out a comprehensive assessment of certain issues covered by the DPEMP guidelines, such as visual effects, land use planning, non-environmental effects of infrastructure and off-site ancillary facilities, communications interference, economic and social effects, or compliance with the *Tasmanian State Coastal Policy* or the *State Policy for the Protection of Agricultural Land.* These matters are substantially for the consideration of Council. Nevertheless, the Board may consider the broad visual, economic and social effects of the project in the context of its obligations to further the objectives of the Resource Management and Planning System of Tasmania. As such, the Board may undertake a general assessment and may make recommendations to Council in relation to these issues.

It should be noted that indirect effects caused by the project, including those that might arise from activities of persons other than the proponent, should be considered in the Board's assessment. This follows the 30 July 2004 Federal Court ruling on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1994* (Nathan Dam Case). The level of assessment of such indirect effects, however, should be appropriate to the degree of significance of the activity to the environment and the likely public interest in the activity (section 74(2) of the EMPC Act).

It should be noted, however, that issues associated with the harvesting of raw materials to supply a wood processing facility are considered outside the scope of the Board's assessment.

F.4 Council Input into Board Assessment

Opportunities for Council to provide the Board with its views on those issues which are being assessed by the Board, will include:

- During preparation of the documentation guidelines
- Informally, during the joint review of preliminary drafts of the DPEMP;
- During the public consultation phase of the assessment process, when Council will be invited to provide comments; and
- Informally, during the preparation of the Environmental Assessment Report for the Board, when Council is typically consulted during the preparation of the draft report.

F.5 'Called In' Permit Applications

Where the Director 'calls in' an application for a level 1 permit as provided for under section 24(1) of the EMPC Act, the Board will undertake the assessment as if it were a level 2 assessment referred to the Board under section 25(1) of the EMPC Act.

A level 1 activity that has been assessed by the Board is subsequently to be regulated by the planning authority as a level 1 activity (*ie* the Board's conditions are to be enforced by the planning authority) **unless** the Board determines under section 24(4A) that the 'called in' activity should be regulated by the Director as a level 2 activity.

F.6 Miscellaneous Legal Matters

Under section 27F(2) of the EMPC Act, if the proponent doesn't submit a satisfactory DPEMP within 12 months of being issued with documentation guidelines, the Board may reject the application, and if so must notify the Council of its decision, and direct Council to also reject the application. Council must comply with such a direction.

Section 25(8) of the EMPC Act states that where the Board has required conditions or restrictions to be contained in a planning permit, the planning authority **must** include the conditions or restrictions and **must not** include any other condition or restriction which is inconsistent with, or which extends the operation of, any of the Board's conditions or restrictions.

Under section 25(8)(c) Council must notify the Board of its decision in respect of a permit application. The Board requests that Council provide a **full copy** of the permit as issued to the Environment Protection Authority for its files.

Appendix G Glossary

AEMC	Australian Energy Markets Commission
ANTS	Annual National Transmission Statement
Brownfields	Building on a site that has or had a powerplant (or large industrial facility). Includes expansions of existing stations.
CCGT	Combined Cycle Gas Turbine – a power generation plant based on a gas turbine generator with a heat recovery steam generator on its exhaust and a steam turbine generator producing additional electrical output. Generally fuelled with natural gas and/or distillate. Generally most suited to base or intermediate duty.
COD	Commercial Operation Date
CPRS	Carbon Pollution Reduction Scheme – the proposed greenhouse gas emissions trading scheme for Australia
Due diligence reviews	A governance process involving independent review of critical aspects of a project before commitment. Can include engineering, approvals, legal, financial, accounting, tax reviews
EHV	Extra High Voltage. Generally electricity transmission at 220kV or higher.
EIS	Environmental Impact Statement (or Assessment, EIA referring to the process). Similar processes are EES (Environmental Effects Statement)
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999
EPC	Engineer-Procure-Construct – a project delivery model where the lead contractor is responsible for the integration engineering as well as the delivery of the project.
EPCM	Engineering, Project and Construction Management – A project delivery model where the owner employs a firm to undertake the integration engineering who then manages a set of other contractors who each delivery a portion of the plant.
Financial Closure	The (generally single) date in a project financed project programme when all the key contracts are put into force and the project debt and equity contributors release the funds for the construction of the project.
Greenfields	Building on a relatively clear site not presently having power generation systems
MCE	Ministerial Council on Energy
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
NER	National Electricity Rules
PPA	Power Purchase Agreement
SCGT	Simple Cycle Gas Turbine – a power generation plant based on a gas turbine generator without further heat recovery. Generally most suitable to peaking duty. Generally fuelled with natural gas and/or distillate. Also colloquially known as an Open Cycle Gas Turbine.
SKM	Sinclair Knight Merz
SOO	Statement of Opportunities – a report published annually by

NEMMCO that describes the projected loads, current and anticipated power generation, supply and demand balance and the ANTS.