Environmental Defender's Office of Western Australia (Inc.)

Petroleum Law: Oil, Gas, Geothermal Energy and Greenhouse Gas Storage

Fact Sheet | 38

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An Introduction to Petroleum Law: Oil, Gas, Geothermal Energy and Greenhouse Gas Storage

Petroleum exploitation includes production of liquefied natural gas (LNG), domestic gas and petroleum liquids (eg crude oil). Petroleum operations consist of geophysical surveys (seismic, gravity, geochemical), the drilling of wells, the extraction of petroleum, the laying of pipelines and other associated infrastructure. Each of these activities has the potential to significantly impact the environment, and oil spills are a further significant risk.

Petroleum exploration and exploitation of petroleum on WA land and in the waters off the WA coast are regulated under several State and Commonwealth laws. The laws are all drafted in similar ways, and the way that the environment is required to be considered and protected under the laws is also largely the same. This fact sheet describes where petroleum can be explored for and extracted, what laws apply where, what approvals are needed to explore for and exploit petroleum, and how these approvals deal with environmental issues.

Geothermal and greenhouse gas storage laws are incorporated into WA's petroleum laws, and are regulated in largely the same way. However, as they are developing industries, they are usually subservient to any petroleum titles in the same area, and may also have their own particular additional approvals.

Petroleum activities are constrained in some marine reserves and conservation reserves - for information on this see Fact Sheet 17: Marine reserves, *and* Fact Sheet 11: Conservation reserves. *Petroleum activities which may have a significant impact on the environment are likely to be dealt with under the environmental impact assessment process. For the EIA process on WA land and in coastal waters (out to three nautical miles), see* Fact Sheet 5: Environmental impact assessment in Western Australia. *Most petroleum developments in Commonwealth waters will be dealt with under the Cth EIA process – see* Fact Sheet 6: Commonwealth environmental impact assessment.

What is petroleum? What is geothermal energy? What is greenhouse gas storage?

Petroleum is defined under the relevant acts to include any naturally occurring hydrocarbon or mixture of hydrocarbons, whether in the form of a solid, liquid or gas. This includes coal seam methane. However, it does not include any mineral extraction. For information on mining laws, see Fact Sheet 36: Mining Law.

Geothermal energy is thermal energy that results from natural geological processes, such as subsurface hot rocks and hot aquifers, and even simply hot ground. Energy can be obtained by using heat exchange

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technology which extracts the heat from the earth and transfers it to where it can be used for direct heating or converted into electricity. Because the geothermal industry uses similar technologies and operate in similar geological environments, petroleum laws also regulate geothermal energy.

Some geological formations beneath the seabed have the potential to store greenhouse gases. As with geothermal energy, because the petroleum and greenhouse gas storage industries use similar technologies and operate in similar geological environments, petroleum laws regulate greenhouse gas storage, for example they provide for permits to be issued to explore for suitable locations for storage, permits to inject and store greenhouse gases etc.

Where can petroleum be exploited?

All WA land and the waters off WA are potentially open for petroleum exploration and production. However private land and reserves will sometimes require additional processes or consents in order for petroleum exploration and production activities to be permitted.

In most cases, entry onto private land for exploration and production can only be undertaken once the landowner has given written consent, and compensation if any has been agreed with the landowner or decided in Court.

Before petroleum titles can be granted on reserved land (such as a conservation park, national park or Class A nature reserve), the Minister for State Development must confer with the Minister responsible for the reserve land and then give consent, subject to the inclusion of conditions in the petroleum permit, authority, lease or licence.

Petroleum exploration and production cannot be carried out in a WA marine nature reserve or in certain areas of a marine park (a sanctuary area, a recreation area or a special purpose area). However these prohibitions do not prevent the renewal or extension of a petroleum title granted before 1997 or before the area was reserved.

The Crown (in effect the State and Commonwealth governments) owns petroleum and geothermal energy resources regardless of whether it is found on private or Crown land. However once the petroleum is extracted under a petroleum title, ownership of it passes to the title holder subject to the payment of royalties.

Petroleum legislation

The specific law which regulates exploration or exploitation of petroleum depends on the location of the petroleum, and what the particular activity is. In summary, the following laws apply:

- Petroleum exploration and production on WA land, plus WA's islands - *Petroleum and Geothermal Energy Resources Act 1967* (WA) ("WA Petroleum Act").
- Petroleum pipelines on WA land - *Petroleum Pipelines Act 1969* (WA) ("WA Pipelines Act")
- Petroleum exploration and production in WA waters (from the low water mark to about 3 nautical miles off shore, but sometimes going out further around some islands) *Petroleum (Submerged Lands) Act 1982* (WA) ("WA Submerged Lands Act").

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- Petroleum exploration and production in Commonwealth waters (from the edge of WA waters to the limit of Australia's jurisdiction, usually 200 nautical miles offshore) - *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) ("Commonwealth Offshore Petroleum Act")
- Joint Petroleum Development Area - the region in the Timor Sea where Australia and East Timor jointly manage and control the use of petroleum resources in the area. This area is regulated by the *Petroleum Timor Sea Treaty Act 2003*.

Who manages petroleum activities?

The Department of Mines and Petroleum (DMP) generally manages all petroleum legislation. For activities in WA land and waters, DMP is responsible in its management to the Minister for State Development. For Commonwealth waters (3 nautical miles out from the WA coast), it is responsible in its management to a "Joint Authority", which is simply the State and Commonwealth Resource Ministers. DMP has some joint responsibilities in Commonwealth waters with the Commonwealth's Department of Resources, Energy and Tourism, but in practice manages all day to day matters. For example, all applications are forwarded to the WA DMP, which then assess the proposals and also assist the applicants in obtaining government approvals.

Petroleum titles

Petroleum laws allow people to explore for and then extract petroleum, as well as explore for and then produce geothermal energy, and explore for suitable places to store greenhouse gases. The law provides for a range of different petroleum "titles" to be granted, each of which permits a different type of activity.

Exploration permit

An exploration permit allows a person to enter an area, explore for petroleum and carry out such operation that is necessary for that purpose, in the permit area. They are awarded in a competitive bid system. The applicant that is both financially and technically able, and also submits the most comprehensive work program, will be awarded the title.

Exploration permits are granted for 6 years and can be renewed for two subsequent five year terms, but generally only on a reduced area (50% reduction) basis.

Where a commercially viable discovery is made, an exploration permit holder has a statutory right to be granted a Production Licence.

Production licence

Production Licences are granted over the blocks comprising a commercial discovery and usually emanate from an Exploration Permit, Drilling Reservation, or Retention Lease. A production licence allows a person to enter an area, to recover petroleum, and to carry on such operations as are necessary for that purpose. The licensee can be directed to maintain, increase or reduce the rate of recovery.

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Production licences can be held for an indefinite period so long as they are being utilised. The Minister has the authority to terminate a production licence if there has been no operations for the recovery of petroleum or geothermal energy for a continuous period of five years (not including circumstances beyond the licensee's control). Note that prior to May 2011, production licences under the WA Petroleum Act were granted for 21 years and could be renewed for additional 21 year terms.

Retention lease

A retention lease may be applied for when a petroleum discovery has been made that is not currently commercial, but may become commercial within 15 years. It is essentially a holding title, but also authorises the holder to continue to explore for petroleum and to carry on such operations and execute such works as are necessary for that purpose. The Minister may also require the lessee to undertake re-evaluation studies on the commercial viability of the discovery from time to time.

A retention lease gives the holder the right to apply for a production licence in the event that the petroleum discovery becomes commercial.

The term of a retention lease is 5 years and can be renewed for subsequent 5 year periods provided the title holder continues to comply with the requirements of the lease.

Pipeline licence

A pipeline licence allows the holder to construct and operate a pipeline for conveying naturally occurring hydro-carbons. Pipelines are defined as also including storage tanks and ancillary works. The Minister has power to resume land for the purpose of the pipeline.

Pipeline licences may be held for an indefinite period so long as they are being utilised. The Minister has authority to terminate a pipeline licence if there has been construction work under the licence and the pipeline (or part of it) has not been used for a continuous period of five years (not including circumstances beyond the licensee's control. Note that prior to May 2011, production licences under the WA Petroleum Act were granted for 21 years and could be renewed for additional 21 year terms.

Infrastructure Licence

An infrastructure licence enables the construction of offshore facilities for the storage and processing of petroleum, which essentially enables the additional processing of petroleum beyond that involved in the initial production process. It is also used for the construction of facilities for the recovery of petroleum in areas outside a production licence. An infrastructure licence can be granted and held for an indefinite period so long as it is being utilised.

Drilling reservation, Special Prospecting Authorities and Access Authorities(WA land only)

Drilling reservations can be applied for on land in Western Australia under the WA Petroleum Act. Similar to exploration permits, drilling reservations allow the title holder to carry out drilling activities and to carry out

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such operations and execute such works as are necessary for that purpose. The term of a drilling reservation cannot exceed 3 years (although this term can be extended for 1 year if certain conditions are met).

There are also some other minor titles available on WA land, such as Special Prospecting Authorities which allow limited prospecting for petroleum but do not authorise the drilling of a well, and Access Authorities which allow the holder of a permit, drilling reservation, lease or licence to conduct exploration activities outside their areas by drilling of deviated wells.

Geothermal titles

Geothermal energy is thermal energy that results from natural geological processes, such as subsurface hot rocks and hot aquifers, and even simply hot ground. Energy can be obtained by using heat exchange technology to transfer the heat to where it can be used for direct heating (eg of swimming pools) or converted into electricity. Because geothermal industry uses similar technologies and operates in similar geological environments to petroleum, petroleum laws also regulate geothermal energy.

Geothermal titles are available on WA land under the WA Petroleum Act, and the titles which can be granted are very similar to these described above.

Greenhouse Gas Storage titles

Some geological formations beneath the seabed have the potential to store greenhouse gases. Options for geological storage of CO2 include injection and storage into depleted oil and gas fields, deep saline formations and unmineable coal seams. As petroleum and greenhouse gas storage industries use similar technologies and operate in similar geological environments, petroleum laws also regulate greenhouse gas storage in Commonwealth waters.

The Commonwealth Offshore Petroleum Act makes titles available for exploring for and exploiting greenhouse gas storage opportunities, which has a titles system that is very similar to that described above for Commonwealth petroleum titles. However, all greenhouse gas storage titles are subject to a condition that the Commonwealth Minister for Resources can direct the permit holder to eliminate, mitigate or manage any significant adverse risk that the greenhouse operations may have on petroleum operations, meaning the greenhouse gas storage titles are always potentially subservient to petroleum titles and have to "make way" for the petroleum activity in the case of a conflict in use of an area.

There is no legislation specially dealing with greenhouse gas storage for WA land and coastal waters.

Mining tenements and petroleum and geothermal titles

All petroleum and geothermal titles in WA require applicants to enter into consultative discussions with existing title holders (eg holders of existing mining tenements) to ensure a constructive working relationship, which usually requires them to enter into an agreement about how the operations will co-exist (and potentially, compensation). In addition, before any works are actually carried out on petroleum and geothermal titles, the works are referred to other parties who are likely to have an interest in the land so that their interests can be protected at that time. If there is a dispute between the holder of a geothermal title and a mining tenement and it can't be resolved between the holders, the matter is referred to the Mining Warden

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to investigate and make a recommendation about how to resolve the dispute to the Minister. The Minister may make such order 'as in the public interest and in the circumstances of the case may seem to him to be just and equitable'.

Environmental conditions on titles

All petroleum titles require the title holder to obtain DMP approval of an environmental plan before commencing any actual petroleum activities. Petroleum activities are defined broadly and include any works, operations or related activities which may impact on the environment.

For exploration and production activities in State jurisdiction, the DMP requires applicants to submit an Environmental Management Plan with their application which follows the Department's guidelines. Applications for proposals in Commonwealth waters must also include an Environment Plan under the *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999* (Cth) (Commonwealth Environment Regulations).

An Environmental Management Plan or Environment Plan must include a description of the proposed activity, environmental impacts and risks, environmental performance objectives and standards and an implementation strategy to meet those objectives. It should identify any environmental effects the proposed activities may have and provide the applicant's procedures to manage monitor and mitigate potential and actual effect, and demonstrate whether the environmental risks are low and adequate management procedures are in place.

If an Environmental Management Plan or Environment Plan is not submitted with the application, or if the content is insufficient for the department to decide whether to approve or refer the proposal, it will request further information from the proponent.

Once an environment plan is approved, it is an offence not to comply with it, or to carry out any activity which has a significant environmental impact or risk which is not provided for in the plan.

Where a proposal includes marine activities, the development and approval of an Oil Spill Contingency Plan ("OSCP") is required. The plan should outline response structure, strategy and other information relevant to decision making in the event of an oil spill. An applicant will need to demonstrate that they have the resources, management structure and skills to prevent, contain and clean up oil spills. Contingency planning for onshore activities is not currently required under petroleum legislation.

Good oil field practice is also required as a condition on titles. This means all those things that are generally accepted as good and safe in the carrying on of petroleum activities, and so is usually judged by reference to industry standards, including responsibility to carry out operations in a manner that is safe and prevents the escape of petroleum into the environment.

How is the environment considered in the grant of titles? How can the public be involved?

There is very limited consideration of the environment, or opportunity for public comment, in the grant of petroleum titles. Most of DMP's consideration of environmental issues comes at the stage when activities are actually proposed under the title, and there is no formal public consultation process in this assessment.

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However, if a proposed petroleum activity is likely to have a significant effect on the environment, the proposal may also need to be assessed by the Environmental Protection Authority ("EPA") under *Part IV of the Environmental Protection Act 1986*. This process is explained in detail in Fact Sheet 5: Environmental Impact Assessment in Western Australia.

If a proposal is referred for assessment under Part IV, the DMP cannot grant a title until either the EPA has advised that it has decided not to assess the proposal, or the assessment process is completed and the Minister for Environment has decided that the proposal may be implemented.

A Memorandum of Understanding ("MOU") between the DMP and the EPA requires the DMP to refer a mining proposal to the EPA if a mining proposal has been submitted, and the mine will exceed certain size thresholds or is an environmentally sensitive area. Proposals which must be referred to the EPA under the MOU include the following:

- Onshore Activity within 500m of conservation reserves, State forest, threatened ecological community, Ramsar wetland, or world heritage area.
- Onshore Activity within 2km of the coast or a town.
- Onshore area already being assessed by the EPA.
- Onshore activity which may affect water resources.
- Offshore activity in intertidal zones or shallow waters in turtle breeding areas during the turtle breeding season.
- Offshore activity in marine parks, marine reserves, and special protection areas of marine management areas.
- Seismic activity wholly or partly located in whale calving areas in the breeding season, or in locations that may affect migrating whales.
- Offshore exploration or drilling within 3nautical miles of the coast, islands or intertidal reefs.
- Any offshore production development and/or pipeline development in State Waters

Other activities which do not meet any of the criteria under the MOU may nonetheless require assessment because they are likely to have a significant effect on the environment. The DMP may decide to refer such a proposal to the EPA, or it could be referred by any person.

If the proposal is assessed by the EPA under Part IV, the Minister makes the final decision whether to approve the proposal. The Minister's approval will usually be subject to conditions designed to minimise the environmental impact of the proposal. For more information on the Part IV assessment process and conditions, see Fact Sheet 5: Environmental Impact Assessment in Western Australia.

The proponent must decide whether the proposal generates a matter of national environmental significance and whether to refer the proposal to the Department of the Environment, Water, Heritage and Arts under the process noted in the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). See Fact Sheet 6: Commonwealth Environmental Impact Assessment.

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Part V works approval or licence under the EP Act

Any place in WA land or waters on which oil or gas production occurs are prescribed premises under the *Environmental Protection Regulations 1987* (WA). A proponent must obtain a works approval under Part V of the EP Act before commencing any work or construction for oil and gas production, and also needs a licence to operate. See Fact Sheet 27: Pollution & Environmental Harm.

Clearing permit for clearing of native vegetation

For petroleum activities, if the proposed activities involve the clearing of native vegetation, the proponent will require a clearing permit under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (WA) (Clearing Regulations) unless the activity falls within an exemption under the EP Act or the Clearing Regulations. These exemptions include clearing for:

- a project which is approved under Part IV of the EP Act,
- clearing which is approved as part of a works approval.
- clearing by person with authority to carry out petroleum exploration as a result of carrying out exploration under an authority given under the WA Petroleum Act, the WA Pipelines Act or the WA Submerged Lands Act.
- low impact activities (eg driving, or where there is no ground disturbance);
- 2ha for particular activities eg camp site, scrape and detect;
- up to 10ha/year altogether in a single tenement/licence area, as long as this is not in a "non permitted area". A "non permitted area" includes conservation land, water supply area, some land districts, 2km from high water mark, etc.

For more information see Fact Sheet 7: Clearing Native Vegetation.

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The Environmental Defender's Office WA (Inc)

The Environmental Defender's Office WA (EDO) is a community legal centre specialising in public interest environmental law.

The objects of the EDO include:

- to provide community groups and individuals with legal advice and representation to help protect the environment;
- to promote law reform that improves environmental protection; and
- to provide community education about environmental law.

The EDO is a non-profit, non-government organisation. The EDO receives its principal funding from the Federal and State Attorney-General's Departments.

However, these funds are limited and donations from the public provide a vital source of funds for many of our activities. Donations over $2 are fully tax deductible. The EDO also welcomes people with a commitment to the environment to join as members.

If you require legal advice on an environmental issue or wish to find out more about the EDO, please contact us at the following address:

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