



Government of Western Australia
Department of Mines and Petroleum

Petroleum Division

WA PETROLEUM AND GEOTHERMAL GUIDELINE FOR GRANT AND ADMINISTRATION OF A RETENTION LEASE



This Guideline provides an overview of the relevant assessment and approval processes for an application for a retention lease.

A retention lease provides security of title for development petroleum and geothermal resources that are not currently commercially viable but which have genuine development potential (i.e. likely to be commercially viable within 15 years).

The objective of this Guideline is to assist the petroleum and geothermal industry to understand the requirements and process leading to the determination (grant or refusal) of a retention lease application in accordance with the provisions of the *Petroleum and Geothermal Energy Resources Act 1967* (WA) (the 'PGERA67') and the *Petroleum (Submerged Lands) Act 1982* (WA) (the 'PSLA82').

Notes:

- Unless otherwise defined, terms used in this Guideline are consistent with those defined in the PGERA67 and PSLA82.
- All references to geothermal are only in respect to the PGERA67. The applicant for a retention lease, or the registered holder of a retention lease (the "lessee"), as the case requires, should note that petroleum and geothermal titles may subsist in respect of the same blocks.
- All references to drilling reservations are only in respect to the PGERA67.
- This Guideline provides for applications for retention leases by the registered holder of an exploration permit or a drilling reservation in accordance with section 48A of the PGERA67 and the registered holder of an exploration permit under section 38A of the PSLA82. It does not contemplate applications by the registered holder of a production licence per section 48CA of the PGERA67 or section 38CA of the PSLA82.
- The Guideline will be updated as required from time to time.

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1. OVERVIEW -RETENTION LEASE APPROVAL PROCESS

Where a petroleum pool or geothermal resource is identified, a registered holder of an exploration permit or drilling reservation must nominate a location in respect of the block(s) to which the pool extends for declaration as a location by the Minister. The registered holder must then assess whether the discovery meets the criteria for a retention lease (refer to section 3).

Be mindful of retention lease period section 4.1*

A preliminary meeting with the Petroleum Division, Department of Mines and Petroleum (DMP) must take place to present the rationale for non-commerciality with an appropriate level of detail.

This will assist in a timely response section 4

Application forwarded to Petroleum Division DMP with commerciality assessment information. Refer to Attachments A and B for more guidance.

Section 5

Petroleum Division DMP conducts assessment and seeks any necessary additional information from the applicant (if necessary)

Section 5

If grant is recommended...

If refusal is recommended...

Section 5.11

Petroleum Division DMP forwards assessment report to Minister

Minister receives Petroleum Division DMP assessment and policy advice (external referrals as required to DPaW, DER, DoW etc)

Consideration by Minister

Registered holder must have Native Title approval

The Minister offers the grant of a retention lease to the applicant.

The applicant accepts the offer.

The Minister grants a retention lease.

NB: One aim of a retention lease is to ensure the holders actively seek to enhance commerciality of the relevant discovery

Applicant given opportunity to comment on proposed rejection and/or work program conditions

2. GENERAL

- 2.1 Retention leases are awarded where recovery of petroleum or geothermal energy resources is not currently commercially viable, but is likely to become so within the next 15 years.
- 2.2 The initial term of a retention lease is five years. A retention lease may be renewed for further periods of five years providing the commerciality criteria continues to be met.
- 2.3 When recovery of the resource is deemed to be commercial, a retention lease must be converted to a production licence. At any time during the five-year term of a retention lease, the Minister may request a re-evaluation of the commercial viability of recovery of petroleum or geothermal energy resources from the retention lease area.

3. APPLICATION FOR A RETENTION LEASE

- 3.1 Where a petroleum pool or geothermal resources area is identified within an exploration permit or drilling reservation area, the registered holder of the exploration permit or drilling reservation, as the case requires, may nominate the block in which the pool or resource is situated, or the blocks (being blocks within the exploration permit or drilling reservation) to which the pool or resource extends, for declaration as a location by the Minister pursuant to section 46 of the PGERA67 or section 36 of the PSLA82.
- 3.2 The registered holder of the exploration permit or drilling reservation may apply to the Minister for grant of a retention lease in respect of the block or one or more of the blocks constituting the location.
- 3.3 The application period is the period of two years after the day on which the location is declared, or such longer period, not more than four years after the day on which the location was declared, as the Minister allows, following written application within the initial period of two years.
 - 3.2.1 Where the registered holder of the exploration permit or drilling reservation does not make an application for a retention lease within the application period, the blocks constituting the location are determined from the underlying title (i.e. the blocks revert to vacant acreage).
- 3.4 An application for a retention lease must be made in the approved manner via the approved application form: [http://www.dmp.wa.gov.au/documents/PD-PTLA-TGR-285D\(4\).pdf](http://www.dmp.wa.gov.au/documents/PD-PTLA-TGR-285D(4).pdf).
- 3.5 The application must address the requirements of section 48A(2) of the PGERA67 or section 38A(2) of the PSLA82 and be accompanied by the information set out in Attachment A.
- 3.6 Applicants should also be aware that the grant of a retention lease is subject to the provisions of the Native Title Act 1993 (Cth).
- 3.7 It is imperative that the underlying exploration permit or drilling reservation be maintained in compliance with the provisions of the relevant Act and any conditions imposed on the title until the application process is finalised.

4. ASSESSMENT OF AN APPLICATION FOR A RETENTION LEASE

- 4.1 To grant a retention lease, the Minister must be satisfied that the application meets the statutory criteria under section 48A of the PGERA67 and section 38A of the PSLA82, that:
 - 4.1.1 the area comprised in the block, or any one or more of the blocks, specified in the application, contains petroleum or geothermal energy resources; and
 - 4.1.2 the recovery of petroleum or geothermal energy resources from that area is not, at the time of the application, commercially viable, but is likely to become commercially viable within the period of 15 years after that time.
- 4.2 A preliminary meeting with the Petroleum Division of DMP is recommended to enable the applicant an opportunity to discuss its proposal to apply for a retention lease and to ensure the appropriate level of detail is provided to justify the application.
- 4.3 Once an application is lodged, the Petroleum Division will undertake an assessment of the application to identify compliance with the provisions of the relevant Act and to the required accompanying information.
- 4.4 Where additional information is required, the Minister may request this be submitted by the applicant within a specified timeframe.
- 4.5 The applicant's proposed work program for the retention lease will be assessed with consideration as to its adequacy for enhancing the commerciality of recovery of the petroleum or geothermal energy resource and removing barriers to production.

- 4.6. When sufficient information has been provided by an applicant, the Resources Branch of the Petroleum Division will prepare a technical report outlining DMP's determination of whether the area subject to the retention lease application contains petroleum or geothermal energy resources, and whether recovery of that resource is commercially viable.
- 4.7. The Minister will take into account the technical report in determining whether to approve or refuse the application for a retention lease.

5. ASSESSING THE COMMERCIALITY CRITERIA

- 5.1. For the purposes of section 48A of the PGERA67 and section 38A of the PSLA82:
likely should be interpreted to convey the sense of a substantial or real chance as distinct from what is a mere possibility; commercially viable, in this context, should be interpreted to mean that the petroleum or geothermal could be developed:
 - 5.1.1 given existing knowledge of the field;
 - 5.1.2 having regard to prevailing market conditions; and
 - 5.1.3 using proven technology readily available within the industry;
such that the commercial rates of return from recovery of the petroleum or geothermal energy resource (including recovery of all operating and capital costs and taxes, royalties and other charges) meet or exceed the minimum return considered acceptable for the type of project under consideration by a reasonable petroleum or geothermal energy developer and by investors or lenders to the industry (i.e. an acceptable rate of return). All costs regarding CAPEX and OPEX should be comparable in the region. Existing knowledge of the field includes mapping and resource estimates at proved, probable and possible probability levels.
- 5.2. A petroleum accumulation cannot be claimed to be not commercially viable because of the inability or unwillingness of the applicant to acquire or apply proven technology readily available within the industry or because of the applicant's lack of skilled personnel or financial capability.
- 5.3. Where commercial viability is dependent on combining a development with other potential third party developments or access to third party facilities or technology, the petroleum or geothermal energy resource will not be considered commercially viable if the applicant is unable to complete an agreement to jointly develop or complete an access agreement for use of facilities or technology which provides an acceptable rate of return.
- 5.4. In addressing market issues, including market access, prices, and timing or market opportunities, it will be accepted that the terms and conditions of supply of petroleum or geothermal energy resources will determine the commercial viability of the project. Consideration will be given if the Minister is satisfied; given the prevailing market conditions.
- 5.5. The onus is on the applicant to justify that recovery of the petroleum or geothermal energy resource is not commercially viable via analysis of prospective development including the assumptions, the methodology, and the conclusions reached by the applicant.
- 5.6. This analysis should provide sufficient information to demonstrate that the assumptions and methodology are realistic and lead to a likely outcome (and if appropriate, a range of outcomes). The impact of alternative reasonable assumptions should also be identified and assessed. The Minister will analyse the extent to which there are reasonable grounds for adopting alternative assumptions and methodologies. For reference, included in this Guideline is DMP's approach to assessing commercial viability (reference Attachment B).

6. GRANT OF A RETENTION LEASE

- 6.1. Where the Minister is satisfied that the criteria specified in section 48A of the PGERA67 or section 38A of the PSLA82 have been met, the Minister shall advise the applicant in writing of his decision to grant a retention lease.
- 6.2. The retention lease may be granted subject to such conditions as the Minister thinks fit. This will include conditions requiring work to be carried in accordance with a work program and may include conditions to ensure the impact on other land users of exploration or appraisal work in the retention lease area is minimised.

7. REFUSAL OF A RETENTION LEASE APPLICATION

- 7.1. Where the Minister is not satisfied that the criteria specified in section 48A of the PGERA67 or section 38A of the PSLA82 have been met, or information requested by the Petroleum Division has not been submitted within the specified time, the Minister shall advise the applicant in writing of his decision to refuse to grant a retention lease.
- 7.2. Where the Minister refuses to grant a retention lease on the grounds that recovery of petroleum or geothermal energy resources from the area is currently commercially viable;

- 7.3. the Minister will revoke the declaration of location in accordance with section 56(6) of the PGERA67 or section 46(6) of the PSLA82;
- 7.4. the registered holder of the exploration permit or drilling reservation has one year from the date the instrument of refusal was served on him within which to nominate the subject block(s) for a new declaration of location, and apply for a production licence; and
- 7.5. where the registered holder does not make an application for a production licence within this period, the blocks constituting the location are determined from the underlying title (i.e. the blocks revert to vacant acreage).
- 7.6. Where the Minister otherwise refuses to grant a retention lease, the declaration of location is not revoked by the Minister and the management of the remaining application period (if applicable) and determination of the blocks constituting the location is the responsibility of the registered holder.

8. RE-EVALUATION

- 8.1. Where the Petroleum Division has reason to believe that the recovery of petroleum or geothermal energy resources from the retention lease area has become commercially viable, in accordance with section 48H(3) of the PGERA67 or section 38H(3) of the PSLA82, the Minister may request the lessee re-evaluate the commercial viability of the resource and inform the Minister in writing of the results within the period of three months after receipt of the request (or within such further period as the Minister allows following written application within the initial period of three months).
- 8.2. The re-evaluation may require work to be carried out in addition to the work program or any other condition to which the retention lease is subject.

The additional work may include seismic surveying, re-interpretation of existing data, numerical simulation, and cost or marketing analyses, but cannot mandate the drilling of a new well.
- 8.3. Where, in consideration of the results of the re-evaluation, the Minister is of the opinion that recovery of petroleum or geothermal energy resources from the retention lease area is commercially viable, and the lessee has not made an application for renewal of the lease, the Minister will inform the lessee that the Minister intends to cancel the lease (refer to clause 11 for further information).

9. VARIATION OR SUSPENSION OF, OR EXEMPTION FROM COMPLIANCE WITH, A RETENTION LEASE CONDITION

- 9.1. In accordance with section 97 of the PGERA67 and section 103 of the PSLA82, the Minister may vary or suspend, or exempt a lessee from compliance with, any of the conditions to which the retention lease is subject (including in respect of the work program) upon application by the lessee.
- 9.2. If the Minister considers that the circumstances make it reasonable to do so, the Minister may extend the retention lease term at the same time as the Minister suspends, or exempts a lessee from compliance with, any of the conditions to which the retention lease is subject, or at a later time.
- 9.3. The “WA Petroleum and Geothermal Guideline for Exploration Permit Management” outlines the provisions upon which applications for variations or suspensions of, or exemptions from compliance with, conditions relating to work programs are assessed. It may be used as a reference by a titleholder in making such an application.

10. RENEWAL OF A RETENTION LEASE

- 10.1. The Minister may renew a retention lease upon application by the lessee.
- 10.2. Where the Minister is satisfied that the criteria specified in section 48F of the PGERA67 or section 38F of the PSLA82 have been met, and the conditions to which the retention lease is subject and the provisions of the relevant Act and subsidiary legislation have been complied with, the Minister shall inform the lessee that the Minister is prepared to grant the renewal of the lease.
- 10.3. Where a lessee has not complied with the conditions to which the retention lease is subject or any of the provisions of the relevant Act and subsidiary legislation, the Minister may inform the lessee that the Minister is prepared to grant the renewal of the lease if the Minister is satisfied that special circumstances exist to justify the granting of the renewal.
- 10.4. It is the responsibility of the lessee to ensure that sufficient compelling evidence as to how the circumstances leading to the non-compliance have been mitigated or resolved to justify the application. Failure to do so will result in refusal of an application.

- 10.5. Where the Minister is not satisfied that the criteria specified in section 48F of the PGERA67 or section 38F of the PSLA82 have been met, or information requested by the Petroleum Division has not been submitted within the specified time, the Minister shall advise the applicant in writing of his decision to refuse to grant the renewal.
- 10.6. The application and assessment process, including for grant or refusal, of an application for the renewal of a retention lease will be managed in accordance with this Guideline.
- 10.7. The management of a retention lease granted by way of renewal will be in accordance with the Guideline.

11. SURRENDER OF A RETENTION LEASE

- 11.1. The Minister may consent to the surrender of a retention lease as to all or some of the blocks in respect of which it is in force upon application by the lessee.
- 11.2. If the conditions to which the retention lease is subject and the provisions of the relevant Act and subsidiary legislation have been complied with, and the lessee has removed or closed where relevant, any property or wells, and has made provision for conservation and remediated any damages, the Minister shall consent to the surrender of the retention lease.
- 11.3. Where a lessee has not complied with the conditions to which the retention lease is subject or any of the provisions of the relevant Act and subsidiary legislation, the Minister may consent to the surrender of the retention lease if the Minister is satisfied that special circumstances exist to justify the giving of consent to the surrender.
- 11.4. It is the responsibility of the lessee to ensure that sufficient justification as to why consent to the surrender should be given is provided. Failure to do so will result in refusal of an application.
- 11.5. All applications will be considered on a case by case basis. However, in considering an application for consent to surrender a retention lease, the Minister will have specific regard to:
 - 11.5.1 the status of the retention lease (including fees and monies due) and whether all conditions have been complied with;
 - 11.5.2 the lease reporting requirements and whether all reports and data have been lodged (for example, reports on specified activities, quarterly reports, annual reports); and
 - 11.5.3 the action taken by the lessee to ensure that the retention lease area is clear of all debris resulting from operations and that all wells have been plugged or closed.

12. CANCELLATION OF A RETENTION LEASE

- 12.1. A lessee is expected to ensure that the provisions of the PGERA67 or PSLA82, subsidiary legislation made under those Acts, any directions issued under the Acts, and the conditions to which the retention lease is subject, are complied with.
- 12.2. Failure to comply may result in cancellation of the retention lease.
- 12.3. Where the Minister considers that a retention lease should be cancelled, the lessee will be given not less than one month's notice of the Minister's intention to cancel the lease, specifying the grounds upon which the cancellation is justified.
- 12.4. The lessee will be invited to submit any matters he wishes the Minister to consider. It is the responsibility of the lessee to ensure that sufficient compelling evidence as to how the circumstances leading to the non-compliance have been mitigated or resolved such that the grounds for cancellation are removed or will be prevented from reoccurring are provided to the Minister for consideration.
- 12.5. Where, in pursuance of clause 8 the Minister cancels a retention lease, the cancellation will have effect at the end of the period of 12 months commencing on the date of service of the instrument of cancellation; or where the lessee makes an application for a production licence in respect of one or more of the blocks comprised in the lease, when the Minister grants or refuses the production licence application, or when the application lapses (whichever first happens).
- 12.5.1 Where a production licence is granted over some of the blocks comprised in the retention lease, the remaining blocks are cancelled.

13. ATTACHMENT A

ACCOMPANYING INFORMATION TO AN APPLICATION FOR A RETENTION LEASE

In addition to the legislative criteria provided by section 48A(2) of the PGERA67 and section 38A(2) of the PSLA82, an application for a retention lease must be accompanied by the following additional information:

Exploration permit or drilling reservation:

- 13.1. details of the exploration permit or drilling reservation history;

Work program:

- 13.2. a detailed five year work program structured to enhance commerciality of recovery and remove barriers to production;
- 13.3. Registered holders are expected to actively seek to enhance the commerciality of a discovery in a lease. Therefore, the application should also include details of the registered holder's five year work program to continue to assess the commercial viability of the field, including those factors currently inhibiting the commercial development of the resource. The work program may include, for example:
 - 13.3.1 Project feasibility reports;
 - 13.3.2 Reports of reviews of exploration data,
 - 13.3.3 Proposals to undertake seismic surveys and drill wells, and,
 - 13.3.4 Other works designed to progress the field toward commercialisation.
 - 13.3.5 Details should include estimates of expenditure in nominal dollars.
- 13.4. In general, the years in which such work program activities are proposed to be completed should be specified. The lease conditions should specify that the work program (including for example any seismic interpretation, well analyses etc) must be completed and results analysed prior to the submission of any application for renewal of the lease.
- 13.5. the work program must provide for the minimum work to be carried out over the five-year term and must not contain any contingent work (reference Attachment B 8(d));
 - 13.5.1 the work program should address the primary constraints to commercial viability that have been identified by the assessment;
 - 13.5.2 the work program must be consistent (in respect of timing, activities proposed and the level of effort) with what a reasonable person could be expected to carry out in order to commercialise the project; and
 - 13.5.3 the work program should address other important areas where suitable information on which to base a decision on commerciality is lacking. For example, further environmental studies may be required, or further seismic definition, appraisal drilling or other technical activities may be appropriate to better define the resource.

Geology:

- 13.6. an appraisal of the current situation of the petroleum or geothermal field;
- 13.7. details of the structural geology and geophysics of the area, hydrocarbon initial in-place, ultimate recovery and rock and fluid properties;

Commerciality:

- 13.8. analysis of all development scenarios considered and the optimum scenarios;
- 13.9. A brief description of the development options considered and the detailed technical and economic assumptions used in the evaluation of commercial viability to satisfy section 48A of PGERA67 and section 38A of PSLA82. All realistic development options should be identified.
- 13.10. Evidence that development of the discovery is not currently commercially viable but is likely to become commercially viable within 15 years, including details of:
 - 13.10.1 Estimated recoverable and in-situ resources given in metric units (especially the 50% and 90% probability levels or other appropriate information) with more detail if these quantities are critical to determining whether the criteria are met;
 - 13.10.2 Estimated annual capital costs (including appraisal and production drilling, facilities costs etc), if the project were to proceed;
 - 13.10.3 Estimated annual operating costs, if the project were to proceed;
 - 13.10.4 Estimated annual production volumes, product prices and estimated annual revenues from sales of product, if the project were to proceed;

- 13.10.5 Estimated annual resource taxation payable (PRRT or excise/royalty);
- 13.10.6 Inflation rates, exchange rates, bond rates used for PRRT assessment, depreciation and registered holder tax provisions used in the financial analyses;
- 13.10.7 All numbers clearly identified as either in Australian dollars;
- 13.10.8 Estimated pre- and post -company tax internal rate of return (IRR) for the project and justification of minimum (or hurdle) rates of return or other criteria used to assess commerciality, including whether they reflect the level of risk for such a project and the degree of confidence ('optimism' or 'pessimism') associated with the other assumptions;
- 13.11. Where that IRR is sufficient for the project to proceed under prevailing market conditions, evidence that there are other factors preventing commercial development of the discovery (e.g. market issues);
- 13.12. Identification of all relevant environmental, land use and other factors that may impact on commerciality;
- 13.13. The treatment of secondary taxes (including PRRT excise/royalty and income tax) in the commercial assessments;
- 13.14. Any other matter which the registered holder considers is relevant to the current commercial viability of the development of the discovery; and;
- 13.15. Ensuring that the basis of any model and assumptions used by the registered holder to assess the commercial viability can be justified and, where relevant, ensuring the impacts of reasonable alternative assumptions and methodologies on the conclusions are assessed.
- 13.16. Where, for reasons of commercial propriety, commonly agreed estimates of, for example, project revenues and rates of return, the registered holder may provide its estimates, on an in-confidence basis, or separate data may be provided by individual members of a joint venture, also on an in-confidence basis.
- 13.17. An application should identify the circumstances which would make the relevant discovery commercially viable and address their likelihood of occurrence. The details should include:
 - 13.17.1 Particulars of expected changes to the details provided above which are likely to make development of the discovery commercially viable within 15 years;
 - 13.17.2 Such other matters or information the registered holder wishes to be taken into account in the application, including research and development of relevant technology; and;
 - 13.17.3 Evidence that such changes would be sufficient to make the project viable.

Exploration:

- 13.18. If the blocks included in the application contain other prospective reservoirs, including potentially drillable prospects, then the application should also contain a strategy for assessing the area including any proposed exploration activity in the lease area. This is to ensure that those parts of the lease area beyond the identified field are adequately explored as if they were part of an exploration permit.

Access:

- 13.19. The registered holder should also identify likely impacts on other users of the land and sea and any consultations they have undertaken with users to minimise potential adverse impacts from those activities that may be carried out during the term of the lease. Any issues raised by other users that may affect the grant of the title, and/or the associated conditions, should be brought to the attention of the Petroleum Division of DMP.

13. ATTACHMENT B

GUIDANCE NOTE ON ASSESSING COMMERCIAL VIABILITY OVER PETROLEUM FIELDS

- 14.1. In assessing commercial viability, the Petroleum Division DMP will use a petroleum price appropriate to the life of the field and will not necessarily accept the price used by the registered holder in its assessment. The Petroleum Division DMP will take note of third party claims that particular fields are commercially viable but the assumptions used by the third party will be tested in the same way that an registered holder's claim is tested. Claims and assumptions used by registered holders or third parties will not be accepted if found to be unreasonable.
- 14.2. The Petroleum Division DMP will usually base calculations on petroleum price projections by reputable Government bodies such as ABARE, IEA or US Department of Energy. Recoverable petroleum volumes will usually be based on P50 estimates although P90 might be acceptable for a small registered holder totally reliant on bank finance. The discount rate used in calculations should reflect the expected cost of capital needed to fund the investment. The PD will usually consider projects which have an IRR of 12% or more as commercially viable.
- 14.3. Every retention lease application will have a work program including marketing or technical studies relevant to addressing the commercial obstacles to the development of the field. Where there is considerable doubt about the commercial viability of a field because of uncertainty about its size or reservoir properties, the Petroleum Division DMP will expect the work program to also include field work such as drilling or seismic surveys or seismic reprocessing designed to reduce such uncertainties and move the field closer to production. Petroleum Division DMP consider work programs seriously and a renewal application may be rejected if the operator has not carried out the work program in the previous term.
- 14.4. The Minister is entitled to reject any application where he/she is not satisfied the relevant field is not commercially viable at the time of the application. Applications will also be rejected where the Minister (or delegate under the legislation is not satisfied that the field could be commercially viable within 15 years.
- 14.5. Where an application is rejected on the grounds that it is currently commercially viable, the registered holder has 12 months to apply for a production licence.

15. FIGURE 1

SAMPLE SPREADSHEET

The Hopeful gas field (all prices and costs are in nominal Australian dollars):

Financial year ending 30 June	LNG FOB E9BTU	Gas price (\$/GJ)	Cond Vol MSTB	Revenue LNG USD million	Revenue Con (\$M)	Total Revenue \$AU million	Upstream Opex \$AU million	Downstream Opex \$AU million	Total Opex \$AU million	Upstream Capex \$AU million	Downstream Capex \$AU million	Total Capex \$AU million	Royalty \$AU million	PRRT SAU million	Capital Depreciation Deductions SAU million	CF Pre Govt Take
2013	-	11.3	-	-	-	-	-	-	-	184	9	193	-	-	184	-193
2014	-	11.5	-	-	-	-	-	-	-	416	130	545	-	-20	110	-545
2015	-	11.8	-	-	-	-	-	-	-	649	214	863	-	-59	297	-863
2016	-	12.1	-	-	-	-	-	-	-	933	1,378	2,311	-	-	158	-2,311
2017	-	12.4	-	-	-	-	-	-	-	2,511	3,500	6,011	-	-	138	-6,011
2018	-	12.7	-	-	64.4	-	-	-	-	4,105	5,019	9,123	-	-	120	-9,123
2019	-	13.0	-	-	65.6	-	-	-	-	6,065	5,661	11,726	-	-	105	-11,726
2020	-	13.3	-	-	66.7	-	-	-	-	5,493	4,872	10,365	-	-	92	-10,365
2021	104,914	13.6	3,802	1,431	66.7	1,811	163	166	329	3,558	2,772	6,329	-	-	2,124	-4,847
2022	265,930	14.0	9,582	3,717	66.7	4,698	280	302	582	2,023	1,413	3,436	-	-	4,056	681
2023	403,153	14.3	13,955	5,772	66.7	7,237	398	432	831	835	445	1,280	0	-	5,969	5,126
2024	584,390	14.7	18,771	8,571	66.7	10,591	504	554	1,058	-	-	-	20	-	5,173	9,533
2025	609,939	15.0	19,265	9,165	-	11,289	514	567	1,081	10	-	10	35	-	4,484	10,199
Totals																

Nominal IRR (after company tax and PRRT): 12.0%

ASSUMPTIONS

Inflation rate for all costs and revenues 3.00% pa

Total recoverable reserves 161 PJ at the 50% probability level

Depreciation: 13% Prime Cost Method

Company tax rate 36%

PRRT Exploration was compounded forward at the long-term bond rate of 7.63% plus 15%
Capital expenditure was compounded forward at the long-term bond rate of 7.63% plus 5%

IRR A bench mark IRR of 12% nominal after company tax and PRRT is considered by the titleholder to be an appropriate hurdle rate of return for the Hopeful field, based on the assumptions used in this analysis

Note: The assumptions used in this Figure are for illustration purposes only and do not imply acceptance of an application based on them.