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The Shell Company of Australia Limited



Vic/P19 Evaluation

Part 2

Field Development Alternatives & Costs

RISC

September 1998

Strictly Confidential



20th Nov. 1998

SDA Facilities Engineering Cover Note for:

Vic/P19 Evaluation Part II, Field Development Alternatives & Costs,
Dated September 1998,
Published by Resource Investment Strategy Consultants Pty. Ltd.

Purpose of Cover Note

The purpose of this cover note is to formally record the SDA (Shell Development Australia) facilities engineering view on the above report, and, where SDA's view differs from RISC's ("Resource Investment Strategy Consultants"), to document the difference.

Introduction

As stated in the introduction to RISC's report, SDA and RISC worked closely throughout the study. Consequently accepts the great majority of the report (concepts and costs) as a sound basis for screening the oil and gas resources of Vic P19.

The only important area where SDA's view differs from RISC's is on well costs.

SDA vs. RISC Well Costs

During the study RISC agreed that the well costs they quoted were likely to represent cheapest achievable wells, rather than a realistic average cost per well during an appraisal and field development drilling campaign. This was recognised in section 4.0 by the statement:

(Quote) "Consequently, whilst the costs presented for drilling are considered to be credible performance targets, the accuracy range could be considered to be more in the range -10% +50%." (Unquote).

Therefore, SDA prepared their own drilling cost estimates, which were generally about 45% higher than RISC's. As a result, for input to economic evaluations, the RISC well cost estimates were all multiplied by the factor 1.45.

The SDA cost estimates were prepared with input from drilling department, and were based on SDA's current contract for the Ocean Bounty.

Assumptions, calculations and comparison with the RISC costs are shown in attachment 1.

Signed

Chris Spencer SDA-UTF/3 This is an enclosure indicator page.

The page that follows this page is an uncatalogued fold-out with page number:

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and is enclosed within the document PE801824 at this page.

RISC STUDY

Declaration

Shell Development (Australia) Pty Ltd ("Shell") has commissioned Resource Investment Strategy Consultants, RISC Pty Ltd ("RISC") to confidentially evaluate selected technical information supplied by Shell in order to provide reservoir and facility engineering services in support of Shell's ongoing management of its interest in Vic/P19. Neither RISC Pty Ltd nor its employees has any pecuniary interest or other interest in relation to the asset other than to the extent of the professional fees receivable for providing services to Shell.

The statements and opinions attributable to us are given in good faith and in the belief that such statements are neither false nor misleading. In carrying out our tasks, we have considered and relied upon information provided by Shell. While every effort has been made to verify data and resolve apparent inconsistencies, neither RISC nor its servants accept any liability for its accuracy, nor do we warrant that our enquiries have revealed all of the matters which an extensive examination should disclose, particularly where we have reason to believe that material facts have not been supplied to us.

We believe our evaluation and conclusions are sound but no warranty of accuracy or reliability is given.

Our review was carried out only for the purpose referred to above and may not have relevance in other contexts.

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September 1998 Rev.0

Executive Summary

Resource Investment Strategy Consultants, RISC Pty Ltd ("RISC") were commissioned by Shell Development (Australia) Pty Ltd ("Shell") to provide assistance in evaluating field development options and associated costs for development of the VIC/P19 resources.

RISC has worked in conjunction with Shell technical staff to develop, at a screening level, an evaluation of various field development concepts that could be employed to exploit, either separately or in an integrated manner, the oil and gas resources of VIC/P19 (Basker, Manta and Gummy).

Against the background of a range of possible development scenarios for the oil and gas resources associated with Basker, Manta and Gummy - standalone or satellite development, separate or integrated oil and gas development, alternate gas market scenarios - there are a large number potential export route options and associated alternate facility concepts.

The evaluation is predicated on the assumption that Kipper would be developed by way of a subsea development producing raw gas products to an onshore plant at Orbost, and that there is no solution for economic development of Kipper oil alone. Further, and under this scenario, the point of access into the gas market is assumed to be at Longford, and hence there is requirement for a 150km pipeline between Orbost and Longford.

In addition to options for export through a possible Kipper development, alternate export routes via the nearby ESSO/BHPP platforms or directly to the shore were assessed. The alternate development concepts addressed included leased and project owned Floating Production Storage & Loading (FPSO) and wellhead platform or subsea satellite options for oil development, and wellhead / process platform or subsea satellite concepts for gas only or integrated oil and gas development scenarios.

Mindful of the objectives of this study, it was not appropriate to explicitly evaluate each of the possible combinations of export routes and concepts by way of determining respective development costs and undertaking economic analysis for each. Therefore, an approach was adopted whereby competing concepts where screened out on a semi quantitative basis leaving only a few key concepts to be addressed in more detail.

This process identified the following generic concepts which are expected to deliver the lowest life cycle unit costs and which have no reliance on existing developed infrastructure:-

- oil only leased FPSO.
- gas only subsea gas satellite to a Kipper subsea facility.
- oil and gas leased FPSO preceding a subsea gas development (as a satellite to Kipper) which employs maximum re-use of oil development wells and production facilities.

These selected concepts were then used as the basis for addressing a range of standalone and integrated development scenarios and alternate gas market scenarios.

The basis for developing costs estimates has been drawn largely from data provided in relation to the various Retention Lease Applications submitted for both VIC/P19 and VIC/RL2. Where relevant data was not available from the above referenced material, RISC has employed its own databases and associated cost engineering models in conjunction with any similarly relevant information available from Shell.

All costs, with the exception of those explicitly discussed below, are considered to represent "P50" (or 50/50) values and by definition include a measure of contingency. Because of the extent of relevant and recent benchmarking data available, it is suggested that the costs developed for this study could be



considered to have a "P85"/"P15" accuracy range of the order of -20% to +30%, <u>for the scopes</u> <u>defined for each case presented</u>, with the exception of drilling costs and leased / low cost FPSOs, where a "best practice / bullish view" has been adopted.

In summary, capital costs under the base gas market scenario and subsea developments for standalone development of Manta/Gummy and Kipper each with dedicated offshore export and onshore processing / export amount to ~A\$580million and ~A\$510million respectively including appraisal, or a total of A\$1090million. On an integrated basis where export and processing infrastructure is shared in some way, the total capital costs for development of both assets is estimated to be ~A\$800million of which A\$285million relates to Manta/Gummy (tied back to Kipper), ~A\$140million is required for Kipper (excluding export etc.), and A\$375million relates to the export / processing system from Kipper to Longford. The capital saving across the two assets through integration is therefore of the order of A\$300million.

For the oil development scenarios, the total capital cost for development of Basker / Manta is estimated to be ~A\$120million and ~A\$210million respectively for leased or project owned FPSOs, inclusive of appraisal. The respective peak annual operating costs amount to A\$50million and A\$20million. This compares to an estimated capital cost for development of Basker / Manta as a subsea satellite to Tuna of ~A\$220million and peak annual operating cost of A\$9million, excluding tariffs. Although the capital cost estimate includes provision for the addition of a process module on Tuna, tariffs for the export / compression of oil and gas would be raised - nominal estimates for such tariffs are A\$1.50/bbl and A\$0.60/GJ at minimum.

In terms of gas development options, the target production start-ups are driven by views of the gas market. For all gas market scenarios, it is presumed that Kipper would be developed first followed by Manta / Gummy. The earliest market opportunity for Kipper is envisaged to occur in the year 2002 and against the background of Kipper's present status, development and start-up by early 2002 is considered quite achievable.

For the Manta / Gummy gas development scenarios, and assuming market opportunities emerge (following Kipper) in 2005, appraisal and project definition would need to be completed by end 2002 with Prime Scope Approval (PSA) occurring in early 2003.

Under the scenario where an integrated development with Kipper is contemplated, then in order for common export / processing systems to be adequately defined and commercial arrangements put in place, an earlier completion of Manta / Gummy appraisal would be required prior to the Kipper development PSA assumed to be early 2000. For this to be achieved, at least one appraisal well would need to be drilled early - mid 1999 irrespective of the timing of a later Manta / Gummy development.

For oil development, an aggressive schedule can be envisaged which requires an appraisal well to be drilled in Basker in early 1999 in order to achieve completion of project definition and PSA by January 2000. This then allows a period of 12 months for the procurement and installation of equipment and contracting of a leased FPSO. Certain items, including for example flexible flowlines and subsea xmas trees will be critical path perhaps requiring order placement prior to PSA. The highest schedule risk associated with this scenario is of course the securing of a suitable FPSO. Since the economics of any development employing an FPSO will almost certainly rely on securing a vessel at a low day rate, this development within the above timeframe may well not be achievable simply because a suitable vessel is not available on the market.

1.0 Introduction

Resource Investment Strategy Consultants, RISC Pty Ltd ("RISC") were commissioned by Shell Development (Australia) Pty Ltd ("Shell") to provide assistance in evaluating field development options and associated costs for development of the VIC/P19 resources.

RISC has worked in conjunction with Shell technical staff to develop, at a screening level, an evaluation of various field develop concepts that could be employed to exploit, either separately or in an integrated manner, the oil and gas resources of VIC/P19 (Basker, Manta and Gummy). The field development concepts have been optimised as far is prudent to do so at a screening level with regard to subsurface and facility development scenarios. For gas, a number of alternate gas marketing scenarios were also considered.

Because of the potential high degree of synergy that exists between VIC/RL2 resources (Kipper) and the VIC/P19 resources, it has been necessary to not only assess development costs of Kipper, but also to define the facility scopes and costs associated with shared or common infrastructure that might be jointly employed to exploit the VIC/RL2 and VIC/P19 resources.

This report documents the full range alternative development concepts considered, the outline functional specifications and costs defined for a representative set of development scenarios (facility concepts, reserve ranges and gas marketing scenarios), and provides a comprehensive set of economic modelling inputs in the form of phased activity, production and cost data sheets.

2.0 Development Concepts

Against the background of a range of possible development scenarios for the oil and gas resources associated with Basker, Manta and Gummy - standalone or satellite development, separate or integrated oil and gas development, alternate gas market scenarios - there are a large number potential export route options and associated alternate facility concepts. A set of plausible field development options, as a function of export routes and facility concepts were defined and are depicted in Figure 2.1. These are predicated on the assumption that Kipper would be developed by way of a subsea development producing raw gas products to an onshore plant at Orbost, and that there is no solution for economic development of Kipper oil alone. Further, the point of access into the gas market is assumed to be at Longford, and hence a 150km pipeline between Orbost and Longford is provided for in all cases.

In defining the export route options, the following assumptions have been made and, in regards to options for tie-in to ESSO/BHPP infrastructure, are based on informal discussions held between ESSO and SDA:-

Tuna platform, ~29km from Basker

This represents the most suitable option for tie-in to the existing Esso/BHPP infrastructure. The platform is understood to have some spare topsides carrying capacity and is considered capable of accommodating either or both of:-

- a small oil separation / metering skid and water injection package suitable for a Basker / Manta oil development (associated gas assumed to be compressed using the existing Tuna gas lift / export gas compression plant), and
- a gas / condensate separation and export gas compression module for handling gas production from a (Basker) / Manta / Gummy gas development (whilst there may be some scope for utilising existing plant to provide the key functions outlined above, this potential has not been assessed as part of this study)



Flounder and West Tuna platforms

- although closer to the Vic/P19 fields, the Flounder platform is not believed to have any spare topsides carrying capacity.
- the West Tuna platform is thought to have greater additional topsides carrying capacity, but is any event, more distant from the Vic/P19 fields and does not have a gas export pipeline

Export to Kipper, ~15km

 predicated on Kipper being developed as a subsea facility exporting raw wellhead gas 55km to a greenfields gas plant at Orbost; this option is only relevant for gas export.

Export directly to shore, ~70km

• assumes a gas plant located at Orbost adjacent to or integrated with a Kipper plant; export to shore is only felt to be a practical option for gas export.

In summary, the alternate concept options consist of FPSO and wellhead platform or subsea satellite options for oil development, and wellhead / process platform or subsea satellite concepts for gas only or integrated oil and gas development scenarios. Mindful of the objectives of this study, it was not appropriate to explicitly evaluate each of these concepts by way of determining respective development costs and undertaking economic analysis for each. Therefore, an approach was adopted whereby competing concepts where screened out on a semi quantitative basis leaving only a few key concepts to be addressed in more detail.

2.1 Base Case Concepts

On the basis of comparable project comparisons and intuition, the following concepts which are expected to deliver the lowest life cycle unit costs and which have no reliance on existing developed infrastructure, were selected as a base case for standalone and integrated development scenarios:-

- oil only leased FPSO.
- gas only subsea gas satellite to a Kipper subsea facility.
- oil and gas leased FPSO preceding a subsea gas development (as a satellite to Kipper) which employs maximum re-use of oil development wells and production facilities.

These concepts, along with any relevant technical comments, are summarised briefly below. Notional field layouts based on the P50 reserves cases, configured to provide for both standalone Basker / Manta oil development or integrated oil / gas development scenarios, are indicated in Figures 2.2 and 2.3.

Oil Only - Leased FPSO

This concept represents a simple subsea / FPSO combination with either well cluster(s) or single wells located over Basker / Manta with individual flowlines tied back to turret moored FPSO. For the P50 reserves case, 2 production wells and a gas injection well are located in a cluster over Basker, whereas only a single production well is required for Manta. Some of the more specific assumptions are:-

- wellheads located outside of required clearance radius of a moored FPSO and offtake tanker so as to allow concurrent production and drilling operations as required.
- principal objective is to minimise flowlines lengths so as to minimise fluid temperature drop (and hence wax formation potential).
 - in the case of the Manta well (s), the notional wellhead location provides an ability for subsequent re-entry, sidetrack, completion and tie-back to a combined Manta / Gummy gas production manifold for a gas development.
 - minimising flowline lengths comes at the expense of higher drilling costs; some scope for optimisation may exist, but extending flowline lengths will tend to



exacerbate wax formation management (temperature drop, and movability in the event of static wax formation conditions).

- wellheads located adjacent to each other so as to allow for a simple cross-over facility between wellhead flowline connection so as to offer the opportunity to circulate flowline contents in the event of wax formation or line flushing requirements; in the case of Manta, twin flowlines are assumed even for a single well so as to provide for the ability to flush line contents in case of wax build-up.
- gas compression on FPSO for gas injection of associated gas production, after fuel and flare requirements, to a single gas injection well and to each production well annulus via a small diameter control umbilical core (or separate flowline to each cluster) to provide for gas kick-off.

The general concept proposed for this scenario is well proven worldwide although specific technical issues relating to an application for Basker / Manta are:-

- wax formation will present some operational challenges although these are not considered unsurmountable.
- gas injection will require a high pressure swivel, technology for which is considered available and adequately proven today.

In estimating costs, a number of assumptions were made with respect to the FPSO which must be considered to represent an optimistic scenario. Specifically, these were:-

- an already converted and operating FPSO suited to the Basker / Manta requirements becomes available for sale.
- sale price is commensurate with such a vessel having only limited remaining years of practical operating life.
- beyond minor refurbishment and minimal mooring modifications, only gas compression equipment has to be added.
- such a vessel is already equipped with crude heating / cargo tank circulation systems.

If the economics for an oil only development, under the above scenario, were to appear favourable then a more rigorous assessment of these assumptions and confirmation of the attendant cost implications through market enquiries would be required.

Gas Only - Subsea tie-back (to Kipper subsea facility)

For this scenario, a single well cluster / manifold would be located between Manta and Gummy which for the cases addressed require up to 6 - 8 wells; conceptually, gas from Basker (following oil depletion and gas injection) could also be produced and tied back into this manifold. Each well would be connected by short jumpers to a "daisy chain" style manifold (capable of expansion to handle additional wells as required). The use of a carbon steel export pipeline, assumed to be the basis for the Kipper - Orbost pipeline, will most likely necessitate wellhead cooling through the use of subsea duplex heat exchangers between the wellheads and the manifold in order to reduce pipeline corrosion to an acceptable level; this is essentially the way in which the East Spar gas field has been developed. Other features of this scenario are:-

- well and manifold control functions and chemical injection capability provided by a locally moored Navigation Control and Communication (NCC) buoy, again also as per East Spar.
 - extension of Kipper control system not assumed to be practical unless this too is founded on the use of a local NCC buoy or equivalent.

- export by carbon steel pipeline of raw wellhead fluids 15km to a tee connection at the Kipper manifold.
 - sizing of the pipeline and reservoir production potential have been defined so as to not impact on the Kipper production potential.
 - cost allowances have also been made to increase the size of the Kipper to Orbost pipeline and onshore plant, again so as not to compromise Kipper production potential.
 - corrosion inhibitor and hydrate depressant chemicals injected on a continuous basis.

This concept is extremely analogous to that of the East Spar gas development off North West Australia and the application of a similar concept to development of Manta and Gummy is therefore considered valid; some technical aspects are, however, worth noting.

- one of the notional Manta well locations results in a substantial horizontal departure and consequential high well cost if the wellhead were to be located adjacent to the manifold; tie-back, on a life cycle cost basis, may prove to be more cost effective through the use of a 2 3km flowline.
- seabed temperatures are substantially lower than those in the East Spar area, hence higher hydrate inhibitor (MEG, DEG or TEG) concentrations will be required; in the event that storage volumes required for an NCC buoy concept become unmanageable, then supply from onshore via a separate small diameter pipeline may be required overall project cost impact not expected to be significant.

Kipper - Orbost - Longford export / processing system

This system would essentially comprise an offshore pipeline to an onshore gas plant at Orbost, and an onshore pipeline connection to Longford.

Depending on the selected gas market scenario, the offshore / onshore Kipper - Orbost pipeline, ~ 55km, is estimated to range from 20" to 26" to satisfy sales gas MDQs of 155TJ/d to 310TJ/d (40PJ/yr to 80PJ/yr ACQ); similarly the Orbost - Longford pipeline size ranges form 14" to 18".

Assumptions regarding the onshore plant are as follows:-

- the Orbost gas plant is presumed to include CO2 removal, LPG extraction, gas dehydration and export compression.
- compression requirements (compression ratio / timing) have been defined as a function of the required capacity(s) / production potential(s) over the peak delivery period; compression is envisaged to be installed in two stages where the first installation provides for up to 3:1compression ratio from "day 1" with a second stage installation providing for a total 9:1 where timing is driven be field production potential requirements.
- principal system operating pressure assumptions are:-
 - 900psi / 800psi minimum offshore pipeline entry (Kipper) / outlet (Orbost) pressures with 3:1 onshore compression; 550psi / 385psi with 9:1 onshore compression.
 - 2100psi / 1500psi normal onshore pipeline entry (Orbost) / delivery (Longford) pressures.
 - onshore plant system pressure drop assumed to increase from 100psi to 150psi over the peak delivery period.



2.2 Alternate Development Concept Screening

The following outlines in brief the key issues associated with the various alternate development concepts and associated options. Where possible, the rationales at a qualitative level for elimination of options are identified. Costs have been used as the principal criteria where the reference cases are those associated with a leased FPSO for an oil only development and a subsea tie-back to a subsea Kipper facility for a gas only development.

Oil only

Project owned FPSO

- only on the basis that a project owned FPSO can be implemented for similar capital costs, plus a component of project management, to those defined for determining a leased FPSO day rate, then a project owned option may be more attractive given more than three or four years service.
- downside of project owned solution is exposure compared to that of a leased option in the event of a shorter than planned field life.
- nevertheless, this option warrants economic assessment to determine whether the substantial shift from an operating cost intensive scenario under a leased arrangement to a capital intensive scenario is likely to be more attractive.

Subsea tie-back to Tuna

- subject to satisfactory resolution of wax formation management issues over ~29km flowline, a subsea tie-back to Tuna may offer lower capital costs compared to a project owned FPSO and certainly lower direct operating costs, although there is exposure to tariffs from Esso/BHPP being offered at too high a level.
- downside of this solution is exposure high levels of capital investment (compared to that of a leased FPSO option) in the event of a shorter than planned field life.
- upside is that produced gas can be exported to add value with field pressure maintenance being provided through water injection; the latter also slightly improves reservoir production performance.
- option should be retained for specific economic analysis.

Wellhead platform tie-back to Tuna

- same issues as identified for subsea tie-back.
- however, water depths over Manta and Basker range from ~130m to ~250m and even at the shallower depths, the cost of a wellhead platform will be prohibitive.
- furthermore, it is highly unlikely that jack-up drilling would be either technically possible or cost effective, assuming that a platform were to be located in shallower water depths to the north of the fields.
- consequently, wells could only be drilled through the use of a tender assisted or fully integrated platform drilling system, both of which would almost certainly not be cost effective for this application.
- despite some possible benefits (access, maintenance etc.) in surface completed wells, a
 wellhead platform option does not appear to offer any overall benefit over a subsea
 completed well system.

Gas only

Integrated well and process platform with gas export to Tuna, Kipper or shore (Orbost)

- given a similar well number requirement for a gas development as for an oil development, there is likewise considered to be no possible benefit in surface completed wells.
- considering only manifolding requirements and the requirement for wellhead fluid cooling prior to entry into a carbon steel export pipeline, again the subsea alternative is considered to be more cost effective than an equivalent platform based solution in these water depths.
- as far as providing process facilities for gas export, either on a floating or fixed platform, this option is unlikely to have any worth for the following reasons.
 - export of treated and compressed gas to a subsea Kipper facility would serve no benefit since this gas would then be blended with "wet" raw Kipper gas and be subject to Kipper export pipeline operating pressure constraints.
 - this is on the basis that the potential for substantial water break through is considered minimal.
 - Esso/BHPP operate a wet gas export system, and hence there would be no benefit
 in dehydrating gas, therefore the only possible processing function would be
 compression.
 - since the cost of installing a separate production gathering and compression
 platform would substantially exceed the equivalent cost of the alternative
 subsea gathering system and compression module addition at Tuna, this
 option would not appear to be attractive (tariffs for subsea or platform
 options would be similar).
 - furthermore, it is understood that additional pipeline capacity from Tuna to Marlin would required through looping.
 - when considering the penalty of a dedicated pipeline (albeit a line of smaller diameter given offshore compression) to shore and the incremental cost of placing a process platform with dehydration and compression offshore compared with providing a plant with equivalent requirements onshore, it is highly unlikely that this would result in a lower overall life cycle cost than the subsea tie-back option to Kipper.

Subsea tie-back to Tuna or shore (Orbost)

- this concept would be almost identical to that for a tie-back to Kipper excepting that in both instances capital costs would be greater.
 - whilst the distance to Tuna, ~29km, is greater than that to Kipper, ~15km, resulting in higher cost, it is unlikely that the tariff that may be levied by Esso/BHPP would be any less than that required to export through Kipper Orbost, especially since additional Tuna to Marline pipeline capacity would be required; further, it is likely that export through Esso/BHPP would be later than that which could be achieved through Kipper or direct to the shore.
 - export to the shore directly would potentially allow an earlier gas market
 entry but this would be at the expense of the cost of a dedicated pipeline
 ~70km to shore rather than just 15km to Kipper; any timing benefit would
 be unlikely to cover the incremental cost of the pipeline, but may also
 frustrate the opportunity to share an onshore plant with Kipper resulting in
 still higher costs.



Wellhead platform tie-back to Tuna or shore (Orbost)

• as per reasons discussed for other options (ie. "oil only" or integrated well / process platform "gas only"), there is perceived to be no benefit in a wellhead tower compared to the subsea alternate.

Oil + Gas

Integrated oil and gas development scenarios are predicated on the basis of oil development ahead of gas, or possibly simultaneously. Conceptually, sequential development of oil followed by gas would allow the maximum opportunity to reuse wells and facilities through adopting the optimum development concepts for "oil only" and "gas only", ie. leased FPSO for oil and subsea satellite Kipper for gas.

- in theory, both these options could be implemented simultaneously, although the equipment reuse potential may be somewhat less.
- in practice, however, sequential development is perhaps more suited to earliest development of the oil resource and development of gas as sales opportunities (under optimum development conditions) emerge 2005+.

Even considering the combined cost of a separate oil development employing an FPSO and a subsequent gas development by way of a subsea tie-back to Kipper, it is not considered likely that the life cycle cost of an integrated oil and gas processing facility would be more attractive. The principal reasons are:-

- all wells would still be subsea.
- there would most likely be a measure of subsea manifolding for the gas wells.
- similar costs for oil or gas export would apply.
- the cost differential again directionally reduces to the difference between placing the gas facilities offshore versus onshore in the case of comparing the subsea gas alternative, the former being significantly less expensive and driven also by the water depth (150m central to all fields).

In the context of a broader potential to jointly develop the resources of Kipper and Basker / Manta / Gummy, there is conceptually potential to locate an integrated well / process platform at Kipper with oil export to Tuna, and gas export via a smaller diameter compressed export pipeline to the shore. Despite this alternative being considered as a fully integrated case, the effective cost allocation to Basker / Manta / Gummy would directionally be at best similar but most likely greater than the combined costs of a leased FPSO (oil) / subsea tieback (gas) to Kipper options; hence there would at face value seem to be little benefit of an integrated production platform system for Vic/P19. It is also felt unlikely that for Kipper, there would be any substantial cost benefit. On this basis, it is suggested that this case not be further addressed at this point in time.

3.0 Selected Development Cases

On the basis of the alternative concept screening exercise, the following base case and sensitivity development concepts were selected for further definition and costing in regards to the assessment of the VIC/P19 resources:-

Base Cases, VIC/P19

- leased FPSO oil only development including gas injection (Basker / Manta).
- subsea satellite to Kipper gas only development (Manta / Gummy).
- leased FPSO oil development (Basker / Manta) followed by subsea gas development (Basker / Manta / Gummy) tied back to Kipper with maximum re-utilisation of oil wells and facilities.
 - note that for this case, the gas reinjected during the oil development is recovered through the tie back of the Basker injection well to the main Manta / Gummy gas gathering system.

Sensitivity Cases, VIC/P19

- project owned FPSO oil only development (Basker / Manta).
- subsea satellite to Tuna oil only development with associated gas sales and water injection (Basker / Manta).

In order to allow identification of the incremental value afforded through integration of VIC/P19 with VIC/RL2, standalone cases where also developed as per:-

Standalone Cases, VIC/P19

• subsea gas development of VIC/P19 with gas export via dedicated offshore pipeline, onshore gas plant and onshore pipeline (Manta / Gummy).

Standalone Cases, VIC/RL2

- leased FPSO development of VIC/RL2 (Kipper).
- subsea gas development of VIC/RL2 with gas export via dedicated offshore pipeline, onshore gas plant and onshore pipeline (Kipper).

All the above cases were assessed against the background of P50 reserves estimates and the "medium" (base) case gas marketing scenario, refer VIC/P19 evaluation Part 1, except for:-

Reserves

- P85 and P15 reserves levels assessed for:-
 - VIC/P19 leased FPSO oil only development (Basker / Manta)
 - " subsea satellite to Tuna "
 - VIC/P19 subsea satellite to Kipper gas only development (Manta / Gummy)
 - combined VIC/P19 & VIC/RL2 subsea gas development

Gas Market Scenarios

- "lo-low", "low" and "high" gas market scenarios for:-
 - subsea satellite to Kipper gas only development (Manta / Gummy)
 - combined VIC/P19 & VIC/RL2 subsea gas development



Table 3.1 Summary Case Matrix

| | Vic | /P19 | | Vic/P19 | Vic/P19 | | Vic/P19 | |
|-----------------------------------|-----------------|-------------------|----------------|----------------------------|----------------------------|-----|----------------------------------|----|
| Standalone | B/M oil only | la, la(owned) | M/G gas only | 1c | | | 710117 | |
| Integrated (tariffs) | B/M oil only | 21 | M/G gas only | 2e, 2e(i), 2e(ii), 2e(iii) | B/M/G gas only (after oil) | 2f | B/M oil (standalone) + B/M/G gas | 2g |
| | К | pper | | Klpper | | | | |
| Standalone | oil only | 1b | gas only | 1d, 1d(li) | | | | |
| Integrated (tariffs) | oil only | 2b | gas only | 2c, 2c(l), 2c(ll) (2c(lli) | | | | |
| | Shared infrasi | iructure (tariff) | Shared inf | rastructure (no tariff) | | | | |
| OII | FPSO at Basker | 2a | | - | | | | |
| Gas | | | İ | _ | | - 1 | | |
| - lo-low" | 40PJ/yr | 2d(1) | K/M/G gas only | 3b(l) | J | | | |
| - "low" market | 40PJ > 60PJ/vr | 2d(ii) | K/M/G gas only | 3b(ii) | 1 | | | |
| "base" market | 60PJ/yr | 2 d | K/M/G gas only | 3b | İ | 1 | | |
| - "high" market | 60PJ -> 80PJ/yr | 2d(III) | K/M/G gas only | 3b(lii) | 1 | | | |

Table 3.2 Detailed Case Listing

| Standalone | developments |
|------------|--|
| la | Basker / Manta oil only with gas injection (FPSO leased) |
| la P85 | Basker / Manta oil only with gas injection (FPSO leased) - P85 volumes |
| la P15 | Basker / Manta oil only with gas injection (FPSO leased) - P15 volumes |
| la (owned) | Basker / Manta oil only with gas injection (FPSO project owned) |
| 1 b | Kipper oil only |
| lc | (Basker) / Manta / Gummy gas only - "medium" (base case) gas market scenario |

ld Kipper gas only - "medium" (base case) gas market scenario

| Satellite d | evelopments (third party tariffing) |
|-------------|---|
| 2a | Basker / Manta / Kipper common oil production and export system |
| 2b | Kipper oil only tie-back (to Basker / Manta oil development - under this scenario, Kipper gas development would be delayed) |
| 2c & 2c(iii | Kipper gas only - "medium" (base case) & "high" gas market scenario (precedes Gummy/Manta gas development) |
| 2c(i) & 2c(| ii) Kipper gas only - "lo-low" & "low" gas market scenario (precedes Gurumy/Manta gas development) |
| 2đ | Kipper / (Basker) / Manta / Gurumy common gas export / processing system (Kipper manifold to Longford) - "medium" (base case) gas market scenario |
| 2d P85 | Kipper / (Basker) / Manta / Gummy common gas export/process system (Kipper to Longford) - "medium" (base case) gas market scenano - P85 volumes |
| 2d P15 | Kipper / (Basker) / Manta / Gummy common gas export/process system (Kipper to Longford) - "medium" (base case) gas market scenario - P15 volumes |
| 2d(i) | As per 2d but with "lo-low" gas market scenario |
| 2d(ii) | As per 2d but with "low" gas market scenario |
| 2d(iii) | As per 2d but with "high" gas market scenario |
| 2e | Manta / Gunnny gas only tie-back (to Kipper gas only development) - "medium" (base case) gas market scenario • |
| 2e P85 | Manta / Gummy gas only tie-back (to Kipper gas only development) - "medium" (base case) gas market scenario - P85 volumes |
| 2e P15 | Manta / Gummy gas only tie-back (to Kipper gas only development) - "medium" (base case) gas market scenario - P15 volumes |
| 2e(i) | As per 2e but with "lo-low" gas market scenario |
| 2e(ii) | As per 2e but with "low" gas market scenario |
| 2e(iii) | As per 2e but with "high" gas market scenario |
| 2f | Basker / Manta / Gurmmy gas only tie-back but after Basker/Manta oil development - "medium" (base case) gas market scenario |
| 2g | Basker / Manta oil development followed by Basker / Manta / Gummy gas only tie-back - "medium" (base case) gas market comorio |
| 2h | Basker / Manta oil development with Kipper tariffed (under this scenario, Kipper gas development would be delayed) - case not evaluated |

Basker / Manta oil development followed by Basker / Manta oil development - "medium" (base case) gas market scenario
Basker / Manta oil development followed by Basker / Manta / Gummy gas only tie-back - "medium" (base case) gas market scenario
Basker / Manta oil development with Kipper tariffed (under this scenario, Kipper gas development would be delayed) - case not evaluated
Basker / Manta oil only with water injection (Tuna satellite)
Basker / Manta oil only with water injection (Tuna satellite) - P15 volumes
Basker / Manta oil only with water injection (Tuna satellite) - P85 volumes

Integrated developments (full co-operative zero tariffing)

| 3a | Basker / Manta / Kipper oil devt integrated with Basker / Manta / Gurnmy / Kipper gas - "medium" | (hase case) as s market scenario |
|-------|--|--|
| 3b | Kipper + Manta/Gummy gas only - "medium" (base case) gas market scenario | (base case) gas market scenario - case not evaluated |
| 3b(i) | Kipper + Manta/Gummy gas only, "In-low" gas market scenario | 4 |

30(i) Kipper + Manta/Gummy gas only - "lo-low" gas market scenario
3b(ii) Kipper + Manta/Gummy gas only - "low" gas market scenario
3b(iii) Kipper + Manta/Gummy gas only - "high" gas market scenario

Notes:-

- 1 Alternate gas market scenarios defined as "low/low", "low", and "high" where case references are suffixed as (i), (ii) and (iii) respectively
- 2 Unless indicated otherwise, all cases based on P50 volumetrics; case reference suffixes "P85" & "P15" refer to cases based on P85 & P15 volumetrics



4.0 Appraisal and Development Costs

The basis for developing costs estimates has been drawn largely from data provided in relation to the various Retention Lease Applications submitted for both VIC/P19 and VIC/RL2. These data have been considered and adapted as required in order to provide the basis for addressing the full range of alternate development scenarios addressed in this study.

Where relevant data was not available from the above referenced material, RISC has employed its own databases and associated cost engineering models in conjunction with any similarly relevant information available from Shell.

All costs, with the exception of those explicitly discussed below, are considered to represent "P50" (or 50/50) values and by definition include a measure of contingency. These costs should generally be considered to be of a "screening" type confidence level. However, because some components of the cost estimates are drawn from public domain reported project costs or study work which has accessed relevant historical and local Bass Strait / Australian experience, the accuracy level is considered to be better than the traditional ~ +/-40% applied screening level costs. This applies to cost estimates relating to, for example, pipelines, onshore plants, and subsea gas systems (ref. the recent East Spar gas project). Recognising also that the "P85" or "P15" outcomes for all components of a development are highly unlikely to occur at the same time, it is suggested that the costs developed for this study could be considered to have a "P85"/"P15" accuracy range of the order of -20% to +30%, for the scopes defined for each case presented.

The exceptions to the above relate to drilling costs and leased / low cost FPSOs, where a "best practice / bullish view" has been adopted.

In the case of drilling, the estimates presented for appraisal and development drilling are designed to reflect the dramatic cost reductions which have been and continue to be achieved in the industry. These reductions stem from a combination of improvements in design efficiency, operational efficiency and technology leading to reductions in drilling times, material and consumables costs. Recent examples of significant drilling cost reductions in Australia are exemplified by BHPP's recent reductions in Timor Sea drilling times by up $\sim 40\%$, and Woodside's exploration and development drilling operations on the North West Shelf. The estimates are also predicated on the basis that there will be a softening in the rig market by mid 1999 as compared to late 1997 / early 1998 rig rates, and a continued softening through to the year 2000+ when development drilling could conceptually commence for VIC/P19 oil or gas development. Consequently, whilst the costs presented for drilling are considered to be credible performance targets, the accuracy range could be considered to be more in the range -10% to +50%.

In the case of oil development scenarios based on the use of an FPSO, the approach to defining costs has been driven by the expectation that unless "industry minimum" costs can be achieved, then development would not be economic. By definition, therefore, the costs presented for the FPSO units, either leased or project owned, are not "P50" (or 50/50) estimates; rather they reflect perhaps a "P30" outcome. The costs have been predicated on the basis that right vessel with existing suitable mooring, production and safety systems becomes available at the right time. These conditions must of course be coupled with such a vessel becoming available at the right price, and therefore necessarily suggests that this points to an "old vessel" with perhaps limited remaining serviceable life. A recent example of such a vessel would perhaps be the sale of the Skua Venture which conceptually would have been suitable with limited modification and upgrade for application on VIC/P19. This vessel is now being leased back to the Elang-Kakatua JV, and is understood to be a possible candidate for later deployment on the Buffalo field.

Beyond the important assumptions upon which this case is predicated, it has been assumed such a vessel would not be available with gas injection compression and hence additional costs have been added accordingly. For the lease scenario, a base day rate for the FPSO/mooring system of A\$125,000/day has been assumed along with a A\$10million mobilisation/installation charge. For a project owned FPSO scenario, the same background capital costs for the leased case were used but with the addition of 10% project management costs to cover a potential contractor's costs.

In summary, capital costs under the base gas market scenario and subsea developments for standalone development of Manta/Gummy and Kipper each with dedicated offshore export and onshore processing / export amount to A\$576million and A\$514million respectively including appraisal, or a total of A\$1090million. On an integrated basis where export and processing infrastructure is shared in some way, the total capital costs for development of both assets is estimated to be A\$799million of which A\$285million relates to Manta/Gummy (tied back to Kipper), A\$139million is required for Kipper (excluding export etc.), and A\$375million relates to the export / processing system from Kipper to Longford. The capital saving across the two assets through integration is therefore of the order of A\$300million.

Tables 4.1 - 4.2 and Figure 4.1 indicate the allocation of costs across the major project cost categories for the key Manta/Gummy and Kipper scenarios. Figure 4.2 indicates the relative total standalone capital costs and the saving potential through integration.

Table 4.1 Standalone Development Cost Summaries

Standalone Manta/Gummy development Dedicated offshore and onshore export system

| | | 40PJ/yr ACQ (155TJ/d MDQ) |
|--|-------|----------------------------|
| Appraisal drilling | | 39 |
| Development drilling | | 92 |
| Subsea systems and control (ex NCC buoy) | | 116 |
| | | 97 |
| Onshore plant | | 136 |
| Compression | | 30 |
| Onshore pipeline | | |
| Other | | 5 |
| | Total | 576 |
| Offshore pipeline Onshore plant Compression Onshore pipeline | Total | 97 136 30 61 5 |

Standalone Kipper development Dedicated offshore and onshore export system

| 60PJ/yr | ACO | (230TJ/d | MDO) |
|---------|-----|----------|------|
| | | | |

| Development drilling 60 Subsea systems and control (ex onshore) 76 Offshore pipeline 84 Onshore plant 177 Compression 146 |
|---|
| Subsea systems and control (ex onshore) Offshore pipeline Onshore plant 76 84 177 |
| Offshore pipeline 84 Onshore plant 177 |
| Onshore plant |
| |
| Compression 46 |
| Onshore pipeline 66 |
| Other |
| Total 514 |



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Table 4.2 Integrated Scenario Development Cost Summaries (offshore excluding common export / processing system)

| Integrated Manta/Gummy only development Utilises shared offshore and onshore export system | | | | |
|--|---|---|---|--|
| | 40PJ/yr ACQ (155TJ/d MDQ) "lo-low market scenario" | 40PJ/yr ->60PJ/yr ACQ (230TJ/d MDQ) "low market scenario" | 60PJ/yr ACQ (230TJ/d MDQ) "medium market scenario" | 60PJ/yr ->80PJ/yr ACQ (310TJ/d MDQ) "high market scenarjo" |
| Appraisal drilling | 39 | 39 | 39 | 20 |
| Development drilling | 92 | 92 | 92 | 39 |
| Subsea systems and control (NCC buoy) | 116 | 116 | | 92 |
| Offshore pipeline | 34 | 34 | 116 | 116 |
| Other | 2 | 34 | 36 | 34 |
| Total | 283 | 283 | | 2 |
| 1544 | 203 | 283 | 285 | 283 |
| Integrated Kipper only development Utilises shared offshore and onshore export system | | | | |
| | 40PJ/yr ACQ (155TJ/d MDQ) "lo-low market scenario" | 40PJ/yr ->60PJ/yr ACQ (230TJ/d MDQ) "low market scenario" | 60PJ/yr ACQ (230TJ/d MDQ) "medium market scenario" | 60PJ/yr ->80PJ/yr ACQ (310TJ/d MDQ) "high market scenario" |
| Appraisal drilling | 0 | 0 | 0 | 0 |
| Development drilling | 45 | 45 | 60 | 60 |
| Subsea systems and control (ex onshore) | 61 | 61 | 77 | 60 |
| Offshore pipeline | 0 | 0 | ,, | 77 |
| Other | 2 | 3 | 0 | 0 |
| T . 1 | | | 2 | 2 |



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complete by end 2002 with PSA occurring in early 2003; this is considered to be a more than adequate time frame.

Under the scenario where an integrated development with Kipper is contemplated, then in order for common export / processing systems to be adequately defined and commercial arrangements put in place, an earlier completion of Manta / Gummy appraisal would be required prior to the Kipper development PSA assumed to be early 2000. For this to be achieved, at least one appraisal well would need to be drilled early - mid 1999 irrespective of the timing of a later Manta / Gummy development.

For oil development, an aggressive schedule is envisaged which requires an appraisal well to be drilled in Basker in early 1999 in order to achieve completion of project definition and PSA by January 2000. This then allows a period of 12 months for the procurement and installation of equipment and contracting of a leased FPSO. Certain items, including for example flexible flowlines and subsea xmas trees will be critical path perhaps requiring order placement prior to PSA. The highest schedule risk associated with this scenario is of course the securing of a suitable FPSO. Since the economics of any development employing an FPSO will almost certainly rely on securing a vessel at a low day rate, this development within the above timeframe may well not be achievable simply because a suitable vessel is not available on the market.

Appendix B includes phased activity, production and cost sheets for each case developed. Key activities are shown along with definition of drilling activities, namely appraisal well(s), appraisal well conversion(s) (denoted "c"), development sidetrack(s) (denoted "st'), and horizontal and injection wells (denoted "h" and "inj" respectively).

Appendix A

Case Definition and Cost Summaries



Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case de | finition | |
|---------|----------|--|

| Case reference Gas sales, PJ Oil/condensate reserves, mmb Scheme Integration Products / peak avg. sales rates | la 0.0 17.9 B/M oil - gas inj Standalone leased FPSO 40 mmscf/d gas inj | 1a P85 0.0 11.9 B/M oil - gas inj - P85 Standalone leased FPSO 40 mmscf/d gas inj |
|---|--|---|
| Products / peak avg. sales fates | 9.0MMstb/yr | 9.0MMstb/yr |

Parameters

| System | • | - |
|---|---------------|-----------------|
| Exploration well TVD, m | 3200 | 3200 |
| Appraisal well TVD, m | 3200 | 1 |
| No. appraisal wells | 1 | 1 |
| No. appraisal campaigns | 1 2200 / 2050 | 3200 / 2850 |
| Development well TVD, m | 3200 / 2850 | 4 |
| No. development wells | 4 | 2 |
| No. appraisal well conversions, dev well s/ts or recomps | 2 | 3 |
| New production/injection wells | 3 | |
| No. wells at central site | 3 | 3 |
| No. predrilled wells (incl. conversions) | 4 | 4 |
| No. satellite well sites | l | 1 |
| Avg. wells/satellite site | 1 | 1 |
| No. devt drilling campaigns (incl. predrilling) | 2 | 2 |
| Raw gas production capacity, mmsef/d | 40 | 40 |
| Avg. raw gas production rate, mmscf/d | - | - |
| Avg. maximum sales gas rate, TJ/d | 0 | 0 |
| Peak oil/cond rate, mbd | 25 | 25 |
| Field life, years | 4years - 5mbd | 3 years - 5 mbd |
| Critical oil/gas host/onshore plant arrival pressure, psi | 400 | 400 . |
| Offshore pipeline to onshore plant distance, km | 0 | . 0 |
| | - | - |
| Offshore pipeline nominal size, inches | 0 | 0 |
| Onshore pipeline export distance, km | - | - |
| Onshore pipeline nominal size, inches | - | |
| Compression required, year of production | - | • |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case definition Case reference | la | 1a P85 |
|---|--|---|
| Gas sales, PJ | 0.0 | 0.0 |
| Oil/condensate reserves, mmb | 17.9 | 11.9 |
| Scheme | B/M oil - gas inj Standalone leased FPSO | B/M oil - gas inj - P85 Standalone leased FPSC |
| Integration | 40 mmscf/d gas inj | 40 mmscf/d gas inj |
| Products / peak avg. sales rates | 9.0MMstb/yr | 9.0MMstb/yr |
| Capital costs, ASmm (1.1.98) - most likely | | |
| Offshore | | 910 |
| Exploration well (tested) | 0.0 | 0.0 |
| Appraisal drilling template(s) | 0.5 | 0.5 |
| Appraisal wells | 13.7 | 13.7 |
| Appraisal well conversion(s) | 10.5 | 10.5 |
| Development / commercial planning | 1.0 | 1.0 |
| Predrilled development wells | 43.7 | 43.7 |
| Post start-up development wells | 8.6 | 8.6 |
| Subsea manifold cluster(s) | 0.0 | 0.0 |
| Subsea cluster flowline set(s) | 0.0 | 0.0 |
| Subsea satellite pipeline set(s) | 24.5 | 24.5 |
| Field control / host facility costs (tie-ins / facilities) | 2.3 | 2.3 |
| FPSO mobilisation / supply | 10.0 | 10.0 |
| Main export pipeline/control umbilical | 0.0 | 0.0 |
| Project management | 1.5 | 1.5 776 |
| Total offshore | 116 | 110 |
| Onshore | 0.0 | 0.0 |
| Development / commercial planning | 0.0 0.0 | 0.0 |
| Gas plant (incl. CO2 removal, LPG extraction) | 0.0 | 0.0 |
| Compression | 0.0 | 0.0 |
| Export pipeline | 0.0 | 0.0 |
| Project management Total onshore | 0.0 | 0 |
| 10tal Onshore | | |
| Grand total | 116 | 116 |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | |
| Offshore | | |
| Wells (annual average) | 1.8 | 1.8 |
| Offshore facilities | 0.5 | 0.5 |
| Leased / project owned FPSO | 45.6 | 45.6 |
| Technical support/offshore logistics base/insurance | 2.3 | 2.3 |
| Total offshore | 50.1 | 50.1 |
| Onshore | | 0.0 |
| Onshore plant | 0.0 | 0.0 |
| Incremental compression | 0.0 | 0.0 |
| Technical support | 0.0 | 0.0 |
| Total onshore | 0.0 | υ.υ |
| Grand total | 50.1 | 50.1 |
| | | |
| Tariff charges | 0.00 | 0.00 |
| Oil. S/bbl Gas. S/GJ | 0.00 | 0.00 |
| Gas. S/GJ | 3.00 | |
| Abandonment costs. A\$mm (1.1.98) | | |
| Offshore | | 10.0 |
| Wells | 12:0 | 12.0 |
| Offshore facilities | 0.7 | 0.7 |
| | 0.0 | 0.0 12.7 |
| Sale value at abandonment | | 19.7 |
| Sale value at abandonment Total offshore | 12.7 | 12.7 |
| Total offshore Onshore | | |
| Total offshore Onshore Onshore plant | 0.0 | 0.0 |
| Total offshore Onshore Onshore plant Environmental rehabilitation | 0.0 0.0 | 0.0 0.0 |
| Total offshore Onshore Onshore plant | 0.0 | 0.0 |
| Total offshore Onshore Onshore plant Environmental rehabilitation | 0.0 0.0 | 0.0 0.0 |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

Case definition

| Case reference | la P15 | (a(owned) |
|----------------------------------|-------------------------|-------------------------------|
| Gas sales. PJ | 0.0 | 0.0 |
| Oil/condensate reserves, mmb | 26.0 | 20.4 |
| | B/M oil - gas inj - P15 | B/M oil - gas inj |
| Scheme | Standalone leased FPSO | Standalone project owned FPSO |
| Integration | 40 mmscf/d gas inj | 40 mmscf/d gas inj |
| Products / peak avg. sales rates | 9.0MMstb/yr | 9.0MMstb/yr |
| | | |

Parameters

| System | | |
|---|---------------|---------------|
| Exploration well TVD, m | - | - |
| Appraisal well TVD, m | 3200 | 3200 |
| No. appraisal wells | 1 | 1 |
| No. appraisal campaigns | 1 | 1 |
| Development well TVD, m | 3200 / 2850 | 3200 / 2850 |
| No. development wells | 4 | 4 |
| No. appraisal well conversions, dev well s/ts or recomps | 3 | 2 |
| New production/injection wells | 3 | 3 |
| No. wells at central site | 3 | 3 |
| No. predrilled wells (incl. conversions) | 4 | 4 |
| No. satellite well sites | 1 | 1 |
| Avg. wells/satellite site | 1 | 1 |
| No. devt drilling campaigns (incl. predrilling) | 2 | 2 |
| Raw gas production capacity, mmscf/d | 40 | 40 |
| | - | |
| Avg. raw gas production rate, mmscf/d | 0 | 0 |
| Avg. maximum sales gas rate, TJ/d | 25 | 25 |
| Peak oil/cond rate, mbd | 6vears > 5mbd | 4years - 5mbd |
| Field life, years | 400 | 400 |
| Critical oil/gas host/onshore plant arrival pressure, psi | | 0 |
| Offshore pipeline to onshore plant distance, km | 0 | U |
| Offshore pipeline nominal size, inches | - | - |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | - | • |
| Compression required, year of production | - | - |

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|--------|------|
|--------|------|

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| ise definition Case reference | la P15 | 1a(owned) 0.0 | |
|--|-------------------------|-------------------------------|----|
| Gas sales, PJ | 0.0 | 20.4 | |
| Oil/condensate reserves, mmb | 26.0 | | |
| Scheme | B/M oil - gas inj - P15 | B/M oil - gas inj | |
| Integration | Standalone leased FPSO | Standalone project owned FPSO | |
| Products i peak avg. sales rates | 40 mmscf/d gas inj | 40 mmscf/d gas inj | |
| | 9.0MMstb/yr | 9.0MMstb/yr | |
| apital costs, ASmm (1.1.98) - most likely | | | |
| Offshore | | | |
| Exploration well (tested) | 0.0 | 0.0 | 10 |
| Appraisal drilling template(s) | 0.5 | 0.5 | |
| Appraisal wells | 13.7 | 13.7 | |
| Appraisal well conversion(s) | 10.5 | 10.5 | |
| Development / commercial planning | 1.0 | 1.0 7 7 % | |
| Predrilled development wells | 43.7 | 43.7 | |
| Post start-up development wells | 16.5 | 8.6 | |
| Subsea manifold cluster(s) | 0.0 | 0.0 | |
| Subsea cluster flowline set(s) | . 0.0 | 0.0 | |
| Subsea satellite pipeline set(s) | 24.5 | 24.5 | |
| Field control / host facility costs (tie-ins / facilities) | 2.3 | 2.3 \ (28.8) | |
| FPSO mobilisation / supply | 10.0 | 92.3 | |
| Main export pipeline/control umbilical | 0.0 | 0.0 / | |
| Project management | 1.5 | 9.7 - | |
| | 124 | 207 | |
| Total offshore | 1-1 | | _ |
| Onshore | 0.0 | 0.0 | |
| Development / commercial planning | 0.0 | 0.0 | |
| Gas plant (incl. CO2 removal, LPG extraction) | | 0.0 | |
| Compression | 0.0 | 0.0 | |
| Export pipeline | 0.0 | 0.0 | |
| Project management | 0.0 | | |
| Total onshore | 0 | 0 | |
| | | 207 | |
| Grand total | 124 | 207 | |
| | | | |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | | |
| Offshore | | _ | |
| Wells (annual average) | 1.8 | 1.8 | |
| Offshore facilities | 0.5 | 0.5 | |
| Leased / project owned FPSO | 45.6 | 14.7 | |
| Technical support/offshore logistics base/insurance | 2.3 | 3.0 | _ |
| Total offshore | 50.2 | 19.9 | |
| Onshore | | | |
| Onshore plant | 0.0 | 0.0 | |
| • | 0.0 | 0.0 | |
| Incremental compression | 0.0 | 0.0 | |
| Technical support | 0.0 | 0.0 | |
| Total onshore | 0.0 | | |
| Grand total | 50.2 | 19.9 | |
| | | | |
| Tariff charges | 0.00 | 0.00 | |
| Oil, \$/bbl Gas, \$/GJ | 0.00 | 0.00 | |
| | | | |
| Abandonment costs, ASmm (1.1.98) Offshore | | | |
| Wells | 12.0 | 12.0 | |
| Offshore facilities | 0.7 | 4.8 | |
| Sale value at abandonment | 0.0 | 25.0 | |
| Sale value at abandomment Total offshore | 12.7 | -8.2 | |
| rotat onymuse | | | - |
| | | 0.0 | |
| Onshore | በ በ | | |
| Onshore Onshore plant | 0.0 | 0.0 | |
| Onshore Onshore plant Environmental rehabilitation | 0.0 | 0.0 | |
| Onshore Onshore plant | | 0.0 0.0 | · |
| Onshore Onshore plant Environmental rehabilitation | 0.0 | | · |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case | | |
|------|--|--|
| | | |
| | | |

| Case reference | 1b | ic |
|----------------------------------|------------------------|------------------------|
| Gas sales, PJ | - | 430.0 |
| - | 5.1 | 18 |
| Oil/condensate reserves, mmb | K oil - gas inj | M/G gas only |
| Scheme | Standalone leased FPSO | Standalone off/onshore |
| Integration | 2.8MMstb/yr | 40 PJ/yr(155TJ/d MDQ) |
| Products / peak avg. sales rates | 2. 81VIIVISTO/ 91 | 1.8 MMstb/vr |
| | • | 1.6 IVHVISID/ yi |

Parameters

| System | | |
|---|----------------|-----------------|
| Exploration well TVD, m | • | 3300 / 3500 |
| Appraisal well TVD, m | 0 | **** |
| No. appraisal wells | 0 | 3 |
| No. appraisal campaigns | 0 | 2 |
| Development well TVD, m | 2300 | 3300 / 3500 |
| No. development wells | 6 | 5 |
| No. appraisal well conversions, dev well s/ts or recomps | 0 | 2 |
| New production/injection wells | 6 | 3 |
| No. wells at central site | 0 | 5 |
| No. predrilled wells (incl. conversions) | 6 | 3 |
| No. satellite well sites | 6 | 0 |
| Avg. wells/satellite site | 1 | 0 |
| No. devt drilling campaigns (incl. predrilling) | 1 | 3 |
| Raw gas production capacity, mmscf/d | 16 | 158 |
| | - | 112 |
| Avg. raw gas production rate, mmscf/d | ` 0 | 109 |
| Avg. maximum sales gas rate, TJ/d | 8 | 7 |
| Peak oil/cond rate. mbd | 2 years > 5mbd | 20 |
| Field life, years | 150 | 800 at 3:1 comp |
| Critical oil/gas host/onshore plant arrival pressure, psi | 0 | 70 |
| Offshore pipeline to onshore plant distance, km | 0 | 20 |
| Offshore pipeline nominal size, inches | · · | 150 |
| Onshore pipeline export distance, km | 0 | 14 |
| Onshore pipeline nominal size, inches | - | 1&4 |
| Compression required, year of production | - | 1 & 4 |

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|-----------|--|----|-----|----|-----|
|-----------|--|----|-----|----|-----|

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case definition Case reference | 1b | lc · |
|---|---------------------------------------|------------------------|
| Gas sales, PJ | • | 430.0 |
| Oil/condensate reserves, mmb | 5.1 | 18 |
| Scheme | K oil - gas inj | M/G gas only |
| Integration | Standalone leased FPSO | Standalone off/onshore |
| Products / peak avg. sales rates | 2.8MMstb/yr | 40 PJ/yr(155TJ/d MDQ |
| . , | • | 1.8 MMstb/yr |
| | | |
| Capital costs, A\$mm (1.1.98) - most likely Offshore | | |
| Exploration well (tested) | 0.0 | 0.0 |
| Appraisal drilling template(s) | 0.0 | 1.0 |
| Appraisal wells | 0.0 | 39.3 |
| Appraisal well conversion(s) | 0.0 | 27.7 |
| Development / commercial planning | 1.0 | 2.0 |
| Predrilled development wells | 81.5 | 17.3 |
| Post start-up development wells | 0.0 | 47.1 |
| Subsea manifold cluster(s) | 0.0 | 60.0 |
| Subsea cluster flowline set(s) | 0.0 | 15.0 |
| Subsea satellite pipeline set(s) | 23.8 | 0.0 |
| Field control / host facility costs (tie-in | ns / facilities) 2.3 | 30.0 |
| FPSO mobilisation: supply | 9.1 | 0.0 |
| Main export pipeline/control umbilica | 1 0.0 | 96.0 |
| Project management | 1.4 | 10.1 |
| Total offshore | 119 | 346 |
| Onshore | | |
| Development / commercial planning | 0.0 | 3.0 |
| Gas plant (incl. CO2 removal, LPG ex | straction) 0.0 | 124.0 |
| Compression | 0.0 | 27.0 |
| Export pipeline | 0.0 | 59.5 |
| Project management | 0.0 | 16.6 |
| Total onshore | 0 | 230 |
| Grand total | 119 | 576 |
| Peak operating costs, A\$mm/yr (1.1.98) - most likel | y | |
| Offshore | , | |
| Wells (annual average) | 0.0 | 1.8 |
| Offshore facilities | 0.5 | 7.9 |
| Leased / project owned FPSO | 45.6 | 0.0 |
| Technical support/offshore logistics b | ase/insurance 2.3 | 4.0 |
| Total offshore | 48.4 | 13.6 |
| Onshore | | |
| Onshore plant | 0.0 | 5.6 |
| Incremental compression | 0.0 | 2.0 |
| Technical support | 0.0 | 1.7 |
| Total onshore | 0.0 | 9.2 |
| Grand total | 48.4 | 22.9 |
| Grang total | 70.7 | 32.7 |
| Tariff charges | | |
| Oil, \$/bbl | 0.00 | 0.00 |
| Gas, \$/GJ | 0.00 | 0.00 |
| Abandonment costs, ASmm (1.1.98) | | |
| Offshore | | |
| Wells | 18.0 | 15.0 |
| Offshore facilities | 0.6 | 4.8 |
| Sale value at abandonment | 0.0 | 0.0 |
| Total offshore | 18.6 | 19.8 |
| Onshore | | |
| Onshore plant | 0.0 | 9.0 |
| Environmental rehabilitation | 0.0 | 1.0 |
| Total onshore | 0.0 | 10.0 |
| | | |
| Grand total | 18.6 | 29.8 |
| | · · · · · · · · · · · · · · · · · · · | |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

Case definition

| Case reference | Id | . ~~ |
|----------------------------------|------------------------|--------------------|
| Gas sales, PJ | 561.0 | - |
| Oil/condensate reserves, mmb | 11 | 31 |
| Scheme | Kipper gas only | K/B/M oil only |
| Integration | Standalone off/onshore | Shared leased FPSO |
| Products / peak avg. sales rates | 60 PJ/vr(230TJ/d MDQ) | - |
| Froducis / peak avg. sales fates | 1.2 MMstb/yr | - |
| | | |

Parameters

| 0 | | • |
|---|-----------------|--------------------------------------|
| System 5 Landing and LTVD | _ | - |
| Exploration well TVD, m | 0 | 0 |
| Appraisal well TVD, m | 0 | 0 |
| No. appraisal wells | 0 | 0 |
| No. appraisal campaigns | 2300 | 0 |
| Development well TVD, m | | 0 |
| No. development wells | 4 | 0 |
| No. appraisal well conversions, dev well s/ts or recomps | 0 | 0 |
| New production/injection wells | 4 | • |
| No. wells at central site | 4 | 0 |
| No. predrilled wells (incl. conversions) | 3 | 0 |
| No. satellite well sites | 0 | 0 |
| Avg. wells/satellite site | 0 | 0 |
| No. devt drilling campaigns (incl. predrilling) | 2 | 0 |
| Raw gas production capacity, mmsct/d | 260 | 0 |
| Avg. raw gas production rate, mmscf/d | 185 | 0 |
| Avg. maximum sales gas rate, TJ/d | 164 | 0 |
| Peak oil/cond rate, mbd | 5 | 25 |
| Field life, years | 12 | 6 years economic |
| Critical oil/gas host/onshore plant arrival pressure, psi | 800 at 3:1 comp | - |
| Offshore pipeline to onshore plant distance, km | 55 . | 0 |
| Offshore pipeline nominal size, inches | 24 | 0 |
| Onshore pipeline export distance, km | 150 | 0 |
| Onshore pipeline nominal size, inches | 16 | . - |
| Compression required, year of production | 1 & 7 | - |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Cas tables P Sel. 0 Selection Scheme Scheme Standardone of Brombore Scheme Standardone of Brombore Shared leased FFSO Products / peak age, sales rates Standardone of Brombore Shared leased FFSO Products / peak age, sales rates Standardone of Brombore Shared leased FFSO S | | Case reference | 1d | | 2 a |
|--|------------------|--|--|------|----------------------|
| Gilcondensate reserves, nmb 1 | | | | | - |
| Scheme S | | 4.5 | the second secon | 1.19 | 31 |
| Integration | | | | | K/B/M oil only |
| Appraisal well contents. ASmm (1.198) - most likely Offshore Esploration well (tested) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0. | | | | , | • |
| 1,2 MMstarbyr 1,2 Mmstarbyr 1,2 Mmstarby | | | | | Dilated leased 11 00 |
| Approximation Approximatio | | Products / peak avg. sales rates | | | |
| Offshore | | | 1.2 WIIVE 60 YE | | |
| Offshore | | | | | |
| Exploration well (tested) | Capital costs, a | • • | | | |
| Appraisal drelling template(s) 0.0 0.0 0.0 0.0 Appraisal wells 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0. | | | 0.0 | | 0.0 |
| Appraisal wells | | | 0.0 | · | 0.0 |
| Appraisal well conversion(s) 0.0 0.0 | | | 0.0 | | 0.0 |
| Development decomponent wells | | • • | 0.0 | | 0.0 |
| Predrilled development wells | | | | | 0.5 |
| Post start-up development wells 15.0 0.0 | | | | | 0.0 |
| Subsea manifold cluster(s) | | • | | | 0.0 |
| Subsea classer flowline set(s) 12.0 0.0 | • | | | | 0.0 |
| Subsea satellite pipeline set(s) | : | • • • | | | 0.0 |
| Field control / host facility costs (tie-ins / facilities) | , | | | | |
| Peak operating costs. ASmm/yr (1.1.98) - most likely Offshore Wells (annual average) Offshore Onshore Onshore Conshore Crand total Total offshore Wells (annual average) Offshore Onshore Onshore Offshore Total onshore Offshore Abandonment costs. ASmm (1.1.98) Offshore Onshore Onshore Onshore Wells Offshore Onshore | 2 | Field control / host facility costs (tie inc / facilities) | | | |
| Name | <i>y</i> . | | | | |
| Project management 6.1 1.0 Total offshore 222 12 Onshore Development / conuncrial planning 3.0 0.0 Gas plant (incl. CO2 removal. LPG extraction) 160.0 0.0 Compression 42.0 0.0 Export pipeline 64.0 0.0 Project management 21.8 0.0 Project management 21.8 0.0 Frand total 513 12 Peak operating costs, ASmm/yr (1.1.98) - most likely Offshore Wells (annual average) 1.4 0.0 Offshore Facilities 4.2 0.0 Cassed / project owned FPSO 0.0 45.6 Technical support offshore logistics base/insurance 3.1 1.5 Total offshore Onshore Onshore 3.2 0.0 Technical support 2.0 0.0 Technical support 2.0 0.0 Technical support 2.0 0.0 Technical support 2.0 0.0 Technical support 2.0 0.0 Abandonment costs, ASmm (1.1.98) Offshore Wells 2.8 0.0 Grand total 1.98 Offshore 12.1 0.0 Grand total 1.98 Offshore 12.1 0.0 Onshore 12.1 0.0 Grand total 1.98) Offshore Contact 1.98 Offshore 1.1.1.98 Offshore 1.1.1.1.98 Offshore 1.1.1.1.98 Offshore 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1. | | PSO mobilisation / supply | | | |
| Total offshore 222 12 | | | | | |
| Development / commercial planning 3.0 0.0 | | | | | |
| Development / commercial planning 3.0 0.0 | | | | | 12 |
| Gas plant (incl. CO2 removal, LPG extraction) 150.0 0.0 | | | | | |
| Compression 42.0 0.0 | · | | | | |
| Export pipeline | | Gas plant (incl. CO2 removal, LPG extraction) | | | |
| Project management 21.8 0.0 | • | Compression | | | |
| Total onshore 297 | • | Export pipeline | | | |
| Peak operating costs, ASmm/yr (1.1.98) - most likely Offshore Wells (annual average) 1.4 0.0 | | Project management | | | |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | Total onshore | 29.1 | | 0 |
| Offshore Wells (annual average) 1.4 0.0 Offshore facilities 4.2 0.0 Leased / project owned FPSO 0.0 45.6 Technical support offshore logistics base/insurance 3.1 1.5 Total offshore 8.6 47.1 Onshore 0.0 0.0 Incremental compression 3.2 0.0 Incremental support 2.0 0.0 Total onshore 12.1 0.0 Grand total 20.8 47.1 Tariff charges Oil, S/bbl 0.00 0.00 Gas, S/GJ 0.00 0.00 Abandonment costs, A\$mm (1.1.98) 0.0 0.0 Offshore 0.0 0.0 Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.0 0.0 Onshore plant 11.7 0.0 | | Grand total | 513 | | 12 |
| Offshore Wells (annual average) 1.4 0.0 Offshore facilities 4.2 0.0 Leased / project owned FPSO 0.0 45.6 Technical support offshore logistics base/insurance 3.1 1.5 Total offshore 8.6 47.1 Onshore 0.0 0.0 Incremental compression 3.2 0.0 Incremental support 2.0 0.0 Total onshore 12.1 0.0 Grand total 20.8 47.1 Tariff charges Oil, S/bbl 0.00 0.00 Gas, S/GJ 0.00 0.00 Abandonment costs, A\$mm (1.1.98) 0.0 0.0 Offshore 0.0 0.0 Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.0 0.0 Onshore plant 11.7 0.0 | | | | | |
| Wells (annual average) | Peak operatir | | | | |
| Offshore facilities 4.2 0.0 Leased / project owned FPSO 0.0 45.6 Technical support/offshore logistics base/insurance 3.1 1.5 Total offshore Onshore Onshore Plant 7.0 0.0 Incremental compression 3.2 0.0 Technical support 2.0 0.0 Total onshore 12.1 0.0 Grand total 20.8 47.1 Tariff charges Oil, S/bbl 0.00 0.00 Gas, S/GJ 0.00 0.00 Abandonment costs, ASmm (1.1.98) 0.00 0.00 Offshore 0.0 0.0 Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.0 0.0 Onshore plant 11.7 0.0 Environmental rehabilitation 0.0 0.0 Total o | | | 1.4 | | 0.0 |
| Leased / project owned FPSO | | • | 4.2 | | 0.0 |
| Technical support/offshore logistics base/insurance | | | | | 45.6 |
| Total offshore | | | | | 1.5 |
| Onshore Onshore plant 7.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1 | | | | | |
| Onshore plant 7.0 0.0 Incremental compression 3.2 0.0 Technical support 2.0 0.0 Total onshore 12.1 0.0 Grand total 20.8 47.1 Tariff charges Oil, S/bbl 0.00 0.00 Gas, S/GJ 0.00 0.00 Abandonment costs, ASmm (1.1.98) Offshore 12.0 0.0 Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.5 0.5 Onshore plant 11.7 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | | 22 | | | |
| Incremental compression 3.2 0.0 Technical support 2.0 0.0 Total onshore 12.1 0.0 Grand total 20.8 47.1 Tariff charges | | | 7.0 | | 0.0 |
| Technical support 2.0 0.0 Total onshore 12.1 0.0 Grand total 20.8 47.1 Tariff charges Oil, S/bbl 0.00 0.00 Gas, S/GJ 0.00 0.00 Abandonment costs, ASmm (1.1.98) Offshore Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 7 0.0 0.0 Total offshore 0.5 Onshore Onshore 14.8 0.5 Onshore Onshore 11.7 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 Total onshore 11.7 0.0 | | • | | | |
| Tariff charges Oil, \$\(\)\$/bbl 0.00 Gas, \$\(\)\$/GJ 0.00 Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore plant Onshore plant Environmental rehabilitation Total onshore Total onshore Total onshore 12.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | | | | | |
| Company Comp | | • • | | | |
| Tariff charges | | Total onshore | 12.1 | | 0.0 |
| Oil, \$\shall{2}\$/\text{GJ} 0.00 0.00 Gas, \$\shall{2}/\text{GJ} 0.00 0.00 Abandonment costs, A\$\text{mm} (1.1.98) \$\text{Offshore}\$ Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.5 0.5 Onshore plant 11.7 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | | Grand total | 20.8 | | 47.1 |
| Oil, \$/bbl 0.00 0.00 Gas, \$/GJ 0.00 0.00 Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities 2.8 0.5 Sale value at abandonment Total offshore Onshore Onshore Onshore Onshore I1.7 0.0 Total onshore I1.7 0.0 Onshore I1.7 0.0 Onshore I1.7 Onshore I1.7 Onshore I1.7 Onshore I1.7 Onshore II.7 Onshore II.7 Onshore III.7 Onshore IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | | | | | |
| Abandonment costs, ASmm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore Onshore Onshore Onshore Onshore Onshore Total onshore Total onshore Total onshore 11.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 | Tariff charg | | 0.00 | | 0.00 |
| Abandonment costs, ASmm (1.1.98) Offshore Wells Offshore facilities 2.8 Sale value at abandonment Total offshore Onshore Onshore Onshore plant Environmental rehabilitation Total onshore 11.7 11.7 10.0 11.7 11.7 10.0 11.7 10.0 11.7 10.0 | | | | | |
| Offshore 12.0 0.0 Wells 2.8 0.5 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.5 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | | Gas, \$/GJ | 0.00 | | 0.00 |
| Offshore 12.0 0.0 Wells 2.8 0.5 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.5 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | Ahandones | nt costs ASmm (1 1 98) | | | |
| Wells 12.0 0.0 Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | Avanuonine | | | | |
| Offshore facilities 2.8 0.5 Sale value at abandonment 0.0 0.0 | | | 12.0 | | 0.0 |
| Sale value at abandonment 0.0 0.0 Total offshore 14.8 0.5 Onshore Onshore plant 11.7 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 Total onshore 11.7 0.0 Onshore 11.7 | | | | | |
| Total offshore | | | | | |
| Onshore Onshore 11.7 0.0 Environmental rehabilitation 0.0 0.0 **Total onshore 11.7 0.0 | | | | | |
| Onshore plant 11.7 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | | ••• | 17.0 | | 0.5 |
| Environmental rehabilitation 0.0 0.0 Total onshore 11.7 0.0 | | | 117 | | 0.0 |
| Total onshore 11.7 0.0 | | | | | |
| 10.00.01.076 | | | | | |
| 2/5 | | Total onshore | 11./ | | υ.υ |
| | | | | | 0.5 |
| | | | | | |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| ~ | | ~ | ٠. | |
|------|---|-----|-----|-----|
| Case | d | etu | nıt | ion |

| on | | |
|----------------------------------|------------------------------------|--|
| Case reference | 2b | 2c, 2c(iii) |
| Gas sales, PJ | - | 561.0 |
| Oil/condensate reserves, mmb | 11.5 | 11 |
| Scheme | K oil - gas inj at B/M | Kipper gas only |
| Integration | S'sea satellite - tariff thro' B/M | Tariff thro' shared export system - "base/high" market |
| Products / peak avg. sales rates | 2.8MMstb/yr | 60 PJ/yr(230TJ/d MDQ) |
| 1 Toddes / peak avg. sales faces | | 1.2 MMstb/yr |
| | | • |

Parameters

| System | | |
|---|--------------------|-----------------|
| Exploration well TVD, m | - | - |
| Appraisal well TVD, m | 0 | 0 |
| No. appraisal wells | 0 | 0 |
| No. appraisal campaigns | 0 | 0 |
| Development well TVD, m | 2300 | 2300 |
| No. development wells | 5 | 4 . |
| No. appraisal well conversions, dev well s/ts or recomps | 2 | 0 |
| New production/injection wells | 5 | 4 |
| No. wells at central site | 5 | 4 |
| No. predrilled wells (incl. conversions) | 5 | 3 |
| No. satellite well sites | 0 | 0 |
| Avg. weils/satellite site | O | 0 |
| No. devt drilling campaigns (incl. predrilling) | 2 | 2 |
| Raw gas production capacity, mmscf/d | 16 | 260 |
| Avg. raw gas production rate, mmscf/d | - | 185 |
| Avg. maximum sales gas rate, TJ/d | 0 | 164 |
| Peak oil/cond rate, mbd | 8 | 5 |
| Field life, years | ~ 6 years economic | 12 |
| Critical oil/gas host/onshore plant arrival pressure, psi | 400 | 800 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 15 | 0 |
| Offshore pipeline nominal size, inches | 8 | 0 |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | - | o |
| Compression required, year of production | - | (). |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case definition | 6 | 2b | 2c, 2c(iii) |
|-----------------|--|------------------------------------|---|
| | e reference | - | 561.0 |
| | sales, PJ | 11.5 | 11 |
| | condensate reserves, mmb | K oil - gas inj at B/M | Kipper gas only |
| Sch | | S'sea satellite - tariff thro' B/M | Tariff thro' shared export system - "base/high" marke |
| | gration | 2.8MMstb/yr | 60 PJ/yr(230TJ/d MDQ) |
| Pro | ducts / peak avg. sales rates | 2. SIVITYISTO/ YI | 1.2 MMstb/yr |
| | | | |
| - | nm (1.1.98) - most likely Shore | | |
| | ploration well (tested) | . 0.0 | 0.0 |
| | praisal drilling template(s) | 0.0 | 0.0 |
| | praisal wells | 0.0 | 0.0 |
| | praisal well conversion(s) | 0.0 | 0.0 |
| | velopment / commercial planning | 1.0 | 2.0 |
| Pre | edrilled development wells | 75.5 | 45.0 |
| | st start-up development wells | 6.5 | 15.0 |
| | bsea manifold cluster(s) | 21.1 | 48.0 |
| | bsea cluster flowline set(s) | 2.5 | 12.0 |
| | bsea satellite pipeline set(s) | 0.0 | 0.0 |
| Su E:. | eld control / host facility costs (tie-ins / facilities) | 3.0 | 2.3 |
| | SO mobilisation / supply | 0.0 | 0.0 |
| | | 12.7 | 8.6 |
| | ain export pipeline/control umbilical | 2.6 | 5.2 |
| Pro | oject management | 125 | 138 |
| _ | Total offshore | 123 | |
| | nshore | 0.0 | 0.0 |
| De | evelopment / commercial planning | | 0.0 |
| | as plant (incl. CO2 removal, LPG extraction) | 0.0 | 0.0 |
| | ompression | 0.0 | 0.0 |
| | port pipeline | 0.0 | |
| Pr | oject management | 0.0 | 0.0 |
| | Total onshore | . 0 | U |
| | Grand total | 125 | 138 |
| | | · | |
| | osts, A\$mm/yr (1,1.98) - most likely ffshore | | |
| | Alshore /ells (annual average) | 1.0 | 1.4 |
| | ffshore facilities | 1.9 | 4.0 |
| | eased / project owned FPSO | 0.0 | 0.0 |
| | echnical support/offshore logistics base/insurance | 2.3 | 2.4 |
| ı | Total offshore | 5.3 | 7.8 |
| | 33 | | |
| | Onshore | 0.0 | 0.0 |
| | Onshore plant | 0.0 | 0.0 |
| | ncremental compression | | 0.0 |
| Т. | echnical support | 0.0 | 0.0 |
| | Total onshore | 0.0 | U.U |
| | Grand total | 5.3 | 7.8 |
| | G | | |
| Tariff charges | | | |
| | Dil, \$/bbl | 0.00 | 0.00 |
| | Gas, \$/GJ | 0.00 | 0.00 |
| Al | osts, A\$mm (1.1.98) | | |
| | Offshore | | |
| | Wells | 15.0 | 12.0 |
| | Offshore facilities | 1.2 | 2.6 |
| | Sale value at abandonment | 0.0 | 0.0 |
| | Total offshore | 16.2 | 14.6 |
| | Onshore | | |
| | Onshore plant | 0.0 | 0.0 |
| | Environmental rehabilitation | 0.0 | 0.0 |
| | | 0.0 | 0.0 |
| | Total onshore | <u> </u> | 0.0 |
| | | | |
| | Grand total | 16.2 rio & cost building blocks | 14.6 Page 10 |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case definition |
|-----------------|
|-----------------|

| Case reference | 2c(i), 2c(ii) | 2d |
|----------------------------------|---|--------------------------------|
| Gas sales, PJ | 561.0 | 991.0 |
| Oil/condensate reserves, mmb | 11 | • |
| Scheme | Kipper gas only | M/G/K gas |
| Integration | Tariff thro' shared export system - "low/lo-low" market | Shared systems - "base" market |
| Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) | 60 PJ/yr(230TJ/d MDQ) |
| | 0.8 MMstb/yr | |

Parameters

| System | | |
|---|-----------------|-----------------|
| Exploration well TVD, m | • | • |
| Appraisal well TVD, m | 0 | - |
| No. appraisal wells | 0 | U |
| No. appraisal campaigns | 0 | 0 |
| Development well TVD, m | 2300 | - |
| No. development wells | 3 | 0 |
| No. appraisal well conversions, dev well s/ts or recomps | 0 | 0 |
| New production/injection wells | 3 | 0 |
| No. wells at central site | 3 | 0 |
| No. predrilled wells (incl. conversions) | 3 | |
| No. satellite well sites | 0 | 0 |
| Avg. wells/satellite site | 0 | 0 |
| No. devt drilling campaigns (incl. predrilling) | i | 0 |
| Raw gas production capacity, mmscf/d | 174 | 260 |
| Avg. raw gas production rate, mmscf/d | 124 | 185 |
| Avg. maximum sales gas rate, TJ/d | 109 | 164 |
| Peak oil/cond rate, mbd | 3 | • |
| Field life, years | 17 | 25 |
| Critical oil/gas host/onshore plant arrival pressure, psi | 800 at 3:1 comp | 800 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 0 | 55 |
| Offshore pipeline nominal size, inches | 0 | 24 |
| Onshore pipeline export distance, km | 0 | 150 |
| Onshore pipeline nominal size, inches | 0 | 16 |
| Compression required, year of production | 0 | 1 & 7 |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| | n Case reference | 2c(i), 2c(ii) | 2d |
|----------------|---|--|---|
| | Gas sales, PJ | 561.0 | 991.0 |
| | Oil/condensate reserves, mmb | 11 | - |
| | Scheme | Kipper gas only | M/G/K gas |
| | Integration | Tariff thro' shared export system - "low/lo-low" market | Shared systems - "base" marke |
| | Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) 0.8 MMstb/yr | 60 PJ/yr(230TJ/d MDQ) |
| Carital agata | A\$mm (1.1.98) - most likely | | |
| Capital custs, | Offshore | | 0.0 |
| | Exploration well (tested) | 0.0 | 0.0 |
| | Appraisal drilling template(s) | 0.0 | 0.0 |
| | Appraisal wells | 0.0 | 0.0 |
| | Appraisal well conversion(s) | 0.0 | 0.0 |
| | Development / commercial planning | 2.0 | 1.0 |
| | Predrilled development wells | 45.0 | 0.0 |
| | Post start-up development wells | 0.0 | 0.0 |
| | Subsea manifold cluster(s) | 36.0 | 0.0 |
| | Subsea cluster flowline set(s) | 9.0 | 0.0 |
| | Subsea satellite pipeline set(s) | 0.0 | 0.0 |
| | Field control / host facility costs (tie-ins / facilities) | 2.3 | 0.0 |
| | FPSO mobilisation / supply | 0.0 | 0.0 |
| | Main export pipeline/control umbilical | 8.6 | 83.0 |
| | Project management | 4.0 | 0.8 |
| | Total offshore | 107 | <i>š</i> 5 |
| | Onshore | | |
| | | 0.0 | 3.0 |
| | Development / commercial planning | 0.0 | 160.0 |
| | Gas plant (incl. CO2 removal, LPG extraction) | 0.0 | 42.0 |
| | Compression | 0.0 | 64.4 |
| | Export pipeline | 0.0 | 21.8 |
| | Project management | 0.0 | 291 |
| | Total onshore | | |
| | Grand total | 107 | 376 |
| | (1.1.00) and Clark | | |
| Peak operat | ing costs, A\$mm/yr (1.1.98) - most likely Offshore | | |
| | Wells (annual average) | 1.1 | 0.0 |
| | Offshore facilities | 3.0 | 0.2 |
| | Leased / project owned FPSO | 0.0 | 0.0 |
| | Technical support/offshore logistics base/insurance | 2.2 | 0.6 |
| | | | |
| | | 6.3 | 0.8 |
| | Total offshore | 6.3 | 0.8 |
| | Total offshore Onshore | | 0.8 7.0 |
| | Total offshore Onshore Onshore plant | 0.0 | |
| | Total offshore Onshore Onshore plant Incremental compression | 0.0 0.0 | 7.0 3.2 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 0.0 0.0 | 7.0 3.2 2.0 |
| | Total offshore Onshore Onshore plant Incremental compression | 0.0 0.0 | 7.0 3.2 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 0.0 0.0 | 7.0 3.2 2.0 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore | 0.0 0.0 0.0 0.0 | 7.0 3.2 2.0 12.1 |
| Tariff char | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total | 0.0 0.0 0.0 0.0 | 7.0 3.2 2.0 12.1 |
| Tariff char | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total | 0.0 0.0 0.0 0.0 6.3 | 7.0 3.2 2.0 12.1 13.0 |
| Tariff char | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total | 0.0 0.0 0.0 0.0 | 7.0 3.2 2.0 12.1 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, \$/bbl Gas, \$/GJ | 0.0 0.0 0.0 0.0 6.3 | 7.0 3.2 2.0 12.1 13.0 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, \$/bbl Gas, \$/GJ | 0.0 0.0 0.0 0.0 6.3 | 7.0 3.2 2.0 12.1 13.0 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, \$/bbl Gas, \$/GJ ment costs, A\$mm (1.1.98) Offshore | 0.0 0.0 0.0 0.0 6.3 | 7.0 3.2 2.0 12.1 13.0 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, \$/bbl Gas, \$/GJ ment costs, A\$mm (1.1.98) Offshore Wells | 0.0 0.0 0.0 0.0 6.3 | 7.0 3.2 2.0 12.1 13.0 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, \$/bbl Gas, \$/GJ ment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 0.00 | 7.0 3.2 2.0 12.1 13.0 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, \$/bbl Gas, \$/GJ ment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 0.00 | 7.0 3.2 2.0 12.1 13.0 0.00 0.00 |
| | Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Teges Oil, \$/bbl Gas, \$/GJ ment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 0.00 | 7.0 3.2 2.0 12.1 13.0 |
| | Total offshore Onshore Onshore Conshore plant Incremental compression Technical support Total onshore Grand total Teges Oil, \$/bbl Gas, \$/GJ ment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 0.00 9.0 2.0 0.0 11.0 | 7.0 3.2 2.0 12.1 13.0 0.00 0.00 0.00 |
| | Total offshore Onshore Onshore Conshore Incremental compression Technical support Total onshore Grand total Teges Oil, \$\forall bold Gas, \$\forall Gas, | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 0.00 9.0 2.0 0.0 11.0 | 7.0 3.2 2.0 12.1 13.0 0.00 0.00 0.00 0.2 0.0 0.2 |
| | Total offshore Onshore Onshore Conshore Onshore plant Incremental compression Technical support Total onshore Grand total Teges Oil, \$/bbl Gas, \$/GJ Then costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore Onshore plant Environmental rehabilitation | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 9.0 2.0 0.0 11.0 0.0 0.0 | 7.0 3.2 2.0 12.1 13.0 0.00 0.00 0.00 0.00 0.2 0.0 0.2 11.7 1.0 |
| | Total offshore Onshore Onshore Conshore Incremental compression Technical support Total onshore Grand total Teges Oil, \$\forall bold Gas, \$\forall Gas, | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 0.00 9.0 2.0 0.0 11.0 | 7.0 3.2 2.0 12.1 13.0 0.00 0.00 0.00 |
| | Total offshore Onshore Onshore Conshore Onshore plant Incremental compression Technical support Total onshore Grand total Teges Oil, \$/bbl Gas, \$/GJ Then costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore Onshore plant Environmental rehabilitation | 0.0 0.0 0.0 0.0 6.3 0.00 0.00 9.0 2.0 0.0 11.0 0.0 0.0 | 7.0 3.2 2.0 12.1 13.0 0.00 0.00 0.00 0.00 0.2 0.0 0.2 0.0 0.2 |

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| 24-Set | 208 |
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| 44-05 | J-70 |

Onshore pipeline export distance, km

Onshore pipeline nominal size, inches

Compression required, year of production

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Case defin | | 2d P85 | 2d P15 |
|------------|---|--------------------------------|-------------------------------|
| | Case reference | 720.0 | 1443.0 |
| | Gas sales, PJ Oil/condensate reserves, mmb | • | - |
| | Scheme | M/G/K gas - P85 | M/G/K gas - P15 |
| | | Shared systems - "base" market | Shared systems - "base" marke |
| , | Integration Products / peak avg. sales rates | 60 PJ/yr(230TJ/d MDQ) | 60 PJ/yr(230TJ/d MDQ) |
| Parametei | rs | | |
| | System | | _ |
| | Exploration well TVD, m | - | _ |
| | Appraisal well TVD, m | - | 0 |
| | No. appraisal wells | 0 | ů 0 |
| | No. appraisal campaigns | 0 | - |
| | Development well TVD, m | - | 0 |
| | No. development wells | 0 | 0 |
| | No. appraisal well conversions, dev well s/ts or recomps | 0 | 0 |
| | New production/injection wells | 0 | 0 |
| | No. wells at central site | 0 | 0 |
| | No. predrilled wells (incl. conversions) | 0 | 0 |
| | No. satellite well sites | 0 | 0 |
| | Avg. wells/satellite site | 0 | 0 |
| | No. devt drilling campaigns (incl. predrilling) | 0 | 260 |
| | Raw gas production capacity, mmsef/d | 260 | 185 |
| | Avg. raw gas production rate, mmscf/d | 185 | 164 |
| | Avg. maximum sales gas rate, TJ/d | 164 | 104 |
| | Peak oil/cond rate, mbd | • | 33 |
| | Field life, years | 20 | 800 at 3:1 comp |
| | Critical oil/gas host/onshore plant arrival pressure, psi | 800 at 3:1 comp | 800 at 3:1 comp 55 |
| | Offshore pipeline to onshore plant distance, km | 55 | 24 |
| | Offshore pipeline nominal size, inches | 24 | 150 |
| | | 150 | |

150

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Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| se definition Case reference | 2d P85 | 2d P15 1443.0 |
|--|--------------------------------|---------------------------------------|
| Gas sales, PJ | 720.0 | - |
| Oil/condensate reserves. mmb | M/G/K gas - P85 | M/G/K gas - P15 |
| Scheme | Shared systems - "base" market | Shared systems - "base" market |
| Integration | 60 PJ/yr(230TJ/d MDQ) | 60 PJ/vr(230TJ/d MDQ) |
| Products / peak avg. sales rates | 00133,(20131122) | , , , , , , , , , , , , , , , , , , , |
| apital costs, ASmm (1.1.98) - most likely | | |
| Offshore | 0.0 | 0.0 |
| Exploration well (tested) | 0.0 | 0.0 |
| Appraisal drilling template(s) | 0.0 | 0.0 |
| Appraisal wells | 0.0 | 0.0 |
| Appraisal well conversion(s) Development / commercial planning | 1.0 | 1.0 |
| Predrilled development wells | 0.0 | 0.0 |
| Post start-up development wells | 0.0 | 0.0 |
| Subsea manifold cluster(s) | 0.0 | 0.0 |
| Subsea cluster flowline set(s) | 0.0 | 0.0 |
| Subsea satellite pipeline set(s) | 0.0 | 0.0 |
| Field control / host facility costs (tie-ins / facilities) | 0.0 | 0.0 |
| FPSO mobilisation / supply | 0.0 | 0.0 |
| Main export pipeline/control umbilical | 83.0 | 83.0 |
| Project management | 0.8 | 0.8 |
| Total offshore | 8.5 | 83 |
| Onshore | | |
| Development / commercial planning | 3.0 | 3.0 |
| Gas plant (incl. CO2 removal, LPG extraction) | 160.0 | 160.0 |
| Compression | 42.0 | 42.0 |
| Export pipeline | 64.4 | 64.4 |
| Project management | 21.8 | 21.8 |
| Total onshore | 291 | 291 |
| | 376 | 376 |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | |
| Offshore | | |
| Wells (annual average) | 0.0 | 0.0 |
| Offshore facilities | 0.2 | 0.2 |
| Leased / project owned FPSO | 0.0 | 0.0 |
| Technical support/offshore logistics base/insurance | 0.6 | 0.6 |
| Total offshore | 0.8 | 0.8 |
| Onshore | | |
| Onshore plant | 7.0 | 7.0 |
| Incremental compression | 3.2 | 3.2 |
| Technical support | 2.0 | 2.0 |
| Total onshore | 12.1 | 12.1 |
| | | 13.0 |
| Grand total | 13.0 | 15.0 |
| Tariff charges Oil, S/bbl | 0.00 | 0.00 |
| Gas, S/GJ | 0.00 | 0.00 |
| Abandonment costs, ASmm (1.1.98) | | |
| Offshore | 0.0 | 0.0 |
| Wells | 0.0 | 0.2 |
| Offshore facilities | 0.2 | 0.0 |
| Sale value at abandonment | 0.0 | 0.2 |
| Total offshore | V.2 | 0.2 |
| Onshore | 11.7 | 11.7 |
| Onshore plant | 1.0 | 1.0 |
| Environmental rehabilitation | 12.7 | 12.7 |
| Total onshore | | |
| Grand total | 12.9 | 12.9 |
| | | |

| Case definition | n. | | |
|-----------------|---|----------------------------------|-------------------------------|
| | Case reference | 2d(i) | 2d(ii) |
| | Gas sales, PJ | 991.0 | 991.0 |
| | Oil/condensate reserves, mmb | - | - |
| | Scheme | M/G/K gas | M/G/K gas |
| | Integration | Shared systems - "lo-low" market | Shared systems - "low" market |
| | Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) | 60 PJ/yτ(230TJ/d MDQ) |
| Parameters | | | |
| | System | | |
| | Exploration well TVD, m | • | • |
| | Appraisal well TVD, m | 0 | • |
| | No. appraisal wells | 0 | 0 |
| | No. appraisal campaigns | 0 | 0 |
| | Development well TVD, m | 0 | • |
| | No. development wells | 0 | 0 |
| | No. appraisal well conversions, dev well s/ts or recomps | 0 | 0 |
| | New production/injection wells | 0 | 0 |
| | No. wells at central site | 0 | . 0 |
| | No. predrilled wells (incl. conversions) | 0 | 0 |
| | No. satellite well sites | 0 | 0 |
| | Avg. wells/satellite site | 0 | 0 |
| | No. devt drilling campaigns (incl. predrilling) | 0 | 0 |
| | Raw gas production capacity, mmscf/d | 174 | 260 |
| | Avg. raw gas production rate, mmscf/d | 124 | 185 |
| | Avg. maximum sales gas rate, TJ/d | 109 | 164 |
| | Peak oil/cond rate, mbd | - | - |
| | Field life, years | 30 | 26 |
| • | Critical oil/gas host/onshore plant arrival pressure, psi | • | 800 at 3:1 comp |
| | Offshore pipeline to onshore plant distance, km | 55 | 55 |
| | Offshore pipeline nominal size, inches | 20 | 24 |
| | Onshore pipeline export distance, km | 150 | 150 |
| | Onshore pipeline nominal size, inches | 14 | 14 |
| | Compression required, year of production | 1 & 11 | 1 & 9 |

| use definition Case reference Gas sales, PJ | 2d(i) 991.0 | 2d(ii) 991.0 |
|---|---|--|
| Oil/condensate reserves, mmb | • | - |
| Scheme | M/G/K gas | M/G/K gas |
| Integration | Shared systems - "lo-low" market | Shared systems - "low" market |
| Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) | 60 PJ/yr(230TJ/d MDQ) |
| , , , | | |
| apital costs, ASmm (1.1.98) - most likely | | |
| Offshore | 0.0 | 0.0 |
| Exploration well (tested) Appraisal drilling template(s) | 0.0 | 0.0 |
| Appraisal wells | 0.0 | 0.0 |
| Appraisal well conversion(s) | 0.0 | 0.0 |
| Development / commercial planning | 1.0 | 1.0 |
| Predrilled development wells | 0.0 | 0.0 |
| Post start-up development wells | 0.0 | 0.0 |
| Subsea manifold cluster(s) | 0.0 | 0.0 |
| Subsea cluster flowline set(s) | 0.0 | 0.0 |
| Subsea satellite pipeline set(s) | 0.0 | 0.0 |
| Field control / host facility costs (tie-ins / facilities) | 0.0 | 0.0 |
| FPSO mobilisation / supply | 0.0 | 0.0 83.0 |
| Main export pipeline/control umbilical | 74.3 | 0.8 |
| Project management | 0.7 | 85 |
| Total offshore | 76 | |
| Onshore | 3.0 | 3.0 |
| Development / commercial planning | 123.6 | 162.7 |
| Gas plant (incl. CO2 removal, LPG extraction) | 27.3 | 43.6 |
| Compression | 59.5 | 64.4 |
| Export pipeline Project management | 16.6 | 22.2 |
| Total onshore | 230 | 296 |
| 10tal olimor | | |
| Grand total | 306 | 381 |
| Peak operating costs, ASmm/yr (1.1.98) - most likely Offshore Wells (annual average) Offshore facilities Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 0.2 0.0 0.6 0.8 5.4 2.0 1.7 9.0 | 0.0 0.2 0.0 0.6 0.8 7.0 3.2 2.0 |
| Total onshore | 9.0 | |
| Grand total | 9.8 | 13.0 |
| Tariff charges | 0.00 | 0.00 |
| Oil, \$/bbl Gas, \$/GJ | 0.00 | 0.00 |
| Abandonment costs, A\$mm (1.1.98) | | |
| Offshore | 0.0 | 0.0 |
| Wells Offshore facilities | 0.2 | 0.2 |
| Sale value at abandonment | 0.0 | 0.0 |
| Total offshore | 0.2 | 0.2 |
| Onshore | | |
| Onshore plant | 8.8 | 11.6 |
| Environmental rehabilitation | 1.0 | 1.0 |
| Total onshore | 9.8 | 12.6 |
| | 10.0 | 12.8 |
| Grand total | 10.0 | 14.0 |

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|------|-----------|---|
| Case | definitio | n |

| Con reference 2d(iii) 2e | |
|--|-----------------|
| Case reference 2d(III) 25 Gas sales, PJ 991.0 430. | .0 |
| Oil/condensate reserves, mmb | 1 |
| Scheme M/G/K gas M/G gas | s only |
| Integration Shared systems - "high" market Tariff thro' Kipper | - "base" market |
| Products / peak avg. sales rates 80 PJ/yr(310TJ/d MDQ) 60 PJ/yr(230° | rj/d MDQ) |
| 2.4 MM | istb/yr |

| System | | |
|---|-----------------|------------------------|
| Exploration well TVD, m | • | 2200 / 2500 |
| Appraisal well TVD, m | 0 | 3300 / 3500 |
| No. appraisal wells | 0 | 3 |
| No. appraisal campaigns | 0 | 2 |
| Development well TVD, m | 0 | 3300 / 3500 |
| No. development wells | 0 | 5 |
| No. appraisal well conversions, dev well s/ts or recomps | 0 | 2 |
| New production/injection wells | 0 | , 3 |
| No. wells at central site | 0 | 5 |
| No. predrilled wells (incl. conversions) | 0 | 2 |
| No. satellite well sites | 0 | 0 |
| | 0 | 0 |
| Avg. wells/satellite site | 0 | 3 |
| No. devt drilling campaigns (incl. predrilling) | 348 | 236 |
| Raw gas production capacity, mmscf/d | 248 | 165 |
| Avg. raw gas production rate, mmscf/d | = : = | 164 |
| Avg. maximum sales gas rate, TJ/d | 218 | 9 |
| Peak oil/cond rate, mbd | - | |
| Field life, years | 22 | 17 |
| Critical oil/gas host/onshore plant arrival pressure, psi | 800 at 3:1 comp | 900 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 55 | 15 |
| Offshore pipeline nominal size, inches | 26 | 24 |
| Onshore pipeline export distance, km | 150 | 0 |
| Onshore pipeline nominal size, inches | 18 | - |
| Compression required, year of production | 1 & 7 | (available for Kipper) |

| Case reference | 2d(iii) | 2e 430.0 |
|--|--------------------------------|-------------------------------------|
| Gas sales, PJ | 991.0 | 18.1 |
| Oil/condensate reserves, mmb | - | M/G gas only |
| Scheme | M/G/K gas | Tariff thro' Kipper - "base" market |
| Integration | Shared systems - "high" market | 60 PJ/yr(230TJ/d MDQ) |
| Products / peak avg. sales rates | 80 PJ/yr(310TJ/d MDQ) | 2.4 MMstb/yr |
| apital costs, ASmm (1.1.98) - most likely | | |
| Offshore | | 0.0 |
| Exploration well (tested) | 0.0 | 0.5 |
| Appraisal drilling template(s) | 0.0 | 39.3 |
| Appraisal wells | 0.0 | 39.3 27.7 |
| Appraisal well conversion(s) | 0.0 | 2.0 |
| Development / commercial planning | 1.0 | 0.0 |
| Predrilled development wells | 0.0 | 64.4 |
| Post start-up development wells | 0.0 | 60.0 |
| Subsea manifold cluster(s) | 0.0 | 15.0 |
| Subsea cluster flowline set(s) | 0.0 | 31.0 |
| Subsea satellite pipeline set(s) | 0.0 | 35.0 |
| Field control / host facility costs (tie-ins / facilities) | 0.0 | 0.0 |
| FPSO mobilisation i supply | 0.0 | 0.0 |
| Main export pipeline/control umbilical | 87.1 | 10.0 |
| Project management | <u>0.9</u> 39 | 285 |
| Total offshore | 89 | 203 |
| Onshore | 7.0 | 0.0 |
| Development / commercial planning | 3.0 | 0.0 |
| Gas plant (incl. CO2 removal, LPG extraction) | 196.4 | 0.0 |
| Compression | 56.4 | 0.0 |
| Export pipeline | 69.3 | 0.0 |
| Project management | 27.0 352 | 0 |
| Total onshore | 332 | |
| Grand total | 441 | 284.9 |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | • |
| Offshore | 0.0 | 1.8 |
| Wells (annual average) | 0.2 | 8.5 |
| Offshore facilities | 0.0 | 0.0 |
| Leased / project owned FPSO | 0.7 | 3.5 |
| Technical support/offshore logistics base/insurance | 0.9 | 13.7 |
| Total offshore | 0.7 | |
| Onshore | 8.3 | 0.0 |
| Onshore plant | 4.1 | 0.0 |
| Incremental compression | 2.3 | 0.0 |
| Technical support Total onshore | 14.7 | 0.0 |
| 10tal onshore | | |
| Grand total | 15.6 | 13.7 |
| Tariff charges | 0.00 | 0.00 |
| Oil, S/bbl Gas, \$/GJ | 0.00 | 0.00 |
| Abandonment costs, ASmm (1.1.98) | | |
| Offshore | 0.0 | 15.0 |
| Wells | | 4.9 |
| Offshore facilities | 0.2 0.0 | 0.0 |
| Sale value at abandonment | 0.0 | 19.9 |
| Total offshore | U.2 | |
| Onshore | 14.0 | 0.0 |
| Onshore plant | 14.0 | 0.0 |
| Environmental rehabilitation | 1.0 15.0 | 0.0 |
| Total onshore | 13.0 | |
| Grand total | 15.2 | 19.9 |
| i stribili fofal | 1.0.0 | |

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|------|----|----|-------|--|

| Case reference Gas sales, PJ Oil/condensate reserves, mmb Scheme Integration Products / peak avg. sales rates | 2e P85 290.0 12.2 M/G gas only - P85 Tariff thro' Kipper - "base" market 60 PJ/yr(230TJ/d MDQ) 2.4 MMstb/yr | 2e P15 734.0 31.8 M/G gas only - P15 Tariff thro' Kipper - "base" marke 60 PJ/yr(230TJ/d MDQ) 2.4 MMstb/yr |
|---|---|--|
| (Tourse) press and a second | 2.4 MMstb/yr | 2.4 MMstb/yr |
| | 2.4 MMstb/yr | 2.4 MMstb/yr |

| S.u.ta | | |
|---|------------------------|------------------------|
| System Fundamental TVD m | • | - |
| Exploration well TVD, m | 3300 / 3500 | 3300 / 3500 |
| Appraisal well TVD, m | 3 | 3 |
| No. appraisal wells | 2 | 2 |
| No. appraisal campaigns | 3300 / 3500 | 3300 / 3500 |
| Development well TVD, m | 5 | 7 |
| No. development wells | 2 | 2 |
| No. appraisal well conversions, dev well s/ts or recomps | 3 | 5 |
| New production/injection wells | 5 | 7 |
| No. wells at central site | 2 | 2 |
| No. predrilled wells (incl. conversions) | 0 | 0 |
| No. satellite well sites | * | 0 |
| Avg. wells/satellite site | 0 | 3 |
| No. devt drilling campaigns (incl. predrilling) | 2 | 236 |
| Raw gas production capacity, mmsef/d | 236 | 165 |
| Avg. raw gas production rate, mmscf/d | 165 | 164 |
| Avg. maximum sales gas rate, TJ/d | 164 | 9 |
| Peak oil/cond rate, mbd | 9 | 23 |
| Field life, years | 13 | |
| Critical oil/gas host/onshore plant arrival pressure. psi | 900 at 3:1 comp | 900 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 15 | 15 |
| Offshore pipeline nominal size, inches | 24 | 24 |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | - | · |
| Compression required, year of production | (available for Kipper) | (available for Kipper) |

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| | 2e P85 290.0 | 2e P15 734.0 |
|--|--|---|
| Gas sales, PJ | 12.2 | 31.8 |
| Oil/condensate reserves, mmb | M/G gas only - P85 | M/G gas only - P15 |
| Scheme | Tariff thro' Kipper - "base" market | Tariff thro' Kipper - "base" marke |
| Integration | 60 PJ/yr(230TJ/d MDQ) | 60 PJ/yr(230TJ/d MDQ) |
| Products / peak avg. sales rates | 2.4 MMstb/yr | 2.4 MMstb/yr |
| | · | |
| tal costs, ASmm (1.1.98) - most likely Offshore | | |
| Exploration well (tested) | 0.0 | 0.0 |
| Appraisal drilling template(s) | 0.5 | 0.5 |
| Appraisal wells | 39.3 | 39.3 |
| Appraisal well conversion(s) | 27.7 | 27.7 |
| Development / commercial planning | 2.0 | 2.0 |
| Predrilled development wells | 0.0 | 48.4 |
| Post start-up development wells | 64.4 | 49.6 |
| Subsea manifold cluster(s) | 60.0 | 84.0 |
| Subsea cluster flowline set(s) | 15.0 | 21.0 |
| | 31.0 | 31.0 |
| Subsea satellite pipeline set(s) Field control / host facility costs (tie-ins / facilities) | 35.0 | 35.0 |
| FPSO mobilisation / supply | 0.0 | 0.0 |
| Main export pipeline/control umbilical | 0.0 | 0.0 |
| | 10.0 | 12.4 |
| Project management Total offshore | 285 | 351 |
| ••• | | |
| Onshore | 0.0 | 0.0 |
| Development / commercial planning Gas plant (incl. CO2 removal, LPG extraction) | 0.0 | 0.0 |
| | 0.0 | 0.0 |
| Compression | 0.0 | 0.0 |
| Export pipeline | 0.0 | 0.0 |
| Project management | 0 | 0 |
| Total onshore | | |
| Grand total | 284.9 | 350.9 |
| Offshore Wells (annual average) Offshore facilities | 1.8 8.5 | 2.5 10.3 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore | 0.0 3.5 13.7 | 0.0 4.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant | 0.0 3.5 | 4.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression | 0.0 3.5 <i>i3.7</i> | 4.0 16.8 0.0 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 3.5 13.7 0.0 0.0 | 4.0 /6.8 0.0 0.0 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 | 4.0 /6.8 0.0 0.0 0.0 0.0 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 3.5 13.7 0.0 0.0 0.0 | 4.0 /6.8 0.0 0.0 0.0 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 | 4.0 /6.8 0.0 0.0 0.0 0.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 | 4.0 /6.8 0.0 0.0 0.0 0.0 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Tariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 | 4.0 /6.8 0.0 0.0 0.0 0.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Tariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 | 4.0 /6.8 0.0 0.0 0.0 0.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Tariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Cariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Cariff charges Oil, S/bbl Gas, S/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 0.00 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 0.00 0.00 0.00 0.00 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Fariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 15.0 4.9 0.0 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 0.00 0.00 0.00 0.00 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Cariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 15.0 4.9 0.0 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 0.00 0.00 0.00 0.00 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Fariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 15.0 4.9 0.0 19.9 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 0.00 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Fariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant Environmental rehabilitation | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 0.00 15.0 4.9 0.0 19.9 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 |
| Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total Fariff charges Oil, \$/bbl Gas, \$/GJ Abandonment costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant | 0.0 3.5 13.7 0.0 0.0 0.0 0.0 13.7 0.00 0.00 15.0 4.9 0.0 19.9 0.0 | 4.0 16.8 0.0 0.0 0.0 0.0 16.8 0.00 0.00 21.0 6.1 0.0 27.1 0.0 0.0 |

Case definition

| Case reference | 2e(i) | 2e(11) |
|----------------------------------|---------------------------------------|-----------------------------------|
| Gas sales, PJ | 430.0 | 430.0 |
| Oil/condensate reserves, mmb | 18.1 | 18.1 |
| Scheme | M/G gas only | M/G gas only |
| Integration | Tariff thro' Kipper - "lo-low" market | Tariff thro' Kipper - "low" marke |
| Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) | 40 PJ/yr(155TJ/d MDQ) |
| . , | 1.8 MMstb/yr | 1.4 MMstb/yr |
| | | |

| System | | |
|---|------------------------|------------------------|
| Exploration well TVD, m | • | - |
| Appraisal well TVD, m | 3300 / 3500 | 3300 / 3500 |
| No. appraisal wells | 3 | 3 |
| ••• | 2 | 2 |
| No. appraisal campaigns | 3300 / 3500 | 3300 / 3500 |
| Development well TVD, m | 5 | 5 |
| No. development wells | 2 | 2 |
| No. appraisal well conversions, dev well s/ts or recomps | 3 | 3 |
| New production/injection wells | 5 | 5 |
| No. wells at central site | 1 | 3 |
| No. predrilled wells (incl. conversions) | 0 | 0 |
| No. satellite well sites | 0 | 0 |
| Avg. wells/satellite site | 0 | 3 |
| No. devt drilling campaigns (incl. predrilling) | 3 | 158 |
| Raw gas production capacity, mmscf/d | 158 | 112 |
| Avg. raw gas production rate, mmscf/d | 112 | 109 |
| Avg. maximum sales gas rate, TJ/d | 109 | 5 |
| Peak oil/cond rate, mbd | 7 | • |
| Field life, years | 19 | 23 |
| Critical oil/gas host/onshore plant arrival pressure, psi | 900 at 3:1 comp | 900 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 15 | 15 |
| Offshore pipeline nominal size, inches | 20 | 20 |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | - | |
| Compression required, year of production | (available for Kipper) | (available for Kipper) |

| Case reference | 2e(i) | 2e(ii) 430.0 |
|--|---------------------------------------|--|
| Gas sales, PJ | 430.0 | |
| Oil/condensate reserves, mmb | 18.1 | 18.1 |
| Scheme | M/G gas only | M/G gas only |
| Integration | Tariff thro' Kipper - "lo-low" market | Tariff thro' Kipper - "low" marke 40 PJ/yr(155TJ/d MDQ) |
| Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) 1.8 MMstb/yr | 1.4 MMstb/yr |
| ipital costs, A\$mm (1.1.98) - most likely | | |
| Offshore | | |
| Exploration well (tested) | 0.0 | 0.0 |
| Appraisal drilling template(s) | 0.5 | 0.5 |
| Appraisal wells | 41.4 | 41.4 |
| Appraisal well conversion(s) | 27.7 | 27.7 |
| Development / commercial planning | 2.0 | 2.0 |
| Predrilled development wells | 18.1 | 18.1 |
| Post start-up development wells | 46.3 | 46.3 |
| Subsea manifold cluster(s) | 60.0 | 60.0 15.0 |
| Subsea cluster flowline set(s) | 15.0 | 28.5 |
| Subsea satellite pipeline set(s) | 28.5 | . 35.0 |
| Field control / host facility costs (tie-ins / facilities) | 35.0 | 0.0 |
| FPSO mobilisation / supply | 0.0 0.0 | 0.0 |
| Main export pipeline/control umbilical | 9.9 | 9.9 |
| Project management | 284 | 284 |
| Total offshore | 284 | 20, |
| Onshore | 0.0 | 0.0 |
| Development / commercial planning | 0.0 | 0.0 |
| Gas plant (incl. CO2 removal, LPG extraction) | 0.0 | 0.0 |
| Compression | 0.0 | 0.0 |
| Export pipeline | 0.0 | 0.0 |
| Project management | 0.0 | 0 |
| Total onshore | | |
| Grand total | 284 | 284 |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | |
| Offshore | | 1.0 |
| Wells (annual average) | 1.8 | 1.8 |
| Offshore facilities | 8.4 | 8.4 |
| Leased / project owned FPSO | 0.0 | 0.0 |
| Technical support/offshore logistics base/insurance | 3.5 | 3.5 13.7 |
| Total offshore | 13.7 | 15.7 |
| Onshore | | 0.0 |
| Onshore plant | 0.0 | 0.0 |
| Incremental compression | 0.0 | 0.0 |
| Technical support | 0.0 | 0.0 |
| Total onshore | 0.0 | 0.0 |
| Grand total | 13.7 | 13.7 |
| Tariff charges | | |
| Oil, S/bbl | 0.00 | 0.00 |
| Gas. S/GJ | 0.00 | 0.00 |
| | | |
| Abandonment costs, ASmm (1.1.98) Offshore | | |
| Wells | 15.0 | 15.0 |
| Offshore facilities | 4.9 | 4.9 |
| Sale value at abandonment | 0.0 | 0.0 |
| Total offshore | 19.9 | 19.9 |
| Onshore | | |
| Onshore plant | 0.0 | 0.0 |
| Environmental rehabilitation | 0.0 | 0.0 |
| Total onshore | 0.0 | 0.0 |
| | 10.0 | 19.9 |
| Grand total | 19.9 | 17.7 |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| Caca | 4.0 | finition |
|------|-----|----------|
| Case | ae | inition |

| n | | O.C. |
|----------------------------------|-------------------------------------|-------------------------------------|
| Case reference | 2e(iii) | 2 f |
| Gas sales, PJ | 430.0 | 495.0 |
| Oil/condensate reserves, mmb | 18.1 | 19 |
| | M/G gas only | B/M/G gas only (after oil devt) |
| Scheme | 5 , | Tariff thro' Kipper - "base" market |
| Integration | Tariff thro' Kipper - "high" market | 60 PJ/yr(230TJ/d MDQ) |
| Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) | |
| • - | 2.0 MMstb/yr | 2.5MMstb/yr cond |

| System | | |
|---|------------------------|------------------------|
| Exploration well TVD, m | • | 3300 / 3500 |
| Appraisal well TVD, m | 3300 / 3500 | • |
| No. appraisal wells | 3 | 2 |
| No. appraisal campaigns | 2 | 2 |
| Development well TVD, m | 3300 / 3500 | 3300 / 3500 |
| No. development wells | 5 | 7 |
| No. appraisal well conversions, dev well s/ts or recomps | 2 | 5 |
| New production/injection wells | 3 | 2 |
| No. wells at central site | 5 | 5 |
| No. predrilled wells (incl. conversions) | 1 | 2 |
| No. satellite well sites | . 0 | 1 |
| Avg. wells/satellite site | 0 | 2 |
| No. devt drilling campaigns (incl. predrilling) | 3 | 4 |
| Raw gas production capacity, mmscf/d | 158 | 236 |
| Avg. raw gas production rate, mmscf/d | 112 | 165 |
| Avg. maximum sales gas rate, TJ/d | 109 | 164 |
| Peak oil/cond rate, mbd | 8 | 10 |
| Field life, years | 19 | 17 |
| Critical oil/gas host/onshore plant arrival pressure. psi | 900 at 3:1 comp | 900 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 15 | 15 |
| Offshore pipeline nominal size, inches | 20 | 20 |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | · • | - |
| | (available for Kipper) | (available for Kipper) |
| Compression required, year of production | (** | • |

| | se reference | 2e(iii) | 2f |
|-----------------|---|--|---|
| | s sales, PJ | 430.0 | 495.0 |
| Oi | Voondensate reserves, mmb | 18.1 | 19 |
| Sc | heme | M/G gas only | B/M/G gas only (after oil devt) |
| Int | egration | Tariff thro' Kipper - "high" market | Tariff thro' Kipper - "base" marke |
| | oducts / peak avg. sales rates | 40 PJ/yτ(155TJ/d MDQ) | 60 PJ/yr(230TJ/d MDQ) |
| | | 2.0 MMstb/yr | 2.5MMstb/yr cond |
| anital casts AS | mm (1.1.98) - most likely | | |
| • | Nshore | | |
| | sploration well (tested) | 0.0 | 0.0 |
| | ppraisal drilling template(s) | 0.5 | 0.0 |
| | ppraisal wells | 41.4 | 34.6 |
| | ppraisal well conversion(s) | 27.7 | 44.0 |
| | evelopment / commercial planning | 2.0 | 2.0 |
| | redrilled development wells | 18.1 | 0.0 |
| | ost start-up development wells | 46.3 | 46.3 |
| | ubsea manifold cluster(s) | 60.0 | 84.0 |
| | ubsea cluster flowline set(s) | 15.0 | 21.0 |
| _ | ubsea satellite pipeline set(s) | 28.5 | 41.5 |
| J1 | ield control / host facility costs (tie-ins / facilities) | 35.0 | 35.0 |
| | | 0.0 | 0.0 |
| | PSO mobilisation / supply | 0.0 | 0.0 |
| | fain export pipeline/control umbilical | 9.9 | 12.5 |
| Р | roject management | 284 | 321 |
| _ | Total offshore | 204 | |
| | Inshore | 0.0 | 0.0 |
| | Development / commercial planning | | 0.0 |
| | as plant (incl. CO2 removal, LPG extraction) | 0.0 | 0.0 |
| | Compression | 0.0 | 0.0 |
| E | xport pipeline | 0.0 | 0.0 |
| P | roject management | 0.0 | |
| | Total onshore | 0 | 0 |
| | Grand total | 284 | 321 |
| Peak operating | costs, A\$mm/yr (1.1.98) - most likely | | |
| (| Offshore | | 2.6 |
| • | Wells (annual average) | 1.8 | 2.5 |
| (| Offshore facilities | 8.4 | 10.4 |
| J | _eased / project owned FPSO | 0.0 | 0.0 |
| - | Technical support/offshore logistics base/insurance | 3.5 | 3.8 |
| | Total offshore | 13.7 | 16.7 |
| 1 | Onshore | | |
| | Onshore plant | 0.0 | 0.0 |
| , | Incremental compression | 0.0 | 0.0 |
| | | 0.0 | 0.0 |
| 1 | lechnical support | | |
| 1 | Technical support Total onshore | 0.0 | 0.0 |
| 1 | | 0.0 | 0.0 |
| 1 | | | |
| Tariff charges | Total onshore Grand total | 0.0 | 0.0 |
| Tariff charges | Total onshore | 0.00 | 0.0 16.7 |
| Tariff charges | Total onshore Grand total | 0.0 | 0.0 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl | 0.00 | 0.0 16.7 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ | 0.00 | 0.0 16.7 0.00 0.00 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) | 0.00 | 0.0 16.7 0.00 0.00 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells | 0.0 13.7 0.00 0.00 | 0.0 16.7 0.00 0.00 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities | 0.00 0.00 0.00 | 0.0 16.7 0.00 0.00 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment | 0.00 0.00 0.00 15.0 4.9 | 0.0 16.7 0.00 0.00 21.0 6.1 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore | 0.00 0.00 0.00 15.0 4.9 0.0 | 0.0 16.7 0.00 0.00 0.00 21.0 6.1 0.0 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore | 0.00 0.00 0.00 15.0 4.9 0.0 19.9 | 0.0 16.7 0.00 0.00 0.00 21.0 6.1 0.0 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant | 0.00 0.00 0.00 15.0 4.9 0.0 19.9 | 0.0 16.7 0.00 0.00 0.00 21.0 6.1 0.0 27.1 |
| Tariff charges | Total onshore Grand total Oil, S/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant Environmental rehabilitation | 0.00 0.00 0.00 15.0 4.9 0.0 19.9 | 0.0 16.7 0.00 0.00 0.00 21.0 6.1 0.0 27.1 |
| Tariff charges | Total onshore Grand total Oil, \$/bbl Gas, \$/GJ costs, A\$mm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant | 0.00 0.00 0.00 15.0 4.9 0.0 19.9 0.0 0.0 | 0.0 16.7 0.00 0.00 21.0 6.1 0.0 27.1 0.0 0.0 |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

Case definition

| Case reference | 2g | 21 |
|----------------------------------|-------------------------------------|---------------------|
| | 495.0 | 23.0 |
| Gas sales, PJ | 36.9 | 24.8 |
| Oil/condensate reserves, mmb | * | - · · · · |
| Scheme | B/M oil + B/M/G gas | B/M oil - water inj |
| Integration | Tariff thro' Kipper - "base market" | Tuna satellite |
| Products / peak avg. sales rates | 60 PJ/yr(230TJ/d MDQ) | 50 mbd water inj |
| Products / peak avg. sales races | 9.0MMstb/yr oil + 2.5MMstb/yr cond | 9.0MMstb/yr, 7PJ/yr |

| System | | |
|---|-----------------------------------|---------------|
| Exploration well TVD, m | | 3200 |
| Appraisal well TVD, m | 3200 / 3300 / 3500 | 3200 |
| No. appraisal wells | 3 | 1 |
| No. appraisal campaigns | 2 | 1 2200 / 2060 |
| Development well TVD, m | 3200 / 2850 / 3300 / 3500 | 3200 / 2850 |
| No. development wells | 9 | 4 |
| No. appraisal well conversions, dev well s/ts or recomps | 2/5 | 2 |
| New production/injection wells | 3 / 2 | 3 |
| No. wells at central site | 3 / 5 | 3 |
| No. predrilled wells (incl. conversions) | 4/2 | 3 |
| No. satellite well sites | 1 / 1 | 1 |
| Avg. wells/satellite site | 1/2 | 1 |
| No. devt drilling campaigns (incl. predrilling) | 2 / 4 | 2 |
| Raw gas production capacity, mmscf/d | 236 | 70 |
| Avg. raw gas production rate, mmscf/d | 165 | 70 |
| Avg. maximum sales gas rate, TJ/d | 164 | 65 |
| Peak oil/cond rate, mbd | 25 / 10 | 30 |
| Field life, years | 4 years > 5mbd oil + 17 years gas | 9years 2 1mbd |
| Critical oil/gas host onshore plant arrival pressure, psi | 400 / 900 at 3:1 comp | 150 |
| Offshore pipeline to onshore plant distance, km | 0 | 29 |
| Offshore pipeline nominal size, inches | 0 | 12 |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | • | = |
| Compression required, year of production | • | • |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| | n | _ | 2i |
|---------------|---|---|---|
| | Case reference | 2g | 23.0 |
| | Gas sales, PJ | 495.0 | |
| | Oil/condensate reserves, mmb | 36.9 | 24.8 |
| | Scheme | B/M oil + B/M/G gas | B/M oil - water inj |
| | Integration | Tariff thro' Kipper - "base market" | Tuna satellite |
| | Products / peak avg. sales rates | 60 PJ/yr(230TJ/d MDQ) | 50 mbd water inj |
| | | 9.0MMstb/yr oil + 2.5MMstb/yr cond | 9.0MMstb/yr; 7PJ/yr |
| | , ASmm (1.1.98) - most likely | | |
| apitai costs, | Offshore | | |
| | Exploration well (tested) | 0.0 | 0.0 |
| | Appraisal drilling template(s) | 0.5 | 0.5 |
| | Appraisal wells | 48.3 . | 13.7 |
| | Appraisal well conversion(s) | 54.5 | 10.5 |
| | Development / commercial planning | 3.0 | 1.0 |
| | Predrilled development wells | 43.7 | 43.7 |
| | | 54.9 | 8.6 |
| | Post start-up development wells | 84.0 | 22.9 |
| | Subsea manifold cluster(s) | 21.0 | 8.4 |
| | Subsea cluster flowline set(s) | 66.0 | 68.4 |
| | Subsea satellite pipeline set(s) | | 31.8 |
| | Field control / host facility costs (tie-ins / facilities) | 37.3 | 0.0 |
| | FPSO mobilisation / supply | 10.0 | 0.0 |
| | Main export pipeline/control umbilical | 0.0 | |
| | Project management | 14.0 | 6.2 |
| | Total offshore | 437 | 216 |
| | Onshore | | |
| | Development / commercial planning | 0.0 | 0.0 |
| | Gas plant (incl. CO2 removal, LPG extraction) | 0.0 | 0.0 |
| | Compression | 0.0 | 0.0 |
| | Export pipeline | 0.0 | 0.0 |
| | Project management | 0.0 | 0.0 |
| | Total onshore | 0 | 0 |
| | Total onshore | | |
| | Grand total | 437 | 216 |
| Peak operat | ting costs, ASmm/yr (1.1.98) - most likely | | |
| | Offshore | • | 1.8 |
| | Wells (annual average) | • | 4.5 |
| | Offshore facilities | - | |
| | | | |
| | Leased / project owned FPSO | • . | 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | | 0.0 3.0 |
| | Leased / project owned FPSO | 0.0 | 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | | 0.0 3.0 9.3 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore | 0.0 | 0.0 3.0 9.3 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore | 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant | 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 |
| · | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore lant Incremental compression | 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support | 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 |
| Tariff char | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 |
| Tariff char | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 |
| Tariff char | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 1.50 0.60 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 0.00 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore plant Incremental compression Technical support Total onshore Grand total rges Oil, S/bbl Gas, S/GJ ment costs, ASmm (1.1.98) Offshore Wells Offshore facilities | 0.0 0.0 0.0 0.0 0.0 0.00 0.00 0.00 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 0.00 0.00 27.0 6.8 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 0.0 9.3 1.50 0.60 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore Onshore logistics base/insurance Total offshore Onshore plant Incremental compression Technical support Total onshore Grand total reges Oil, S/bbl Gas, S/GJ ment costs, ASmm (1.1.98) Offshore Wells Offshore facilities Sale value at abandonment Total offshore | 0.0 0.0 0.0 0.0 0.0 0.00 0.00 0.00 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 0.0 9.3 1.50 0.60 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance | 0.0 0.0 0.0 0.0 0.0 0.00 0.00 27.0 6.8 0.0 33.8 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 0.0 9.3 1.50 0.60 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore Onshore logistics base/insurance Total offshore Onshore plant Incremental compression Technical support Total onshore Grand total Technical support Total onshore Grand total Technical support Total offshore Onshore Onshore plant | 0.0 0.0 0.0 0.0 0.00 0.00 0.00 27.0 6.8 0.0 33.8 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 9.3 1.50 0.60 12.0 2.9 0.0 14.9 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore Onshore logistics base/insurance Total offshore Onshore plant Incremental compression Technical support Total onshore Grand total Technical support Total offshore Offshore Wells Offshore facilities Sale value at abandonment Total offshore Onshore Onshore plant Environmental rehabilitation | 0.0 0.0 0.0 0.0 0.0 0.00 0.00 27.0 6.8 0.0 33.8 0.0 0.0 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 0.0 9.3 1.50 0.60 12.0 2.9 0.0 14.9 |
| | Leased / project owned FPSO Technical support/offshore logistics base/insurance Total offshore Onshore Onshore Onshore logistics base/insurance Total offshore Onshore plant Incremental compression Technical support Total onshore Grand total Technical support Total onshore Grand total Technical support Total offshore Onshore Onshore plant | 0.0 0.0 0.0 0.0 0.00 0.00 0.00 27.0 6.8 0.0 33.8 | 0.0 3.0 9.3 0.0 0.0 0.0 0.0 0.0 9.3 1.50 0.60 12.0 2.9 0.0 14.9 |

Shell Development Australia Basker Manta Evaluation Case Definitions and Costs

| ^ | | |
|-------|-----|---------|
| C.ase | aeı | inition |

| Case reference | 2i P85 | 2i P15 |
|-----------------------------------|---------------------------|---------------------------|
| Gas sales, PJ | 14.9 | 32.8 |
| Oil/condensate reserves, mmb | 16.7 | 35.6 |
| Scheme | B/M oil - water inj - P85 | B/M oil - water inj - P15 |
| Integration | Tuna satellite | Tuna satellite |
| Products / peak avg. sales rates | 50 mbd water inj | 50 mbd water inj |
| r todacts / peak avg. sales lates | 9.0MMstb/yr; 7PJ/yr | 9.0MMstb/yr; 9PJ/yr |

| System | | |
|---|---------------|----------------|
| Exploration well TVD, m | - | • |
| Appraisal well TVD, m | 3200 | 3200 |
| No. appraisal wells | 1 | l |
| No. appraisal campaigns | 1 | 1 |
| Development well TVD, m | 3200 / 2850 | 3200 / 2850 |
| No. development wells | 4 | 4 |
| No. appraisal well conversions, dev well s/ts or recomps | 2 | 3 |
| New production/injection wells | 3 | 3 |
| No. wells at central site | 3 | 3 |
| No. predrilled wells (incl. conversions) | 3 | 3 |
| No. satellite well sites | 1 | 1 |
| Avg. wells/satellite site | 1 | 1 |
| No. devt drilling campaigns (incl. predrilling) | 2 | 2 |
| Raw gas production capacity, mmsef/d | 70 | 70 |
| Avg. raw gas production rate, mmscf/d | 70 | 70 |
| Avg. maximum sales gas rate, TJ/d | 65 | 65 |
| Peak oil/cond rate, mbd | 30 | 30 |
| Field life, years | 7years > 1mbd | 12years > 1mbd |
| Critical oil/gas host/onshore plant arrival pressure, psi | 150 | 150 |
| Offshore pipeline to onshore plant distance, km | 29 | 29 |
| Offshore pipeline nominal size, inches | 12 | 12 |
| Onshore pipeline export distance, km | 0 | 0 |
| Onshore pipeline nominal size, inches | - | - |
| Compression required, year of production | • | - |

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| Care sales, P | | Case reference | 2i P85 | 2i P15 |
|---|----------------|--|---------------------|--|
| Obleshment rear-very, attent Schemer Trans satellite Trans | | Gas sales, PJ | | |
| Tuna satellite Tuna satellite Tuna satellite Products / peak avg. sales rates So meld water in j So me | | Oil/condensate reserves, mmb | | |
| Development | | Scheme | - | · · |
| Products paint Sup Sales interest | | Integration | | |
| Capital costs, Almer (1.1.98) - most likely | | Products / peak avg. sales rates | - | _ |
| Offshore 0.0 0.0 Exploration well (tested) 0.5 0.5 Appraisal wells 13.7 13.7 Appraisal well convenion(s) 10.5 10.5 Development commercial planning 1.0 1.0 Profit Start up development wells 43.7 43.7 Four start up development wells 8.6 16.5 Subsea smanfold cluster(s) 22.9 22.9 Subsea statilities pripeline set(s) 68.4 68.4 Subsea statility oriest fities of facilities) 31.8 51.8 FISI control (Institute ories (s) (s) 68.4 68.4 Field control (Institute ories (s) (s) 68.4 68.4 Field control (Institute ories (s) (s) 0.0 0.0 Main export pipelinete (connectic) planning 0.0 0.0 Onshore 0.0 0.0 0.0 One pression 0.0 0.0 0.0 Export pipeline (connectic) planning 0.0 0.0 0.0 Compression 0.0 0.0 0.0 Co | | | 9.0MMstb/yr; 7PJ/yr | 9.0MMstb/yr; 9PJ/yr |
| Offshore 0.0 0.0 Exploration well (tested) 0.5 0.5 Appraisal wells 13.7 13.7 Appraisal well conversion(s) 10.5 10.5 Development of commercial planning 1.0 1.0 Prod start-up development wells 43.7 43.7 Post start-up development wells 8.6 16.5 Subsea smanifold cluster(s) 22.9 22.9 Subsea statistic profiles est(s) 68.4 68.4 Field control / but actication of supply 0.0 0.0 Main export pripelinic control instances of profiles est(s) 0.0 0.0 Project management 6.2 6.2 2.24 Onthore 0.0 0.0 0.0 Gas plant (incl. CO2 removal. LPG extraction) 0.0 0.0 Compression | • - | | | |
| Exploration well (tested) | Capital costs. | | | |
| Apprisal drilling template(s) | | | 0.0 | 0.0 |
| Appraisal wells onversion(s) Appraisal well conversion(s) Appraisal well conversion(s) Appraisal well conversion(s) Development / commercial planning Produlled development wells 43.7 Post start-up development wells \$ 46 Subsea manifold cluster(t) \$ 43.7 Post start-up development wells \$ 45 Subsea manifold cluster(t) \$ 44 \$ 48.4 \$ 48.4 \$ 48.4 \$ 55 \$ 68.4 | | | | 0.5 |
| Appriasal well conversion(s) Development / commercial planning 10 10 10 10 Predicible development wells 43.7 43.7 Post start-up development wells 84.6 16.5 Subsex manifold clustre(s) 22.9 32.9 Subsex cluster flowine set(s) 84.4 68.4 Field control / host facility cost stic-ins / facilities) 31.8 31.8 FPSC mobilisation is supply 0.0 0.0 Main export pipeline/control unabilical Protei Influence of the supply 0.0 0.0 Project management 10 0.0 0.0 Gas plant (inel, CO2 removal, LPG extraction) Gas plant (inel, CO2 removal, LPG extraction) Compression Export pipeline 20 0.0 Export pipeline 10 0. | | | | 13.7 |
| Development / Commercial planning | | | | 10.5 |
| Predrilled development wells | | | | 1.0 |
| Post start—up development wells | | | | 43.7 |
| Subsea manifold cluster(s) 22.9 22.9 | | | 8.6 | 16.5 |
| Subsea cluster flowine set(s) | | | | 22.9 |
| Sabses astellite pipeline set(4) | | | 8.4 | 8.4 |
| Field central / host facility costs (tic-ins / facilities) | | · · | 68.4 | 68.4 |
| PPSO mobilisation / supply | | Field control / host facility costs (tie-ins / facilities) | 31.8 | |
| Main export pipeline/control umbilical 0.0 0.0 1.0 Project management 6.2 6.2 Total offshore 216 224 Onshore 0.0 0.0 Gas plant (incl. CO2 removal, LPG extraction) 0.0 0.0 Compression 0.0 0.0 Export pipeline 0.0 0.0 Project management 0.0 0.0 Project management 0.0 0.0 Total onshore 0 0 Grand total 216 224 Peak operating costs, ASmm/vr (1.1.98) - most likely Offshore 1.8 1.8 Cffshore facilities 4.5 4.5 Cffshore facilities 4.5 4.5 Lessed / project owned FPSO 0.0 0.0 Technical support/offshore logistics base/insurance 5.0 3.1 Total offshore 7.3 9.3 Onshore 0.0 0.0 Incremental compression 0.0 0.0 Technical support 0.0 0.0 Technical support 0.0 0.0 Technical support 0.0 0.0 Total onshore 0.0 0.0 Total onshore 0.0 0.0 Total onshore 0.0 0.0 Grand total 9.3 9.3 Tariff charges 1.50 1.50 Offshore facilities 0.0 0.60 Abandonment costs, ASmm (1.1.98) Offshore facilities 2.9 2.9 Sale value at abandonment 0.0 0.0 Total onshore 0.0 0.0 Onshore 0.1 0.0 Onshore 0.1 0.0 0.0 Everyonmental rehabilitation 0.0 0.0 Everyonmental rehabilitation 0.0 0.0 Everyonmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 Onshore 0.0 0.0 Everyonmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 Onsho | | | 0.0 | |
| Project management | | | 0.0 | |
| Total offshore | | | 6.2 | |
| Onshore Development / commercial planning Gas plant (incl. COZ removal, LPG extraction) 0.0 0.0 Gas plant (incl. COZ removal, LPG extraction) 0.0 0.0 Compression 0.0 0.0 Export pipeline 0.0 0.0 Project management 0.0 0.0 Total onshore 0 0 Grand total 216 224 Peak operating costs, ASmm/yr (1.1.98) - most likely Offshore 1.8 1.8 Wells (annual average) 1.8 1.8 Offshore 4.5 4.5 Leased / project owned FPSO 0.0 0.0 Leased / project owned FPSO 0.0 0.0 Technical support offshore logistics base/insurance 9.3 9.3 Onshore Plant 0.0 0.0 Onshore plant 0.0 0.0 Incremental compression 0.0 0.0 Total onshore 0.0 0.0 Cand total 9.3 9.3 Total onshore Offshore facil | | · - | 216 | 224 |
| Development.' commercial planning | | ** | | |
| Gas plant (incl. CO2 removal, LPG extraction) | , | | 0.0 | • |
| Compression | | Gas plant (incl. CO2 removal, LPG extraction) | 0.0 | |
| Export pipeline | | | 0.0 | |
| Project management | | | 0.0 | |
| Peak operating costs, ASmm/yr (1.1.98) - most likely Offshore Uvelic (annual average) 1.8 1.8 1.8 1.8 1.5 1. | | | 0.0 | |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | | 0 | 0 |
| Peak operating costs, ASmm/yr (1.1.98) - most likely | | Grand total | 216 | 224 |
| Offshore Wells (annual average) 1.8 1.8 Offshore facilities 4.5 4.5 Leased / project owned FPSO 0.0 0.0 Technical support Onshore 9.3 9.3 Onshore Plant 0.0 0.0 Incremental compression 0.0 0.0 Incremental compression 0.0 0.0 Total onshore 0.0 0.0 Grand total 9.3 9.3 Tariff charges 0.0 0.0 Oil, S/bbl 1.50 1.50 Gas. S/GJ 0.60 0.60 Abandonment costs. ASmm (1.1.98) 1.50 1.50 Offshore 0.60 0.60 Wells 12.0 12.0 Offshore facilities 2.9 2.9 Sale value at abandonment 0.0 0.0 Total offshore 14.9 14.9 Onshore 0.0 0.0 Conshore 0.0 0.0 Environmental rehabilitation 0.0 0.0 | | Grana wie | | |
| Nells (annual average) 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.5 | Peak operat | = | | |
| Continue | | | 1.9 | 1.8 |
| Consider facilities 1.00 0.0 0.0 | | | | |
| Technical support/offshore logistics base/insurance 3.0 3.1 | | | | |
| Total offshore 9.3 9.3 9.3 | | | | |
| Onshore Onshore plant 0.0 0.0 0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0 | | ••• | | |
| Onshore plant 0.0 0.0 Incremental compression 0.0 0.0 Technical support 0.0 0.0 Total onshore Grand total 9.3 9.3 Tariff charges Oil, S/bbl 1.50 1.50 Gas. S/GJ 0.60 0.60 Abandonment costs. ASmm (1.1.98) Offshore Wells 12.0 12.0 Offshore facilities 2.9 2.9 Sale value at abandonment 0.0 0.0 Total offshore 14.9 14.9 Onshore 0.0 0.0 Onshore plant 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 | | *** | | |
| Incremental compression 0.0 0.0 0.0 Technical support 0.0 0.0 Total onshore 0.0 0.0 Grand total 9.3 9.3 Tariff charges 0.60 0.60 Tariff charges 0.60 0.60 Abandonment costs, ASmm (1.1.98) 0 | | | 0.0 | 0.0 |
| Technical support | | | | 0.0 |
| Total onshore 0.0 0.0 | | · · | | . 0.0 |
| Tariff charges | | | | 0.0 |
| Tariff charges | | Torms Common o | | |
| Oil, S/bbl 1.50 1.50 Gas. S/GJ 0.60 0.60 Abandonment costs, ASmm (1.1.98) Offshore Wells Offshore Wells Offshore facilities 2.9 Sale value at abandonment Total offshore Onshore Onshore Onshore Onshore Onshore Jant Environmental rehabilitation Total onshore On On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total On On Total Onshore On On Total Onshore On On Total Onshore On On Total Onshore On On Total On On Total On On Total On On Total | | Grand total | 9.3 | 9.3 |
| Oil, S/bbl 1.50 1.50 Gas. S/GJ 0.60 0.60 Abandonment costs, ASmm (1.1.98) Offshore Wells Offshore Wells Offshore facilities 2.9 Sale value at abandonment Total offshore Onshore Onshore Onshore Onshore Onshore Jant Environmental rehabilitation Total onshore On On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total onshore On On Total Onshore On On Total Onshore On On Total Onshore On On Total Onshore On On Total Onshore On On Total Onshore On On On On On On On On On On On On On On O | m:ee t | | | |
| Abandonment costs, ASmm (1.1.98) Offshore Wells 12.0 12.0 Offshore facilities 2.9 2.9 Sale value at abandonment 0.0 0.0 Total offshore 14.9 14.9 Onshore Onshore plant 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 Total on | i anii char | • | 1.50 | 1.50 |
| Abandonment costs. ASmm (1.1.98) Offshore Wells Offshore facilities Offshore facilities Sale value at abandonment Total offshore Onshore Onshore Onshore plant Environmental rehabilitation Total onshore Total onshore On O Total onshore On O On Total onshore On O On Total onshore On O On Total onshore | | | | 0.60 |
| Offshore 12.0 12.0 Wells 12.0 12.0 Offshore facilities 2.9 2.9 Sale value at abandonment 0.0 0.0 Total offshore 14.9 14.9 Onshore 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 | | G43, 3/GJ | | |
| Wells 12.0 12.0 Offshore facilities 2.9 2.9 Sale value at abandonment 0.0 0.0 Total offshore 14.9 14.9 Onshore 0.0 0.0 Conshore plant 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 | Abandonm | | | |
| Offshore facilities Offshore facilities Sale value at abandonment Total offshore Onshore Onshore Onshore plant Environmental rehabilitation Total onshore Ono Total onshore Ono Ono Total onshore Ono Ono Ono Ono Ono Ono Ono On | | | | 12.0 |
| Sale value at abandonment 0.0 0.0 Total offshore 14.9 14.9 Onshore 0.0 0.0 Onshore plant 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 Total on | | | | |
| Total offshore | | | | |
| Onshore Onshore plant Onshore plant Environmental rehabilitation Total onshore 0.0 0.0 0.0 0.0 0.0 | | | | |
| Onshore plant 0.0 0.0 Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 | | | 14.9 | 14.9 |
| Environmental rehabilitation 0.0 0.0 Total onshore 0.0 0.0 | | | 0.0 | 0.0 |
| Total onshore 0.0 0.0 | | • | | |
| Total bishore | | | | the state of the s |
| Grand total 14.9 14.9 | | 1 otal onsnore | 0.0 | 0.0 |
| | | Grand total | 14.9 | 14.9 |

Case definition

Case reference
Gas sales, PJ
Oil/condensate reserves, mmb
Scheme
Integration
Products / peak avg. sales rates

991.0
29.1
K + M/G gas only - "base" market
Shared (no tariff) common systems
60 PJ/yr(230TJ/d MDQ)

1.8 MMstb/yr

800

3b

29.1
K + M/G gas only - "lo-low" market
Shared (no tariff) common systems
40 PJ/yr(155TJ/d MDQ)
1.8 MMstb/yr

3b(i)

991.0

| - | - |
|-------------------------------|-----------------------------------|
| 0/3300/3500 | 0 / 3300 / 3500 |
| 0/3 | 0 / 3 |
| 0 / 2 | 0 / 2 |
| 2300 / 3300 / 3500 | 2300 / 3300 / 3500 |
| 4/5 | 3 / 5 |
| 0 / 2 | 0 / 2 |
| 4/3 | 3 / 3 |
| 4/5 | 3 / 5 |
| 3 / 2 | 3 / 1 |
| 0 / 0 | 0 / 0 |
| 0 / 0 | 0 / 0 |
| 2/3 | 1/3 |
| 260 / 236 | 174 / 158 |
| 185 / 165 | 124 / 112 |
| 164 / 164 | 109 / 109 |
| 5/9 | 3 / 7 |
| 12 / 17 | 17 / 19 |
| at 3:1 comp / 900 at 3:1 comp | 800 at 3:1 comp / 900 at 3:1 comp |
| 0 / 15 | 0 / 15 |
| 0 / 24 | 0 / 20 |
| 0 / 0 | 0 / 0 |
| - | • |
| - | - |

| 2.4 | ٥. | p-98 | , |
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| Case definition | | | |
|--|--|---------------------------------------|---|
| Case definition Case reference | | 3ь | 3b(i) |
| Gas sales, PJ | | 991.0 | 991.0 29.1 |
| Oil/condensate res | erves, mmb | 29.1 | |
| Scheme | | K + M/G gas only - "base" market | K + M/G gas only - "lo-low" market Shared (no tariff) common systems |
| Integration | | Shared (no tariff) common systems | 40 PJ/yr(155TJ/d MDQ) |
| Products / peak av | g. sales rates | 60 PJ/yr(230TJ/d MDQ) 1.8 MMstb/yr | 1.8 MMstb/yr |
| | (tested) template(s) nversion(s) mmercial planning | 0.0 0.5 39.3 27.7 5.0 | 0.0 0.5 41.4 27.7 5.0 63.1 |
| Predrilled develo | | 45.0 | 46.3 |
| Post start-up deve | | 79.4 108.0 | 96.0 |
| Subsea manifold | | | 24.0 |
| Subsea cluster flo | | 27.0 31.0 | 28.5 |
| Subsea satellite p | ipeline set(s) | | 37.3 |
| | st facility costs (tie-ins / facilities) | 37.3 0.0 | 0.0 |
| FPSO mobilisation | | 91.6 | 82.9 |
| | line/control umbilical | 16.0 | 14.7 |
| Project managem | | 508 | 467 |
| | al offshore | 500 | |
| Onshore | i-I alamaina | 3.0 | 3.0 |
| Constant (incl. (| ommercial planning CO2 removal, LPG extraction) | 160.0 | 123.6 |
| Compression | 502 felloval, El G extraction, | 42.0 | 27.3 |
| Export pipeline | | 64.4 | 59.5 |
| Project managen | nent . | 21.8 | 16.6 |
| • | tal onshore | 291 | 230 |
| | | 799 | 697 |
| Gri | and total | /99 | |
| Peak operating costs, ASmm/yr | · (1.1.98) - most likely | | |
| Offshore | | 3.2 | 2.8 |
| Wells (annual av | ~ | 12.6 | 11.7 |
| Offshore faciliti | | 0.0 | 0.0 |
| Leased / project | owned FPSO | 6.6 | 6.3 |
| | ort/offshore logistics base/insurance | 22.4 | 20.8 |
| | tal offshore | | |
| Onshore Onshore plant | | 7.0 | 5.4 |
| Incremental con | nnression | 3.2 | 2.0 |
| Technical suppo | | 2.0 | 1.7 |
| • • | otal onshore | 12.1 | 9.0 |
| | | | 30.0 |
| · G | rand total | 34.5 | 29.8 |
| • | | | |
| Tariff charges | | | 0.00 |
| Oil. S/bbl | | 0.00 | 0.00 |
| Gas, S/GJ | | 0.00 | 0.00 |
| | | | |
| Abandonment costs, A\$mm (1 | 1.1.96) | | |
| Offichara | | 27.0 | 24.0 |
| Offshore Wells | | 7.6 | 7.0 |
| Wells | ties | 0.0 | 0.0 |
| Wells Offshore facili | | 0.0 | |
| Wells Offshore facili Sale value at a | | 34.6 | 31.0 |
| Wells Offshore facili Sale value at a | bandonment | | |
| Wells Offshore facili Sale value at a T | bandonment | 34.6 11.7 | 8.8 |
| Wells Offshore facili Sale value at a 7 Onshore | bandonment Total offshore | 34.6 11.7 1.0 | 8.8 1.0 |
| Wells Offshore facili Sale value at a T Onshore Onshore plant Environmental | bandonment Total offshore | 34.6 11.7 | 8.8 |
| Wells Offshore facilit Sale value at a T Onshore Onshore plant Environmental | bandonment Total offshore Tehabilitation | 34.6 11.7 1.0 | 8.8 1.0 |

Case definition

Case reference Gas sales, PJ Oil/condensate reserves, mmb Scheme Integration Products / peak avg. sales rates 3b(ii) 991.0 29.1

K + M/G gas only - "low" market Shared (no tariff) common systems 60 PJ/yr(230TJ/d MDQ) 1.8 MMstb/yr

29.1 K + M/G gas only - "high" market Shared (no tariff) common systems 80 PJ/yr(310TJ/d MDQ) 2.7 MMstb/yr

3b(iii)

991.0

| System | | |
|---|-----------------------------------|-----------------------------------|
| Exploration well TVD, m | • | 0 / 3300 / 3500 |
| Appraisal well TVD, m | 0 / 3300 / 3500 | |
| No. appraisal wells | 0 / 3 | 0/3 |
| No. appraisal campaigns | 0 / 2 | 0/2 |
| Development well TVD, m | 2300 / 3300 / 3500 | 2300 / 3300 / 3500 |
| No. development wells | 3 / 5 | 4 / 5 |
| No. appraisal well conversions, dev well s/ts or recomps | 0/2 . | 0 / 2 |
| New production/injection wells | 3/3 | 4/3 |
| No. wells at central site | 3 / 5 | 4/5 |
| No. predrilled wells (incl. conversions) | 3 / 1 | 3 / 1 |
| No. satellite well sites | 0 / 0 | 0 / 0 |
| Avg. wells/satellite site | 0 / 0 | 0 / 0 |
| No. devt drilling campaigns (incl. predrilling) | 1/3 | 2/3 |
| Raw gas production capacity, mmscf/d | 174 / 158 | 260 / 158 |
| Avg. raw gas production rate, mmscf/d | 124 / 112 | 185 / 112 |
| Avg. maximum sales gas rate, TJ/d | 109 / 109 | 164 / 109 |
| Peak oil/cond rate, mbd | 3 / 5 | 5 / 8 |
| Field life, years | 17 / 23 | 12 / 19 |
| Critical oil/gas host/onshore plant arrival pressure. psi | 800 at 3:1 comp / 900 at 3:1 comp | 800 at 3:1 comp / 900 at 3:1 comp |
| Offshore pipeline to onshore plant distance, km | 0 / 15 | 0 / 15 |
| Offshore pipeline nominal size, inches | 0 / 20 | 0 / 20 |
| Onshore pipeline export distance, km | 0 / 0 | 0 / 0 |
| Onshore pipeline nominal size, inches | | - |
| Compression required, year of production | - | - |

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| Case definition Case reference | 3b(ii) | 3b(iii) |
|--|-----------------------------------|---------------------------------------|
| Gas sales, PJ | 991.0 | 991.0 |
| Oil/condensate reserves, mmb | 29.1 | 29.1 |
| Scheme | K + M/G gas only - "low" market | K + M/G gas only - "high" market |
| Integration | Shared (no tariff) common systems | Shared (no tariff) common systems |
| Products / peak avg. sales rates | 60 PJ/yr(230TJ/d MDQ) | 80 PJ/yτ(310TJ/d MDQ) 2.7 MMstb/yr |
| | 1.8 MMstb/yr | 2. / Whyisto/yi |
| Capital costs, A\$mm (1.1.98) - most likely | | |
| Offshore | 0.0 | 0.0 |
| Exploration well (tested) | 0.5 | 0.5 |
| Appraisal drilling template(s) | 41.4 | 41.4 |
| Appraisal wells Appraisal well conversion(s) | 27.7 | 27.7 |
| Development / commercial planning | 5.0 | 5.0 |
| Predrilled development wells | 63.1 | 63.1 |
| Post start-up development wells | 46.3 | 61.3 |
| Subsea manifold cluster(s) | 96.0 | 108.0 |
| Subsea cluster flowline set(s) | 24.0 | 27.0 |
| Subsea satellite pipeline set(s) | 28.5 | 28.5 |
| Field control / host facility costs (tie-ins / facilities) | 37.3 | 37.3 |
| FPSO mobilisation / supply | 0.0 | 0.0 |
| Main export pipeline/control umbilical | 91.6 | 95.7 |
| Project management | 14.8 | 16.0 |
| Total offshore | 476 | 512 |
| Onshore | | |
| Development / commercial planning | 3.0 | 3.0 |
| Gas plant (incl. CO2 removal, LPG extraction) | 162.7 | 196.4 |
| Compression | 43.6 | 56.4 |
| Export pipeline | 64.4 | 69.3 |
| Project management | 22.2 | 27.0 |
| Total onshore | 296 | 352 |
| Grand total | 772 | 864 |
| Grana total | | |
| Peak operating costs, ASmm/yr (1.1.98) - most likely Offshore | | |
| Wells (annual average) | 2.8 | 3.2 |
| Offshore facilities | 11.7 | 12.6 |
| Leased / project owned FPSO | 0.0 | 0.0 |
| Technical support/offshore logistics base/insurance | 6.4 | 6.6 |
| Total offshore | 20.9 | 22.4 |
| Onshore | | 0.0 |
| Onshore plant | 7.0 | 8.3 |
| Incremental compression | 3.2 | 4.1 2.3 |
| Technical support | 2.0 | 14.7 |
| Total onshore | 12.1 | 14.7 |
| Grand total | 33.0 | 37.1 |
| | | |
| Tariff charges | 0.00 | 0.00 |
| Oil, S/bbl | 0.00 | 0.00 |
| Gas, \$/GJ | 0.00 | |
| • | | |
| Abandonment costs, A\$mm (1.1.98) | | |
| Offshore | | |
| Wells | 24.0 | 27.0 |
| Offshore facilities | 7.0 | 7.6 |
| Sale value at abandonment | 0.0 | 0.0 |
| Total offshore | 31.0 | 34.6 |
| Onshore | | |
| Onshore plant | 11.6 | 14.0 |
| Environmental rehabilitation | 1.0 | 1.0 |
| Total onshore | 12.6 | 15.0 |
| | - | |
| Grand total | 43.7 | 49.7 |

Appendix B

Phased Activity, Production and Cost Data Sheets



Shell Development Australia

Basker Manta Evaluation

Case 1a

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

Integration
Products / peak avg. sales rates

17.9

B/M oil - gas inj Standalone leased FPSO

40 mmscf/d gas inj

| Products / peak avg. sales rates | 9.0MMstb/yr | | | | | | | | | | | | | Abandonment costs, |
|--|-------------|---------|-------|-------|----------|-----------|--------|-------|----------|-------------|--------------|----------|----------------|--------------------|
| A Al 2A . | Year | | Sales | | W | ell sched | ule | 1 | | costs, A\$m | | | ts, A\$mm 1998 | ASmm 1998 |
| Activity | | OlVcond | LPG | Gas | Expln | Appl | Devt | 1 | Offshore | | Onshore | Offshore | Onshore | Y2WW 1339 |
| | | Mstb/yr | kT/yr | PJ/yr | - | | | | etts! | Facs | Facs | | | 1 |
| | | | | | | .,_, | | E & A | Devt | | | | | |
| asker appraisal well; PSA 1/10/99 | 1999 | | | | | ı | | 14 | 54 | . 3 28 | | | | |
| xB hor.well(lconvn)+1xgas inj; 1xM app/hor. dev well | 2000 | | | | | | 3 + 1c | | 2-1 | 9 | | 49.4 | | |
| RFSU 1/1/2001 | 2001 | 7.59 | | | | | | | 9 | , | | 49.7 | | 1 |
| /ert. S/T of 1 x Basker well; Manta RFSU | 2002 | 4.22 | | | | | Ist | | , | | | 50 1 | | |
| | 2003 | 3.42 | | | | | | | | | | 50.1 | | |
| | 2004 | 2.67 | | | | | | } | | | 1 | | | 12.7 |
| resumed uneconomic beyond end 2004 | 2005 | | | | ļ | | | } | | | | ļ | | |
| • | 2006 | | | | | | | 1 | | | | | | 1 |
| | 2007 | 1 | | | | | | | | | 1 | | | |
| | 2008 | 1 | | | 1 | | | İ | | | 1 | 1 | | i |
| | 2009 | | | | l | | | | | | | | | |
| | 2010 | | | | | | | 1 | | | 1 | | | |
| | 2011 | | | | | | | ŀ | | | ľ | | | 1 |
| | 2012 | Į. | | | | | | ł | | | | 1 | | |
| | 2013 | | | | 1 | | | | | | | | | |
| | 2014 | 1 | | | | | | 1 | | | | | | 1 |
| | 2015 | 1 | | | | | | | | | | | | 1 |
| | 2016 | | | | ļ | | | 1 | | | | | | |
| | 2017 | | | | | | | | | | | 1 | | |
| | 2018 | | | | | | | ļ | | | 1 | | | |
| | 2019 | | | | - | | | | | | | | | |
| | 2020 | 1 | | | | | | | | | | | | 1 ' |
| | 2021 | | | | l | | | 1 | | | 1 | | | |
| | 2022 | | | | | | | | | | | | | } |
| | 2023 | 1 | | | 1 | | | 1 | | | | | | ì |
| | 2024 | | | | | | | İ | | | 1 | j . | | |
| | 2025 | | | | | | | 1 | | | | 1 | | |
| | 2026 | ļ | | | | | | | | | 1 | 1 | | |
| | 2027 | | | | | | | | | | | 1 | | |
| | 2028 | 1 | | | | | | | | | 1 | | | |
| | 2029 | | | | İ | | | | | | | | | |
| | 2030 | | | | | | | | | | | | | |
| | 2031 | | | | | | | 1 | | | 1 | | | |
| | 2032 | 1 | | | 1 | | | | | | | | | |
| | 2033 | 1 | | | | | | | | | 1 | 1 | | |
| | 2034 | Ì | | | | | | | | | 1 | 1 | | |
| | 2035 | L | | | | | | | | | | 199 | | 13 |
| | Totals | 18 | | | <u> </u> | 1 | | 14 | 63 | 39 | | 177 | | |

Shell Development Australia

Basker Manta Evaluation

Case 1a P85

Case definition Gas sales, PJ

Oil/cond/LPG reserves, minb

Scheme

Integration
Products / peak avg. sales rates

11.9

B/M oil - gas inj - P85 Standalone leased FPSO 40 mmscl/d gas inj

| Products / peak avg. sales rates | 9.0MMstb/yr | | | | | | | | | | | T 2 11 1 1 | * 1000 | Abandonment costs, |
|---|-------------|----------|--------|-------|-------|------------|--------|-------|----------|------------|----------|--------------------|---------|--------------------|
| | Year | T | Sales | | V | Vell sched | lule | | | osts, A\$n | ım 1998 | Operating costs, A | | ASmm 1998 |
| Activity | 2 000 | Oll/cond | LPG | Gas | Explu | Appl | Devt | | Offshore | | Onshore | Offshore | Onshore | Asmin 1776 |
| | | Mstb/yr | kT/yr | PJ/yr | | • • • | | | 'ells | Facs | Facs | | | |
| | | """" | ****** | | | | | E & A | Devt | | | | | |
| Basker appraisal well; PSA 1/10/99 | 1999 | | | | | i | | 14 | | 3 28 | | | | 1 |
| 2xB hor.well(1convn)+1xgas inj; 1xM app/hor. dev well | 2000 | 1 | | | | | 3 + 10 | | 54 | | | 49.4 | | ì |
| RFSU 1/1/2001 | 2001 | 6.38 | | | | | | | | 9 | ĺ | 49.7 | | |
| Vert. S/T of 1 x Basker well; Manta RFSU | 2002 | 2.91 | | | ļ . | | lst | | 9 | | | 50.1 | | i |
| Ven. 5/1 of 1 x basker wen, trains to 50 | 2003 | 2.65 | | | | | | 1 | | | [| 1 | | 12.7 |
| Presumed uneconomic beyond end 2003 | 2004 | 1 | | | İ | | | | | | | | | |
| Presidited directioning beyond and accept | 2005 | 1 | | | | | | | | | 1 | • | | |
| | 2006 | | | | | | | 1 | | | 1 | ļ | | |
| | 2007 | 1 | | | | | | | | | | 1 | | |
| | 2008 | | | | | | | | | | 1 | | | |
| | 2009 | İ | | | | | | | | | | | | |
| | 2010 | 1 | | | | | | 1 | | | | İ | | 1 |
| | 2011 | } | | | | | | 1 | | | | | | |
| | 2012 | 1 | | | 1 | | | 1 | | | | İ | | |
| | 2013 | 1 | | | 1 | | | İ | | | | | | |
| | 2014 | | | | 1 | | | 1 | | | | | | |
| | 2015 | | | | | | | | | | 1 | | | |
| | 2016 | | | | 1 | | | | | | | | | |
| | 2017 | | | | | | | | | | | | | 1 |
| | 2018 | 1 | | | 1 | | | 1 | | | 1 | | | |
| | 2019 | | | | | | | Ì | | | | | | |
| | 2020 | İ | | | 1 | | | | | | \ | { | | |
| | 2021 | | | | | | | | | | | 1 | | 1 |
| | 2022 | | | | | | | | | | - | | | |
| | 2023 | 1 | | | 1 | | | 1 | | | İ | | | |
| | 2024 | 1 | | | 1 | | | 1 | | | | | | |
| | 2025 | | | | 1 | | | 1 | | | 1 | | | |
| | 2026 | | | | | | | | | | 1 | | | |
| 1 | 2027 | | | | | | | | | | | | | |
| | 2028 | | | | | | | | | | | | | 1 |
| | 2029 | ĺ | | | | | | | | | | | | |
| | 2030 | | | | İ | | | 1 | | | | ł | | |
| | 2031 | 1 | | | 1 | | | | | | | | | |
| | 2032 | | | | | | | | | | | 1 | | 1 |
| | 2033 | 1 | | | 1 | | | | | | 1 | 1 | | 1 |
| | 2034 | | | | 1 | | | | | | 1 | | | |
| | 2035 | | | | | | | | | | | 149 | | 13 |
| | Totals | 12 | | | l | 1 | | 14 | 63 | 39 | | 1 17 | | |

Shell Development Australia Basker Manta Evaluation

Case 1a P15

Case definition

Gas sales, PJ Oil/cond/LPG reserves, rumb

Scheme

Integration

26

B/M oil - gas inj - P15 Standalone leased FPSO 40 mmscf/d gas inj

| Products / peak avg. sales rates | 40 mmscFd gas inj 9.0MMstb/yr | | | | | | | | | | | | 1000 | Abandonment costs, |
|---|----------------------------------|-----------|-------|-------|-------|-----------|--------|----------|---------|------------|---------|----------|----------------|--------------------|
| | Year | | Sales | | 14 | ell sched | ule | | | osts, ASmn | 1 1998 | | ts, A\$mm 1998 | ASmm 1998 |
| Activity | 1 | OlVcond | LPG | Gas | Expln | Appl | Devt | | (fshore | - 1 | Onshore | Offshore | Onshore | A3min 1770 |
| | | Mstb/yr | kT/yr | PJ/yr | - | • • • | | Wells | | Facs | Facs | | | |
| | | (11210/)! | | | 1 | | | | Dev1 | | | | | |
| | 1999 | | | | | 1 | | 14 | | 3 | | | | 1 |
| Basker appraisal well; PSA 1/10/99 | 2000 | 1 | | | 1 | | 3 + 1c | 1 | 54 | 28 | | | | i |
| 2xB hor.well(1convn)+1xgas inj; 1xM app/hor. dev well | 2001 | 8.26 | | | İ | | | 1 | | 9 | | 49.2 | | |
| RFSU 1/1/2001 | 2002 | 5.51 | | | | | | i | | | | 49.5 | | |
| Mante RFSU | 2002 | 3.58 | | | | | 2st | | ló | | | 49.5 | | |
| Vert. S/T of 2 x Basker wells to deeper LaTrobe | 2003 | 3.48 | | | | | | | | | | 50.1 | | |
| | 2004 | 2.92 | | | | | | ļ | | , | | 50.1 | | |
| | 2006 | 2.27 | | | | | | 1 | | ì | | 50.1 | | 12.7 |
| * | 2007 | 1 2.2. | | | | | | | | | | , | | 12.7 |
| Presumed uneconomic beyond end 2006 | 2007 | | | | 1 | | | ŀ | | | | | | 1 |
| | 2008 | | | | | | | 1 | | | | i | | |
| | 2010 | | | | | | | 1 | | | | İ | | |
| | | | | | | | | | | | | | | |
| | 2011 | | | | | | | | | | | ł | | |
| | 2012 | | | | | | | 1 | | | | | | |
| | 2013 | | | | | | | 1 | | | | | | |
| | 2014 | | | | } | | | | | | | | | |
| | 2015 | 1 | | | 1 | | | | | | | | | |
| | 2016 | | | | 1 | | | 1 | | | | i | | |
| | 2017 | 1 | | | | | | 1 | | | | | • | 1 |
| | 2018 | 1 | | | ļ | | | | | | | | | |
| | 2019 | - 1 | | | 1 | | | 1 | | | | Į. | | |
| | 2020 | 1 | | | | | | | | | | | | |
| | 2021 | 1 | | | 1 | | | 1 | | | | 1 | | |
| | 2022 | | | | 1 | | | 1 | | | | | | 1 |
| | 2023 | i | | | | | | 1 | | | | | | |
| | 2024 | | | | 1 | | | Į. | | | ļ | | | 1 |
| | 2025 | 1 | | | 1 | | | | | | 1 | | | |
| | 2026 | 1 | | | 1 | | | \ | | | 1 | | | ł |
| | 2027 | | | | | | | į. | | | | | | |
| | 2028 | ì | | | | | | İ | | | | 1 | | |
| | 2029 | - [| | | 1 | | | | | | | | • | |
| | 2030 | | | | Ì | | | ļ | | | | 1 | | 1 |
| | 2031 | 1 | | | | | | 1 | | | | 1 | | |
| | 2032 | | | | 1 | | | 1 | | | Į. | | | |
| | 2033 | 1 | | | 1 | | | 1 | | | 1 | | | ı |
| | 2034 | | | | 1 | | | | | | | | | |
| 1 | 2035 | ļ | | | | | | | | | | 299 | | 13 |
| | Totals | 26 | | | | 1 | | 14 | 71 | 39 | <u></u> | 299 | | |

Shell Development Australia

Basker Manta Evaluation

Case 1a(owned)

Case definition Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

Integration
Products / peak avg. sales rates

20.4

B/M oil - gas inj
Standalone project owned FPSO
40 mmiscl/d gas inj

| Products / peak avg. sales rates | 9.0MMstb/yr | | | | | | | | | | Operating cost | 4 Cmm 1998 | Abandonment costs, |
|---|----------------|---------|-------|-------|-------|------------|--------|----------|-------------|----------|----------------|------------|--------------------|
| 4 47 24 | Year | | Sales | | | ell schedu | | | costs, A\$m | | | Onshore | A5mm 1998 |
| Activity | | OlVcond | LPG | Cas | Expln | Appl | Devt | Offshore | | Onshore | Offshore | Onsnore | AJIIIII 1770 |
| | | Mstb/yr | kT/yr | PJ/yr | | | | Wells | Facs | Facs | | | |
| | | 1 | | | | | | E&A Devi | | | | | |
| 1 1 P. DC 4 1/10/00 | 1999 | | | | | 1 | | 14 | 14 | | | | 1 |
| Basker appraisal well; PSA 1/10/99 | 2000 | | | | | | 3 + 1c | 54 | 108 | } | 18.2 | | İ |
| 2xB hor.well(1convn)+1xgas inj, 1xM app/hor. dev well | 2001 | 7.59 | | | | | | ì | 9 | 1 | | | |
| RFSU 1/1/2001 | 2002 | 4.22 | | | | | lst | 9 | | | 19.1 | | 1 |
| Vert. S/T of 1 x Basker well; Manta RFSU | 2003 | 3.42 | | | 1 | | | 1 | | | 19.9 | | 1 |
| | 2004 | 2 67 | | | 1 | | | | | | 18.9 | | |
| | 2005 | 1.35 | | | | | | 1 | | | 18.0 | | |
| | 2006 | 1.14 | | | | | | | | | 17.1 | | -8.2 |
| | 2007 | | | | 1 | | | | | | | | 1 |
| Presumed uneconomic beyond end 2006 | 2008 | | | | ł | | | | | | | | l l |
| | 2009 | | | | 1 | | | | | | | | |
| | 2010 | | | | | | | | | 1 . | İ | | ŀ |
| | 2011 | İ | | | ł | | | j | | 1 | | | |
| | 2012 | f | | | | | | 1 | | i | | | |
| | | | | | 1. | | | | | 1 | • | | - 1 |
| | 2013 | | | | | | | | | | | | |
| | 2014 | ì | | | 1 | | | | | | İ | | 1 |
| | 2015 | ļ | | | | | | | | , | | | 1 |
| • | 2016 | Ì | | | | | | | | } | 1 | | |
| | 2017 | 1 | | | ŀ | | | 1 | | | | | :- |
| | 2018 | - 1 | | | ļ | | | | | | | | |
| | 2019 | | | | 1 | | | | | | | | |
| | 2020 | 1 | | | - | | | 1 | | 1 | | | |
| | 2021 | | | | 1 | | | ļ | | | | | 1 |
| | 2022 | ļ | | | 1 | | | | | | | | ļ |
| | 2023 | 1 | | | ı | | | | | 1 | Ī | | l |
| | 2024 | | | | ţ | | | 1 | | 1 | 1 | | l l |
| | 2025 | | | | 1 | | | | | 1 | | | Į. |
| | 2026 | l | | | 1 | | | Ì | | | | | } |
| | 2027 | 1 | | | 1 | | | | | | 1 | | ı |
| | 2028 | - 1 | | | | | | | | 1 | 1 | | l |
| | 2029 | 1 | | | | | | | | 1 | | | |
| | 2030 | | | | | | | | | | | | |
| | 2031 | - 1 | | | | | | 1 | | | 1 | | |
| | 2032 | 1 | | | | | | 1 | | | 1 | | |
| | | | | | | | | | | 1 | | | |
| | 2033 | | | | | | | | | | 1 | | |
| | 2034 | | | | | | | 1 | | | | | |
| | 2035 Totals | 20 | | | | 1 | | 14 63 | 131 | | 111 | | -8 |

Shell Development Australia
Basker Manta Evaluation

Case 1b

Case definition
Gas sales, Pi
Oil/cond/LPG reserves, mmb

Scheme

5.1 K oil - gas inj

andalone leased FPSO 2.8MMstb/yr

Integration
Products / neak avg. sales rates

| roducts / peak avg. sales rates | Year | Oil/cond Mstb/yr | Sales LPG kT/yr | Gas PJ/yr | Expln | ell schedu Appl | le Devi | We | Capital co Offshore lls Devt | Facs | n 1998 Onshore Facs | Operating cost Offshore | ts, ASmm 1998 Onshore | Abandonment costs, A\$mm 1998 |
|------------------------------------|--------|---------------------|-----------------------|--------------|-------|--------------------|------------|-------|---------------------------------------|------|---------------------------|-------------------------|--------------------------|----------------------------------|
| | | | | | | | | E & A | Devi | 3 | | | | |
| SA 1/10/99 | 1999 | | | | | | 61 | | 82 | 3/1 | Ì | ļ | | |
| x hor.wells + 1 gas injection well | 2000 | 1 | | | 1 | | 5h + 1 inj | | 62 | 0 | | 48.4 | | |
| X nor.wells + 1 gas injection wen | 2001 | 2.77 | | | | | · | | | U | Ì | 48.4 | | 1 |
| Cipper oil RFSU 1/1/2001 | 2002 | 2.26 | | | 1 | | | | | | | 48.4 | | 1 |
| | 2003 | 1.72 | | | 1 | | | | | | 1 | 10.1 | | 18.6 |
| resumed not economic beyond 2002 | 2004 | •= | | | | | | | | | | ĺ | | |
| | 2005 | 1 | | | | | | | | | 1 | Ì | | 1 |
| | | | | | 1 | | | | | | | | | 1 |
| | 2006 | 1 | | | 1 | | | | | | | 1 | | i |
| | 2007 | | | | 1 | | | | | | | 1 | | 1 |
| | 2008 | } | | | | | | | | | 1 | | | 1 |
| | 2009 | | | | | | | | | | | | | |
| | 2010 | | | | ŀ | | | | | | ļ | 1 | | Į. |
| | 2011 | | | | Į | | | | | | i | | | |
| | 2012 | į. | | | 1 | | | Ì | | | | | | |
| | 2013 | 1 | | | 1 | | | | | | ĺ | | | |
| | 2014 | | | | 1 | | | l . | | | | | | |
| | 2015 | | | | | | | 1 | | | 1 | | | |
| | 2016 | 1 | | | | | | ļ | | | | | | |
| | 2017 | l . | | | | | | 1 | | | | 1 | | Į. |
| | 2018 | i | | | 1 | | | 1 | | | | | | l l |
| | 2019 | | | | 1 | | | | | | | | | 1 |
| | 2019 | 1 | | | | | | | | | | İ | | |
| | 2021 | | | | | | | | | | | 1 | | |
| | | ļ | | | | | | } | | | | Į. | | 1 |
| | 2022 | } | | | 1 | | | 1 | | | 1 | | | 1 |
| | 2023 | | | | 1 | | | | | | İ | | | 1 |
| | 2024 | 1 | | | | | | i | | | | | | ; |
| | 2025 | | | | | | | Į. | | | 1 | | | } |
| | 2026 | | | | ì | | | | | | [| | | 1 |
| | 2027 | | | | - | | | 1 | | | | 1 | | 1 |
| | 2028 | | | | 1 | | | 1 | | | 1 | 1 | | 1 |
| * | 2029 | 1. | | | 1 | | | | | | | | | · · |
| | 2030 | 1 | | | | | | | | | | 1 | | 1 |
| | 2031 | | | | - | | | | | | 1 | 1 | | 1 |
| | 2032 | | | | | | |] | | | | | | |
| | 2033 | | | | | | | | | | | 1 | | 1. |
| | 2034 | | | | 1 | | | 1 | | | | 1 | | 1 |
| | 2035 | | | | | | | | | | + | 145 | | 19 |
| | Totals | 7 | | | | - | | I | 82 | 38 | | 1 143 | | |

Shell Development Australia

Basker Manta Evaluation

Case 1c

Case definition

Gas sales, PJ Oil/cond/LPG reserves, mmb

430 18

Scheme

M/G gas only Standalone offonshore

Integration Products / peak avg. sales rates

40 PJ/yr(155TJ/d MDQ)

| | 1.8 MMstb/yr | T | Sales | | l v | ell schedul | e | | Capital co | sts, ASmm | 1998 | Operating cos | ts, A\$mm 1998 | Abandonment costs, |
|---|----------------|----------|-------|-------|-------|-------------|----------|-------|------------|-----------|---------|---------------|----------------|--------------------|
| Activity | Year | Oil/cond | LPG | Gas | Explu | Appl | Devi | | Offshore | | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | Mstb/yr | kT/yr | РЈ/уг | Lp | | | w | ells | Facs | Facs | | | |
| 1 | | NISTO/YF | Kirji | ,, | | | | E & A | Devt | | | | | |
| | 1200 | | | | 1 | I | | 15 | | 1 | | | | |
| iummy appraisal well | 1999 | 1 | | | 1 | | | | | 1 | | | | |
| | 2000 | | | | | 2 . | | 2-1 | | i | | | | ı |
| appraisal each in Gunnny and Manta | 2001 | | | | 1 | | | | | 2 | 1 | | | j |
| | 2002 | | | | 1 | | | | | 75 | 7ó | | | ł |
| SA 1.1.2003 | 2003 | | | | | | 2hc+1h | ĺ | 45 | 130 | 138 | | | |
| x G hor, appl well convs; 1 x M hor, well | 2004 | | | 10.0 | ł | | ZIIC TII | | | | | 11.6 | 8.6 | |
| Summy/Manta RFSU 1/1/2005 | 2005 | 1.83 | 136.8 | 40.0 | | | lh | İ | 31 | 3 | . 3 | 11.6 | 8.6 | |
| x M hor well (extended reach well) | 2006 | 1.84 | 137.2 | -10.0 | | | 111 | l | ٠, | - | 12 | 12.9 | 8.7 | 1 . |
| A 112 Marine | 2007 | 1.84 | 137.2 | -10.0 | 1 | | | | | | ,,, | 12.9 | 9.2 | |
| and stage onshore compression RFSU | 2008 | 1.84 | 137.6 | 40.0 | | | | 1 | | | | 12.9 | 9.2 | |
| itt stage onshore compression in | 2009 | 1.84 | 137.2 | 40.0 | 1 | | ., | 1 | 16 | 3 | | 12.9 | 9.2 | |
| x M hor, well | 2010 | 1.84 | 137.2 | 40.0 | | | lh | | 10 | ٠ | | 13.7 | 9.2 | 1 |
| X M NOI, WEIL | 2011 | 1.55 | 125.2 | 39.4 | 1 | | | i | | | | 13.7 | 9.2 | |
| | 2012 | 1.28 | 104.8 | 33 4 | | | | | | | | 13.7 | 9.2 | 1 |
| | 2013 | 1.06 | 88.3 | 28.6 | | | | | | | | 13.7 | 9.2 | |
| 1 | 2014 | 0.88 | 75.2 | 24.8 | | | | | | | | 13.7 | 9.2 | 1 |
| | 2015 | 0.75 | 65.4 | 22.0 | | | | | | | | 13.7 | 9.2 | · · |
| ĺ | 2016 | 0.62 | 52.1 | 17.0 | 1 | | | | | | | | 92 | |
| | | 0.48 | 36.0 | 10.5 | | | | | | | | 13.7 | 9.2 | |
| | 2017 | 0.48 | 13.1 | 3.8 | 1 | | | 1 | | | | 13.7 | | |
| 1 | 2018 | 0.14 | 10.2 | 3.0 | | | | 1 | | | 1 | 13.7 | 9.2 | |
| | 2019 | | 8.0 | 2.3 | 1 | | | | | | | 13.0 | 8.8 | |
| | 2020 | 0.11 | | 18 | ì | | | | | | | 12.3 | 8.3 | |
| | 2021 | 0.08 | 6.2 | 14 | 1 | | | i | | | ì | 11.7 | 7,9 | 1 |
| i | 2022 | 0.06 | 48 | | ĺ | | | | | | | 11.1 | 7.5 | |
| | 2023 | 0.05 | 3.8 | 1.1 | 1 | | | - | | | | 10.6 | 7.1 | |
| | 2024 | 0.04 | 3.0 | 0 9 | 1 | | | 1 | | | 1 | 1 | | 30.7 |
| Abandonment | 2025 | | | | 1 | | | | | | 1 | | | |
| - Controlline | 2026 | | | | | | | | | | Į. | | | 1 |
| | 2027 | | | | | | | | | | 1 | | | 1 |
| | 2028 | | | | | | | | | | | | | 1 |
| | 2029 | ļ | | | | | | 1 | | | 1 | 1 | | |
| | 2030 | 1 | | | | | | | | | 1 | 1 | | |
| | 2031 | } | | | | | | 1 | | | | 1 | | |
| | 2032 | 1 | | | | | | | | | | 1 | | 1 |
| | 2032 | 1 | | | 1 | | | | | | | | | |
| | 2034 | 1 | | | | | | | | | | 1 | | |
| | | 1 | | | | | | | | | | | 176 | 31 |
| | 2035 Totals | 18 | 1419 | 430 | | 3 | | 39 | 92 | 214 | 230 | 256 | 176 | |

Shell Development Australia

Basker Manta Evaluation

Case 1d

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

Integration

561 11

Kipper gas only Standalone off/onshore

| | 1.2 MMstb/yr | | 6-1 | | | elt schedule | , | Car | ital costs, | ASmm | 1998 | Operating co | sts, ASmm 1998 | Abandonment costs, |
|-----------------------------------|--------------|----------|--------------|-------|-------|--------------|------|-------|-------------|------|---------|--------------|----------------|--------------------|
| Activity | Year | | Sales | Gas | Expln | Appl | Devt | | hore | | Onshore | Offshore | Onshore | A\$min 1998 |
| | | Oil/cond | LPG kT/yr | PJ/yr | Expin | аррі | | Wells | | acs | Facs | | | |
| | | Mstb/yr | KIIJI | 1,1 | | | | E&A D | evt | | | | | |
| | 1999 | | | | | | | | | 2 | 2 | | | |
| | 2000 | | | | | | | | | 54 | 96 | | | |
| Cipper PSA 1/1/2000 | 2001 | | | | | | 3 | 4 | 5 1 | 02 | 170 | 7.0 | 11.2 | |
| x Kipper vert wells | 2002 | 1.16 | 149.5 | 600 | ł | • | | | | . | | 7.9 7.9 | 11.2 | |
| ipper RFSU 1/1/2002 | 2003 | 1.16 | 149.9 | 60 0 | 1 | | ı | i | 5 | 3 | | 7.9 8 ó | 11.2 | |
| x Kipper vert. well | 2004 | 1 16 | 150.3 | 60.0 | | | | | | | | 8.6 | 11.2 | |
| | 2005 | 1.16 | 149.9 | 60 0 | ļ | | | | | - 1 | | 8.ó | 11.2 | |
| | 2006 | 1.16 | 149.9 | 0.00 | 1 | | | | | - 1 | 5 | 8.ó | 11.4 | |
| | 2007 | 1.16 | 149.9 | 60.0 | 1 | | | | | - 1 | 18 | 8.6 | 12.2 | |
| L. L. L. Landerson DECII | 2008 | 1.16 | 150.3 | 60.0 | 1 | | | | | 1 | | 8.2 | 11.6 | |
| nd stage onshore compression RFSU | 2009 | 1.16 | 149.9 | 60.0 | 1 | | | | | | | 8.2 7.8 | 11.0 | |
| | 2010 | 0.71 | 91.4 | 30.0 | | | | | | | | 7.4 | 10.4 | 1 |
| | 2011 | 0,43 | 55.8 | 22.3 | | | | | | 1 | | 7.0 | 9.9 | į. |
| | 2012 | 0.26 | 34.1 | 13.6 | | | | | | ľ | | 6.7 | 9.4 | |
| | 2013 | 016 | 20.8 | 8.3 | | | | | | - 1 | | 0.7 | ,,, | 26.5 |
| | 2014 | 1 | | • | | | | | | - 1 | | | | |
| Abandonment | 2015 | | | | | | | | | - 1 | | | | |
| | 2016 | 1 | | | | | | Ì | | 1 | | | | |
| ٠, | | | | | 1 | | | İ | | - } | | | | |
| | 2018 | 1 | | | | | | | | 1 | | | | |
| | 2019 | | | | ł | | | | | l | | | | 1 |
| | 2020 | | | | | | | · | | 1 | | | | Ì |
| | 2021 | | | | | | | | | ļ | | | | |
| | 2022 | | | | 1 | | | 1 | | 1 | | | | |
| | 2023 | | | | | | | 1 | | i | | | | |
| | 2024 | | | | i | | | | | | | | | |
| | 2025 | | | | | | | | | | | | | · · |
| | 2026 | ì | | | | | | ł | | | | | | |
| • | 2027 | 1 . | | | | | | | | | | | | 1 |
| | 2028 | l | | | | | | | | | | | | |
| | 2029 | | | | | | | | | | | | | 1 |
| | 2030 | 1 | | | | | | 1 | | | | i | | |
| | 2031 | 1 | | | | | | 1 | | | | 1 | | |
| | 2032 | | | | 1 | | | | | | | 1 | | |
| | 2032 | 1 | | | | | | 1 | | | | 1 | | 1 |
| | 2034 | 1 | | | 1 | | | 1 | | | | | | |
| | 2035 | | | | | | | | | | | | 132 | 27 |
| | Totals | 11 | 1402 | 561 | | | 4 | 1 | 60 | 161 | 291 | 96 | 134 | |

Shell Development Australia

Basker Manta Evaluation

Case 2a

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

Integration

31 K/B/M oil only Shared leased FPSO

| | | | 6.1 | | v | Vetl schedul | le | Capital c | osts, ASmir | n 1998 | Operating cos | ts, A\$mm 1998 | Abandonment costs, |
|-------------------------------------|--------|----------|-------|--------|--------------|--------------|------|---------------|-------------|---------|---------------|----------------|--------------------|
| ctivity | Year | ł | Sales | | 1 | | Devi | Offshore | -, | Onshore | Offshore | Onshore | A\$mm 1998 |
| · | | OiVcond | LPG | Gas | Expin | Appl | DEVI | Wells | Facs | Facs | | | |
| | | Mistb/yr | kT/yr | P.J/yr | ļ | | | E&A Devt | | • | | | |
| | | | | | | | | E GLA Dett | 1 | | | | |
| | 1999 | 1 | | | | | | | 10 | | | | |
| | 2000 | | | | | | | | 0 | | 47.1 | | · · |
| Basker/Manta RFSU RFSU 1/1/2001 | 2001 | 7.59 | | | | | | | = | | 47.1 | | ŀ |
| Kipper RFSU 1/1/2002 | 2002 | 6.99 | | | | | | | | | 47.1 | | |
| , | 2003 | 5.68 | | | | | | | | | 47.1 | | |
| | 2004 | 4.39 | | | | | | | | | 47.1 | | |
| | 2005 | 3.58 | | | | | | | | | 47.1 | | |
| | 2006 | 2.82 | | | | | | | | | | | 0.5 |
| Presumed uneconomic beyond end 2006 | 2007 | | | | 1 | | | | | | | | |
| • | 2008 | | | | | | | | | | | | |
| | 2009 | | | | | | | | | | | | 1 |
| • | 2010 | | | | | | | ĺ | | | | | |
| | 2011 | | | | | | | 1 | | 1 | | | |
| | 2012 | | | | 1 | | | | | 1 | | | ı |
| | 2013 | | | | | | | | | | | , | - |
| | 2014 | | | | 1 | | | | | | | | |
| | 2015 | 1 | | | | | | | | | 1 | | |
| | 2016 | | | | | | | | | 1 | 1 | | [|
| | 2017 | | | | | | | | | | | | 1 |
| | 2018 | | | | | | | | | I | ļ | | ļ |
| | 2019 | 1 | | | | | | | | | | | i |
| , | 2020 | | | | 1 | | | | | | } | | |
| | 2021 | | | | 1 | | | | | | 1 | | 1 |
| | 2022 | } | | | İ | | | | | | 1 | | 1 |
| | 2023 | } | | | İ | | | | | | Į. | | ļ |
| | 2024 | | | | | | | | | | 1 | | i |
| | 2025 | | | | 1 | | | | | ĺ | | | 1 |
| | 2026 | | | | 1 | | | | | | ļ | | |
| | 2027 | | | | 1 | | | 1 | | | | | 1 |
| | 2028 | 1 | | | | | | 1 | | | 1 | | |
| | 2029 | | | | 1 | | | | | 1 | | | |
| | 2030 | | | | | | | | | 1 | l | | 1 |
| | 2031 | Į | | | | | | | | | | | |
| | 2032 | | | | | | | | | | 1 | | |
| | 2033 | | | | | | | | | 1 | | | |
| | 2034 | - 1 | | | İ | | | | | | 1 | | |
| | 2035 | 1 | | | | | | - | | | 283 | | 1 |
| | Totals | 31 | | | 1 | | | <u></u> | 12_ | | | | |

Shell Development Australia

Basker Manta Evaluation

Case 2b

Case definition

Gas sales, PJ Oil/cond/LPG reserves, mmb

Scheme

Integration
Products / peak avg. sales rates

11.5

K oil - gas inj at B/M S'sea satellite - tariff thro' B/M

the second second second

2 8MMstb/yr

| | Year | 1 | Sales | | V | eli schedul | e | | Capital | osts, A\$mn | 1998 | | ts, ASmm 1998 | Abandonment costs, |
|---------------------------------------|--------|-----------|-------|--------|-------|-------------|------|-------|----------|-------------|---------|----------|---------------|--------------------|
| Activity | 1 ear | Oil/cond | LPG | Gas | Expin | Appl | Devi | | Offshore | | Onshore | Offshore | Onshore | ASmm 1998 |
| | | Mstb/yr | kT/yr | P.J/yr | | | | We | lls | Facs | Facs | | | |
| | | (VISID/YI | K1731 | • , • | | | | E & A | Devt | | | | | |
| PSA 1/10/99 | 1999 | | | | | | | | | 18 | | | | |
| | 2000 | | | | | | 5h | | 76 | 25 | | 0.8 | | 1 |
| 5 x hor wells (B/M RFSU 1/1/2001) | 2001 | 2.77 | | | | | 2 | 1 | | | | 5.0 | | 1 |
| Kipper oil RFSU 1/1/2002 | 2002 | 2.26 | | | | | 2rc | ì | 7 | | | 5.0 | | 1 |
| Recomplete 2 wells to LaTrobe | 2003 | 1.72 | | | [| | 210 | | • | | | 5.3 | | 1 |
| Complete 2 Wells to Estitute | 2004 | 2 23 | | | | | | | | | | 5.0 | | 1 |
| | 2005 | 1.68 | | | 1 | | | | | | ļ | 4.8 | | |
| | 2006 | 0.80 | | | i | | | 1 | | | | 4.0 | | 16.2 |
| Presumed uneconomic beyond end 2006 | 2007 | i | | | | | | | | | i l | | | |
| Presumed uneconomic beyond end 2000 | 2008 | | | | | | | | | | l l | | | Į. |
| (as a product of K + B/M production) | 2009 | | | | | | | ł | | | | | | |
| | 2010 | İ | | | | | | | | | | | | 1 |
| • | 2011 | 1 | | | 1 | | | | | | | | | |
| 1 | 2012 | | | | | | | | | | | | | |
| į | | 1 | | | | | | i | | | | | | |
| | 2013 | | | | 1 | | | | | | | | | l |
| | 2014 | | | | 1 | | | | | | 1 | | | ļ |
| ł | 2015 | | | | 1 | | | 1 | | | Į . | | | 1 |
| · · · · · · · · · · · · · · · · · · · | 2016 | | | - | | | | | | | | | | |
| İ | 2017 | | | | | | | 1 | | | | | | · |
| | 2018 | | | | | | | | | | | | | 1 |
| | 2019 | | | | 1 | | | ļ | | | | | | |
| | 2020 | | | | - | | | | | | | | | ľ |
| | 2021 | | | | | | | | | | | 1 | | } |
| | 2022 | 1 | | | 1 | | | 1 | | | | | | |
| | 2023 | | | | 1 | | | 1 | | | | ' | | 1 |
| | 2024 | } | | | i | | | 1 | | | | | | |
| | 2025 | i | | | 1 | | | 1 | | | } | | | |
| | 2026 | | | | ŀ | | | | | | 1 | | | |
| | 2027 | | | | | | | | | | 1 | 1 | | |
| 1 | | | | | | | | | | | | | | 1 |
| | 2028 | | | | 1 | | | | | | 1 | 1 | | |
| | 2029 | - } | | | 1 | | | | | | 1 | | | |
| | 2030 | 1 | | | İ | | | | | | } | | | |
| | 2031 | i | | | | | | 1 | | | 1 | | | |
| | 2032 | - 1 | | | 1 | | | | | | | | | |
| | 2033 | | | | i | | | 1 | | | | | | |
| | 2034 | | | | | | | 1 | | | | 1 | | |
| | 2035 | | | | | | | + | 82 | 43 | | 26 | | 16 |
| , | Totals | 11 | | | | | | | 82 | +3 | | | | |

Case definition

Gas sales, PJ

561 11

Oil/cond/LPG reserves, mnib

Kipper gas only

Scheme Integration

hared export system - "base/high" market 60 PJ/yr(230TJ/d MDQ)

| | 1.2 MMstb/yr | | Sales | | 1 | Vell schedule | e l | Capital co | sts, ASmi | 1998 | Operating cost | | Abandonment costs, A\$mm 1998 |
|------------------------------------|--------------|----------|--------------|-------|-------|---------------|-----------|------------|-----------|---------|----------------|---------|----------------------------------|
| Activity | Year | | | Gas | Explo | Appl | Devt | Offshore | | Oushore | Offshore | Onshore | A5mm 1998 |
| | | Oil/cond | LPG | | Expin | , spp. | | Wells | Facs | Facs | | | |
| | 1 | Mstb/yr | kT/yr | PJ/yr | 1 | | | E & A Devt | | | | | |
| • | | | | | | | | | 2 | | | | |
| | 1999 | | | | | | | | 29 | | | | |
| Kipper PSA 1/1/2000 | 2000 | ļ | | | 1 | , | 3 | -15 | 44 | | | | Į. |
| 3 x Kipper vert wells | 2001 | 1.16 | 149.5 | 00.0 | | | | | 0 | | 6.8 | | 1 |
| Kipper RFSU 1/1/2002 | 2002 | 1.16 | 149.9 | 0.00 | 1 | | 1 | 15 | 3 | | 6.8 | | |
| l x Kipper vert. well | 2003 | 1.16 | 150 3 | 60.0 | | | | | | ł | 78 | | |
| | 2004 | 1.16 | 149.9 | 60.0 | 1 | | | | | | 78 | | l |
| | 2005 | | 149.9 | 60 0 | | | | | | | 7.8 | | 1 |
| | 2006 | 1.16 | 149.9 | 60.0 | | | | | | | 7.8 | | Į. |
| ĺ | 2007 | 1.16 | 150.3 | 60.0 | | | | | | | 7.8 | | |
| 2nd stage onshore compression RFSU | 2008 | 1.16 | 130.3 | ö0.0 | 1 | | | | | 1 | 7.4 | | |
| - | 2009 | 1.16 | | 36.6 | 1 | | | i | | | 7.0 | | |
| 1 | 2010 | 0.71 | 91.4 55.8 | 22.3 | | | | | | 1 | 6.7 | | 1 |
| | 2011 | 0.43 | | 13.6 | | | | | | 1 | 6.4 | | 1 |
| | 2012 | 0.26 | 34.1 | | | | | | | | 6.0 | | |
| | 2013 | 0:16 | 208 | 83, | İ | | | | | | ŀ | | 14.6 |
| Abandonment | 2014 | | | | | | | | | | | | |
| Apardoransin | 2015 | | | | | | | 1 | | | 1 | | l |
| | 2016 | | | | 1 | | | | | i | | | |
| | 2017 | | | | 1 | | | | | | 1 | | |
| | 2018 | } | | | | | | | | 1 | 1 | | 1 |
| | 2019 | | | | ÷ | | 1 ******* | | | | | | |
| | 2020 | | | | 1 | | | | | ļ | | | |
| | 2021 | | | | | | | | | | | | |
| | 2022 | | | | 1 | | | 1 | | Ì | ļ, | | i |
| | 2023 | | | | | | | | | | | | 1 |
| | 2024 | 1 | | | | | | | | 1 | | | |
| | 2025 | | | | | | | | | 1 | | | |
| | 2026 | 1 | | | 1 | | | | | 1 | | | |
| | 2026 | | | | 1 | | | 1 | | 1 | | | |
| | | | | | | | | 1 | | | | | |
| | 2028 | 1 | | | | | | | | ļ | | | |
| | 2029 | | | | | | | | | | | | |
| | 2030 | 1 | | | | | | | | | | | |
| | 2031 | | | | | | | 1 | | 1 | 1 | | |
| | 2032 | | | | | | | | | i | | | |
| | 2033 | | | | ļ | | | | | | 1 | | į. |
| 1 | 2034 | 1 | | | | | | | | | | | |
| | 2035 | | | | | | 4 | 60 | 78 | | 86 | | 15 |
| 1 | Totals | 11 | 1402 | 561 | | | | | | | | | |

Shell Development Australia

Basker Manta Evaluation

Case 2c(i), 2c(ii)

Case definition Gas sales, PJ

561 11

Oil/cond/LPG reserves, mmb

Kipper gas only

Scheme Integration

Tariff thro' shared export system - "low/lo-low" market 40 PJ/yr(155TJ/d MDQ)

| Products / peak avg. sales rates | 0.8 MMstb/yr | | Sales | | T | Well schedul | de | Capital c | costs, ASmin | m 1998 | | osts, ASmm 1998 | Abandonment costs, | - 1 |
|------------------------------------|--------------|---------|-------|-------|-------|--------------|------|---------------|--------------|---------|----------|-----------------|--------------------|----------|
| Activity | Year | | | | | | Devt | Offshore | | Onshore | Offshore | Onshore | A\$mm 1998 | 1 |
| | | OlVcond | LPG | Gas | Expln | Appi | Devi | Wells | Facs | Facs | 1 | | l | 1 |
| | | Mstb/yr | kT/yr | PJ/yr | } | | | E & A Deyt | , | 1 | 1 | | | \dashv |
| 1 | | | | | | | | E as a | 2 | | | | | 1 |
| | 1999 | | | | | | | | 23 | 1 | 1 | | - } | 1 |
| Kipper PSA 1/1/2000 | 2000 | | | | 1 | | 3 | -15 | 38 | 1 | i | | 1 | 1 |
| 3 x Kipper vert wells | 2001 | | | 10.0 | i | | - | ** | 0 | 1 | 6.3 | | | - 1 |
| Kipper RFSU 1/1/2002 | 2002 | 0.77 | 99.7 | 40.0 | I | | | 1 | • | 1 | 6.3 | | į | - 1 |
| Kipper Kr 36 1/1/2002 | 2003 | 0.77 | 99.9 | 40.0 | 1 | | | | , | 1 | 6.3 | | | ļ |
| | 2004 | 0.77 | 100.2 | 40.0 | 1 | | | | , | 1 | 6.3 | | | - 1 |
| | 2005 | 0.77 | 99.9 | 40.0 | İ | | | | , | 1 | 6.3 | | | - 1 |
| | 2006 | 0.77 | 99.9 | 40 0 | | | | | , | | 6.3 | | 1 | 1 |
| | 2007 | 0 77 | 99.9 | 40.0 | | | | | | 1 | 6.3 | | 1 | - 1 |
| i | 2008 | 0.77 | 100.2 | -10.0 | | | | | , | } | 6.3 | | | 1 |
| 1 | 2009 | 0 77 | 99.9 | 40.0 | | | | | • | } | 6.3 | | 1. | } |
| 1 . | 2010 | 0.77 | 99.9 | -10.0 | | | | | • | 1 | 6.3 | | | ļ |
| 2nd stage onshore compression RFSU | 2010 | 0.77 | 99.9 | 40.0 | | | | | | | | | 1 | 1 |
| 1 | | 0.77 | 100.2 | 40.0 | ĺ | | | 1 | | 1 | 6.3 | | 1 | |
| 1 | 2012 | | 99.9 | 40.0 | l | | | İ | | ļ | 6.3 | | 1 | 1 |
| | 2013 | 0.77 | 86.2 | 3-1-5 | 1 | | | | | ľ | 6.0 | | 1 | |
| 1 | 2014 | | 52.6 | 21 0 | i | | | | | | 5.7 | | 1 | |
| 1 | 2015 | 0.41 | | 12.8 | l | | | | | 1 | 5.4 | | 1 | |
| 1 | 2016 | 0.25 | 32.2 | | | | | | | | 5.2 | | | - 1 |
| 1 | 2017 | 0.15 | 19.6 | 7.8 | | | | | | | 4.9 | | | |
| | 2018 | 0.09 | 11.9 | 4.8 | - | | | | | | 1 | | 11.0 | - 1 |
| . 1 | 2019 | - | | . ' | | | | · · · · · · - | 15 = 1 × 1 | | | | | . ! |
| Abandonment | 2020 | | | | | | | | | | | | | |
| 1 | 2021 | | | | | | | | | | | | | |
| 1 | 2022 | | | | ł | | | | | | 1 | - | | |
| 1 | 2022 | | | | 1 | | | | | | į | - | | |
| 1 | 2023 | | | | | | | | | | | | | |
| | | 1 | | | ł | | | i | | 1 | | | l | |
| 1 | 2025 | | | | 1 | | | | | | | | 1 | |
| \ | 2026 | | | | 1 | | | | | | j | | 1 | |
| 1 | 2027 | | | | 1 | | | | | | | | 1 | |
| ļ . | 2028 | | | | - [| | | | | | | | | |
| | 2029 | 1 | | | | | | | | | | | 1 | |
| | 2030 | | | | 1 | | | 1 | | | | | 1 | |
| | 2031 | | | | 1 | | | | | | | | | |
| 1 | 2032 | | | | | | | | | | 1 | | | |
| | 2033 | | | | İ | | | | | 1 | | | 1 | |
| | 2034 | | | | i | | | | | ļ | | | 1 | |
| | 2035 | ļ | | | | | | | | | 103 | | 11 | _ |
| 1 | Totals | 11 | 1402 | 561 | | | 3 | 45 | 63 | 1 | 103 | | | _ |

Shell Development Australia Basker Manta Evaluation

Case 2d

Case definition

Gas sales, PJ

991

Oil/cond/LPG reserves, numb

Scheme

M/G/K gas

Integration

Shared systems - "base" market 60 PJ/yr(230TJ/d MDQ)

| | V | | Sales | | V | Vell schedul | le | Сар | ital costs, | A\$mm | 1998 | | its, A\$mm 1998 | Abandonment costs, |
|------------------------------------|--------|----------|-------|--------------|--------|--------------|------|----------|-------------|-------|---------|----------|-----------------|--------------------|
| Activity | Year | Oil/cond | LPG | Gas | Expin | Appl | Devt | | hore | | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | | kT/yr | PJ/yr | L.Ap.m | opp. | | Wells | | acs | Facs | | | |
| | | Mstb/yr | K1/yr | 1 3// yr | | | | E&A Do | evt | - 1 | | | | |
| | | | | | | | | | | | 2 | | | Ì |
| | 1999 | | | | | | | | | 30 | 96 | | | |
| Kipper PSA 1/1/2000 | 2000 | | | | | | | | | 55 | 170 | | | |
| | 2001 | | | 60.0 | | | | i | | 1 | | 0.8 | 11.2 | |
| Cipper RFSU 1/1/2002 | 2002 | | | 60.0 | | | | | | - 1 | | 0.8 | 11.2 | } |
| | 2003 | | | 60.0 60.0 | | | | | | - 1 | | 0.8 | 11.2 | |
| | 2004 | | | | | | | | | | | 0.8 | 11.2 | |
| 1 | 2005 | | | 60.0 | Į | | | | | 1 | 5 | 0.8 | 11.2 | |
| | 2006 | | | 60.0 | 1 | | | | | | 18 | 0.8 | 11.4 | |
| | 2007 | | | 60.0 | | | | | | | | 08 | 12.1 | |
| 2nd stage onshore compression RFSU | 2008 | | | 60.0 | 1 | | | | | | | 0.8 | 12.1 | |
| and and | 2009 | | | 60.0 | | | | [| | 1 | - | 0.8 | 12.1 | |
| Gummy RFSU 1/1/2010 | 2010 | | | 60.0 | | | | 1 | | | | 0.8 | 12.1 | |
| Manta RFSU 1/1/2011 | 2011 | | | 60.0 | | | | | | | | 0.8 | 12.1 | |
| Ivianta Ri 30 1/1/2011 | 2012 | | | 60.0 | 1 | | | | | | | 0.8 | . 12.1 | |
| | 2013 | | | 60.0 | | | | 1 | | • | | 0.8 | 12.1 | |
| | | | | 60.0 | 1 | | | l | | | | 0.8 | 12.1 | ' |
| | 2015 | | | 48.2 | | | | | | | · | 0.8 | 12.1 | |
| | 2016 | | | 39.3 | 1 | | | l | | | | 0.8 | 12.1 | |
| | 2017 | İ | | 32 6 | | | | | | | | | 12.1 | |
| | 2018 | | | 27.5 | i | | | 1 | | | | 0.8 | | l . |
| | 2019 | | | 20.0 | | | | 1 | | | ļ . | 0.8 | 12.1 | |
| | | | | 15.3 | 1 | | | _ | | | | 0.8 | 12.1 | |
| | 2020 | | | 11.1 | | | | | | | | 0.8 | 12.1 | |
| | 2021 | | | 9.4 | 1 | | | | | | | 0.8 | 11.5 | |
| | 2022 | | | 2.8 | 1 | | | | | | 1 | 0.8 | 11.0 | |
| 1 | 2023 | 1 | | 2.8 | | | | 1 | | | | 0.7 | 10.4 | |
| | 2024 | | | 1.6 | 1 | | | | | | | 0.7 | 9.9 | |
| | 2025 | | | 1.0 | | | | | | | 1 | 0.7 | 9.4 | |
| | 2026 | | | Ιź | | | | | | | | | | 12.9 |
| System abandomient | 2027 | | | | 1 | | | 1 | | | | 1 | | |
| -y | 2028 | | | | | | | 1 | | | | | | |
| | 2029 | | | | | | | | | | 1 | 1 | | |
| | 2030 | | | | | | | | | | | | • | |
| | 2031 | 1 | | | | | | 1 | | | 1 | | | 1 |
| | 2032 | 1 | | | | | | 1 | | | | | | |
| | 2033 | 1 | | | | | | 1 | | | | | | |
| i. | 2034 | 1 | | | | | | | | | | | | |
| | 2035 | 1 | | | | | | <u> </u> | | | | 21 | 289 | 13 |
| | Totals | | | 991 | | _ | | <u></u> | | 85 | 291 | 41 | 107 | |

Shell Development Australia

Basker Manta Evaluation

Case 2d P85

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

LPG reserves, mino

Integration
Products / peak avg. sales rates

720 -

M/G/K gas - P85 Shared systems - "base" market 60 PJ/yr(230TJ/d MDQ)

| | Year | T | , V | Vell schedule | e | | Capital c | osts, A\$mi | | Operating costs, ASmm 1998 | | Abandonment costs, | | |
|------------------------------------|--------|----------|--------------|---------------|--------------|------|-----------|-------------|----------|----------------------------|---------|--------------------|---------|-------------|
| Activity | y ear | Qil/cond | Sales LPG | Gas | Explu | Appl | Devt | | Offshore | | Onshore | Offshore | Onshore | . A5mm 1998 |
| | | | kT/yr | PJ/yr | L.p | | | l w | ells | Facs | Facs | | | |
| | | Mistb/yr | ктуг | 1 37 31 | | | | E&A | | | | | | |
| | | | | | | | | | | | 2 | | | |
| | 1999 | | | | } | | | | | 30 | 96 | | | 1 |
| Cipper PSA 1/1/2000 | 2000 | | | | İ | | | 1 | | 55 | 170 | | | 1 |
| | 2001 | | | 60.0 | | | | | | | | 0.8 | 11.2 | 1 |
| Cipper RFSU 1/1/2002 | 2002 | | | 60.0 | | | | ľ | | | | 0.8 | 11.2 | |
| | 2003 | ! | | 60.0 | | | | 1 | | | 5 | 0.8 | 11.2 | |
| | 2004 | | | 60.0 | | | | | | | 18 | 0.8 | 11.4 | |
| | 2005 | 1 | | 60.0 | | | | ļ | | | | 0.8 | 12.1 | |
| 2nd stage onshore compression RFSU | 2006 | | | 60 0 | | | | ł | | | | 0.8 | 12.1 | |
| | 2007 | | | | | | | | | | 1 | 0.8 | 12.1 | |
| Manta RFSU 1/1/2008 | 2008 | 1 | | 60.0 | | | | | | | 1 | 0.8 | 12.1 | |
| Gummy RFSU 1/1/2009 | 2009 | | | 60.0 | | | | l | | | | 0.8 | 12.1 | |
| Canally 12 | 2010 | 1 | | 59.9 | | | | | | | | 0.8 | . 12.1 | |
| | 2011 | | | 50.4 | | | | | | | | 0.8 | 12.1 | |
| 1 | 2012 | | | 38.7 | | | | | | | i | 0.8 | 12.1 | |
| | 2013 | 1 | | 27.9 | | | | | | | | 0.8 | 12.1 | |
| ···· | 2014 | | | -23.2 | | | | + | + | | | 0.8 | 12:1 | |
| • | 2015 | | | 16.3 | 1 | | | | | | | 0.8 | 12.1 | |
| | 2016 | | | 10.2 | 1 | | | 1 | | | | 0.8 | 11.5 | į. |
| | 2017 | 1 | | 8 3 | | | - | | | | | 0.8 | 11.0 | |
| | 2018 | 1 | | 2.0 | 1 | | | 1 | | | | 0.7 | 10.4 | |
| | 2019 | | | 1.4 | i | | | 1 | | | ļ | 0.7 | 9.9 | 1 |
| | 2020 | | | 1.0 | | | | 1 | | | | 0.7 | 9.4 | |
| | 2021 | | | 0.8 | 1 | | | | | | | 1 0.7 | · · · | 12.9 |
| | 2022 | | | | | | | | | | | | | |
| System abandonment | 2023 | | | | | | | | | | | 1 | | |
| , | 2024 | | | | 1 | | | | | | | l | | 1 |
| ! | 2025 | ļ | | | | | | | | | | | | |
| | 2026 | | | | ļ | | | 1 | | | | | | |
|] | 2027 | | | | 1 | | | 1 | | | | | | |
| | 2028 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | , |
| | 2029 | | | | | | | 1 | | | | | | |
| | 2030 | | | | | | | 1 | | | | | | |
| | 2031 | | | | | | | 1 | | | | 1 | | |
| | 2032 | | | | 1 | | | } | | | | 1 | | |
| | 2033 | | | | i | | | | | | | 1 | | |
| | 2034 | | | | | | | | | | | | | |
| | 2035 | | | 720 | | | | 1 | | 85 | 291 | 16 | 231 | 13 |
| | Totals | | | /411 | _1 | | | | | | | | | |

Shell Development Australia

Basker Manta Evaluation

Case 2d P15

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme Integration

Products / peak avg. sales rates

1443

M/G/K gas - P15 Shared systems - "base" market 60 PJ/yr(230TJ/d MDQ)

| | Year | | Sales | | W | 'ell schedul | e | Capital | costs, A\$m | | Operating costs, ASmm 1998 | | Abandonment costs |
|------------------------------------|--------|----------|-------|--------|---------|--------------|------|----------|-------------|---------|----------------------------|---------|-------------------|
| Activity | ¥ ear | Oil/cond | LPG | Gas | Expln | Appl | Devt | Offshore | | Onshore | Offshore | Onshore | ASmm 1998 |
| 1 | | | kT/yr | PJ/yr | DAp | | - | Wells | Facs | Facs | | | |
| . 1 | | Mstb/yr | кілуг | 1 3/yı | | | | E&A Devt | | | | | |
| | | | | | | | | | | 2 | | | |
| | 1999 | | | | | | | | 30 | 96 | | | |
| Cipper PSA 1/1/2000 | 2000 | | | | | | | | 55 | 170 | | | ļ |
| 1 | 2001 | | | 60 0 | | | | | | | 0.8 | 11.2 | |
| Cipper RFSU 1/1/2002 | 2002 | | • | 60.0 | ļ | | | | | | 0.8 | 11.2 | 1 |
| | 2003 | | | 60.0 | İ | | | | | | 0.8 | 11.2 | 1 |
| | 2004 | | | 60.0 | 1 | | | | | 1 | 0.8 | 11.2 | |
| | 2005 | | | 60.0 | | | | | | | 0.8 | 11.2 | İ |
| | 2006 | | | 60.0 | 1 | | | | | 1 | 0.8 | 11.2 | 1 |
| | 2007 | | | 60.0 | | | | | | 5 | 0.8 | 11.2 | |
| | 2008 | | | 60.0 | | | | | | 18 | 0.8 | 11.4 | |
| | 2009 | | | 60.0 | | | | | | | 0.8 | 12.1 | |
| 2nd stage onshore compression RFSU | 2010 | | | 60.0 | | | | · . | | 1 | 0.8 | 12.1 | |
| | 2011 | | | 60.0 | | | | | | 1 | 0.8 | 12.1 | |
| Manta RFSU 1/1/2012 | 2012 | | | 60.0 | | | | | | 1 | 0.8 | 12.1 | ļ |
| | 2013 | | | | 1 | | | | | | 0.8 | 12.1 | |
| Gummy RFSU 1/1/2014 | 2014 | | | 60 0 | , | | | | | 1 | 0.8 | 12.1 | ·} |
| | 2015 | | | 60.0 | ļ | | | | | | 0.8 | 12.1 | |
| | 2016 | | | 60.0 | 1 | | | | | | 0.8 | 12.1 | - |
| | 2017 | | | 59.8 | 1 | | | | | | 0.8 | 12.1 | |
| | 2018 | | | 60 0 | Ì | | | | | | 0.8 | 12.1 | |
| | 2019 | | | 59 5 | | | | | | 1 | 0.8 | 12.1 | |
| | 2020 | | | 56.5 | | | | Į. | | | 0.8 | 12.1 | l . |
| | 2021 | | | 49 9 | | | | | | 1 | 0.8 | 12.1 | |
| | 2022 | 1 | | 46 2 | | | | | | Į. | 0.8 | 12.1 | 1 |
| | 2023 | Į. | | 41-0 | 1 | | | | | | 0.8 | 12.1 | |
| | 2024 | 1 | | 37 8 | | | | | | ì | 0.8 | 12.1 | ł |
| | 2025 | | | 31.3 | 1 | | | | | | 0.8 | 12.1 | |
| | 2026 | | | 27 2 | | | | 1 | | | 0.8 | 12.1 | |
| | 2027 | | | 161 | 1 | | | | | | 0.8 | 12.1 | |
| | 2028 | | | 14.7 | | | | | | 1 | 0.8 | 12.1 | |
| | 2029 | | | 138 | | | | | | 1 | 0.8 | 11.5 | |
| | 2030 | 1 | | 66 | 1 | | | 1 | | | 0.8 | 11.0 | |
| | 2031 | 1 | | 6 2 | | | | | | | 0.8 | 10.4 | |
| | 2032 | | | 5.9 | | | | | | | 0.7 | 9.9 | |
| | 2033 | | | 5 5 | | | | | | | 0.7 | 9.4 | |
| | 2034 | | | 5 1 | | | | | | | 0.7 | 7.4 | 12.9 |
| | 2035 | | | | | | | | | | 27 | 385 | 13 |
| System abandorunent | Totals | | | 1443 | | | | | 85 | 291 | | 383 | 1 13 |

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, minb

Scheme Integration 991 . M/G/K gas

Shared systems - "lo-low" market 40 PJ/yr(155TJ/d MDQ)

Products / peak avg. sales rates Abandonment costs, Operating costs, A5mm 1998 Capital costs, ASmm 1998 Sales Well schedule Year Activity ASmm 1998 Offshore Onshore Offshore Onshore Devt LPG Gas Expin Appl OlVcond Facs Wells Facs kT/yr PJ/yr Mstb/yr E & A Devt 2 1999 27 77 2000 136 49 2001 8.4 0.8 40.0 2002 Kipper RFSU 1/1/2002 0.8 8.4 40.0 2003 8.4 0.8 40.0 2004 84 8.0 40.0 2005 8.4 0.8 40.0 200ó 8.4 0.8 40 0 2007 0.8 8.4 40.0 2008 0.8 8.4 40.0 2009 8.4 3 8.0 40.0 2010 8.6 8.0 40.0 2011 9.0 8.0 40.0 2012 9.0 Onshore suction compression reqd 8.0 40.0 2013 0.8 9.0 40.0 2014 0.8 9.0 Manta RFSU 1/1/2014 40.0 2015 8.0 9.0 40.0 2016 9.0 0.8 40.0 2017 9.0 0.8 40.0 2018 90 Guminy RFSU 1/1/2018 0.8 40.0 2019 9:0 0.8 40.0 2020 9.0 0.8 40.0 2021 9.0 0.8 39.0 2022 9.0 0.8 31.3 2023 9.0 0.8 27.9 2024 9.0 8.0 25.2 2025 9.0 0.8 19.4 2026 0.7 8.6 13.8 2027 0.7 8.2 12.2 2028 0.7 77 10.8 2029 7.4 0.6 5.7 2030 0.6 7.0 5.2 2031 10.0 2032 Abandoument 2033 2034 2035 259 10 76 230 990 Totals

Shell Development Australia Basker Manta Evaluation Case 2d(ii)

Case definition

Gas sales, PJ

991

Oil/cond/LPG reserves, minb

Scheme

M/G/K gas

Integration

Products / peak avg. sales rates

Shared systems - "low" market 60 PJ/yr(230TJ/d MDQ)

| A . 42 . 54 | Year | | Well schedule | | | 1 | Capital co | osts, ASmn | | Operating costs, ASmm 1998 | | Abandonment costs, | | |
|----------------------------------|--------------|-----------|---------------|--------|-----------------------------------|-------|------------|------------|----------|----------------------------|---------|--------------------|------------|-----------|
| Activity | 1 ear | Oil/cond | Sales LPG | Gas | Expln | | | | Offshore | | Onshore | Offshore | Onshore | A5mm 1998 |
| | | Mstb/yr | kT/yr | PJ/yr | | • • • | Devt | Wei | lls | Facs | Facs | i | | |
| | 1 | (visio/yi | K1/31 | • 0.,. | 1 | | | E & A | Devt | | | | | |
| | 1999 | | | | | | - | | | | 3 | 1 | | i |
| | 2000 | | | | | • | | 1 | | 30 | 78 | 1 | | |
| | | | | | 1 | | ļ | • | | 55 | 139 | • | | |
| | 2001 | | | 40.0 | 1 | | | | | | 1 | 0.8 | 9.0 | ļ |
| Cipper RFSU 1/1/2002 | 2002 2003 | | | 40.0 | | | | 1 | | | 18 | 0.8 | 9.0 | |
| | | | | 40 0 | | | | İ | | ŀ | 26 | 0.8 | 9.7 | |
| | 2004 | | | 60 0 | | | | ŀ | | | | 0.8 | 10.8 | 1. |
| Manta RFSU 1/1/2005 | 2005 | | | 60 0 | | | | i | | | | 0.8 | 10.8 | |
| | 2006 | | | 60.0 | | | | | | | • | 0.8 | 10.8 | |
| | 2007 | 1 | | 60.0 | 1 | | | | | Ţ | 7 | 0.8 | 10.8 | |
| | 2008 | | | 60.0 | 1 | | | | | Į. | 26 | 0.8 | 11.1 | |
| | 2009 | i . | | 60.0 | | | | 1 | | Į. | 1 | 0.8 | 12.1 | |
| Onshore suction compression reqd | 2010 | 1 | | 60.0 | | | | | | Į. | 1 | 0.8 | 12.1 | ĺ |
| | 2011 | 1 | | 60.0 | | | | 1 | | ļ | 1 | 0.8 | 12.1 | |
| | 2012 | | | 60.0 | | | | i | | | | 0.8 | 12.1 | 1 |
| | 2013 | | | | | | | | | | · | 0.8 | 12.1 | |
| Jummy RFSU 1/1/2014 | 2014 | | | 60.0 | · · · · · · · · · · · · · · · · · | | 2 | | | | · | | 12.1 | |
| • | 2015 | | | 57.3 | 1 | | | 1 | | | | 0.8 | 12.1 | Į. |
| | 2016 | 1 | | 46.2 | | | | | | | | 0.8 | 12.1 | |
| | 2017 | 1. | | 39.1 | 1 | | | | | | | 0.8 | 12.1 | |
| | 2018 | 1. | | 34 5 | | | | | | | | 0.8 | 12.1 | |
| | 2019 | | | 22.2 | | | | 1 | | | | 0.8 | 12.1 | |
| | 2020 | | | . 164 | | | | 1 | | | | 0.8 | 12.1 | |
| | 2021 | ł | | 128 | | | | l. | | | ł | 0.8 | 12.1 | |
| | 2022 | | | 9.5 | 1 | | | 1 | | | | 0.8 | 11.5 | |
| | 2023 | 1 | | 8.4 | 1 | | | | | | | | 11.0 | |
| | 2024 | 1 | | 7.5 | | | | 1 | | | | 0.8 0.7 | 10.4 | |
| | 2025 | | | 6.7 | | | | i | | | | | 9.9 | 1 |
| | 2026 | ĺ | | 6.0 | | | | | | | | 0.7 | 9.9 9.4 | |
| | 2027 | 1 | | 5.2 | | | | | | | | 0.7 | 9.4 | 12.8 |
| | 2028 | 1 | | | | | | | | | 1 | 1 | | 12.8 |
| Abandomnent | 2029 | | | | | | | | | | ! | | | |
| | 2029 | 1 | | | 1 | | | | | | | 1 | | |
| | 2030 | | | | 1 | | | 1 | | | | <u> </u> | | |
| | | | | | | | | | | | | | | |
| | 2032 | | | | 1 | | | 1 | | | | | | |
| | 2033 | | | | 1 | | | | | | | | | |
| | 2034 | | | | 1 | | | | | | | | | |
| | 2035 | | | 992 | + | | | 1 | | 85 | 297 | 21 | 292 | 13 |
| | Totals | | | 994 | | | | | | | | | | |

Basker Manta Evaluation

Case 2d(iii)

Case definition Gas sales, PJ

Oil/cond/LPG reserves, mmb

Integration

991

M/G/K gas Shared systems - "high" market

| | · · · · · · · · · · · · · · · · · · · | T | Sales | | T | ell schedul | le | Capital c | osts, ASmn | 1998 | Operating cos | ts, ASmm 1998 | Abandonment costs, |
|----------------------------------|---------------------------------------|---------------------|--------------|--------------|-------|-------------|------|-------------------------------|------------|-----------------|---------------|---------------|--------------------|
| Activity | Year | Oil/cond Mstb/yr | LPG kT/yr | Gas PJ/yr | Expln | Appl | Devt | Offshore Wells E&A Devi | Facs | Onshore Facs | Offshore | Onshore | ASmm 1998 |
| | 1999 | | | | 1 | | | | | 3 | | | |
| | 2000 | | | | 1 | | | | 31 | 98 | | | |
| | 2001 | 1 | | | 1 | | | | 57 | 173 | 0.0 | 11.4 | |
| Kipper RFSU 1/1/2002 | 2002 | İ | | 60.0 | i | | | | - 1 | 10 | 0.9 0.9 | 11.4 | |
| uppet KF30 1/1/2002 | 2003 | 1 | | 60.0 | 1 | | | | - 1 | 16 | 0.9 | 12.1 | |
| | 2004 | | | 0.00 | | | | | | 24 | 0.9 | 13.1 | |
| Aanta RFSU 1/1/2005 | 2005 | | | 80.0 | | | | | | ., | 0.9 | 13.1 | |
| tana Kr30 1/1/2005 | 2006 | 1 | | 80.0 | | | | | - | 8 | 0.9 | 13.4 | |
| | 2007 | | | 80.0 | | | | | 1 | 31 | 0.9 | 14.7 | |
| Onshore suction compression regd | 2008 | | | 80 0 | | | | | - 1 | | 0.9 | 14.7 | |
| Manute adequit compression requ | 2009 | 1 | | 80.0 | | | | | | | 0.9 | 14.7 | |
| Summy RFSU 1/1/2010 | 2010 | | | 80.0 | 1 | | | | | | 0.9 | 14.7 | İ |
| Julility Rt 50 1/1/2010 | 2011 | | | 70.1 | | | | | | | 0.9 | 14.7 | |
| | 2012 | 1 | | 56 7 | ļ | | | | | | 0.9 | 14.7 | ŀ |
| | 2013 | | | 47.7 | ì | | | Ì | | | 0.9 | 14.7 | |
| | 2014 | Į. | | 33.3 | | | | | | | 0.9 | 14.7 | |
| | 2015 | | | 28 8 | | | | | | | 0.9 | 14.7 | · I |
| • | 2016 | | | 21.6 | 1 | | | | | | 0.9 | 14.7 | İ |
| | 2017 | | | 1.7.0 | | - | · | | | | 0.9 | | |
| | 2018 | 1 | | 13.0 | | | | | | | 0.8 | 14.0 | |
| | 2019 | | | 11.3 | | | | | | | 0.8 | 13.3 | |
| | 2020 | | | 9.7 | 1 | | | | | | 0.8 | 12.6 | <u> </u> |
| | 2021 | | | 8.5 | 1 | | | | | | 0.7 | 12.0 | 1 |
| | 2022 | | | 7.5 | | | | | | | 0.7 | 11.4 | , |
| | 2023 | 1 | | 6.7 | 1 | | | | | | 1 " | ••. • | 15.2 |
| Abandonment | 2024 | - | | | | | | | | | 1 | | |
| Dandoriment | 2025 | | | | ŀ | | | | | | | | |
| | 2026 | 1 | | | 1 | | | | | | | | 1 |
| and the second second | 2027 | | | | 1 | | | | | ĺ | | | |
| | 2028 | 1 | | | 1 | | | | | | | | 1 |
| | 2029 | 1 | | | | | | | | 1 | 1 | | 1 |
| | 2030 | 1 | | | | | | | | İ | | | |
| | 2031 | 1 | | | 1 | | | | | | 1 | | |
| | 2032 | | | | | | | | | | | | |
| | 2033 | | | | | | | | | | 1 | | |
| | 2034 | | | | | | | | | | | | |
| | 2035 | | | | | | | | | | l | 299 | 15 |
| | Totals | | | 992 | | | | 1 | 88 | 352 | 19 | 299 | |

24-Scp-98

Shell Development Australia

Basker Manta Evaluation

Case 2e

Case definition

Gas sales, Pl

430 18.1

Oil/cond/LPG reserves, numb

M/G gas only

Scheme Integration

Tariff thro' Kipper - "base" market

60 PJ/yr(230TJ/d MDQ) 2.4 MMstb/yr

Products / peak avg. sales rates

| | 2.4 MMstb/yr | | Sales | | | ell schedu | e e | | Capital o | osts, A\$mn | 1998 | Operating cos | ts, A\$mm 1998 | Abandonment cost |
|-------------------------------------|--------------|----------|-------|-------|--------------|------------|-----------|-------|--------------|-------------|--------------|---------------|------------------|------------------|
| Activity | Year | | | c. | Expln | Appl | Devt | | Offshore | | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | Oil/cond | LPG | Gas | e.xpm | Appi | 17611 | l w | ells | Facs | Facs | | | |
| | | Mistb/yr | kT/yr | PJ/yr | l | | | E & A | Devt | | | | | <u> </u> |
| | | | , | | | 1 | | 15 | | | | | | 1 |
| Gummy appraisal well | 1999 | | | | | • | | | | | | | | [|
| 1 | 2000 | | | | l | | | 1 | | | | | | 1 |
| | 2001 | | | | l | | | | | | | | | |
| | 2002 | İ | | | ı | | | | | | | | | İ |
| | 2003 | | | | | | | | | | | | | |
| | 2004 | | | | l . | | | | | | : | | | 1 |
| | 2005 | } | | | 1 | 2 | | 24 | | | | 1 | | 1 |
| appraisal each in Gummy and Manta | 2006 | | | | | - 4 | | | | | | } | | |
| , appraira | 2007 | | | | 1 | | | | | 58 | | | | 1 |
| PSA 1.1.2008 | 2008 | | | | | | 2hc | 1 | 28 | 87 | | | | |
| 2 x G hor, appl well convs | 2009 | | | | | | 2nc 1h | 1 | 18 | . 3 | | 10.2 | | 1 |
| Gummy RFSU 1/1/2010; 1 x M hor well | 2010 | 1 07 | 80.0 | 23.4 | | | 113 | | 10 | , | | 11.2 | | |
| Manta RFSU 1/1/2011 | 2011 | 1.73 | 129 2 | 37 7 | | | 11 | İ | 31 | 3 | | 11.2 | | |
| 1 x M hor well (extended reach) | 2012 | 2.14 | 159.5 | 46.4 | 1 | | 1h | | 15 | 3 | | 12.9 | | İ |
| 1 x M hor.well | 2013 | 2 37 | 177.3 | 51.7 | l | | 1h | 1 | 13 | , | | 13.8 | | j |
| 1 X M nor.weit | | 2.50 | 1958 | 60.0 | | | | | | | | 13.8 | or mesocrate and | 1 |
| | 2015 | 1.96 | 155.4 | 48.2 | 1 | | | 1 | | | | 13.8 | | |
| | 2016 | 1 55 | 125.2 | 39 3 | | | | | | | | 13.8 | | |
| | 2017 | 1.24 | 101.8 | 32.6 | | | | | | | 1 | 13.8 | | |
| | 2018 | 1.01 | 84.4 | 27 5 | | | | | | | i | 13.8 | | |
| N | 2019 | 0.79 | 63.5 | 20 0 | 1 | | | | | | | 13.8 | | |
| | 2020 | 0.64 | 50 2 | 153 | 1 | | | ļ | | | | | | 1 |
| | 2021 | 0.51 | 38 2 | 11.1 | 1 | | | | | | | 13.8 | | İ |
| | 2022 | 0.43 | 32 1 | 94 | 1 | | | 1 | | | | 13.1 | | |
| | 2023 | 0.13 | 9.7 | 2.8 | | | | | | | | 12.4 | | l l |
| | 2024 | 0.10 | 7.2 | 2.1 | | | | | | | | 11.8 | | |
| | 2025 | 0.07 | 5.4 | 16 | 1 | | | 1 | | | | 11.2 | | |
| | 2026 | 0.05 | 4.0 | 1 2 | | | | | | | | 10.6 | | 19.9 |
| | | 0.03 | 1, | | | | | 1 | | | | | | . 19.9 |
| Abandonment | 2027 | 1 | | | | | | 1 | | | | 1 | | |
| | 2028 | | | | i | | | 1 | | | | 1 | | |
| | 2029 | | | | | | | | | | 1 | 1 | | |
| | 2030 | | | | | | | | | | 1 | | | |
| | 2031 | | | | 1 | | | | | | 1 | | | |
| | 2032 | 1 | | | | | | | | | | | | 1 |
| | 2033 | 1 | | | | | | 1 | | | | | | |
| | 2034 | | | | | | | | | | .] | | | |
| • | 2035 | | | 420 | | 3 | | 39 | 92 | 154 | | -215 | | 20 |
| | Totals | 18 | 1419 | 430 | | 3 | | 1 -55 | - | | J., | | | |

Shell Development Australia

Basker Manta Evaluation

Case 2e P85

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme Integration 290 12.2

M/G gas only - P85 Tariff thro' Kipper - "base" market 60 PJ/yr(230TJ/d MDQ)

| Products / peak avg. sales rates | 2.4 MMstb/yr | 1 | Sales | | 111111111111111111111111111111111111111 | eli schedul | e | | Capital c | osts, A\$mı | n 1998 | Operating cost | s, A\$mm 1998 | Abandonment costs, |
|--|--------------|----------|-------|--------|---|-------------|------|-------------|-----------|-------------|--------------|----------------|---------------|--------------------|
| Activity | Year | Oil/cond | LPG | Gas | Expln | Appl | Devt | | Offshore | • | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | Mstb/yr | kT/yr | P.J/yr | | •• | | We | ells | Facs | Facs | | | |
| | | MISID/JI | KI.J. | , - | | | | E & A | Devt | | | | | ļ |
| Gummy appraisal well | 1999 | | | | | 1 | | 15 | | | | | | |
| Jununy appraisar wen | 2000 | ł | | | 1 | | | | | | | | | 1 |
| | 2001 | | | | } | | | | | | · | | | 1 |
| | 2002 | j | | | 1 | | | ļ | | | | | | |
| | 2003 | | | | 1 | | | | | | | | | |
| appraisal each in Gummy and Manta | 2004 | 1 | | | | 2 | | 24 | | | | | | |
| appraisar each at Guttany and man | 2005 | | | | 1 | | | | | 60 | | } | | İ |
| PSA 1.1.2006 | 2006 | | | | | | | | 40 | 58 87 | | | | |
| 2 x M hor, appl wells (incl. 1 extended reach) | 2007 | | | | | | 2h | | 49 | | ļ | 11.2 | | |
| Manta RFSU 1/1/2008; 2 x G hor well convis | 2008 | 0.23 | 17.1 | 27.7 | | | 2hc | | 28 16 | 6 3 | | 12.9 | | |
| Gummy RFSU 1/1/2010: 1 x M hor well | 2009 | 1.28 | 95.3 | 41.0 | | | 1 h | | 10 | 3 | | 13.8 | | Ĭ |
| Julius Id Be 1/1/2010. 1 11 11 11 | 2010 | 1.88 | 140.7 | 48.8 | | | | | | | • | 13.8 | | |
| | 2011 | 2.06 | 160.4 | 43.8 | | | | | | | | 13.8 | | |
| | 2012 | 1.76 | 140.4 | 38.7 | 1 | | | | | | | 13.8 | | |
| | 2013 | 1.52 | 123.0 | 27.9 | | | | l | | | | 13.8 | | |
| | 2014 | 1.03 | 85.9 | 23.2 | -1 - | | | | - ::: | | | 13.8 | | 1* |
| Į | 2015 | 0.81 | 69.8 | 16.3 | } | | | 1 | | | | 13.1 | | |
| | 2016 | 0.62 | 50.9 | 10.2 | | | | İ | | | | 12.4 | | |
| | 2017 | 0 47 | 34.9 | 8.3 | | | | | | | l | 11.8 | | - |
| | 2018 | 0.38 | 28.6 | 2.0 | | | | ł | | | | 11.2 | | |
| | 2019 | 0.09 | 68 | 1.4 | ı | | | | | | | 10.7 | | ł |
| | 2020 | 0.07 | 4.9 | 1.0 | 1 | | | İ | | | | 10.7 | | 19.9 |
| Abandorunent | 2021 | | | | | | | | | | | | | , , , , , |
| Abandolulietii | 2022 | | | | | | | | | | | | | |
| | 2023 | | | | | | | | | | 1 | | | |
| | 2024 | | | | | | | | | | 1 | l | | |
| | 2025 | | | | | | | | | | 1 | | | |
| | 2026 | ŀ | | | | | | | | | | | | • |
| | 2027 | | | | 1 | | | | | | | ļ · | | |
| ! | 2028 | | | | | | | | | | | 1 | | |
| | 2029 | | | | | | | | | | | | | |
| İ | 2030 | 1 | | | | | | 1 | | | 1 | 1 | | |
| | 2031 | | | | | | | 1 | | | 1 | | | |
| | 2032 | | | | | | | 1 | | | | | | |
| | 2033 | 1 | | | | | | | | | | 1 | | |
| | 2034 | 1 | | | | | | 1 | | | 1 | 1 | | |
| | 2035 | 1 | | | | | | | | | | 166 | | 20 |
| | Totals | 12 | 959 | 290 | | 3 | | 39 | 92 | 154 | | 100 | | |

Case 2e 185

Shell Development Australia Basker Manta Evaluation

Case 2e P15

Case definition

Gas sales, PJ

734 31.8

Oil/cond/LPG reserves, numb

M/G gas only - P15 Tarifl'thro' Kipper - "base" market

Scheme Integration

60 PJ/yr(230TJ/d MDQ)

| Products / peak avg. sales rates | 2.4 MMstb/yr | | Sales | | We | ll schedu | le I | | Capital c | osts, A\$mı | ո 1998 | Operating costs | A\$mm 1998 | Abandonment costs, A\$mm 1998 |
|--|----------------|----------|-------|--------|--------------|-----------|----------|-------|-----------|-------------|---------|-----------------|------------|----------------------------------|
| ctivity | Year | | | 0 | Expln | Appl | Devt | | Offshore | | Onshore | Offshore | Onshore | Asimin 1990 |
| 1 | | Oil/cond | LPG | Gas | Expin | արթո | 20 | W | | Facs | Facs | | | |
| | | Mistb/yr | kT/yr | P.J/yr | 1 | | | E & A | Devt | | | | | |
| | | ļ | | | | <u> </u> | | 15 | | | | | | |
| ummy appraisal well | 1999 | | | | | | | | | | | | | 1 |
| | 2000 | | | | | | | | | | | | | 1 |
| | 2001 | | | | | | | | | | | | | |
| | 2002 | 1 | | | | | | | | | | | | |
| | 2003 | 1 | | | 1 | | | | | | | | | |
| | 2004 2005 | | | | | | | | | | · · | | | } |
| | 2005 | | | | | 2 | | 24 | | | ł | | | 1 |
| | 2006 | | | | | | | | | | | | | 1 |
| | 2008 | | | | | | | | | | | | | |
| appraisal each in Gunnny and Manta | 2008 | | | | | | | | | | l | | | į. |
| | 2010 | 1 | | | 1 | | | | | 58 | | | | |
| PSA 1.1.2010 | 2011 | | | | | | 2h | | 48 | 86 | | 11.3 | | 1 |
| x M hor, appl wells (incl. 1 extended reach) | 2012 | 0.80 | 59.7 | 17.4 | | | | | | | Ì | 11.1 | | |
| Ianta RFSU 1/1/2012 | 2012 | 1.37 | 102.0 | 29.8 | | | 2hc + 1h | | 43 | 9 | | 13.6 | | |
| x G hor.well convns; 1 x M hor.well | | 1 22 | 132.1 | 38.5 | | | | | | | i | 13.6 | | |
| Jummy RFSU 1/1/2014 | 2014 | 2.06 | 153.5 | 44.8 | | | | | | | | 13.6 | | |
| | 2015 | 2.76 | 206.3 | 60.0 | i | | | | | 13 | | 14.2 | | Ì |
| | 2016 | 2.75 | 205.2 | 59.8 | ŀ | | 2h | | 35 | 19 | | 16.8 | | İ |
| x G hor.well; 1 x M hor.well | 2017 | 2.61 | 200.0 | 60.0 | | | | | | | Ì | 16.8 | | 1 |
| | 2018 | 2.48 | 194.3 | 59.5 | 1 | | | | | | 1 | 16.8 | | |
| | 2019 | 2.35 | 184.5 | 56.5 | 1 | | | į | | | | 16.8 | | |
| | 2020 | 2.04 | 161.2 | 49.9 | 1 | | | 1 | | | 1 | 16.8 | | |
| | 2021 | 1.87 | 148.7 | 46.2 | | | | | | | 1 | 16.8 | | |
| | 2022 | 1.63 | 130.7 | 41.0 | 1 | | | | | | | | | |
| | 2023 | 1.48 | 120.0 | 37.8 | i | | | | | | | 16.8 16.8 | | |
| | 2024 | 1.31 | 102.5 | 31.3 | 1 | | | 1 | | | 1 | 16.8 | | |
| ì | 2025 | 1.18 | 90.7 | 27.2 | l l | | | | | | i | 16.8 | | |
| i | 2026 | 0.71 | 53.9 | 16.1 | 1 | | | | | | | 16.8 | | |
| | 2027 | 0.66 | 49.9 | 147 | 1 | | | | | | 1 | 16.8 | | |
| | 2028 | 0.62 | 46.9 | 13.8 | 1 | | | | | | | | | ì |
| | 2029 | 0.62 | 22.6 | 6.6 | | | | | | | | 16.0 | | |
| | 2030 | 0.30 | 21.1 | 6.2 | 1 | | | | | | | 15.2 | | |
| | 2031 | | 20.2 | 5.9 | 1 | | | 1 | | | 1 | 14.4 | | • |
| | 2032 | 0.27 | 18.9 | 5.5 | 1 | | | | | | 1 | 13.7 | | |
| | 2033 | 0.25 | 18.9 | 5.1 | 1 | | | 1 | | | | 13.0 | | 19.9 |
| | 2034 | 0.24 | 17.0 | ١,٠ | | | | 1 | | | | | | 20 |
| Abandonment | 2035 Totals | 32 | 2442 | 734 | | 3 | | 39 | 126 | 186 | | 352 | | |

Shell Development Australia

Basker Manta Evaluation

Case 2e(i)

Case definition

Gas sales, PJ Oil/cond/LPG reserves, mmb 430 18.1

M/G gas only

Scheme

Tariff thro' Kipper - "lo-low" market 40 PJ/yr(155TJ/d MDQ)

Integration Products / peak avg. sales rates

| Troducts / pour ang. saids tarri | 1.8 MMstb/yr | | | | 1 | Vell schedul | | | Canital | osts, A\$mn | 1998 | Operating cost | s, A\$mm 1998 | Abandonment costs, |
|--------------------------------------|--------------|-------------|-------|-------------|-------|--------------|------|------|-------------|-------------|---------|----------------|---------------|--------------------|
| Activity | Year | | Sales | | | | | | Offshore | , , | Onshore | Offshore | Onshore | A\$mm 1998 |
| Tearns, | | Oil/cond | LPG | Gas | Expln | Appi | Devt | .,, | ells | Facs | Facs | | | |
| i | | Mstb/yr | kT/yr | PJ/yr | | | | E&A | ens Devi | rucs | I ucs | | | |
| | | 1 | | | | | | 15 | Devi | | | | | |
| Gummy appraisal well | 1999 | | | | 1 | ł | | 1.5 | | | | | | |
| Cultility appraisar west | 2000 | | | | 1 | | | l | | | | | | |
| | 2001 | 1 | | | | | | | | | | ŀ | | |
| | 2002 | | | | l | | | | | | | Ì | | |
| | 2003 | | | | i | | | | | | | | | |
| | 2004 | İ | | | | | | | | | | Į | | |
| | 2005 | | | | | | | | | | | 1 | | 1 |
| | 2006 | | | | | | | | | | | - | | l' |
| | 2007 | 1 | | | | | | 1 | | | | | | 1 |
| | 2008 | | | | | | | | | | | 1 | | 1 |
| | 2009 | | | | | | | - 74 | | | | ! | | |
| I appraisal each in Gummy and Manta | 2010 | | | | | 2 | | 24 | | 2 | 1 | | | |
| appraisar each in Outliny and Island | 2011 | | | | | | | ĺ | | 38 | | | | |
| PSA 1 1.20012 | 2012 | | | | 1 | | | ļ | 18 | 60 | · · | | | 1 |
| 1 x M hor.well | 2013 | | | | | | 1 h | 1 | 10 | 00 | | 7.6 | | |
| Manta RFSU 1/1/2014 | | 0.25 | 18.8 | 5.5 19.0 | | | | | | | 1 | 7.6 | | 1 |
| Mania RFSO 1/1/2014 | 2015 | 0.87 | 65.0 | | | | | | 21 | - 22 | | 7.6 | | |
| 11 (| 2016 | 1.25 | 93.4 | 27.2 | | | H | | 31 | 22 26 | İ | 10.2 | | |
| 1 x M hor well (extended reach) | 2017 | 1.48 | 110.3 | 32.2 | | | 2hc | | 28 | 20 | | 12.8 | • | |
| 2 x G hor, appl well convns | 2018 | 1.62 | 120.7 | 35.2 | | | | 1 | 1.5 | 3 | | 12.8 | | |
| Gummy RFSU 1/1/2018 | 2019 | 1.84 | 137.1 | 40.0 | | | ۱h | 1 | 15 | 3 | | 13.7 | | |
| 1 x M hor.well | 2020 | 1.74 | 133.4 | 40.0 | į. | | | | | | | 13.7 | | |
| | 2021 | 1.63 | 129.2 | 40.0 | 1 | | | | | | | 13.7 | | |
| | 2022 | 1.54 | 123.9 | 39.0 | 1 | | | İ | | | | 13.7 | | |
| | 2023 | 1.18 | 97.3 | 31.3 | | | | 1 | | | | 13.7 | | |
| | 2024 | 1.03 | 86.1 | 27.9 | 1 | | | | | | 1 | 13.7 | | |
| | 2025 | 0.90 | 76.5 | 25.2 | } | | | | | | | 13.7 | | |
| | 2026 | 0.76 | 61.5 | 19.4 | İ | | | | | | 1 | 13.7 | | 1 |
| | 2027 | 0.63 | 47.3 | 13.8 | | | | | | | 1 | 13.0 | | |
| 1 | 2028 | 0.56 | 41.8 | 12.2 | 1 | | | | | | | 12.4 | | |
| | 2029 | 0.50 | 37.2 | 10.8 | | | | | | | | 11.8 | | |
| | 2030 | 0.26 | 19.6 | 5.7 | | | | | | | | 11.2 | | |
| | 2031 | 0.24 | 17.9 | 5.2 | | | | 1 | | | 1 | 10.6 | | |
| | 2032 | 0.31 | 22.9 | 6.7 | 1 | | | | | | | 10.0 | • | 19.9 |
| | 2032 | | | | İ | | | 1 | | | | | | |
| Abandonment | 2034 | | | | | | | 1 | | | | | | |
| | 2035 | | | | | | | | | | | 227 | | 20 |
| } | Totals | 19 | 1440 | 436 | | 3 | | 39 | 92 | 152 | | 1 441 | | |

Shell Development Australia

Basker Manta Evaluation

Case 2e(ii)

Case definition

Gas sales, PJ

430 18.1

Oil/cond/LPG reserves, mmb Scheme

M/G gas only Tariff thro' Kipper - "low" market 40 PJ/yr(155TJ/d MDQ) 1.4 MMstb/yr

Integration Products / peak avg. sales rates

| Gummy appraisal well I appraisal each in Gummy and Manta | Year 1999 2000 | Oil/cond Mstb/yr | Sales LPG kT/yr | Gas PJ/yr | Expln | ell schedu Appl | Devt | , | Offshore | osts, ASmi | Onshore | Offshore | Onshore | ASmm 1998 |
|--|----------------------|---------------------|-----------------------|--------------|--------------|--------------------|-----------|-----|----------|------------|---------|----------|---------|-----------|
| i i | 2000 | | | | Lypni | Chh. | | | | | | | | 1 |
| i i | 2000 | Mstb/yr | килуг | | 1 | | | We | | Facs | Facs | | | |
| i i | 2000 | | | , . | | | | E&A | Devt | | ' | | | |
| i i | 2000 | | | | | ī | | 15 | | | | | | |
| i i | | | | | | • | | | | | | | | |
| appraisal each in Gununy and Manta | | | | | ł | 2 | | 24 | | | | | | |
| | 2001 | | | | | - | | - | | | | | | |
| 1 | 2002 | | | | İ | | | | | 38 | | | | |
| PSA 1.1.2003 | 2003 | | | | | | th | | 18 | 62 | | | | |
| 1 x M hor.well | 2004 | | 60.4 | 20.0 | | | ••• | | •- | | | 7.6 | | |
| Manta RFSU 1/1/2005 | 2005 | 0.92 | 68 4 | | i | | | | | | | 7.6 | | |
| | 2006 | 0.92 | 68.6 | 20.0 | | | 1h | 1 | 31 | 3 | | 7.6 | | |
| 1 x M hor well (extended reach) | 2007 | 0.92 | 68 6 | 20.0 | 1 | | 111 | İ | ٥. | - | | 9.3 | | |
| | 2008 | 0.92 | 68 8 | 20.0 | | | | | | | | 9.3 | | |
| | 2009 | 0.92 | 68 6 | 20.0 | 1 | | | | | | | 9.3 | | 1 |
| | 2010 | 0.92 | 68.6 | 20.0 | | | | | | | Ì | 9.3 | | |
| | 2011 | 0.92 | 68 6 | 20.0 | | | | | | 19 | | 9.3 | | |
| | 2012 | 0.92 | 68 8 | 20.0 | | | 2hc | | 28 | 26 | 1 | 10.2 | | |
| 2 x G hor, appl well convis | 2013 | 0.92 | 68 6 | 20.0 | | | inc ih | | 15 | 3 | [| 12.8 | | |
| Gummy RFSU 1/1/2014; 1 x M hor well | 2014 | 1.17 | 87.4 | 25.5 | | | 11) | 1 | 13 | , | | 13.7 | | |
| Canally 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 2015 | 1.41 | 114.2 | 36.2 | L | | | | | | <u></u> | 13.7 | | |
| | 2016 | 1.28 | 1049 | 33.4 | 1 | | | | | | | 13.7 | | |
| | 2017 | 1.18 | 97 3 | 31.3 | | | | 1 | | | | 13.7 | | 1 |
| | 2018 | 1.11 | 91 9 | 29.7 | | | | 1 | | | 1 | 13.7 | | |
| | 2019 | 0.77 | 66.4 | 22.2 | | | | | | - | | 13.7 | | |
| | 2020 | 0.63 | 51 6 | 16.4 | | | | | | | 1 | 13.7 | | |
| , | 2021 | 0.52 | 41.3 | 12.8 | Į. | | | | | | | 13.7 | | .1 |
| , | 2022 | 0.44 | 32 7 | 9.5 | 1 | | | | | | į | 13.0 | | |
| , I | 2023 | 0.39 | 28.9 | 8.4 | | | | | | | | 12.4 | | |
| , 1 | 2024 | 0.34 | 25 7 | 7.5 | 1 | | | 1 | | | | | | |
| 1 | 2025 | 0.31 | 23.1 | 6.7 | | | | 1 | | | | 11.8 | | |
| i | 2026 | 0.27 | 20.4 | 6.0 | | | | | | | | 11.2 | | 1 |
| 1 | 2027 | 0.24 | 17.7 | 5.2 | | | | | | | İ | 10.6 | | 19.9 |
| 1., , . | 2028 | | | | | | | | | | | 1 | | 19.9 |
| Abandonment | 2029 | | | | | | | | | | | | | |
| i l | 2030 | | | | | | | | | | 1 | | | |
| i l | 2030 | | | | | | | | | | | | | |
| i l | 2032 | | | | | | | | | | | | | |
| 1 | 2032 | | | | 1 | | | | | | | | | |
| 1 | | | | | | | | | | | | | | 1 |
| 1 | 2034 | | | | | | | | | | L | | | |
| 1 | 2035 Totals | 18 | 1421 | 431 | | 3 | | 39 | 92 | 152 | | 261 | | 20 |

Shell Development Australia

Basker Manta Evaluation

Case 2e(iii)

Case definition

Gas sales, PJ Oil/cond/LPG reserves, munb

Scheme

18.1 M/G gas only Tariff thro' Kipper - "high" market

430

Integration

| Products / peak avg. sales rates | 40 PJ/yr(155TJ/d MDQ) 2.0 MMstb/yr | | | | | | | | | | 1000 | Operating cas | ts, A5mm 1998 | Abandonment costs, |
|---|---------------------------------------|----------|-------|-------|-------|-------------|------|-------|----------|-------------|--------------|---------------|---------------|---|
| Activity | Year | | Sales | | 1 | 'ell schedu | | | | osts, A\$mr | | Offshore | Onshore | A\$mm 1998 |
| Activity | | Oil/cond | LPG | Gas | Explu | Appl | Devt | | Offshore | _ | Onshore | Ollanore | Ollanoi | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| | | Mstb/yr | kT/yr | PJ/yr | j | | | We | | Facs | Facs | | | |
| | | | | | | | | E & A | Devt | | | | | |
| Gunmy appraisal well | 1999 | | | | | 1 | | 15 | | | ļ | | | |
| Guitari, appraisor work | 2000 | | | | j. | | | | | | | | | |
| I appraisal each in Gummy and Manta | 2001 | | | | | 2 | | 24 | | | | | | |
| appraisar each in Guarany and resure | 2002 | | | | 1 | | | | | | | | | |
| PSA 1.1.2003 | 2003 | | | | | | | | | 38 | | | | |
| 1 x M hor.well | 2004 | | | | | | Hi | | 18 | 62 | | 7.6 | | |
| Manta RFSU 1/1/2005 | 2005 | 0.92 | 68.4 | 20.0 | | | | | | | | 7.6 | | 1 |
| 1 x M hor well (extended reach) | 2006 | 0.92 | 68.6 | 20.0 | 1 | | 16 | | 31 | 3 | 1 | 93 | | į |
| 1 X M Hol. Well (extended reach) | 2007 | 0.92 | 68.6 | 20.0 | | | | | | | | 9.3 | | |
| | 2008 | 0.92 | 68.8 | 20.0 | 1 | | | | | 19 | | 10.2 | | |
| 2 x G hor, appl well convns | 2009 | 0.92 | 68.6 | 20.0 | 1 | | 2hc | 1 | 28 | 26 | | 12.8 | | |
| Guruny RFSU 1/1/2010; 1 x M hor well | 2010 | 1.99 | 148.7 | 43.4 | | | lh | | 15 | 3 | | 13.7 | | · · |
| Guminy RESO 17172010, 1 x tot flor well | 2011 | 1.94 | 153.9 | 47.8 | 1 | | | | | | | 13.7 | | , |
| | 2012 | 1.73 | 138.3 | 43.1 | | | | | | | | 13.7 | | |
| | 2013 | 1.55 | 125.2 | 39.4 | | | | | | | 1 | 13.7 | | |
| | 2014 | 1.27 | 104.2 | 33.3 | 1 | | | .] | _ | . <u> </u> | | | | |
| | 2015 | 1.07 | 89.0 | 28 8 | | | | 1 | | | | | | |
| | 2016 | 0.86 | 69.2 | 21.6 | | | | | | | ļ | 13,7 | | |
| | 2017 | 0.72 | 55.8 | 17.0 | | | | 1 | | | | 13.7 | | |
| | 2018 | 0.60 | 44.7 | 130 | | | | | | | | 13.7 | | |
| | 2019 | 0.52 | 38.8 | 11.3 | İ | | | | | | | 13.0 | | |
| | | 0.45 | 33.3 | 9.7 | j. | | | | | | | 12.4 | | |
| | 2020 | 0.39 | 29.3 | 8.5 | ì | | | 1 | | | 1 | 11.8 | | |
| | 2021 | 0.35 | 25.9 | 7.5 | ł | | | 1 | | | 1 | 11.2 | | |
| | 2022 | 0.33 | 22.9 | 6.7 | | | | 1 | | | | 10.6 | | |
| | 2023 | 0.31 | 22.3 | 0,, | 1 | | | | | | 1 | | | 19.9 |
| Abandonment | 2024 | İ | | | 1 | | | | | | ŀ | 1 | | 1 |
| | 2025 | 1 | | | | | | | | | | | | |
| | 2026 | 1 | | | | | | | | | i | İ | | |
| | 2027 | 1 | | | | | | ļ | | | | | | |
| | 2028 | | | | | | | | | | | | | |
| | 2029 | | | | | | | | | | | | | |
| | 2030 | | | | i | | | | | | | | | 1 |
| | 2031 | 1 | | | | | | | | | | 1 | | |
| | 2032 | 1 | | | | | | | | | | 1 | | |
| | 2033 | | | | | | | | | | | | | |
| | 2034 | | | | | | | | | | | | | |
| | 2035 | | | | | | | 1 20 | | 152 | | 226 | | 20 |
|) h | Totals | 18 | 1422 | 431 | 1 | 3 | | 39 | 92 | 154 | | 1 220 | | |

Basker Manta Evaluation

Case 2f

24-Sep-98

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

Integration
Products / peak a

495 19

B/M/G gas only (after oil devt)
Tanff thro' Kipper - "base" market
60 PJ/yr(230TJ/d MDQ)

| Products / peak avg. sales rates | 60 PJ/yr(230TJ/d MDQ) | | | | | | | | | | |
|---|-----------------------|-------------|-------|-------|-----------------|-------|-------------------|---------|---------------|-----------------|-------------------|
| | 2.5MMstb/yr cond | 1 | Sales | | Well schedule | Can | ital costs, A\$mn | 1998 | Operating cos | ts, A\$nım 1998 | Abandonment costs |
| Activity | Year | | | | Exptn Appl Devt | | Tshore | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | Oil/cond | LPG | Gas | Expin Appl Devi | Wells | Facs | Facs | | | |
| | | Mstb/yr | kT/yr | PJ/yr | | | Devi | 1 | | | |
| | 1999 | | | | 1 | 15 | | 1 | | | |
| x Gummy appraisal well | 2000 | l | | | incremental | 5 | | 1 1 | | | |
| 1 x Manta app/dev well drilled for oil - incri to deeper target only) | | | | | | - | | 1 | | | |
| | 2001 2002 | | | | | | | 1 | | | |
| | 2002 | | | | | | | 1 | | | |
| | 2003 | | | | | | | | | | 1 |
| | | | | | | | | 1 | | | |
| | 2005 | | | | 1 | 14 | | 1 1 | | | |
| x Gurnmy appraisal well | 2006 | | | | , | | | 1 | | | İ |
| | 2007 | | | | | | 58 | | | | |
| PSA 1.1.2008 | 2008 | | | | 2hc | | 26 86 | | | | |
| 2 x G hor, appl well convs | 2009 | 1.07 | 80.0 | 23.4 | lst | | 12 3 | 1 | 10.7 | | |
| Gummy RFSU 1/1/2010; 1 x M hor well (oil well S/T) | 2010 | | 129.2 | 37.7 | 130 | | - | 1 1 | 11.5 | | |
| Manta RFSU 1/1/2011 | 2011 | 1.73 | | 46.4 | - 1h | | 31 3 | | 11.5 | | |
| x M hor well (extended reach) | 2012 | 2.14 | 159.5 | | 3h | | 15 20 | | 13.2 | | |
| x M hor well | 2013 | 2.37 | 177.3 | 51.7 | 2r | | 6 26 | | 15.1 | | |
| 2 x Basker oil well recompletions | 2014 | 2.50 | 195.8 | 60.0 | 21 | | 0 10 | | 16.7 | | 1 . |
| Basker gas RFSU | 2015 | 2.08 | 179.4 | 60.0 | | | | | 16.7 | | |
| 2000-100-1 | 2016 | 1.70 | 154.5 | 53.6 | | ļ | | | 16.7 | | 1 |
| | 2017 | 1.39 | 132.2 | 47.5 | | l | | | 16.7 | | |
| | 2018 | 1.15 | 112.9 | 41.5 | | | | } | 16.7 | | 1 |
| | 2019 | 0.90 | 85.4 | 30.7 | 1 | ľ | | 1 | 16.7 | | |
| j | 2020 | 0.64 | 50.2 | 15.3 | İ | | | 1 | 16.7 16.7 | | 1 |
| | 2021 | 0.51 | 38.2 | 11.1 | | | | | 15.9 | | |
| į. | 2022 | 0.43 | 32.1 | 9.4 | | | | | | | |
| | 2023 | 0.13 | 9.7 | 2.8 | 1 | ì | | | 15.1 | | |
| | 2024 | 0.10 | 7 2 | 2.1 | | ļ | | | 14.4 | | |
| | 2025 | 0.07 | 5.4 | 1.6 | | | | | 13.6 | | |
| | 2026 | 0.05 | 4.0 | 1.2 | | Į | | | 13.0 | | 27.1 |
| | 2027 | | | | | | | | | | 27.1 |
| Abandonment | 2028 | | | | | | | | | | |
| İ | 2029 | | | | 1 | 1 | | | 1 | | |
| | 2030 | | | | | 1 | | | | | |
| | 2031 | | | | | 1 | | | | | |
| | 2032 | | | | | | | | 1 | | ľ |
| 1 | 2032 | Í | | | | | | | | | |
| 1 | | | | | | l | | | | | |
| i | 2034 | 1 | | | | | | | | | |
| - | 2035 | | 1553 | 106 | 7 | 35 | 90 197 | 1 | 251 | | 27 |
| | Totals | 19 | 1553 | 496 | | 35 | 90 197 | | 1 231 | | |

Case 2g

Case definition

Gas sales, PJ Oil/cond/LPG reserves, minb

Scheme

Integration

495 36.9

B/M oil + B/M/G gas Tariff thro' Kipper - "base market" 60 PJ/yr(230TJ/d MDQ)

| Products / peak avg. sales rates | 60 PJ/yr(230TJ/d MDQ) | | | | | | | | | | | | | |
|--|------------------------------------|---------|-------|--------------|----------|------------|--------|----|------------|----------|---------|----------------|---------------|--------------------|
| | 9.0MMstb/yr oil + 2.5MMstb/yr cond | | | | | ell schedu | | | apital cos | ete ASmu | n 1998 | Operating cost | s. A\$mm 1998 | Abandonment costs, |
| Activity | Year | | Sales | _ | l . | | Devt | | Offshore | | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | OlVcond | LPG | Gas PJ/yr | Expln | Appl | Devi | | ells | Facs | Facs | • | | |
| | | Mstb/yr | kT/yr | PJ/yr | - | | | | Devt | 1 403 | | | | |
| | 1999 | | | | <u> </u> | 1+1 | | 29 | | 3 | | | | |
| Basker appraisal well, PSA 1/10/99, 1 x Gummy appraisal well | 2000 | | | | | | 3 + 1c | 5 | 54 | 28 | 1 1 | | | |
| 2xB hor.well(1convn)+1xgas inj, 1xM app/dev well | 2001 | 7.59 | | | | | | | | 9 | | 49.4 | | |
| Oil RFSU 1/1/2001 | 2001 | 4.22 | | | | | lst | | 9 | | 1 | 49.7 | | İ |
| Vert. S/T of 1 x Basker well; Manta RFSU | 2002 | 3.42 | | | | | | | | | | 50.1 | | |
| | 2003 | 2.67 | | | 1 | | | | | | 1 | 50.1 | | |
| | 2004 | 2.01 | | | Í | | | | | | 1 | | | |
| Oil presumed uneconomic beyond end 2004 | | | | | | 1 | | 14 | | | 1 | | | 1 |
| l x Gummy appraisal well | 2006 | | | | | • | | | | | 1 | | | 1 |
| | 2007 | | | | | | | | | 58 | 1 | | | |
| Gas PSA 1.1.2008 | 2008 | 1 | | | | | 2hc | | 26 | 8ó | 1 | | | 1 |
| 2 x G hor, appl well convs | 2009 | 1.07 | 80.0 | 23 4 | | | lst | | 12 | 3 | 1 1 | 10.7 | | |
| Gummy RFSU 1/1/2010; 1 x M hor.well (oil well S/T) | 2010 | 1.73 | 129.2 | 37.7 | 1 | | | 1 | | | 1 | 11.5 | | |
| Manta RFSU 1/1/2011 | 2011 | 2.14 | 159.5 | 46.4 | 1 | | th | 1 | 31 | 3 |] . | 11.5 | | |
| 1 x M hor well (extended reach) | 2012 | 2.14 | 177.3 | 51.7 | 1 | | lh | | 15 | 20 | | 13.2 | | 1 |
| I x M hor well | 2013 | | 195.8 | 60.0 | | | 21 | | 6 | 26 | 1 | 15.1 | | 1 |
| 2 x Basker oil well recompletions | 2014 | 2.50 | 179.4 | 60.0 | ł | | | } | | | 1 1 | 16.7 | | |
| Basker gas RFSU | 2015 | 2.08 | 154.5 | 53.6 | 1 | | | 1 | | | | 16.7 | | |
| | 2016 | 1.70 | | 33.0 47.5 | 1 | | | 1 | | | 1 | 16.7 | | |
| | 2017 | 1 39 | 132.2 | | | | | 1 | | | 1 | 16.7 | | i |
| | 2018 | 1.15 | 112.9 | 41.5 | 1 | | | | | | | 16.7 | | |
| | 2019 | 0.90 | 85.4 | 30.7 | 1 | | | | | | 1 . 1 | 16.7 | | İ |
| | 2020 | 0.64 | 50.2 | 15.3 | 1 | | | 1 | | | 1 1 | 16.7 | | ŀ |
| | 2021 | 0.51 | 38.2 | 11.1 | | | | | | | | 15.9 | | |
| † | 2022 | 0.43 | 32.1 | 9.4 | | | | 1 | | | i i | 15.1 | | Į. |
| | 2023 | 0.13 | 9.7 | 2.8 | 1 | | | | | | | 14.4 ^ | | ł |
| | 2024 | 0.10 | 7.2 | 2 1 | | | | 1 | | | Į. | 13.6 | | (|
| | 2025 | 0.07 | 5.4 | 1.6 | | | | | | | 1 1 | 13.0 | | 1 |
| | 2026 | 0.05 | 4.0 | 1.2 | 1 | | | ł | | | 1 | 13.0 | | 33.8 |
| Abandonment | 2027 | 1 | | | 1 | | | 1 | | | i i | | | |
| Abandonanem | 2028 | | | | ĺ | | | | | | | | | |
| | 2029 | ŀ | | | | | | 1 | | | 1 1 | | | |
| | 2030 | | | | 1 | | | 1 | | | 1 | | | |
| | 2031 | | | | | | | | | | } ! | | | 1 |
| | 2032 | | | | | | | 1 | | | 1 | | | |
| | 2033 | 1 | | | | | | 1 | | | 1 | | | |
| | 2034 | | | | | | | | | | i 1 | | | |
| | 2035 | 1 | | | | | | | | | | | | 34 |
| | Totals | 37 | 1553 | 496 | | | | 48 | 153 | 236 | | 450 | | 3+ |
| | | | | | | | | | | | | | | |

Basker Manta Evaluation

Case 2i

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

23 24.8 B/M oil - water inj

Integration

Tuna satellite

Products / peak avg. sales rates

50 mbd water inj

9.0MMstb/yr; 7PJ/yr Operating costs, ASmm 1998 Abandonment costs, Capital costs, A\$mm 1998 Well schedule Sales Activity Year A\$mm 1998 Onshore Offshore Onshore Offshore Devt LPG Gas Expin Appl Oil/cond Wells Facs Facs Mstb/yr kT/yr PJ/yr E & A Devt 14 1999 Basker appraisal well 50 2000 PSA 1/7/2000 54 81 3 + 1c 2001 2xB hor.well(1convn)+1x w.inj well; 1xM app/hor. dev well 8.6 8.17 7.3 2002 RFSU 1/1/2002 8.9 9 lst 5.90 5.2 2003 Vert. S/T of 1 x Basker well, Manta RFSU 9.3 3.71 3.4 2004 9.3 2.55 2.4 2005 8.8 1.3 2006 1.54 8.4 1.0 2007 1.17 7.9 0.8 0.83 2008 7.5 0.7 2009 0.56 7.2 0.6 0.37 2010 14.9 Presiuned uneconomic beyond end 2010 2011 2012 2013 2014 2015 201ó 2017 2018 2019 2020 2021 2022 2023 2024 2025 202ó 2027 2028 2029 2030 2031 2032 2033 2034 2035 15 139 63 23 Totals

Shell Development Australia Basker Manta Evaluation

Case 2i P85

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, inmb Scheme

Integration

14.9 16.7 B/M oil - water inj - P85

Tuna satellite 50 mbd water inj

| Products / peak avg. sales rates | 50 mbd water inj | | | | | | | | | | | | | |
|---|---------------------|----------|-------|--------------|-------|------------|--------|---------|---------------|----------|-------|---------------|----------------|--------------------|
| | 9.0MMstb/yr, 7PJ/yr | T | Sales | | T 10 | ell schedu | ılo | Can | ital costs, A | Smm 1998 | | Operating cos | ts, A\$mm 1998 | Abandonment costs, |
| Activity | Year | | | - | Expla | | Devi | Offst | | | shore | Offshore | Onshore | A\$mm 1998 |
| | | Oll/cond | LPG | Gas PJ/yr | Expin | white | Devi | Wells | Fac | | Facs | | | |
| | | Mstb/yr | kT/yr | r Jiyi | | | | E&A Dev | | | | | | |
| | 1999 | | | | | 1 | | 14 | | | | | | |
| Basker appraisal well | 2000 | t | | | | , | | | 50 | | | ļ | | ì |
| PSA 1/7/2000 | 2001 | 1 | | | ł | | 3 + 1c | 54 | 81 | 1 | | Ì | | 1 |
| 2xB hor.well(1convn)+1x w.inj well; 1xM app/hor. dev well | 2002 | 7.40 | | οó | | | | | 8 | | | 8.6 | | 1 |
| RFSU 1/1/2002 | 2002 | 3.54 | | 31 | | | ist | 9 | | 1 | | 8.9 | • | 1 |
| Vert. S/T of 1 x Basker well; Manta RFSU | 2003 | 2.68 | | 2.5 | | | | | | ı | | 8.8 | | |
| | 2005 | 1.47 | | 1.2 | | | | | | | | 8.4 | | 1 |
| | 2006 | 0.79 | | 0.ó | 1 | | | | | ı | | 7.9 | | 1 |
| | 2007 | 0.43 | | 0.1 | | | | | | - 1 | | 7.5 | | ŀ |
| | 2007 | 0.38 | | 0.1 | 1 | | | | | 1 | | 7.2 | • | |
| | 2009 | 0.50 | | | | | | | | | | | | 14.9 |
| Presumed uneconomic beyond end 2008 | 2010 | | | | | | | | | | | | | |
| | 2011 | | | | | | | | | | | | | |
| l i | 2012 | | | | | | | | | ł | | } | | |
| | 2012 | | | | | | | | | 1 | | 1 | | |
| | 2014 | | | | | | | | | i | | 1 | | |
| · · | 2014 | 1 | | | | | | | | | | | • | 1 |
| | 2016 | | | | ľ | | | | | | | | | |
| | 2017 | | | | | | | | | ļ | | | | |
| | 2017 | 1 | | | į | | | ĺ | | - 1 | | | | |
| | 2019 | 1 | | | 1 | | | | | 1 | | | | 1 . |
| | 2019 | | | | 1 | | | | | 1 | | | | 1 |
| | | ŀ | | | 1 | | | | | | | | | ķ |
| 1 | 2021 | | | | i | | | | | 1 | | | | ł |
| | 2022 | 1 | | | | | | | | | | 1 | | 1 |
| | 2023 | | | | | | | i | * | İ | | Í | | i |
| | 2024 | | | | | | | l | | | | | | ı |
| | 2025 | | | | | | | | | ļ | | | | 1 |
| | 2026 | 1 | | | i | | | | | 1 | | | | |
| | 2027 | | | | | | | | | 1 | | | | 1 |
| | 2028 | 1 | | | | | | | | | | 1 | | |
| | 2029 | | | | | | | 1 | | | | | | |
| | 2030 | | | | | | | | | | | İ | | 1 |
| | 2031 | | | | | | | | | | | | | |
| | 2032 | | | | | | | | | | | | | |
| | 2033 | | | | | | | | | | | | | |
| 4 | 2034 | 1 | | | | | | | | | | | | |
| | 2035 | | | | | | | 11 | 3 13 | . — | | 57 | | 15 |
| | Totals | 17 | | 15 | L | 1 | | 14 6: |) 13 | <u>'</u> | | | | |

Shell Development Australia

Basker Manta Evaluation

Case 2i P15

Case definition

Gas sales, PJ Oil/cond/LPG reserves, mmb 32.8 35.6

Scheme

B/M oil - water inj - P15 Tuna satellite

Integration

50 mbd water inj

Products / peak avg. sales rates

| Products / peak avg. sales rates | 9.0MMstb/yr; 9PJ/yr | · | | | | | | C | costs, ASm | 1008 | Operating cost | s ASmm 1998 | Abandonment costs, |
|---|---------------------|----------|-------|-------|-------|-----------|--------|----------|------------|---------|----------------|-------------|--------------------|
| Activity | Year | 1 | Sales | | | ell sched | | | | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | Oil/cond | LPG | Gas | Expln | Appl | Devt | Offshore | | Facs | Chistore | Gustion | |
| | | Mstb/yr | kT/yr | PJ/yr | | | | Wells | Facs | racs | İ | | 1 |
| | | 1 | | | | | | E&A Devt | | | | | |
| Basker appraisal well | 1999 | | | | Ì | ì | | 14 | 50 | | | | |
| PSA 1/7/2000 | 2000 | | | | | | | | | | | | 1 |
| 2xB hor.well(Iconvn)+1x w.inj well; 1xM app/hor. dev well | 2001 | 1 | | | | • | 3 + 1c | 54 | 81 8 | | 8.3 | | |
| RFSU 1/1/2002 | 2002 | 8.63 | | 7,7 | | | | İ | 8 | | 8.6 | | |
| Manta RFSU | 2003 | 7.28 | | 6.5 | | | | | | | 8.6 | | Į. |
| Vert. S/T of 2 x Basker wells to deeper LaTrobe | 2004 | 6.03 | | 5.3 | | | 2st | 16 | | | 9.3 | | |
| Vent. Set of a A Business in the Set of the | 2005 | 3.58 | | 3.3 | ļ | | | | | | 9.3 | | l |
| 1 | 2006 | 2.63 | | 2.6 | | | | | | | 9.3 | | |
| | 2007 | 1.85 | | 1.5 | | | | | | I | 9.3 | | |
| ļ | 2008 | 1.48 | | 1.3 | | | | | | | 8.8 | | |
| | 2009 | 1.23 | | 1.1 | } | | | | | 1 | 8.4 | | |
| | 2010 | 1.06 | | 10 | | | | | | | 8.4 | | |
| | _ 2011 | 0.81 | | 0.9 | | | | | | | | | |
| | 2012 | 0.61 | | 0.9 | | | | 1 | | 1 | 7.6 | | |
| | 2013 | 0 43 | | 0 7 | ŀ | | | | | | 7.2 | | 14.9 |
| | 2014 | 1 | | | | | | | | | | | 17:2 |
| Presumed uneconomic beyond end 2013 | 2015 | 1 | | | | | | | | | | | , |
| | 2016 | 1 | | | 1 | | | | | | | | 1 |
| | 2017 | ì | | | | | | | | | i | | 1 |
| 1 | 2018 | 1 | | | | | | | | 1 | | | l . |
| | 2019 | 1 | | | 1 | | | | | 1 | 1 | | 1 |
| İ | 2020 | 1 | | | Ì | | | 1 | | | | | |
| | 2021 | ļ. | | | i | | | | | | 1 | | |
| | 2022 | | | | l | | | | | | | | |
| | 2022 | 1 | | | | | | | | | i | | |
| | 2024 | i | | | | | | | | | | | |
| | 2025 | | | | | | | | | | | | |
| | 2026 | 1 | | | 1 | | | | | | | | |
| | | | | | 1 | | | | | | 1 | | l |
| | 2027 | | | | | | | | | | | | [|
| | 2028 | | | | | | | | | | | | |
| | 2029 | 1 | | | | | | | | | | | |
| | 2030 | Į | | | 1 | | | | | | | | 1 |
| | 2031 | | | | | | | | | | | | |
| | 2032 | | | | 1 | | | | | 1 | | • | |
| | 2033 | | | | 1 | | | | | | | | |
| | 2034 | 1 | | | | | | 1 | | | 1 | | |
| Į. | 2035 | | | | + | | | 14 71 | 139 | | 103 | | 15 |
| ı | Totals | 36 | | 33 | 1 | 1 | | 1 14 /1 | 137 | | | | |

Shell Development Australia
Basker Manta Evaluation

Case 3b

Case definition Gas sales, PJ

Oil/cond/LPG reserves, mmb

Od/cond/LPG reserves, mmt Scheme 991 29.1

K + M/G gas only - "base" market Shared (no tariff) common systems 60 PJ/yr(230TJ/d MDQ)

Integration Products / peak avg. sales rates

and the product amount and those of

| 4.41.34 | 1.8 MMstb/yr Year | | Sales | | 11 | ell schedule | , | | Capital c | osts, A\$mr | n 1998 | Operating cos | ts, A\$mm 1998 | Abandonment costs, |
|--|----------------------|----------|--------|-------|-------|--------------|------|-------|-----------|-------------|---------|---------------|----------------|--------------------|
| Activity | 3 CAI | Oll/cond | LPG | Gas | Explu | Appl | Devi | | Otishore | | Onshore | Offshore | Onshore | A\$mm 1998 |
| | | Mstb/yr | kT/yr | PJ/yr | | | | Well | ls | Facs | Facs | | | İ |
| | | } | | | | | | E & A | Devt | | | | | |
| Gummy appraisal well | 1999 | | | | | | | 15 | | 2 | 2 | | | |
| Kipper PSA 1/1/2000 | 2000 | | | | i | | | | | 59 | 96 | | | |
| 3 x Kipper vert wells; | 2001 | | | | | | | | 45 | . 99 | 170 | 7.6 | 11.2 | ł |
| Kipper RFSU 1/1/2002 | 2002 | 1.16 | 149.5 | 60.0 | 1 | | | | | 0 | | 7.6 | 11.2 | - - |
| x Kipper vert. well | 2003 | 1.16 | 149.9 | 60.0 | 1 | | | | 15 | 3 | | 8.7 | 11.2 | |
| | 2004 | 1.16 | 150.3 | 60.0 | | | | | | | | 8.7 | 11.2 | |
| | 2005 | 1.16 | 149.9 | 60.0 | | | | | | | ١, | 8.7 | 11.2 | i |
| l appraisal each in Gummy and Manta | 2006 | 1.16 | 149.9 | 60.0 | | | | 24 | | | 5 18 | 8.7 | 11.4 | |
| , | 2007 | 1.16 | 1-19.9 | 60.0 | 1 | | | | | | 18 | 8.7 8.7 | 12.1 | ŀ |
| 2nd stage compn RFSU; M/G PSA 1/1/2008 | 2008 | 1.16 | 150.3 | 60.0 | | | | | 20 | 58 87 | | 8.7 8.3 | 12.1 | ł |
| 2 x G hor, appl well convs | 2009 | 1.16 | 149.9 | 60.0 | | | | | 28 | | 1 | 18.1 | 12.1 | |
| Guminy RFSU 1/1/2010; 1 x M hor.well | 2010 | 1.78 | 171.5 | 60.0 | | | | | 18 | 3 | 1 | 18.8 | 12.1 | |
| Manta RFSU 1/1/2011 | 2011 | 2.16 | 185.0 | 60.0 | | | | | | | · . | 18.4 | 12.1 | |
| 1 x M hor.well (extended reach) | 2012 | 2.40 | 193.6 | 60.0 | | | | | 31 | 3 | | 19.8 | 12.1 | 1 |
| 1 x M hor.well | 2013 | 2.53 | 198.0 | 60.0 | | | | | 15 | 3 | | | 12.1 | 14.6 |
| Kipper abandonment | י 2014 | 2.50 | 195.8 | 60.0 | | | | | | | | 14.6 | 12.1 | . 14.0 |
| tupper acanacians | 2015 | 1.96 | 155.4 | 48.2 | | | | | | | 1 | 14.6 | 12.1 | |
| | 2016 | 1.55 | 1252 | 39.3 | } | | | | | | | 14.6 | | |
| | 2017 | 1.24 | 101.8 | 32.6 | 1 | | | Ì | | | | 14.6 | 12.1 | |
| | 2018 | 1.01 | 84.4 | 27.5 | 1 | | | | | | | 146 | 12.1 | , |
| | 2019 | 0.79 | 63.5 | 20.0 | 1 | | | } | | | | 14.6 | 12.1 | |
| | 2020 | 0.64 | 50.2 | 15.3 | 1 | | - | Ì | | | | 14.6 | 12.1 | |
| | 2021 | 0.51 | 38.2 | 11.1 | ŀ | | | | | | ł | 14.6 | 12.1 | |
| | 2022 | 0.43 | 32.1 | 9.4 | 1 | | | | | | İ | 13.9 | 11.5 | |
| | 2023 | 0.13 | 9.7 | 2.8 | 1 | | | | | | Į. | 13.2 | 11.0 | |
| | 2024 | 0.10 | 7.2 | 2.1 | | | | | | | | 12.5 | 10.4 | |
| | 2025 | 0.07 | 5.4 | 1.6 | | | | 1 | | | 1 | 11.9 | 9.9 | |
| • | 2026 | 0.05 | 4.0 | 1.2 | | | |] | | | | 11.3 | 9.4 | |
| VG abandonment | 2027 | 1 | | | | | | | | | | | | 32.8 |
| And againgoinnein | 2028 | 1 | | | | | | | | | | 1 | | |
| | 2029 | | | | l | | | | | | | 1 | | |
| | 2030 | | | | 1 | | | | | | | | | |
| | 2031 | | • | | | | | | | | 1 | 1 | | |
| | 2032 | | | | | | | | | | 1 | 1 | | |
| | 2033 | | | | 1 | | | | | | 1 | 1 | | |
| | 2034 | | | | | | | | | | | 1 | | |
| | 2035 | | | | | | | | | | | | | |
| | Totals | 29 | 2821 | 991 | 1 | | | 39 | 152 | 317 | 291 | 322 | 289 | 47 |

 $(a,a)\in B_{0}$

Shell Development Australia

Basker Manta Evaluation

Case 3b(i)

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, rnmb Scheme

Integration Products / peak avg. sales rates

991 29.1

K + M/G gas only - "lo-low" market Shared (no tariff) common systems 40 PJ/yr(155TJ/d MDQ)

| Activity | Year | | Well schedule | | | | Capital cos | | | Operating costs, ASmm 1998 | | Abandonment costs, ASmm 1998 | | |
|---|--------------|----------|---------------|--------------|-------|------|-------------|--------------|----------|----------------------------|----------|---------------------------------|------------|-----------|
| | | Oil/cond | LPG | Gas | Expln | Appl | Devt | | Offshore | | Onshore | Offshore | Onshore | A3mm 1998 |
| | | Mstb/yr | kT/yr | PJ/yr | | | | | ells | Facs | Facs | | | |
| | | | | | | | | E&A | Devt | | | | | |
| Summy appraisal well | 1999 | | | | | t | | 15 | | 2 | 2 77 | | | |
| Kipper PSA 1/1/2000 | 2000 | | | | 1 | | _ | | | 50 | 136 | | | |
| 3 x Kipper vert wells | 2001 | | | | 1 | | 3 | 1 | 45 | 87 0 | 130 | 7.1 | 8.4 | |
| Kipper RFSU 1/1/2002 | 2002 | 0 77 | 99.7 | 40.0 | 1 | | | | | U | | 7.1 | 8.4 | |
| Capper Ici do 17172002 | 2003 | 0.77 | 99.9 | 40.0 | | | | | | | | 7.1 | 8.4 | |
| | 2004 | 0.77 | 100.2 | 40.0 | | | | | | | | 7.1 | 8.4 | |
| 1 | 2005 | 0.77 | 99.9 | 10.0 | | | | | | | | | | |
| | 2006 | 0.77 | 99.9 | -10.0 | | | | | | | İ | 7.1 | 8.4 | 1 |
| | 2007 | 0.77 | 99.9 | 40.0 | 1 | | | | | | | 7.1 | 8.4 8.4 | |
| | 2008 | 0.77 | 100.2 | -10 0 | | | | | | | | 7.1 7.1 | 8.4 8.4 | 1 |
| | 2009 | 0.77 | 99.9 | 40 0 | | | | | | | _ | | 8.4 8.4 | |
| appl well each in G and M: 2nd stage onshore compressi | 2010 | 0 77 | 99.9 | 40.0 | ł | 2 | | 24 | | | 3 | 7.1 | 8.4 8.6 | |
| I appi well each in G and M. Zhu stage offshore compressi | 2011 | 0.77 | 99.9 | 40 0 | | | | 1 | | 2 | 12 | 7.1 | | |
| - 1/2 PG - 1 1 20012 | 2012 | 0,77 | 100.2 | 10.0 | | | | 1 | | 38 | | 7.1 | 9.0 | |
| M/G PSA 1.1 20012 | 2013 | 0.77 | 99.9 | 40 0 | | | 1h | | 18 | 60 | | 7.1 | 9.0 | |
| 1 x M hor.well | 2014 | 0.92 | 105.0 | 40.0 | 1 | | | | | | | 14.4 | 9.0 | |
| Manta RFSU 1/1/2014 | 2015 | 1.28 | 117.6 | -10-0 | | | | | | | | 14.1 | 9.0 | |
| | 2016 2016 | 1.50 | 125.6 | 40.0 | | | 1h | | 31 | 22 | ļ | 13.8 | 9.0 | |
| x M hor well (extended reach) | 2017 | 1.63 | 129.9 | 40.0 | | | 2hc | l | 28 | 26 | | 16.2 | 9.0 | |
| 2 x G hor, appl well convns | 2018 | 1.71 | 132.7 | -10.0 | 1 | | | ĺ | | | ١. | 18.5 | 9.0 | |
| Gummy RFSU I/I/2018 | 2019 | 1 84 | 137.1 | -10.0 | | | th | Ì | 15 | 3 | | 13.6 | 9.0 | 11.0 |
| I x M hor well; abandonment Kipper | 2020 | 1.74 | 133.4 | 40 0 | | | | 1 | | | | 14.5 | 9.0 | |
| | 2020 | 1 63 | 129.2 | 40.0 | 1 | | | | | | | 14.5 | 9.0 | |
| 1 | | 1.54 | 123.9 | 39 0 | | | | 1 | | | | 14.5 | 9.0 | |
| | 2022 | 1.18 | 97.3 | 31.3 | | | | İ | | | İ | 14.5 | 9.0 | |
| | 2023 | 1.18 | 8ó.1 | 27.9 | 1 | | | ļ | | | 1 | 14.5 | 9.0 | |
| | 2024 | 0.90 | 76.5 | 25.2 | 1 | | | 1 | | | | 14.5 | 9.0 | 1 |
| | 2025 | | 61.5 | 23.2 19.4 | 1 | | | | | | ! | 145 | 9.0 | |
| | 2026 | 0.76 | 61.3 47.3 | 13.4 | | | | İ | | | 1 | 14.4 | 8.6 | |
| | 2027 | 0.63 | | 12.2 | | | | | | | 1 | 13.7 | 8.2 | |
| | 2028 | 0.56 | 41.8 | | | | | | | | | 13.0 | 7.7 | |
| | 2029 | 0.50 | 37.2 | 10.8 5.7 | 1 | | | I | | | | 12.4 | 7.4 | |
| | 2030 | 0 26 | 19.6 | | 1 | | | | | | | 11.8 | 7.0 | |
| | 2031 | 0 24 | 17.9 | 5.2 | 1 | | | | | | | 10.6 | | 10.0 |
| i | 2032 | 0.31 | 22.9 | ó.7 | | | | | | | | 1 | | 19.9 |
| Abandonment M/G | 2033 | | | | 1 | | | 1 | | | | 1 | | , |
| Apartacianess of a | 2034 | i | | | | | | | | | | | | |
| | 2035 | | | | | | | | | 200 | 230 | 353 | 259 | 41 |
| <u>, </u> | Totals | 29 | 2842 | 997 | | 3 | 3 | 39 | 137 | 290 | <u> </u> | 333 | 237 | |

Basker Manta Evaluation

Case 3b(ii)

Case definition

Gas sales, PJ

Oil/cond/LPG reserves, mmb

Scheme

Integration Products / peak avg. sales rates 991

29.1 K + M/G gas only - "low" market Shared (no tariff) common systems

60 PJ/yr(230TJ/d MDQ)

| Activity | 1.8 MMstb/yr Year | | Sales | | W | ell schedul | e | | Capital c | osts, ASmn | | Operating costs, ASmm 1998 | | Abandonment costs, |
|--|----------------------|----------|-------|-------|-------|-------------|-----|----------|-----------|------------|----------|----------------------------|------------|--------------------|
| | 1 | Oll/cond | LPG | Gas | Explu | Appl Devt | | Offshore | | Onshore | Offshore | Onshore | ASmm 1998 | |
| | | Mstb/yr | kT/yr | PJ/yr | 1 | | | We | lis | Facs | Facs | | | |
| | | | ,. | | | | | E & A | Devt | | | | | |
| Giummy appraisal well | 1999 | | | | | 1 | | 15 | | 2 | 3 | | | |
| Kipper PSA 1/1/2000 | 2000 | | | | | | | 1 | | 53 | 78 | | | |
| 3 x K vert wells; I appl each in G and M | 2001 | | | | | 2 | 3 | 2.4 | -15 | 93 | 139 | 2.5 | 9.0 | |
| Kipper RFSU 1/1/2002 | 2002 | 0.77 | 99.7 | -10.0 | 1 | | | | | v | 1 | 7.2 | 9.0 | 1 |
| M/G PSA 1.1.2003 | 2003 | 0.77 | 99.9 | 40 0 | 1 | | | | | 38 | 18 | 7.2 | 9.0 9.7 | ļ |
| 1 x M hor.well | 2004 | 0.77 | 100.2 | 40.0 | 1 | | H | İ | 18 | 62 | 26 | 7.2 | | ł |
| Manta RFSU 1/1/2005 | 2005 | 1.69 | 168 3 | 60.0 | ļ | | | | | | | 14.8 | 10.8 | , |
| Mania K130 1/1/2003 | 2006 | 1.69 | 168 5 | 60.0 | | | | | | | | 14.8 | 10.8 | |
| 1 x M hor well (extended reach) | 2007 | 1.69 | 168 5 | 60 0 | ĺ | | 1h | | 31 | 3 | i | 14.8 | 10.8 | } |
| I X NI HOLWER (extended reactly | 2008 | 1.70 | 169 0 | 60 0 | 1 | | | | | | 7 | 16.5 | 10.8 | İ |
| | 2009 | 1.69 | 168 5 | 60 0 | | | | | | | 26 | 16.5 | 11.1 | |
| 2nd stage onshore compression RFSU | 2010 | 1 69 | 168.5 | 60.0 | | | | | | | } | 16.5 | 12.1 | |
| and stage offshore compression at 50 | 2011 | 1 69 | 168.5 | 60.0 | 1 | | | | | | l | 16.5 | 12.1 | |
| | 2012 | 1.70 | 169.0 | 60.0 | 1 | | | | | 19 | | 16.5 | 12.1 | |
| | 2013 | 1.69 | 168.5 | 60.0 | 1 | | 2hc | | 28 | 26 | | 17.4 | 12.1 | |
| 2 x G hor, appl well convns | 2014 | 1.84 | 173 5 | 60.0 | | |) h | | 15 | 3 | | 19.7 | 12. i | |
| Gunmy RFSU 1/1/2014; Lx M hor.well | 2014 | 1.81 | 166.8 | 57.3 | | | | | | | | 20.3 | 12 1 | |
| | 2016 | 1.53 | 137.0 | 46 2 | l. | | | İ | | | | 20.0 | 12.1 | |
| | 2017 | 1.33 | 1169 | 39.1 | l | | | | | | | 19.7 | 12.1 | |
| | 2017 | 1.20 | 103.9 | 34.5 | | | | | | | | 19.5 | 12.1 | |
| | | 0.77 | 66.4 | 22.2 | | | | İ | | | | 14.6 | 12.1 | 11.0 |
| Abandonment Kipper | 2019 | | 51.6 | 16.4 | ł | | | l | | | | 14.6 | 12.1 | |
| | 2020 | 0.63 | | 12.8 | 1 | | | | | | | 14.6 | 12.1 | 1 |
| | 2021 | 0.52 | 41.3 | 9.5 | İ | | | | | | | 14.6 | 12.1 | i |
| | 2022 | 0 44 | 32.7 | | 1 | | | | | | | 13.8 | 11.5 | |
| | 2023 | 0.39 | 28.9 | 8.4 | 1 | | | 1 | | | | 13.1 | 11.0 | |
| | 2024 | 0.34 | 257 | 7.5 | | | | | | | | 12.5 | 10.4 | |
| | 2025 | 0.31 | 23.1 | 6.7 | | | | | | | | 11.9 | 9.9 | |
| • | 2026 | 0.27 | 20.4 | 6.0 | ł | | | | | | | 11.3 | 9.4 | |
| | 2027 | 0 24 | 17.7 | 5.2 | İ | | | Į | | | | 11.3 | 2.4 | 32.7 |
| Abandonment M/G | 2028 | 1 | | | | | | 1 | | | | | | 32 |
| | 2029 | 1 | | | | | | | | | | | | |
| | 2030 | | | | | | | 1 | | | | | | |
| | 2031 | 1 | | | | | | 1 | | | | | | 1 |
| | 2032 | 1 | | | | | | | | | | | | |
| | 2033 | 1 | | | 1 | | | | | | | | | |
| | 2034 | 1 | | | | | | | | | | | | |
| | 2035 | | | | | | | <u> </u> | | | | | | |
| | Totals | 29 | 2823 | 992 | T | 3 | 3 | 39 | 137 | 299 | 297 | 386 | 292 | 44 |

Basker Manta Evaluation

Case 3b(iii)

Case definition Gas sales, PJ

Oil/cond/LPG reserves, minb

Scheine

Integration

991 29.1

K + M/G gas only - "high" market Shared (no tariff) common systems 80 PJ/vr(310TJ/d MDO)

| | 2.7 MMstb/yr Year | Sales | | | Well schedule | | | T | Capital c | osts, ASmu | 1998 | Operating costs, ASmm 1998 | | Abandonment costs, |
|---|----------------------|----------|-------|-------|---------------|------|------|----------|-----------|------------|---------|----------------------------|---------|--------------------|
| Activity | y car | OiVcond | LPG | Gas | Expln | Appl | Devt | İ | Offshore | 1 | Onshore | Offshore | Onshore | ASmm 1998 |
| 1 | | Mstb/yr | kŤ/yr | PJ/yr | L.Apin | | | We | | Facs | Facs | | | |
| | | (1310/)1 | ку. | ,- | 1 | | | E & A | Devt | | | | | |
| iummy appraisal well | 1999 | | | | | 1 | | 15 | | 2 | 3 | | | |
| ipper PSA 1/1/2000 | 2000 | 1 | | | | | | | | 60 | 98 | | | |
| x K vert wells; I appl each in G and M | 2001 | | | | | 2 | 3 | 24 | 45 | 101 | 173 | | 11.4 | |
| ipper RFSU 1/1/2002 | 2002 | 1.16 | 149.5 | 60.0 | | | | Ì | | 0 | | 7.7 | 11.4 | 1 |
| I/G PSA 1.1.2003; 1 x Kipper vert, well | 2003 | 1.16 | 149.9 | 60.0 | | | ı | | 15 | 41 | 16 | 7.7 8.7 | 12.1 | |
| x M hor.well | 2004 | 1.16 | 150 3 | 60 0 | 1 | | 3 h | <u> </u> | 18 | 62 | 24 | 8.7 16.3 | 13.1 | 1 |
| Ianta RFSU 1/1/2005 | 2005 | 2.07 | 218.3 | 80.0 | l | | | İ | | | | 16.3 | 13.1 | |
| x M hor well (extended reach) | 2006 | 2.08 | 218.5 | 80.0 | | | 1h | Į. | 31 | 3 | 8 31 | 18.0 | 13.4 | |
| , | 2007 | 2.08 | 218 5 | 80 0 | 1 | | | 1 | | | 31 | 18.0 | 13.4 | |
| and stage onshore compression RFSU | 2008 | 2.08 | 219 I | 80.0 | | | 21 | | 10 | 19 | | 18.0 | 14.7 | |
| x G hor. appl well convns | 2009 | 2.08 | 218 5 | 80.0 | | | 2hc | l | 28 | 26 3 | | 20.8 | 14.7 | |
| Gummy RFSU 1/1/2010; 1 x M hor.well | 2010 | 2.70 | 240.1 | 80.0 | | | 1h | | 15 | 3 | | 21.3 | 14.7 | |
| · ' | 2011 | 2.37 | 209.7 | 70 1 | ł | | | | | j | | 21.0 | 14.7 | |
| | 2012 | 1.99 | 172 4 | 56.7 | 1 | | | | | | | 20.6 | 14.7 | |
| | 2013 | 1.71 | 146.0 | 47.7 | 1 | | | | | 1 | | 14.6 | 14.7 | 14.6 |
| Abandorunent Kipper | 2014 | 1.27 | 10-12 | 33 3 | İ | | | | | | | 14.6 | 14.7 | 17.0 |
| •••• | 2015 | 1.07 | 89.0 | 28 8 | | | | l | | | | 14.6 | 14.7 | |
| | 2016 | 0.86 | 69.2 | 21.6 | | | | | | | | 14.6 | 14.7 | |
| | 2017 | 0.72 | 55.8 | 170 | | | | l | | | | 14.6 | 14.7 | 1 |
| | 2018 | 0.60 | 44.7 | 130 | | | | | | | | 13.9 | 14.0 | |
| | 2019 | 0.52 | 38.8 | 11.3 | | | | | | | | | 13.3 | |
| · | 2020 | 0.45 | 33.3 | 9.7 | | | | 1 | | | | 13.2 12.5 | 12.6 | • |
| | 2021 | 0.39 | 29.3 | 8.5 | | | | | | | | | 12.0 | |
| | 2022 | 0.35 | 25.9 | 7.5 | | | | | | | | 119 | | |
| | 2023 | 0.31 | 22.9 | ó 7 | 1 | | | | | | | 11.3 | 11.4 | 35.1 |
| Abandonment M/G | 2024 | | | | 1 | | | Į. | | | | | | 33.1 |
| Commontent NP C | 2025 | | | | i | | | | | | | | • | |
| | 2026 | | | | İ | | | | | | | | | 1. |
| | 2027 | | | | ļ. | | | 1 | | | | 1 | | |
| | 2028 | | | | | | | | | | | | | |
| | 2029 | | | | | | | | | | | | | |
| | 2030 | | | | | | | } | | | | - | | |
| | 2031 | 1 | | | | | | 1 | | | | | | |
| • | 2032 | | | | | | | 1 | | | | | | |
| | 2033 | 1 | | | | | | | | | | | | |
| | 2034 | | | | ļ | | | | | | | | | } |
| | 2035 | | | | _L | | | | | | | | | |
| | Totals | 29 | 2824 | 992 | _L | | 4 | 39 | 152 | 318 | 352 | 331 | 299 | 50 |