

Update on UKCS field development projects

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NB Underlining denotes new information.

1 Approved projects

2 new approved projects (marked *).

Field	Auk North/Auk Redevelopment
Area	Central North Sea
Operator	Talisman
Development concept	Subsea
Transport concept	11km pipeline to Fulmar
Start-up	2011
<p>Comments: Auk North project approved Jan 2009. Talisman plans to develop reserves at Auk North, on which it drilled a successful appraisal well in 2007, with three subsea production wells. In parallel, however, the company is seeking to sell the Auk and Fulmar assets, according to industry sources. Two of the wells will be drilled before start-up, which is now scheduled for 2011. In Jan semisub <i>Ocean Princess</i> began batch-drilling top-holes. The wells will be tied into a manifold which will be connected by an 8in reeled pipeline to Fulmar, where the wellstream will go over the AD wellhead platform to the A platform for processing. Pipelay bids are under review. A riser caisson will be installed on AD, which will also house risers for a 6in electro-hydraulic umbilical and a 7in power cable which will supply 2.5MW of power to run downhole electric submersible pumps in the wells. The pipeline and cables will be separately trenched. Oil will be exported through Fulmar's connection to Norpipe, while gas will be flared. <u>Fabricom will perform topsides modifications.</u> In parallel Talisman is planning to redevelop the main Auk field, installing a new drilling rig, accommodation and power generation facilities and drilling up to nine new wells. Start-up is scheduled for 2011. This project has not yet been approved.</p>	

Field	Babbage
Area	Southern North Sea
Operator	E.ON Ruhrgas
Development concept	Platform
Transport concept	28km pipeline to West Sole
Start-up	Q4 2009
<p>Comments: Approved Jan 2009. There will be up to five wells housed on a platform, three to be drilled prior to platform installation and up to two afterwards. All wells will be hydraulically fractured. Development drilling has been contracted to Transocean jackup <i>Labrador</i> – <u>work started in Apr</u> – and platform fabrication to SLP. The topsides will weigh 1,265t and the jacket 2,000t. Platform installation is understood to have been awarded to Heerema. Production will be exported via a 12in pipeline to BP's West Sole B platform – Technip will perform pipelay around mid year. The platform will be manned for the drilling phase; once this is completed, the temporary living quarters, which will have about 30 beds, will be removed. A 2006 appraisal well will be recompleted as a producer. Reserves are estimated at 182 bcf and capex will be £200m.</p>	

Field	Dumbarton II
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Area	Central North Sea
Operator	Maersk
Development concept	Subsea
Transport concept	2km in-field pipeline to FPSO
Start-up	Oct 2009
<p>Comments: Approved Aug 2008. Maersk is implementing a second phase of development of Dumbarton, whose official name according to DECC remains Donan. This calls for a second drilling centre, located close to the first, which will consist of a subsea manifold with up to three subsea producers clustered around it, and a fourth remote producer tied back to it by a 4km, 8in flowline. All the producers will be gas-lifted. There will also be a produced water reinjection well, the third. The 70t, eight-slot manifold will be supplied by Framo. The manifold will be connected to the Dumbarton FPSO, <i>Global Producer III</i>, by a 14in pipeline. The drilling start has been delayed – <u>semisub <i>Borgsten Dolphin</i> drilled one well in Feb-Mar and has now switched to <i>Lochranza</i>, a satellite field which will be tied back to the Dumbarton phase two manifold (see separate entry). Pipelay/subsea construction has been awarded to Acergy; the work will be performed between July and October. Vetco Gray will supply subsea trees and Duco the umbilical. An extension of the subsea control system installed in phase one will be supplied by Aker Solutions. Award of a pipelay contract was imminent in late Mar. Maersk expects recovery of an estimated 72m bbl in phase II.</u></p>	

Field	Jacky
Area	Central North Sea
Operator	Ithaca
Development concept	Platform
Transport concept	10km pipeline to Beatrice A
Start-up	Apr 2009
<p>Comments: Approved Nov 2008 and came on stream in April 2009. Jacky, which holds an estimated 5m bbl and is located in part-block 12/21c on the outskirts of Beatrice, has been developed with a single production well housed in an unmanned wellhead platform. <u>The well, a recompleted appraisal from 2007, was tied in by jackup <i>Energy Enhancer</i> which began work in Mar, replacing jackup <i>Ensco 92</i> which had been detained elsewhere.</u> It is fitted with a downhole submersible pump supplied by Baker Centrilift. The platform, consisting of a 500t topsides and 900t jacket fabricated by Dutch yard HSM, was installed by Heerema crane-barge <i>Hermod</i> in early Jan, after adverse weather defeated installation attempts by Bonn & Mees sheerlegs crane <i>Matador III</i>. It is tied back 10 km to Beatrice A platform by a 6in production line. The pipeline will also collect production from the Beatrice B wellhead platform, which has been closed in due to corrosion of the original pipeline. Subsea 7 layship <i>Seven Navica</i> performed pipelay in Dec. In early 2008 Ithaca found oil on Polly, also in the Beatrice area, but has yet to decide if the field is commercial. Parts of Polly are near enough to be drilled from Beatrice B, but a subsea producer might also be needed.</p>	

Field	Lochranza
Area	Central North Sea
Operator	Maersk
Development concept	Subsea
Transport concept	3.9km pipeline to FPSO

Start-up	Oct 2009
<p>Comments: Approved Oct 2008. Maersk plans to develop Lochranza as a subsea satellite to Dumbarton. It will have two subsea wells tied back to the Dumbarton phase II manifold by an 8in production line and a flexible lift-gas line. <u>Pipelay/subsea construction has been awarded to Acergy; the work will be performed between July and October.</u> Vetco Gray will supply subsea trees, Duco the umbilical and Aker Solutions the subsea controls. <u>The wells are being drilled by semisub <i>Borgsten Dolphin</i>, which started work in Apr.</u></p>	

Field	Ormonde
Area	Morecambe Bay
Operator	Eclipse
Development concept	2 fixed platforms + jackup power generation platform
Transport concept	--
Start-up	Q4 2012
<p>Comments: Approved Feb 2007. Eclipse's novel project involves the development of gas reserves as part of an offshore wind energy scheme. Power generation capacity from gas will be 100MW and from wind 150MW – increased from an original 108MW through an incremental project approved in Sept 2008. Start-up will be phased, with the 30-turbine wind farm due on stream in Q4 2011 followed by gas production about a year later. Eclipse is now completely owned by Swedish energy company Vattenfall, which has approved funding for the wind farm project - letters of intent for equipment and services are continuing to be issued. <u>Work on the substructures is already under way by Burntisland Fabrication.</u> The tendering process is being managed by ODE. Turbines will be supplied by German company Repower Systems. Tendering for the gas development will start once Vattenfall's approval has been given – <u>this is expected shortly.</u> Earliest start-up will be late 2012. Initially gas will be produced from two wells drilled on Ormonde South and housed on a fixed wellhead platform; electricity will be generated by a gas turbine housed on a jackup platform. A subsea cable will transmit the power to an offshore sub-station and from there, together with power from the wind farm, to shore. When the first field is depleted, two wells on a wellhead platform on Ormonde North will be brought on stream. The same four-legged jacket structure will be used for the wellhead platforms as for the wind turbines.</p>	

Field	*Seven Seas
Area	Southern North Sea
Operator	Centrica
Development concept	Subsea
Transport concept	8.2km pipeline to Newsham
Start-up	Q3 2009
<p>Comments: Approved March 2008. Centrica is to develop Seven Seas, a small gas field discovered in 2007, with a single subsea well. This will be 48/7c-13y, a sidetrack in the discovery well, which will be recompleted for production by Northern Offshore jackup <i>Energy Enhancer</i> – the 35-day job was expected to begin in late Apr. The well will be tied back by an 8.2km, 8in rigid line to BP's Newsham subsea system, which is itself tied back 6km to the West Sole A platform. A pipelay contract has been let to Subsea 7 for performance in mid 2009. CSL has been contracted for subsea project management. The subsea tree will be supplied by</p>	

Vetco Gray and the subsea control system by ePS. Subsea 7 has placed subcontracts with Duco for the umbilical and Vallourec & Mannesmann for the line-pipe. A second well will be considered once some production experience has been gained.

Field	*Topaz
Area	Southern North Sea
Operator	RWE-Dea
Development concept	Subsea
Transport concept	15.2km pipeline to Schooner
Start-up	Q3 2009
<p>Comments: Approved March 2008. RWE-Dea is developing Topaz, a small gas field, as a subsea tieback to Tullow's Schooner platform. In 2008 jackup <i>Noble Al White</i> drilled an appraisal well which flowed at commercial rates from a sidetrack; this was subsequently converted to a producer. The well will be tied back to Schooner by a 6in pipeline, on which the umbilical may be piggybacked. Technip's reel-ship <i>Apache</i> is scheduled to lay the lines in June. Duco will supply the umbilical, Vallourec & Mannesmann the line-pipe, ePS the subsea controls and DrilQuip the subsea tree. Depending on the production experience, a second producer may be drilled. A tee will be pre-installed in the pipeline to tie in this well.</p>	

2 Projects on the move or likely to move

4 entries promoted from Section 3 (marked *).

Field	Andrew Extension
Area	Central North Sea
Operator	BP
Development concept	Subsea
Transport concept	25km pipeline to Andrew
Start-up	2010/11
<p>Comments: The Andrew Extension – BP’s internal name for the development of the Kinnoull, Arundel and Kidd fields as subsea tiebacks to Andrew – will help prolong Andrew’s productive life beyond 2015, when it is otherwise expected to end. Three wells will be drilled on Kinnoull, and one each on Arundel and Kidd. One 12-14in pipeline will transport production from all three fields to Andrew. The wells will be gas-lifted. Also part of the project is the development of Farragon North which will be tied back by a 6in pipeline to the Farragon pipeline bundle. Conceptual engineering is being performed by Xodus. Kinnoull was discovered in 2008 by exploration well 16/23-7. After plugging and abandoning the well, semisub <i>Paul B Loyd Jr</i> went on to drill an appraisal well on Arundel which was suspended.</p>	

Field	Athena
Area	Central North Sea
Operator	Ithaca
Development concept	FPSO
Transport concept	2.5km in-field pipeline
Start-up	2011/12
<p>Comments: Ithaca’s plans for developing the Athena oil field using Bluewater’s <i>Uisge Gorm</i> FPSO have foundered on the contractor’s apparent inability to raise the finance to extend the 25-year-old ship’s operating lifetime. <u>Ithaca says it has put the project on hold until economic conditions improve.</u> Development as planned for the FPSO solution called for five subsea producers and one water injector, three of the wells to be recompleted appraisal wells. An additional producer and water injector might be drilled subsequently. Subsea trees would be supplied by Vetco Gray. As the oil is heavy, electric submersible pumps from Schlumberger would be installed. The wells would be tied into a manifold weighing about 210t located 2.5 km from the FPSO. This would be connected to the FPSO by an 8in production pipeline, 6in water line and 3-4in service line for scale squeeze operations; there would also be a power, control and service umbilical and a power cable for the ESPs. CSL had been contracted for subsea engineering services. Reserves are put at 40m bbl. The decision to develop the field followed a successful appraisal well in 2006. In spring 2008 Ithaca drilled a new appraisal to delineate the field’s southern extension with semisub <i>Byford Dolphin</i> – though dry, the well was suspended for possible development use. A further appraisal drilled by <i>Stena Spey</i> tested oil in mid year and was completed as a producer. Ithaca raised funds for the project by selling 17.7% of its 70% stake to Dyas last year.</p>	

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Field	*Bains Gas Storage
Area	Morecambe Bay
Operator	Centrica
Development concept	Platform
Transport concept	32km pipeline to Barrow terminal
Start-up	Q1 2012

Comments: Centrica is considering converting the Bains gas reservoir into a gas storage facility with 20 bcf capacity – in Mar it submitted a planning application for onshore works and began a process of public consultation. The final investment decision is expected later this year. Bains, which produces through a single subsea well, is nearing depletion and is expected to cease production in 2009 or 2010. For storage purposes an unmanned platform would be installed together with a pipeline to the Barrow terminal, where additional gas processing facilities will be required.

Field	Barbara/Phyllis
Area	Central North Sea
Operator	Dana/Shell
Development concept	Subsea
Transport concept	Pipeline to ETAP or Everest
Start-up	2011

Comments: Start-up for the Barbara and Phyllis gas/condensate fields, which Dana and Shell have agreed to jointly develop, is scheduled for 2011, according to Dana, which proposes to operate the joint development. However, selection of a host facility has now been put back to mid 2009 and sanction to early 2010. While Phyllis is wholly owned by Shell and ExxonMobil, Barbara lies on three different licences and a unitisation agreement is under discussion. Commercial negotiations with potential hosts are also under way. Development is likely to take the form of subsea facilities tied back either to Everest some 35 km to the north – which has fluid characteristics similar to Barbara’s – or the ETAP infrastructure 10 km to the south. Both sets of facilities are BP-operated. ExxonMobil has put its interests in the fields up for sale.

Field	Bardolino
Area	Central North Sea
Operator	Shell
Development concept	Subsea
Transport concept	2km pipeline to Howe
Start-up	Mar 2010

Comments: Shell plans to develop Bardolino with a single subsea well tied back to the Howe subsea manifold by a 6in production flowline with a 3in lift-gas line piggybacked on it. Howe is itself tied back to Nelson. Start-up has been rescheduled to Mar 2010 and drilling by Transocean semisub GSF Arctic IV, which had been due to start in Mar, has been put back to Aug at earliest. The subsea tree will be supplied by Vetco Gray and subsea controls and umbilical by Aker Subsea. The well will be tied into a 91t manifold. Technip is expected to perform pipelay in June.

Field	Bentley
Area	Northern North Sea
Operator	Xcite
Development concept	Production facility + storage
Transport concept	Offshore loading
Start-up	EPS 2010/11?
<p>Comments: Xcite is planning a phased development of the Bentley heavy-oil field in block 9/3b with an early production system (EPS). <u>This was expected to take place in 2010 or 2011, but the company cautions that it will move forward with its work programme as market conditions allow.</u> To provide greater subsurface clarity, it plans to drill and test another appraisal well as part of the EPS. Full field development, if it follows, will call for 50 plus wells and a fixed platform, but for the EPS an FPSO is one of the options. In all phases oil will be exported by shuttle tanker, so storage in some form will be required. The company achieved test production of 150 b/d with the help of an electric submersible pump from an appraisal well drilled in 2007-08. Both the specific gravity – around 13°API - and the viscosity of the oil were found to be within acceptable limits, and assessment by Schlumberger indicated that well productivity of 4,400b/d could be achieved from a 3,000-metre horizontal section. Base-case reserves are estimated by RPS at 122m bbl. Xcite, the sole licensee, is discussing financing and commercial options with a number of potential partners.</p>	

Field	Blackbird
Area	Central North Sea
Operator	Nexen
Development concept	Subsea
Transport concept	6km flexible pipeline to Etrick
Start-up	2010/11
<p>Comments: Nexen says it intends to fast-track the development of the Blackbird oil discovery as a subsea tieback to Etrick. Blackbird was discovered in 2008 by exploration well 20/2a-8 which was drilled by Transocean semisub <i>Arctic IV</i>. It tested 3,800 b/d and was suspended for possible recompletion as a producer. <u>An appraisal well is likely to be drilled in late 2009, Nexen says.</u></p>	

Field	Breagh
Area	Southern North Sea
Operator	Sterling
Development concept	Platform
Transport concept	50 km pipeline to Cleeton
Start-up	H1 2011
<p>Comments: Sterling has proved up commercial quantities of gas at Breagh which it plans to bring on stream in 2011. Submission of a development plan will be the next step, the company said in Jan. This followed the successful drilling and testing of appraisal wells into the field's eastern and western structures. Both wells, together with a 2007 appraisal, have been suspended and will serve as future producers. To raise funds for development, Sterling is</p>	

selling off other assets and may offer part of its 45% Breagh stake. According to partner Encore, the field could be one of the larger finds of recent years. An exploration well on the Airidh prospect to the south is also planned. Sterling has engaged Asset Development and Improvement Ltd (Adil) for detailed engineering, scheduling and procurement. The base-case development concept is a minimum facilities platform housing six wells. It will be tied back some 50 km to BP's Cleeton field centre where a new riser will be installed.

Field	*Bressay
Area	Northern North Sea
Operator	StatoilHydro
Development concept	Platform
Transport concept	Offshore loading
Start-up	2014/15

Comments: StatoilHydro has postponed development of Bressay by a year – it now aims to seek sanction in mid 2011. In the interim the project will not be shelved but slowed. In Nov StatoilHydro completed a two-week test programme on the heavy-oil field – according to Xcite, which exchanged data with StatoilHydro on the Bentley and Bressay fields, the operator subsequently concluded that the field was commercial and would be brought on stream in 2014. The well-test was part of a work programme which also includes seismic and sub-surface surveys. Development is expected to call for a fixed platform and offshore loading. Bressay could be one location for a hub gathering production from neighbouring heavy-oil fields.

Field	Burghley
Area	Central North Sea
Operator	Talisman
Development concept	Subsea
Transport concept	10.4km pipeline to Balmoral
Start-up	2010

Comments: Talisman plans to develop Burghley as a subsea tieback to Oilexco North Sea's Balmoral floater. It issued an environmental statement in January but it is unclear whether the project will be affected by Oilexco's move into administration and Premier's bid for the company. Pipelay, which is out to bid, has been postponed to 2010, so start-up, previously set for late 2009, has also been rescheduled. There will be a single well which is to be drilled by semisub *Ocean Nomad* starting in June. It will be tied back to Balmoral by means of a 10in production pipeline with a 4in lift-gas line piggybacked on it. The lines will be reel-laid. An appraisal well with two sidetracks was drilled on the field in 2006-2007. A further appraisal with two sidetracks was drilled and suspended in 2008.

Field	Causeway
Area	Northern North Sea
Operator	Antrim
Development concept	Subsea

Transport concept	9km pipeline to Dunlin
Start-up	Mid 2010
<p>Comments: Antrim has submitted its field development plan for the Causeway oil field, as planned. However it has decided to phase the development, concentrating first on the eastern part of the field. This will minimise initial costs and generate income to fund subsequent phases, involving development of the central and western parts, it says. The start-up date will be confirmed later – previously it talked of first oil in mid 2010. The first phase calls for one subsea producer and one water injector, tied back to Fairfield’s Dunlin platform. A second producer will be added after a year. Overall reserves are estimated at 21.6m bbl, of which 7.3m will be produced in the first phase. The field was discovered in 2006 by a Causeway East exploration well, which was suspended. Five appraisal wells have been drilled, all of them suspended. No more drilling is required before start-up. 3D seismic has been reprocessed. Senergy is assisting with preparation of the plan. CSL is looking after subsea project management and assisted with selection of the host facility.</p>	

Field	Cayley/Fiddich
Area	Central North Sea
Operator	Talisman
Development concept	Subsea
Transport concept	Pipelines to Montrose: Cayley 10 km, Fiddich 15 km
Start-up	2013
<p>Comments: Talisman is planning a joint development of the Cayley and Fiddich gas/condensate fields, with project sanction scheduled for H1 2010 and start-up for 2013. The two fields will be tied back to Montrose with subsea facilities. The schedule will give Talisman time to explore other prospects in the area. <u>In Apr semisub <i>Ocean Nomad</i> plugged Godwin exploration well without comment and spudded a well on Shaw.</u> A new platform is likely to be required at Montrose to accommodate the new tiebacks. Cayley has estimated reserves of 35m boe and Fiddich 20m boe.</p>	

Field	Cheviot
Area	Northern North Sea
Operator	ATP
Development concept	Semi-submersible drilling, production and storage platform
Transport concept	Offshore loading + gas export pipeline
Start-up	Q4 2011
<p>Comments: In 2008 ATP submitted a draft plan for redeveloping Cheviot. However, the environmental statement has been delayed and is now only expected to be issued in mid 2009, <u>assuming an export route for the gas has been negotiated by then.</u> In Oct the company announced that it was cutting capex for 2009 – this could slow the progress of the Cheviot development and delay start-up. ATP says it will use Moss Maritime’s Octobuoy concept, a semisubmersible platform with drilling and storage facilities. Production capacity will be 25,000 b/d of oil and 50 MMcf/d of gas. Storage capacity, which is required as the crude is too acidic to be transported by pipeline and will instead be exported by shuttle tanker, will be 200,000 bbl. ATP has confirmed that hull construction has been provisionally contracted to Cosco and Dockwise has been awarded a contract for transport of the hull from China in late 2010/early</p>	

2011. Twelve to 15 horizontal and high-angle wells will be required. Reserves, including the small nearby Peter discovery which will be included in the development, are estimated at 22.7m bbl and 113 bcf. ATP, which is sole licensee, is understood to be negotiating with companies interested in acquiring a stake in Cheviot. Cheviot was formerly known as Emerald.

Field	Clair North
Area	West of Shetlands
Operator	BP
Development concept	Platform(s)
Transport concept	10-15km oil pipeline to Clair, gas pipeline to Laggan
Start-up	2012/13
<p>Comments: BP is planning the development of oil and gas reserves in the north of the Clair field. FEED for development options is now being performed by Amec; this is due to be completed by late 2009/early 2010. There are three main options: a single drilling/processing platform with 75,000 b/d production capacity; two such platforms with 150,000 b/d capacity; and a single drilling/processing platform with 120,000 b/d capacity. All the options involve a substantial fabrication task: the existing Clair platform, which has 60,000 b/d capacity, has an 11,000t topsides on an 8,000t jacket. BP has now confirmed that its two-well appraisal campaign on Clair Ridge in 2006 and 2007 was successful; an appraisal on Clair North in 2006 also found oil. If fabrication is awarded in 2010, start-up could take place in 2012 or 2013. Oil will be exported via Clair and <u>gas via the Laggan pipeline.</u></p>	

Field	Clipper South
Area	Southern North Sea
Operator	Fairfield
Development concept	Platform
Transport concept	Pipeline to Clipper, Anglia or Loggs
Start-up	2011
<p>Comments: <u>Fairfield says it is committed to submitting a field development plan for Clipper South in H2 once it has negotiated a deal with a host facility and taken a partner on board – it is the sole licensee. Start-up is scheduled for 2011.</u> FEED by Genesis is under way and 3D seismic has been reprocessed. Fairfield's preferred option is an unmanned platform tied back to Clipper, Loggs or Anglia. <u>Bid invites for platform fabrication, platform installation, drilling and pipelay are on hold for the time being.</u> Six wells are required. The Clipper field centre lies around 7 km to the north, Anglia 10 km to the south-west and the Loggs gas-gathering centre 20 km to the east. A long-term contract for fracture and stimulation services has been signed with Schlumberger, which will use the specialised vessel <i>Siem Sailor</i>. Reserves are estimated at 200 bcf.</p>	

Field	Columbus
Area	Central North Sea
Operator	Serica
Development concept	Subsea

Transport concept	23km pipeline to Marnock?
Start-up	Q3 2010
<p>Comments: In Oct Serica announced it had submitted a field development plan for Columbus; start-up is scheduled for Q3 2010. The field will be developed with subsea facilities probably tied back to BP's Marnock platform, some 25 km to the west, rather than Lomond six km to the south-east – Marnock requires less topsides work and could probably implement the tieback sooner than Lomond. But a final decision has not yet been taken, Serica says. The pipeline will be 12-14in in diameter. The company has previously said that up to three horizontal production wells will be drilled, using the vertical bores of the 2006 discovery well and a 2007 appraisal. Serica has yet to arrange a rig – it has good time and can afford to wait and see if rates soften. The current development will concentrate on the development of reserves in 23/16f, the location of the previous wells, which are estimated at around 15m boe. The field is believed to extend south into BG's 23/21 – <u>BG drilled appraisal well 23/21-7 and a sidetrack on the field, which were plugged and abandoned in Feb without comment.</u></p>	

Field	Crawford II
Area	Northern North Sea
Operator	Fairfield
Development concept	Subsea
Transport concept	30km pipeline to Brae East
Start-up	2011
<p>Comments: <u>Fairfield has temporarily put the redevelopment of Crawford on hold in hopes of capturing the benefit of the falling cost of services. It says it will still aim for start-up in late 2010 but 2011 might be more realistic. Agreement in principle has been reached to tie the field back to Marathon's East Brae platform to the south. Bids for a drilling rig and subsea equipment are under review but contracts will not be awarded for the time being, while tenders for pipelay and umbilical supply, which were to be issued in Q1, are on hold.</u> There are likely to be four wells tied into a manifold, one of them an outlier located about 1.2 km distant and connected to the manifold by a 6in pipeline. Production will be exported through a 10in multiphase pipeline and lift-gas imported through a 4in line. Genesis is responsible for FEED and detailed design of a subsea development. A long-term contract for fracture and stimulation services has been signed with Schlumberger, which will use the specialised vessel <i>Siem Sailor</i>. Recoverable reserves are estimated at 26m bbl. Only some 4m bbl were produced when the field was originally developed by Hamilton in 1989-90.</p>	

Field	Cygnus
Area	Southern North Sea
Operator	GdF Suez
Development concept	Platform(s)
Transport concept	Pipeline to McAdam
Start-up	Nov 2010
<p>Comments: <u>GdF Suez has issued an environmental statement for the development of the Cygnus gas field, where reserves are estimated at 150-1,300 bcf. The first phase will consist of two wells housed on an unmanned wellhead platform with a single-lift topsides weighing 1,300t. Both wells will be pressure-fractured. Production will be exported via a 27km, 12in</u></p>	

pipeline with a 3in chemical supply line piggybacked on it to the McAdam subsea template, and thence through an existing pipeline to the Murdoch field centre. Start-up is scheduled for late 2010. In later stages up to a further five platforms could be installed and up to a further 15 wells drilled. The ES was written before the results of the current appraisal campaign were known – both appraisal wells were successful and according to partner Endeavour proven reserves in the eastern part of the field are in excess of 500 bcf. So further stages of development look certain. The appraisal campaign has also shown that commercial flow-rates can be achieved, although the reservoir is tight. Pipelay was tendered in Jan. Cygnus was discovered in 2006.

Field	Ensign
Area	Southern North Sea
Operator	Venture
Development concept	Platform
Transport concept	15km pipeline to Audrey
Start-up	Q4 2009/H1 2010

Comments: Venture is seeking approval to develop Ensign after achieving commercial flow-rates on the gas field with appraisal/production well 48/14a-6, which was suspended in 2008; the well, which has a long horizontal reservoir section, tested 40 MMcf/d after being hydraulically fractured at five locations. Reserves are estimated at 97 bcf. Start-up was scheduled for late 2009, but commercial arrangements for the export of the gas have yet to be finalised, so slippage into 2010 is possible. A fabrication contract for a Sea Harvester platform has yet to be signed with SLP, with which Venture has a frame agreement. However, long-lead items have been secured. There will be two or three production wells. Gas will be exported via Venture's Audrey B platform to the east. FEED and execution of topside modifications will be carried out by Petrofac. Subsea 7 will perform pipelay under its frame agreement with Venture. Venture plans to drill an exploration well on the nearby Andrea prospect, which could be developed as a single-well subsea tieback to Audrey via Ensign.

Field	Fyne
Area	Central North Sea
Operator	Antrim
Development concept	FPSO
Transport concept	Offshore loading
Start-up	2011

Comments: Having drilled two successful appraisal wells, both suspended, on the Fyne heavy-oil field in 2008, Antrim says it will submit a field development plan by mid 2009 aiming at start-up in 2011. At 25° API, the oil is moderately heavy. Antrim says it plans to develop Fyne with an FPSO, and is looking for a suitable vessel. From its comments it appears that the required investment will be £110m. Antrim also operates the nearby Dandy heavy-oil discovery, though it has yet to drill it. A third-party assessment at end 2007 put recoverable reserves in the two fields at 21m bbl.

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Field	Golden Eagle Area
Area	Central North Sea
Operator	Nexen
Development concept	Fixed platform?
Transport concept	Offloading or 15km pipelines to Buzzard?
Start-up	2011/12
<p>Comments: With three finds in close proximity in block 20/1 – Golden Eagle, Pink and Hobby – Nexen is planning a joint development. <u>The combined prize may warrant a stand-alone facility rather than an FPSO, it says.</u> Last year it tendered for an FPSO but made no award. Required production capacity was 40,000b/d but this may now be greater. Start-up was scheduled for 2011 but may now have slipped as the development has become more complex. Further drilling is expected – <u>in Apr Transocean semisub GSF Arctic IV spudded an appraisal on Pink, and more E&A wells are planned.</u> Oil and gas could be exported via the Buzzard pipelines, or oil could be offloaded. Golden Eagle was discovered in 2007, Pink in 2008 and Hobby, which in Apr was being appraised, in Feb.</p>	

Field	Greater Kittiwake Satellites
Area	Central North Sea
Operator	Venture
Development concept	Subsea
Transport concept	Various
Start-up	2011 onwards
<p>Comments: Following the development of Grouse, which came on stream last Dec, Venture and its partner Dana continue an active exploration and appraisal programme in the greater Kittiwake area, looking for candidates to tie back to the Kittiwake platform. The next exploration well is likely to target the high-risk Jaeger prospect to the west. The next development will be Christian, an HPHT field, on which an appraisal/development well is planned in 2010; the well will be extended to explore the underlying Christian Deep prospect. Christian will be tied into the Mallard pipeline, probably coming on stream in 2011. It may then be the turn of Bligh (estimated 30m boe), another HPHT field, for which substantial topsides modifications will be required. Other candidates for development are the Wagtail and Whinchat discoveries, which require appraisal drilling to firm up their commerciality. They would also be tied into the Goosander bundle. There are also plans eventually to redevelop Durward and Dauntless. Venture has extended its contract for semisub <i>Noble Ton van Langeveld</i> to mid 2010.</p>	

Field	Harding Gas + Devenick tieback
Area	Northern North Sea
Operator	BP
Development concept	--
Transport concept	Gas pipeline from Harding? 13km multiphase line from Devenick to Harding.
Start-up	2011/12
<p>Comments: BP has acknowledged that a new plan for the development of the Harding gas reserves and the Devenick HPHT gas/condensate field is being prepared, under the title of the Harding Area Gas Project Recycle. FEED for the subsea facilities was awarded in 2007 to JP</p>	

Kenny. Start-up now looks unlikely before 2011. The previous scheme, which BP scrapped on the grounds that it was uneconomic, called for a new gas processing platform on Harding to which subsea facilities on Devenick – initially just one well – would be tied back.

Field	*Harrison/K4
Area	Southern North Sea
Operator	ConocoPhillips
Development concept	Platform or subsea
Transport concept	Pipeline to Kelvin
Start-up	2011

Comments: Harrison, a gas field discovered last year, and K4, a 2006 find, are candidates for development as tiebacks to the Kelvin platform, which itself is connected to the Murdoch field centre. The most recent information comes from partner Tullow, which said this month that both fields were planned to be developed with a single well and come on stream in 2011. However, they are on different schedules for development sanction – for Harrison this is due in H2 2009 and for K4 in H1 2010. According to industry sources a pipelay tender for Harrison was to be issued in early 2009 but this appears to have been postponed. For both fields the options appear to be a minimum facilities platform or subsea facilities. Harrison is about 10 km from Kelvin and K4 five km. Timing will have to fit in with other Murdoch tiebacks such as Cygnus and Humphrey.

Field	Hood
Area	Central North Sea
Operator	Iranian Oil Company (IOC)
Development concept	Subsea or floater
Transport concept	--
Start-up	2010/11

Comments: IOC intends to push ahead with plans to develop the Hood field following a successful appraisal well in mid 2008; it hopes to get the field on stream within two-three years, it said last autumn. The drilling campaign, which was carried out by semisub *Byford Dolphin* under the management of Senergy, included an exploration well on a nearby Paleocene prospect. Both wells were suspended. Senergy is now analysing the well results and development options, IOC said in Feb. The company, which is sole licensee, is seeking a possible partner which would take on the development under a farm-in agreement. Development options for Hood, whose reserves prior to the appraisal were estimated at 21m bbl, include a floater and a subsea tieback of some 20 km to Piper.

Field	Huntington
Area	Central North Sea
Operator	E.ON Ruhrgas
Development concept	FPSO
Transport concept	Offloading
Start-up	2011/12

Comments: Following Oilexco North Sea's recent move into administration, the partners promptly reacted by choosing E.ON Ruhrgas to take over as operator. According to Noreco, the move was intended to ensure that Huntington, an oil field, stayed on the fast track to development. However, industry sources say pipelay has been postponed to 2011, in which case start-up has also been pushed back. It is unclear whether the contract for an FPSO will be retendered – a letter of intent issued to Bluewater for the lease of FPSO *Glas Dorr* last year is believed to have been cancelled by Oilexco. Huntington consists of a Forties reservoir and Fulmar/Triassic reservoirs. According to Noreco a development plan for Huntington Forties will be submitted in H2; three to five development wells will be required. Noreco estimates reserves in each part of the field at about 100m boe. Framo has a contract to supply a 100t, eight-slot subsea manifold. Huntington was discovered in 22/14b in 2007, and successfully appraised by a multi-bore well the same year. A single-bore appraisal drilled in 2007-08 led to a further increase in the size of the field. Well 22/14b-9, which discovered the Fulmar/Triassic reservoirs in Sept-Oct last year, confirmed an extension of the field into 22/14a, according to Oilexco, which thereby earned a 25% interest in this BG-operated licence. The owners of this licence are now involved in development discussions. An appraisal well is planned into this part of the field in Q2, says Noreco. Oilexco also participated in BG's Mallory discovery on the 22/14a licence in 2007. A joint development with Mallory is a possibility. Premier has made a bid for Oilexco North Sea which has been accepted by the receiver.

Field	Hutton North-West Redevelopment
Area	Northern North Sea
Operator	--
Development concept	Subsea or floater?
Transport concept	Existing pipelines?
Start-up	2010/11

Comments: BP is still hopeful of completing a deal for the redevelopment of Hutton North-West soon. Recoverable reserves of some 80m bbl of oil and 250 bcf of gas would become available if the recovery factor could be raised to 45% from the 26% achieved so far from the field, where the original production facilities are currently being decommissioned. Use could be made of the existing pipelines which have been left in place: a 13km, 20in oil export pipeline to Cormorant South, now operated by Taqa, and an 11-km, 10in gas pipeline to a tee in the western leg of the FLAGS system. Redevelopment could perhaps involve subsea facilities or a leased floater with processing facilities.

Field	Islay
Area	Northern North Sea
Operator	Total
Development concept	Subsea
Transport concept	3km pipeline to Jura?
Start-up	2010/11

Comments: Total plans to develop the Islay gas/condensate field, which was discovered by exploration well 3/15-12 in 2008. No timing has yet been given. The well, which tested 43 MMcf/d of gas, was completed for production and suspended. It will presumably be tied into the Jura subsea infrastructure 3 km to the west; Jura is itself tied into the Forvie North

manifold. More than one well may be required.

Field	Jasmine
Area	Central North Sea
Operator	ConocoPhillips
Development concept	Platform
Transport concept	9km pipeline to Judy?
Start-up	2012/13
<p>Comments: According to a ConocoPhillips presentation, the company plans to develop Jasmine, which it describes as one of the largest recent finds on the UKCS, with a 24-slot wellhead platform bridge-linked to an accommodation platform. Production will be delivered to Judy for processing via a 9km multiphase pipeline. Start-up is scheduled in the period up to 2013. Award of a FEED contract was expected by end 2008 but has not yet taken place. Jasmine was discovered by exploration well 30/6-6 and 6z in 2006; a further drilling campaign in 2007-08 found a second structure known as North Terrace and appraised both fields. The hydrocarbons are presumably gas and condensate in an HPHT reservoir.</p>	

Field	Juliet
Area	Southern North Sea
Operator	GdF Suez
Development concept	Platform or subsea
Transport concept	10-15km pipeline to Amethyst?
Start-up	2010/11
<p>Comments: GdF Suez says it will evaluate development options for the Juliet gas field, with the possibility of starting production in late 2010 or early 2011. Juliet lies just south of BP's Amethyst West field facilities; it could be developed with a platform or subsea facilities. The field was discovered early this year by exploration well 47/14b-10, which was drilled and suspended by jackup <i>Noble Piet van Ede</i>.</p>	

Field	Kessog
Area	Central North Sea
Operator	Total
Development concept	Subsea
Transport concept	20km pipeline to Elgin?
Start-up	2010/11
<p>Comments: In late Apr Total was preparing to start an extended well test (EWT) on the Kessog HP/HT field with semisub <i>Sedco 714</i>. This will be performed on an appraisal well drilled by Total in 2006-07 which the rig re-entered in Mar. If the EWT is successful, it will open the way to full development, which could come on stream in late 2010 or 2011. It is also the second step in a farm-in deal whereby Total will gain a 25-50% stake in the field and take over the operatorship from BP. The first step was the appraisal well, 30/1c-9. Permanent production is likely to involve subsea wells tied back to Total's Elgin HP/HT facilities – it is understood the</p>	

platform option has been discarded.

Field	*Kraken
Area	Northern North Sea
Operator	Nautical
Development concept	FPSO
Transport concept	Offshore loading
Start-up	2012
<p>Comments: Nautical, which drilled a successful appraisal on the Kraken heavy oil field in 9/2b in 2007, believes it can achieve the 30m bbl of recoverables which would make development economic – oil in place is estimated at 370m-1.2 billion bbl. The company aims to submit a development plan by end 2009 intending to achieve start-up in 2012. This summer it plans to drill a third appraisal and an exploration well on a prospect in 3/27a – negotiations for a rig were under way in Jan. At 18°API, the crude is substantially lighter than expected. The second appraisal in 2008 failed to find additional reserves. Development is likely to involve an early production system (EPS) based on three to five subsea wells tied back to an FPSO or a fixed drilling/wellhead platform combined with an FPSO for processing. In either case export will be through offshore loading. Downhole pumps will be required.</p>	

Field	Laggan/Tormore
Area	West of Shetland
Operator	Total
Development concept	Subsea
Transport concept	2 x 140km pipelines to Sullom Voe, 15km inter-field pipeline
Start-up	2013/14
<p>Comments: Total has begun prequalifying contractors for the subsea development of the Laggan and Tormore gas/condensate fields west of the Shetlands – in around 600m of waters, the deepest development yet undertaken in the UK sector. Early tenders are planned for basic engineering, subsea production equipment and an onshore terminal. Submission of a development plan is scheduled for Sept. Subsea equipment will be installed in 2011 to allow drilling to start – there will be five wells on Laggan and three on Tormore. Start-up is due in late 2013 or 2014. Recoverable reserves on the two fields are estimated at 1.5 tcf. Gas and condensate will be sent to a plant on Sullom Voe via two 140km multiphase pipelines (no separation on the field as previously reported). From there gas will be transported to the mainland via a 224km line linking into the Frigg network which ends up in St Fergus. The gas line from Laggan will have 665 MMcf/d capacity, enabling it to act as a hub for third-party gas: 100 MMcf/d from Chevron's Rosebank/Lochnagar field and 65 MMcf/d from BP's Clair North, in addition to 500 MMcf/d from Laggan/Tormore.</p>	

Field	Mariner
Area	Northern North Sea
Operator	StatoilHydro
Development concept	Platform

Transport concept	Offshore loading
Start-up	2014/15
<p>Comments: StatoilHydro has postponed development of the Mariner heavy-oil field by a year – it now aims to seek sanction in mid 2011. In the interim the project will not be shelved but <u>slowed</u>. Last year StatoilHydro began implementing a work programme consisting of seismic and sub-surface surveys. In Jan semisub <i>Stena Spey</i> plugged and abandoned Broch exploration well 9/11e-14 without comment – the prospect is a possible satellite to Mariner. As the main field has been extensively appraised and tested several times, <u>further appraisal drilling is considered unnecessary, according to partner Nautical</u>. Development is expected to involve a fixed platform combined with export by offshore loading. Moreover, it could perhaps act as a hub platform serving several fields, according to StatoilHydro. <u>The company has acquired a 30% interest in three licences covering 9/12e and other nearby blocks through funding exploration activities – the Broch well was part of this deal.</u></p>	

Field	Maureen Redevelopment
Area	Central North Sea
Operator	Fairfield
Development concept	Subsea
Transport concept	Pipeline – 21 km to Andrew or 14 km to Varg
Start-up	2012
<p>Comments: Fairfield's plan to drill an appraisal/development well on Maureen in early 2009 has gone on the back-burner – it is unlikely to happen before next year, the company says. Start-up before 2012 therefore looks unlikely. <u>Meanwhile Fairfield's prospective partner, Canadian North Sea Energy, which was due to fund the well in return for a 30% stake, has withdrawn, leaving the operator looking for a replacement.</u> Fairfield plans initially to develop Maureen North-East, which contains an estimated 27m bbl of oil in place, and the Morag reservoir which lies under Maureen. It sees further potential in the nearby Mary and Mabel fields – Mary has already been in production while Mabel is an undeveloped discovery. Fairfield's preferred development solution is subsea facilities tied back either to BP's Andrew hub or Talisman's Varg in the Norwegian sector. Stand-alone mobile solutions have also been evaluated. Maureen was originally developed by Phillips; it ceased production in 1999 when 226m bbl had been produced.</p>	

Field	Moth
Area	Central North Sea
Operator	Oilexco/BG
Development concept	Subsea or platform
Transport concept	2km pipeline to Lomond?
Start-up	2011/12
<p>Comments: Oilexco North Sea, which is now in administration, last year made a significant oil/gas/condensate discovery with Moth exploration well 23/21-6 and a sidetrack, drilled by semisub <i>Ocean Guardian</i>. The company said the field was capable of producing 44 MMcf/d of gas and 4,400 b/d of liquids. <u>Further appraisal is required, but no decisions on this have yet been taken, BG said in Mar. But the company confirmed that it will become operator if development goes ahead.</u> Moth is likely to be tied back two km to Lomond, a gas/condensate</p>	

field, where BG has agreed to take BP's place as operator following an asset swap. Depending on the size of the field, a subsea or fixed platform solution could be appropriate. In Mar Premier announced that it proposed to purchase Oilexco.

Field	Peik
Area	Northern North Sea
Operator	Lundin
Development concept	Subsea
Transport concept	20km pipeline to Heimdal, Beryl or Bruce
Start-up	Q4 2012
<p>Comments: A development decision for Peik, a small HP/HT gas/condensate field which straddles UK/Norwegian median line, is believed to be imminent. In Nov Bow Valley, Lundin's partner on the UK side, reported that a unitisation agreement between the UK and Norwegian licences had been reached; but in Dec it revealed it had agreed to sell its interest to Centrica, which last year acquired Marathon's 50% stake in the Norwegian licence. According to Centrica start-up is scheduled for late 2012. Lundin has increased its reserves estimate by 10m boe to 37m boe. Potential hosts are Heimdal in the Norwegian sector and Beryl and Bruce on the UK side – all three are about 20 km distant. Marathon's Alvheim FPSO, at 8 km, is not a candidate as it is not equipped to handle HPHT hydrocarbons.</p>	

Field	Ptarmigan
Area	Central North Sea
Operator	Oilexco
Development concept	Subsea
Transport concept	25km pipeline to Balmoral
Start-up	2009/10
<p>Comments: <u>It seems likely that Premier, which has made a bid to acquire Oilexco North Sea, will proceed with Oilexco's plan to develop Ptarmigan, a small oil field. In the prospectus issued in connection with the acquisition, Premier says that it is 'anticipated' that the field 'will be developed by a production well tieback to the Balmoral FPV at some point in the future', which is Oilexco's plan.</u> It calls for an 8in pipeline to connect the single subsea well to the platform, and a 13km, 4in line to bring lift-gas from the Brenda subsea manifold. Technip reelship <i>Apache</i> was lined up to perform pipelay, FMC for the subsea tree, Duco the umbilical and Framo the manifold and subsea control system – the Framo equipment at least has already been delivered. <u>The plan formed part of a farm-in deal whereby Oilexco earned a 60% stake in the field plus the operatorship.</u> The company was also considering installing a pipeline between Ptarmigan and Caledonia to enable gas to be exported from Balmoral to Britannia.</p>	

Field	Rinnes/Melville
Area	Northern North Sea
Operator	Dana
Development concept	FPSO or subsea
Transport concept	--

Start-up	2011/12
<p>Comments: Dana's exploration campaign on the Rinnes prospects has led to significant finds at Rinnes East, Rinnes West and Rinnes South-East, in addition to the nearby Melville field. It plans to develop the four fields jointly. Engineering studies are under way on options including tiebacks to nearby infrastructure and stand-alone development with an FPSO. The company says that reserves in the area, including its producing Hudson field, are 55-100m bbl. Earliest start-up looks like 2011 or 2012. The nearest platforms are Tern, to which the Hudson subsea facilities are tied back, at around 15km and Cormorant A at some 25 km; both are operated by Taqa.</p>	

Field	Rochelle/Rubie II
Area	Central North Sea
Operator	Endeavour
Development concept	Subsea
Transport concept	25km pipeline to Scott?
Start-up	Q4 2010
<p>Comments: Endeavour has reported success with Rochelle appraisal well 15/27-11, estimating reserves in excess of 30m bbl of oil. <u>It plans to seek government approval late this year and achieve start-up in Q4 2010. There are likely to be two subsea wells, which according to partner Nexen will probably be tied back to its Scott platform about 30 km to the north.</u> Scott could also be the new host for Endeavour's Renee and Rubie field – these are currently tied back to Hess's <i>AH001</i> floater where production ceased in Mar (see Ivanhoe/Rob Roy entry in Section 4). Endeavour had planned to drill a second subsea producer on Rubie but the project is currently suspended. Rochelle itself lies about 10 km south-west of Renee.</p>	

Field	Rosebank/Lochnagar
Area	West of Shetland
Operator	Chevron
Development concept	FPSO?
Transport concept	Offshore loading + gas via Laggan
Start-up	2014/15
<p>Comments: <u>In Apr newbuild drillship <i>Stena Carron</i> plugged exploration well 213/27-3 on Rosebank North and spudded an exploration sidetrack on Lochnagar North.</u> This is the first in a three-well drilling campaign on the Rosebank/Lochnagar field. The wells will not be drilled back-to-back, so the campaign is expected to take a couple of years to complete. FEED for the development is planned for 2011, so start-up looks unlikely until 2014 or 2015. When it discovered the field in 2004, Chevron hinted that it looked large. It has released little information since. Of a three-well programme carried out in 2006-07, it has revealed only that one well, 205/1-1, tested light oil at a rate of 6,000b/d. Situated close to the UK/Faroes border, far from any infrastructure, and in deeper waters – 1,100 metres – than any other commercial find in the UK sector, Rosebank/Lochnagar looks like a candidate for an FPSO combined with offshore loading. Gas will be exported via the Laggan multiphase pipeline in which Chevron will take a stake (see Laggan entry). Peak gas volume will be 100 MMcf/d.</p>	

Field	Selkirk
Area	Central North Sea
Operator	Nexen
Development concept	Subsea
Transport concept	Pipeline to Gannet or Marnock?
Start-up	2010/11
<p>Comments: An appraisal well on Selkirk in late 2007 proved a sufficient volume of oil to justify development, according to partner Venture, which estimates reserves at around 12m boe. In Nov the company said project sanction was planned for 2009, followed by development in 2010. So far Nexen has only confirmed that development is being evaluated. There is likely to be a single subsea well which may be the suspended sidetrack of the appraisal well recompleted as a producer. Tieback options include Shell's Gannet platform 15 km to the west and BP's Marnock 25 km to the east, according to Venture.</p>	

Field	Solan
Area	West of Shetlands
Operator	Chrysaor
Development concept	Articulated tower
Transport concept	Offshore loading
Start-up	Q3 2010
<p>Comments: Having successfully appraised the Solan oil field in 2008, Chrysaor aims to bring it on stream in Q3 2010. <u>Submission of a field development plan has been put back to H2 2009 to allow a new appraisal well and sidetrack to be drilled in order to lift more reserves into the proven category. Semisub <i>Byford Dolphin</i> is due to spud the well in May.</u> The same rig is lined up for development drilling. <u>Chrysaor now plans to drill two subsea producers – one more than previously – plus a water injector. The producers will be equipped with electric submersible pumps to lift the 26 deg API crude.</u> The wells will be tied back to an articulated tower.</p>	

Field	West Wick
Area	Central North Sea
Operator	Venture
Development concept	Extended-reach drilling
Transport concept	---
Start-up	2010
<p>Comments: Venture has held discussions with Chevron about developing the West Wick oil discovery in the Outer Moray Firth by drilling an extended-reach well from the Captain wellhead platform. If agreement is reached, the well could presumably get under way in 2009 or 2010. Previously Venture envisaged a subsea tieback to Captain. It appears to have dropped plans to drill an appraisal well with a mobile rig. In 2008 Venture took over the operatorship from Shell and acquired part of its stake.</p>	

Field	York
Area	Southern North Sea
Operator	Centrica
Development concept	Platform or subsea
Transport concept	5km pipeline to Rough
Start-up	2011

Comments: Centrica has acquired the major stake and operatorship in the York gas field and plans to bring it on stream in 2011, tied back to the nearby Rough facilities which it operates. The field, which consists of a southern and an eastern reservoir, could be developed with either a platform or subsea facilities. Centrica calls it the 'largest known undeveloped gas reserve' in the southern basin, though reserves appear to be a modest 118 bcf.

3 Possible future projects

One new entry (marked **), one entry demoted from Section 2 (marked #).

Field	Alder
Area	Central North Sea
Operator	Chevron
Development concept	Subsea
Transport concept	27km pipeline to Britannia
Start-up	2012?
<p>Comments: Chevron says it is evaluating the development of Alder, an HP/HT oil and gas field, as a subsea tieback to Britannia. <u>A development decision is now expected in Q2 2009, though a recent presentation suggested start-up would take place in 2012. According to partner ConocoPhillips, start-up is scheduled for 2014.</u> Two subsea wells are planned as part of the \$500m project. It is expected that Alder will be part of the second phase of the Britannia Satellites development, though Enochdhu/Finlaggan (see separate entry) may no longer be candidates for this phase.</p>	

Field	Amanda/Agatha
Area	Southern North Sea
Operator	Venture
Development concept	Subsea
Transport concept	3km pipeline to Alison
Start-up	2011/12
<p>Comments: Venture's plans for the joint development of the neighbouring Amanda and Agatha gas fields depend on the results of the Agatha exploration well. This has been rescheduled again, to 2010. At this time exploration wells will also be drilled on the Adele and Adele South-East prospects in the same block. If these are successful, a joint development may take place, which suggests start-up in 2011 or 2012. Amanda will only be developed if Agatha is commercial – results from the sidetrack drilled and tested in an existing Amanda appraisal well in 2007 indicated it was not commercial in its own right. The well was suspended. If development goes ahead, the Amanda and Agatha wells will be tied into a common manifold connected to the Alison subsea facilities by a 6in production line. Alison is itself tied back to Loggs. Subsea construction and pipelay would be performed by Subsea 7 with which Venture has a frame agreement. Amanda's existing subsea tree would be reused.</p>	

Field	**Baird Gas Storage
Area	Southern North Sea
Operator	Centrica
Development concept	Platform
Transport concept	100km pipeline to Bacton
Start-up	2013
<p>Comments: Centrica has acquired from Perenco a 70% stake in a project to convert the Baird field into a gas storage facility – Perenco retains the other 30%. A final investment decision is</p>	

scheduled for Q3 2010. If it goes ahead, the facility, which will cost about £1.7 bn, will have 60 bcf storage capacity. A new platform, wells and pipeline to shore will be required. The Baird gas reserves, which have been developed by a single well drilled from Perenco's Inde D platform, are largely depleted.

Field	#Caledonia
Area	Central North Sea
Operator	Chevron
Development concept	Subsea
Transport concept	Existing pipeline to Britannia
Start-up	--

Comments: Following Premier's proposed purchase of Oilexco North Sea, it remains to be seen whether it will proceed with Oilexco's plan to redevelop Caledonia. In the prospectus issued in connection with the acquisition, the project is not mentioned. Oilexco proposed to redrill the existing well and then drill one-three new producers. Last summer it drilled a multi-leg appraisal well on the field as part of a farm-in deal which would also have made it operator, though the deal has not been consummated. Problems with the existing well have restricted production in recent years. Oilexco was also considering installing a pipeline between Ptarmigan and Caledonia to enable gas to be exported from Balmoral to Britannia.

Field	Culzean
Area	Central North Sea
Operator	Maersk
Development concept	Platform or subsea?
Transport concept	Pipeline to nearby infrastructure
Start-up	2011/12

Comments: In Feb Maersk announced a 'promising' discovery at Culzean, an HP/HT gas/condensate field, and said it was evaluating the size of the find and possible development options. The field lies in part-block 22/25a, about 20 km from BP's Marnock and Lomond and 25 km from Shell's Shearwater. Water depth is 92 metres, so a wellhead platform or subsea facilities could be relevant options.

Field	Enochdhu/Finlaggan
Area	Central North Sea
Operator	ConocoPhillips
Development concept	Subsea
Transport concept	15km pipeline to Britannia
Start-up	--

Comments: Enochdhu and Finlaggan, which were discovered in 2006 by exploration wells 21/5a-6 and 6x, were potential candidates for the second phase of Britannia Satellites development, involving a subsea tieback to Britannia. But in a presentation in Mar, ConocoPhillips failed to mention the fields, while revealing that start-up for Chevron's Alder,

another Britannia satellite candidate, was scheduled for 2014. Enochdhu and Finlaggan are presumably on the back-burner for the time being.

Field	Foinaven South-West
Area	West of Shetland
Operator	BP
Development concept	Subsea
Transport concept	11km pipeline to Foinaven FPSO
Start-up	2010/11
<p>Comments: BP has discovered oil with Foinaven South-West exploration well 204/23-2 and is evaluating development options. It has talked of the possibility of a two-well subsea tieback to the Foinaven FPSO. The well, which was drilled in a water depth of 168 metres by semisub <i>Paul B Loyd Jr</i>, was plugged and abandoned in early 2008. In Feb BP received approval for an incremental project known as Panel 2 South, which calls for two producers and one water injector to be drilled at an existing drill centre. <u>Semisub <i>Transocean Rather</i> completed these wells in Apr.</u></p>	

Field	Gateway Gas Storage
Area	Morecambe Bay
Operator	Stag
Development concept	Platform
Transport concept	2 x 24km pipelines to Barrow
Start-up	2014
<p>Comments: The Gateway Gas Storage project involves the development of 40 bcf of gas storage capacity in Morecambe Bay block 110/3b some 24 km from Barrow. The project, which is managed by Stag Energy, was granted a licence for the offshore works and had its environmental impact assessment approved last year, when it also received planning approval to build a gas compression station at Barrow. The next major step is the investment decision, which is scheduled for late 2009. Before then major supplies and services will be tendered to provide a good grip on costs. The cost of the project has risen to £600m (previously £500m) and start-up has been put back two years to 2014. Twenty man-made storage caverns will be created by a leaching process conducted through a borehole drilled from the surface by a jackup rig. Each well will be completed on a 150-200t unmanned monopod wellhead platform. Gas will be transported to and from shore via a 36in pipeline loop running out to the storage complex, around all the monopods and back to shore. Each monopod will be connected to the ring main by a short 10in feeder pipe. A 4in methanol line will be strapped to one of the lines. The pipeline sections between the shore and the complex will be trenched. Power will be supplied from shore via a 66kV cable.</p>	

Field	Humphrey
Area	Southern North Sea
Operator	ConocoPhillips
Development concept	Platform or subsea

Transport concept	40km pipeline to Murdoch
Start-up	--
<p>Comments: ConocoPhillips found gas in 2006 with Humphrey exploration well 44/16-3. The field's commerciality is under evaluation, according to COP. According to partner Venture, the field needs additional reserves to be proven at the Humphrey North-West prospect to make development viable but as far as is known there are no firm plans for this well as yet. The obvious host for processing is the Murdoch field centre some 40 km away, but Humphrey is likely to be tied into an intermediate installation. In view of plans to tie Cygnus and Harrison/K4 back to Murdoch, Humphrey may anyway have to wait its turn.</p>	

Field	Jackdaw
Area	Central North Sea
Operator	BG
Development concept	Platform
Transport concept	Pipeline to Judy?
Start-up	2011/12
<p>Comments: In Dec BG finally completed Jackdaw appraisal well 30/2a-7 which jackup <i>Rowan Gorilla VI</i> spudded in Oct 2007. The main bore and two sidetracks were all plugged and abandoned. According to partner OMV, the main bore found hydrocarbons. BG has not commented on the well, though following discovery it said that Jackdaw, an HPHT field, had the potential to be one of the largest finds of recent years. It now plans to drill a second appraisal in late 2009 or early 2010. The field was discovered in 2005 by exploration well 30/2a-6, which was drilled by partner ConocoPhillips. A platform tied back to Judy could be the development solution – as ConocoPhillips also plans for the HPHT Jasmine field in the same area.</p>	

Field	Kepler/Copernicus
Area	Southern North Sea
Operator	RWE-Dea/GdF Suez
Development concept	Subsea
Transport concept	Pipeline to?
Start-up	2011/12
<p>Comments: Joint development of RWE-Dea's Kepler (43/20b & 44/16c) and GdF Suez's Copernicus (44/16b & c) is possible – the neighbouring gas fields both require a solution for their high carbon dioxide content. An appraisal well on Copernicus is being considered for late 2009/early 2010, GdF Suez says. The results of this well may indicate whether an appraisal well on Kepler is required, according to partner Venture. Venture has previously said that successful appraisal of Copernicus could open the way to a two or three-well development, recovering 190 or 280 bcf respectively. Previous plans for Kepler called for a single subsea production well.</p>	

Field	Kildare
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Area	Central North Sea
Operator	Nexen
Development concept	Subsea
Transport concept	30km pipeline to Scott?
Start-up	2010/11
<p>Comments: In 2007 Oilexco found oil in Kildare well 15/26b-9. Though classified as an exploration well, the probe established connection with the 15/26b-5 discovery of 1988. <u>Nexen, the operator, planned an appraisal well in 2008 but this has yet to be drilled – it is one of several exploration wells postponed to save capital costs, according to Nexen.</u> Oilexco, which Premier has agreed to acquire, said Kildare was likely to be developed as a subsea tieback to Scott. Nexen has declined to comment on development solutions.</p>	

Field	Orca
Area	Southern North Sea
Operator	GdF Suez
Development concept	Platform
Transport concept	Pipeline to CMS, NGT or WGT
Start-up	2011/12
<p>Comments: GdFSuez says that Orca has been deferred due to the high cost base for drilling, fabrication and installation. It plans to revive the project when the economic climate is more favourable. The development concept is a platform with a minimum of two wells. Previously project sanction had been looked for in late 2008, and subsea wells were additionally planned due to the large areal extent of the field. Orca extends into the Dutch sector, where one of the Dutch partners is GdF subsidiary Proned. Three export routes have been under study – the NGT and WGT lines in the Dutch sector and the CMS system in the UK sector. Seismic over the area has been reprocessed.</p>	

Field	Pilot
Area	Central North Sea
Operator	Venture
Development concept	FPSO
Transport concept	2km in-field pipeline; offshore loading
Start-up	--
<p>Comments: Venture is in the process of reconsidering its plans for Pilot, as last year's appraisal well found oil that was both heavier and more viscous than that yielded by previous wells on the field. As a result the reserves were recategorised. A decision is now expected in 2009. Venture has renegotiated its contract for the Sevan 300 FPSO it planned to install on Pilot – it has until end 2009 to declare its option and may locate the platform on any field. The plan as outlined in the environmental statement called for three subsea production wells and one subsea water injector tied back to the FPSO via a manifold. Hydraulic submersible pumps would be fitted in the producers. The wells would be located about 2 km from the FPSO to allow rig intervention. There would be a 10in production flowline, 6in injection water line and 10in power water line to run the pumps, plus an umbilical with chemical lines.</p>	

Field	Scott Satellites
Area	Central North Sea
Operator	Nexen
Development concept	Subsea
Transport concept	Pipelines to Scott
Start-up	2011 onwards
<p>Comments: Nexen has a series of small discoveries which could be developed as subsea tiebacks to its Scott platform. Foremost candidates are Black Horse which lies about 12 km from the platform and Bugle a further 12 km out in the same direction. <u>But Nexen says it will postpone capital spending on these projects for a year</u> – an appraisal had been planned on Bugle for Q3 2009 and a possible appraisal on Black Horse in 2010. Start-up in 2011 is perhaps possible though 2012 looks more likely. <u>Black Horse will only be developed if Bugle is developed, Nexen says.</u> In 2008 Oilexco semisub <i>Ocean Guardian</i> drilled an appraisal sidetrack in the Bugle discovery well 15/23d-13 which, the company said, established the field's commerciality.</p> <p>Other satellites include Dolphin, Perth, Polecat and Yeoman. An appraisal was planned on Polecat in 2009 but <u>this has presumably also been postponed.</u> Yeoman, located in 15/18b, was appraised in 2007 by Stag exploration well 15/19b-10; the well was plugged and abandoned without comment.</p>	

Field	Sheryl
Area	Central North Sea
Operator	Sterling
Development concept	Subsea
Transport concept	8km pipeline to Pict
Start-up	2010/11
<p>Comments: <u>Sterling reports that it has taken back the operatorship of Sheryl, which was discovered and appraised in 2006 by Oilexco North Sea under a farm-in deal. Oilexco is now in administration. Development has been awaiting capacity in the Pict pipeline system which is expected to become available in late 2009/early 2010, according to Sterling. Pict, which lies about 8 km away, is tied into PetroCanada's Triton FPSO. Other offtake options will be investigated, says Sterling, though apart from other points of entry into the Triton infrastructure, there is nothing else nearby.</u> Reserves are understood to be around 3m bbl, again according to Sterling. <u>According to Premier, which is seeking to acquire Oilexco North Sea, the 'development options...are currently being reviewed'.</u></p>	

Field	Vulcan East
Area	Southern North Sea
Operator	Silverstone
Development concept	Subsea
Transport concept	Pipeline to Viking?
Start-up	2010/11
<p>Comments: Silverstone has two undeveloped finds in the V-Fields area which it made in 2006</p>	

under a farm-in arrangement with ConocoPhillips and BP: Vulcan East (49/21a-10) and Vanquish (49/16-15). Development planning is under way for Vulcan East, where in-place reserves are estimated at 150-200 bcf gas, according to Silverstone. This could involve subsea facilities tied back to the Viking B complex in 49/17. Earliest start-up appears to be 2010. At a later stage development will also be considered for Vanquish. In Sept jackup *Ensco 100* plugged and abandoned without comment an exploration well on the Vantage prospect in the V-Fields area. In Mar Transocean jackup *Labrador* plugged and abandoned exploration well (48/25c-6) on Vulcan North-West after finding a non commercial quantity of gas. Last year Silverstone brought on stream Victoria, another find in the V-Fields area made under the farm-in deal.

4 Decommissioning projects

One new entry (marked *).

Field	Don
Area	Northern North Sea
Operator	BP
Field facilities	Seven subsea wells housed on template/manifold, two x 17.3km, 8in pipelines to Thistle
Production end	Jan 2003
<p>Comments: BP is preparing to decommission the facilities currently installed on the Don field, which has not produced since early 2003. Formal cessation of production was approved by the DTI in Jan 2005. The first draft of the decommissioning plan, including proposals for the manifold and pipelines, was submitted in July 2008. The second draft is expected to be issued for consultation towards mid year. In late 2007 Technip dsv <i>Orelia</i> performed some preparatory work on the field. Petrofac's development of Don West and Don South-West (see Section 1) does not include the reuse of any Don facilities.</p>	

Field	Fife, Fergus, Flora and Angus
Area	Central North Sea
Operator	Hess
Field facilities	Leased FPSO, nine subsea wells (six producers, three water injectors), in-field pipelines and umbilicals
Production end	May 2008
<p>Comments: Production of Fife and the satellite Fergus and Flora fields through Bluewater's <i>Uisge Gorm</i> FPSO ceased in 2008. Angus, which is tied back to the FPSO via Flora, had already been shut down since summer 2006. The final cargo offload took place in June, subsea and process equipment was flushed and the FPSO left the field in Sept. In Oct Technip support rig <i>Orelia</i> removed some flexible risers and umbilicals. The remaining scope will be combined with that for Ivanhoe/Rob Roy where production ceased in Mar – but no time-frame has been set for the work. The Fife flowlines, umbilicals and risers belonged to Bluewater but Hess has taken ownership of them. While preparing a decommissioning plan, Hess proposes to leave the wells suspended for about three years in case another company sees value in redeveloping the fields. If no-one takes up this opportunity, they will be plugged and abandoned. The final decommissioning plan will not be submitted until the possibility of redevelopment has been considered, the company says.</p>	

Field	Inde
Area	Southern North Sea
Operator	Shell
Field facilities	6 platforms, 26 wells, 4 pipelines, 2 hose bundles
Production end	Jan 2006
<p>Comments: Decommissioning plan approved Aug 2007. In autumn 2008 Shell signed interim agreements with AF Gruppen for onshore disposal and Seaway Heavy Lifting for platform removal. A full contract, worth £23m, was signed with AF Gruppen in Feb. The final investment</p>	

decision is yet to be made – Shell declines to say when this will be. Bids for a subsea decommissioning contract are under review. Offshore removals will start in 2010 using SHL's newbuild lift-vessel *Oleg Strashnov*. The onshore disposal site is yet to be decided. The topsides of the four smaller platforms - JD, L, M and N – will be removed by single lift, and those of the two larger platforms, JP and K, by multiple lift. The largest platform, JD, has a 3,028t topsides supported by a 1,108t jacket. There are two export pipelines, of 20in and 24in diameter, two infield pipelines and two infield hose bundles. The pipelines will be left in situ and the hose bundles retrieved. Logis Nautiques' jackup *Seafox 1* was due to start a long-term contract providing accommodation support for offshore activities in Oct 2008 but a refurbishment project, including the installation of a 300t crane, has run into delays. Shell now reports that well abandonment on N platform started with the support of jackup *Seafox 4* in Feb. Abandonment of the 16 wells on the JD, K and N platforms is being carried out by Halliburton using a rigless method. The work has been organised in two campaigns. The four M wells were abandoned in 2006 by jackups *GSF Britannia* and *Noble George Sauvageau*, and the six L wells in 2007 by jackup *GSF Monarch*.

Field	Ivanhoe/Rob Roy
Area	Central North Sea
Operator	Hess
Field facilities	<i>AH001</i> semisubmersible production platform, nine flexible risers. Each field has subsea wells – Ivanhoe four producers and three water injectors, Rob Roy five and three respectively – tied into a manifold. Both manifolds are tied back to a riser base manifold. Oil export by 41km, 14in pipeline to Claymore, gas export/import by 23km, 8in line to Tartan.
Production end	Mar 2009

Comments: Production from the Ivanhoe and Rob Roy oil fields came to an end in Mar. Decommissioning will be jointly planned with that for Fife and its satellite fields, though no time-frame yet exists for submitting the plan or performing the work. The *AH001* production platform also served Hess's one-well Hamish satellite, from which production has also ceased, and Endeavour's Renee and Rubie fields – alternative solutions will have to be found for Renee and Rubie. The floater, which is being marketed for reuse, is expected to be brought to port in the short term.

Field	*Kittiwake SAL System and Pipeline
Area	Central North Sea
Operator	Venture
Field facilities	SAL system, weighs 200t, held in place by four built-in suction buckets. The pipeline consists of two lengths of flexible flowline totalling 2.9 km.
Production end	--

Comments: Venture is seeking permission to remove the Kittiwake single anchor loading (SAL) system and pipeline. This equipment is on lease from Nordic Troll and Trym until Nov 2010, but the operator wishes to make use of construction vessels it has on charter this year. The SAL will be released from the seabed by pumping water into the suction buckets until they lift clear of the seabed; it will then be lifted to the surface by a crane-vessel. The pipeline will be

reeled up by lay-vessel *Seven Navica*; it is trenched with a backfill of weak, unconsolidated sand.

Field	Miller
Area	Central North Sea
Operator	BP
Field facilities	PDQ platform with 28,100t topsides supported by 17,500t, eight-leg jacket. 22 wells drilled. Three pipelines: oil export 8km, 14in to Brae A, gas export 242km, 30in to St Fergus, gas import 9km, 16in from Brae B.
Production end	Sept 2007

Comments: BP was granted cessation of production as from Sept 2007 and is preparing a decommissioning plan – this is likely to be submitted in H1 2009, it says. Well abandonment operations by the incumbent contractor KCA Deutag started in summer 2008 and in late April were nearing completion; Schlumberger was contracted to provide cement services and Expro for plugs and perforating services. Norse Cutting & Abandonment has been contracted to cut all casing and conductors. As the jacket weighs over 10,000t, derogation can be sought to leave the footings in place. The platform was installed in 1992 – the jacket was barge-launched and the topsides lifted on in eight major lifts, the largest being the 6,500t cellar deck. The field was shut down following BP's decision to scrap a proposed scheme to prolong oil recovery through CO2 injection.

Field	Welland
Area	Southern North Sea
Operator	Perenco
Field facilities	1,000t topsides, 570t jacket, two platform wells, three subsea wells, in-field flowlines and umbilicals, 18km export pipeline
Production end	2002

Comments: Although production from Welland ceased in 2002, decommissioning did not take place under the then operator ExxonMobil as some reuse possibilities existed. In 2007 the platform passed to Perenco's ownership. Reuse is no longer viable as the export pipeline has been disconnected at Thames. Perenco, which has extensive southern basin assets, is preparing an overall decommissioning strategy before deciding what to do with Welland. It will proceed anyway with the task of well abandonment but this has been postponed to 2010. This will probably focus on the two platform wells, one of which was drilled into the Tristan field. The platform and subsea equipment will have to be removed but the pipelines and umbilicals could be left in place.