

Upstream I: Maximising Asset Value

Mike Astell & Jim Craig



Maximising asset value

Three case studies demonstrate our distinctive capabilities

Distinctive capabilities

World-class stewardship
of production hubs

Delivering challenging
mid-size capital projects

Targeted exploration in
known basins and
subsurface models

Targeted, strategic
acquisitions

Case studies



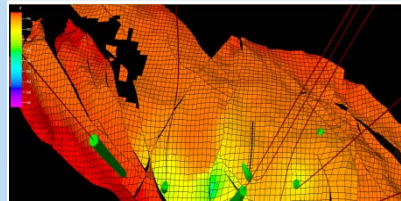
Case study 1: Morecambe

*Extending field life by maximising
production and increasing efficiency*



Case study 2: F3-FA

*Accessing new reserves using
innovative technology*



Case study 3: Greater Markham

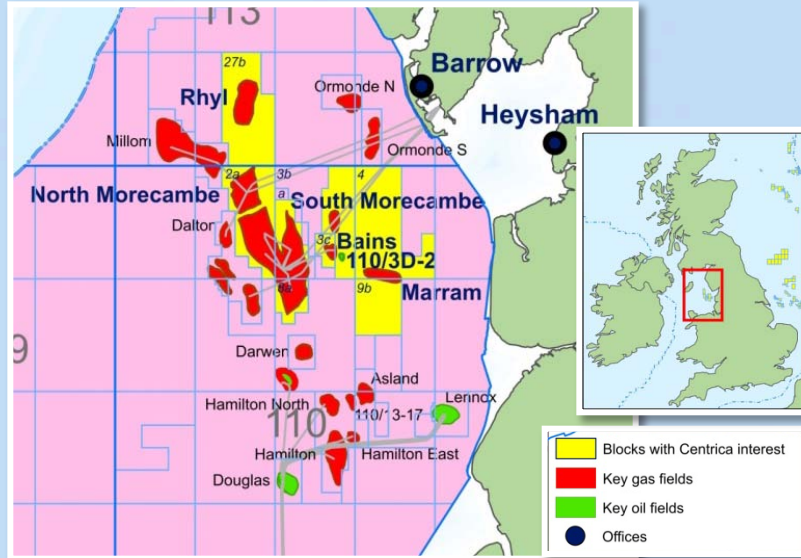
*Creating value from our subsurface
expertise in tight gas fields*

Covered in the International Growth case studies

Case study 1: Morecambe

After 25 years as a hub, production is in decline

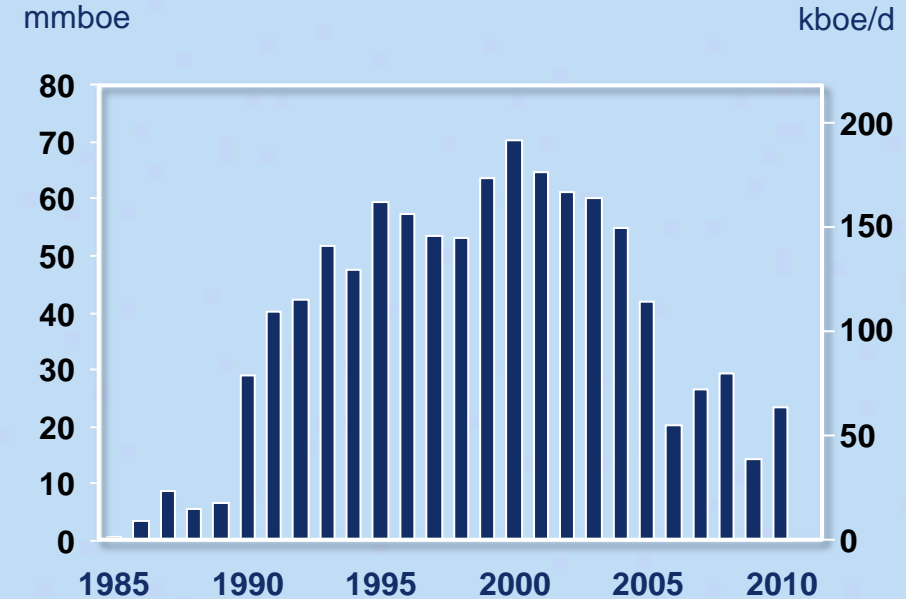
Morecambe is Centrica's most strategic hub



- 100% owned and operated¹
- One of the most reliable assets in the UK
- Among lowest operating costs in the industry
- Can be operated as a flexible swing field

1. Centrica owns 86.8% of Bains

Production peaked in 2000

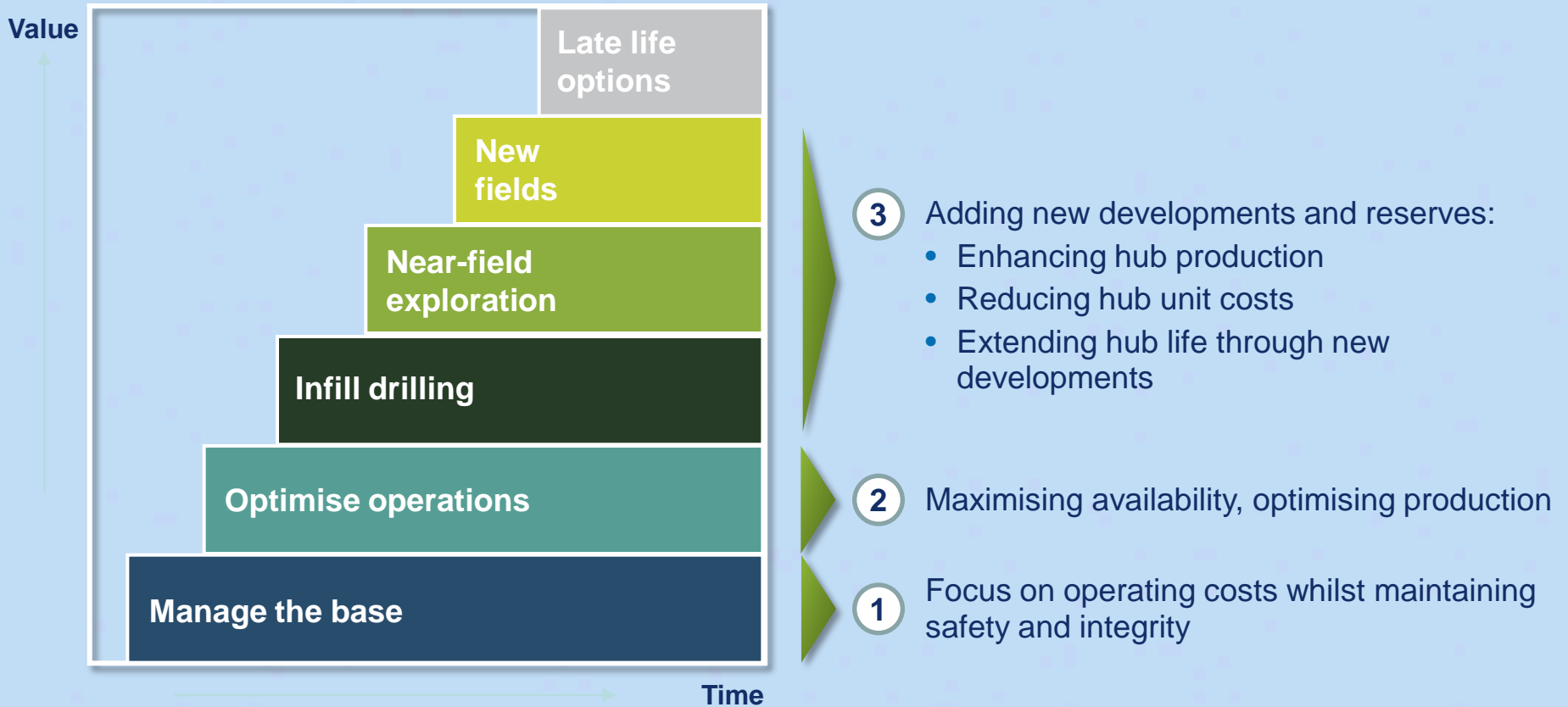


- First production in 1985
- Peak production in 2000
- Since 2000, production has been in natural decline

Case study 1: Morecambe

However, by active management we are extending field life

Extending field life by maximising production and increasing efficiency



Potential to extend productive lifetime beyond 2030

Case study 1: Morecambe

Focus on operating costs, safety and integrity

Unique cost-saving approaches implemented

Procurement and contracting

- New approach to contracting for integrity work, leading to 25% reduction in facility repair costs between 2009 and 2011
- Platform upgrades at 50% lower cost than comparable North Sea projects

Lifting costs

- Rationalisation of infrastructure
- Increased environmental efficiency

Synergies

- Approaches have been rolled-out to other regions:
 - Operations support
 - Innovative work practices
 - New plant development

Example: productivity improvement in campaign maintenance

- 53 day campaign
- Approximately 4,000 m² fabric maintenance
- 22,000 man hours
- 20% productivity improvement from 2010 campaign, over 40% improvement from 2009 campaign



Fabric maintenance of 5 well-head Xmas trees

2 Case study 1: Morecambe

Maximising availability and optimising production

Production maximisation initiatives at Morecambe

Increasing asset reliability

- Asset reliability embedded within performance management systems
- Ongoing integrity programmes
- Process equipment simplification and upgrade

Well intervention

- Bore clean-up trial now delivering sustained production uplift through reducing salt drop out
- Non-producing wells scheduled for intervention

Reservoir optimisation

- Regular choking and shut-in employed to allow degree of reservoir re-pressurisation

High production reliability maintained

Quarterly reliability, percent



Case study 1: Morecambe

Adding new developments and reserves

Rhyl: first new development since 2003

- £85m development, 7mboe 2P reserves
- First gas expected 2012
- 2.5-year turnaround from discovery to production
- Innovative concept provides options for further exploration and developments
- Extends producing hub field life
- North Rhyl follow-up development planned

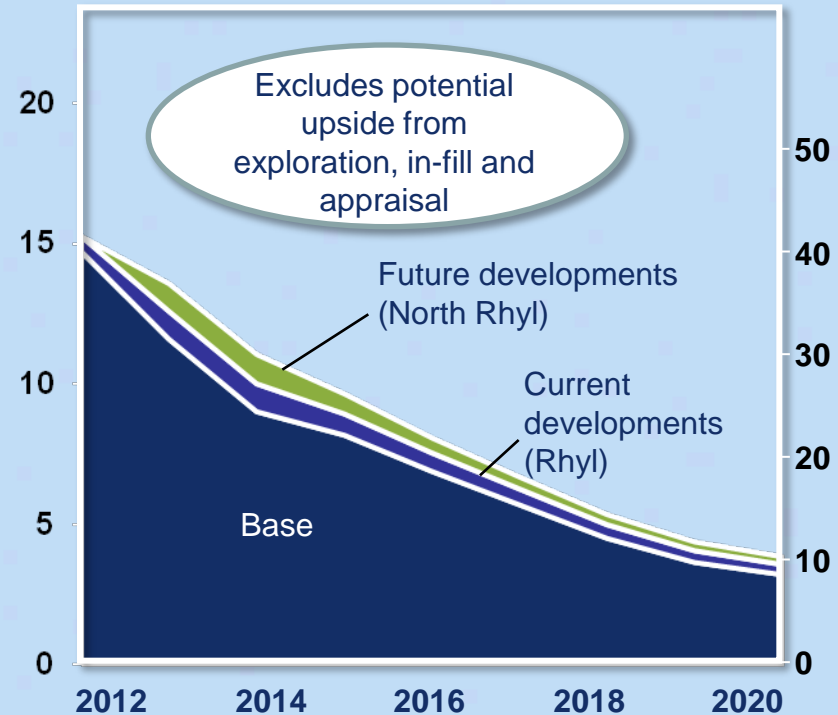
New exploration campaigns underway

- First seismic since early 1990s
- Further appraisal work through 2012/13 to assess potential for in-fill, flanks and new fields
- 3 exploration wells planned for 2012, more possible if results are encouraging

Production outlook for Morecambe

mmboe

kboe/d

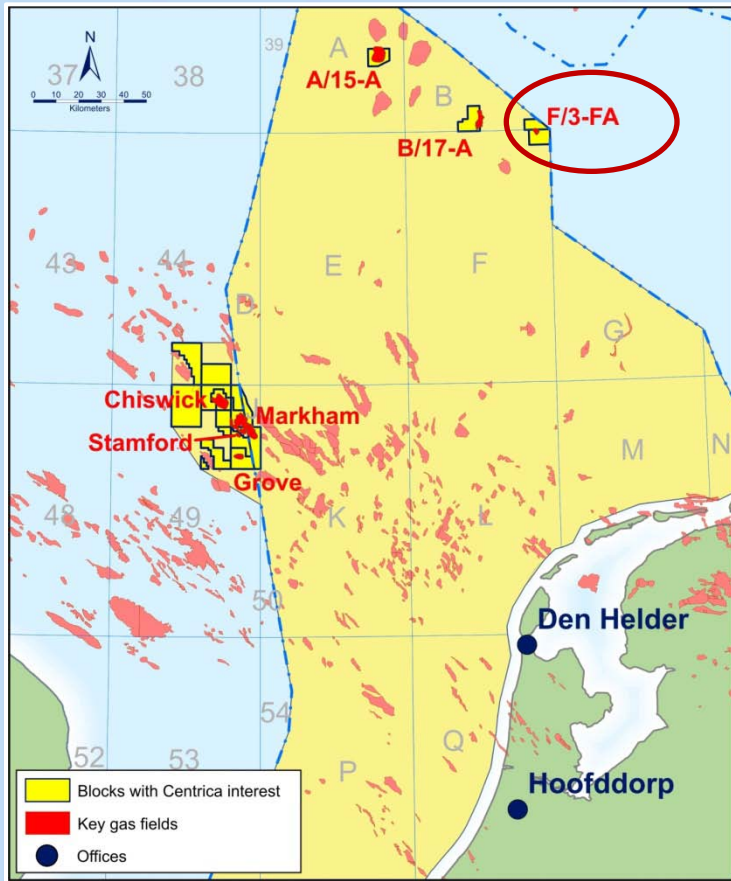


Potential to extend productive lifetime beyond 2030, subject to successful exploration and appraisal work

Case study 2: F3-FA

Accessing reserves using innovative technology

F3-FA, a marginal field where conventional development would have been uneconomic



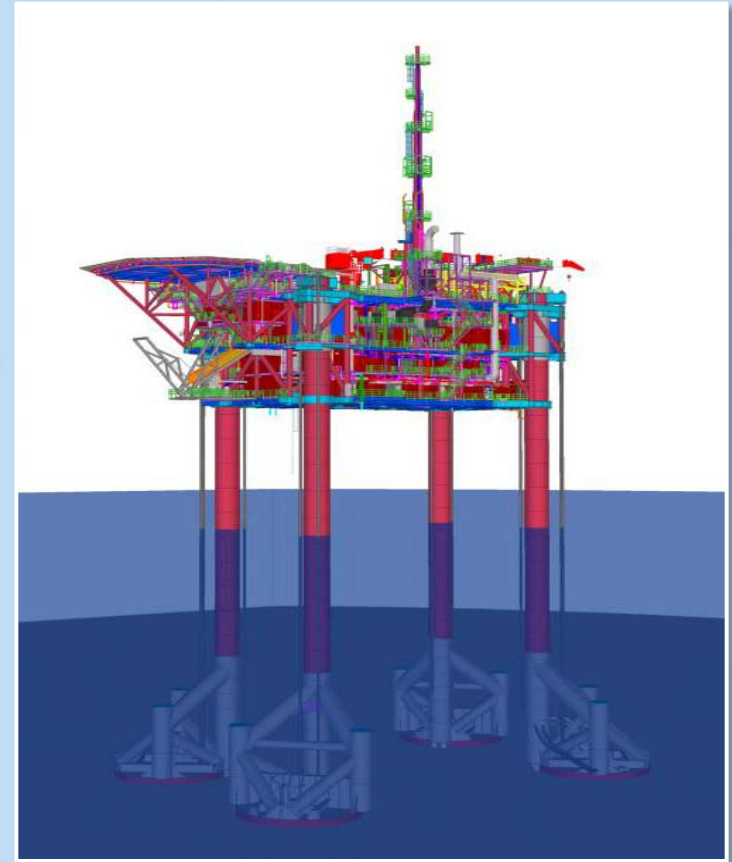
- Gas condensate field originally discovered in the Dutch North Sea by NAM in 1971
- Reserves originally estimated at 3.6 – 10.8 mmboe gross
- 58% equity interest in the field acquired in 2008
- Typical of many marginal gas fields in the Southern North Sea
 - Significant subsurface uncertainty and challenging reservoir
 - Surrounding infrastructure unsuitable and expensive resulting in poor economics for conventional development

Case study 2: F3-FA

A unique approach was identified for commercialisation

- Innovative solution of a self installing, moveable production platform
- Concept eliminates significant investment risk through ability to redeploy early if reserves do not meet expectations
- Can be re-deployed on other opportunities at end of field life:
 - Limits dependency on 3rd party host infrastructure
 - Suitable for use throughout Southern North Sea
 - No need for heavy lifts
- Represents new mode of operation for marginal fields
 - Entering and exiting fields quickly and efficiently

Schematic of the F3-FA platform



Case study 2: F3-FA

The development has been highly successful

The F3-FA platform



- Formal investment decision taken in August 2008
- Construction started April 2009 and completed in August 2010
- Self Installing Platform (SIP) installed on location in 60 hours
- Commissioning, drilling of the production well and start-up completed within 3 months
- Single high angle well completed across major reservoir compartments
- Reserves and production of gas and condensate in excess of expectations

Case study 2: F3-FA

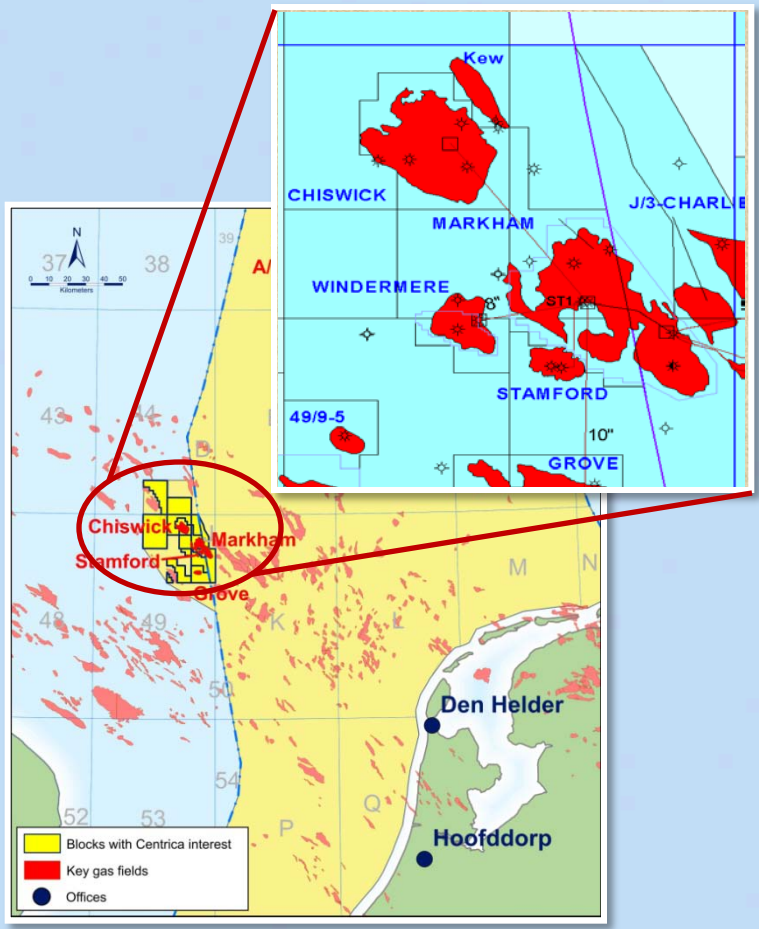
A highly-successful challenging mid-size project (video)



Case study 3: Greater Markham

Creating value from our subsurface expertise in tight gas fields

Greater Markham: a mature field with challenging tight gas potential

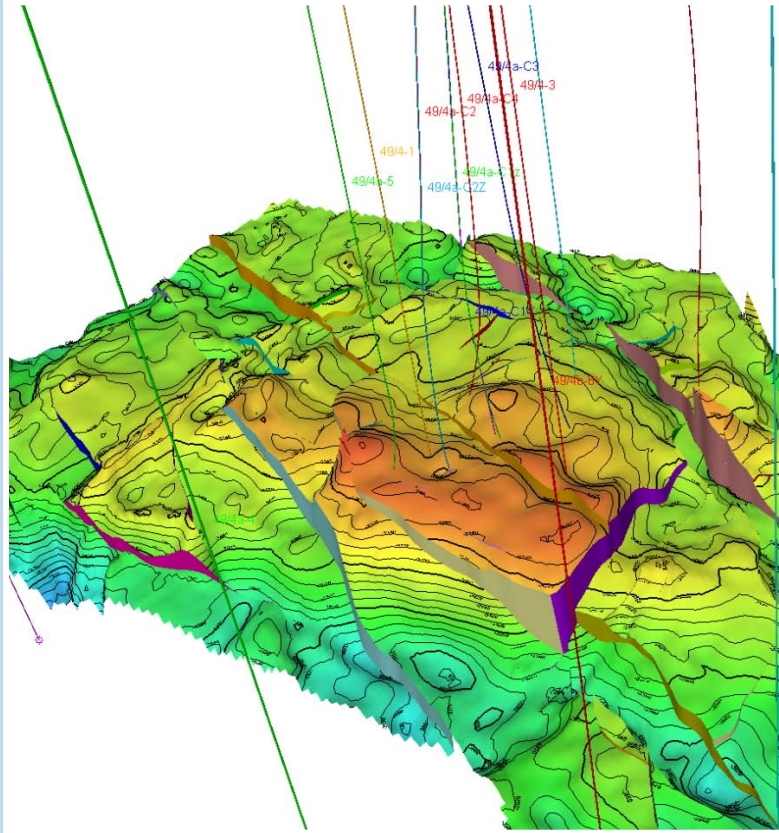


- Production from Markham field peaked in 1995 and had dropped by 80% by 2007
- Several carboniferous, tight gas fields were known but stranded:
 - Chiswick, discovered 1971 by Shell
 - Grove, discovered 1984 by BP
 - Kew, discovered 1988 by Ultramar
- The more conventional Stamford field was also undeveloped
- Centrica acquired its first position in 2006, subsequently bolstered through additional equity purchases and 26th licensing round award

Case study 3: Greater Markham

Developing tight gas expertise enabled exploitation

Deployment of tight gas expertise, Chiswick



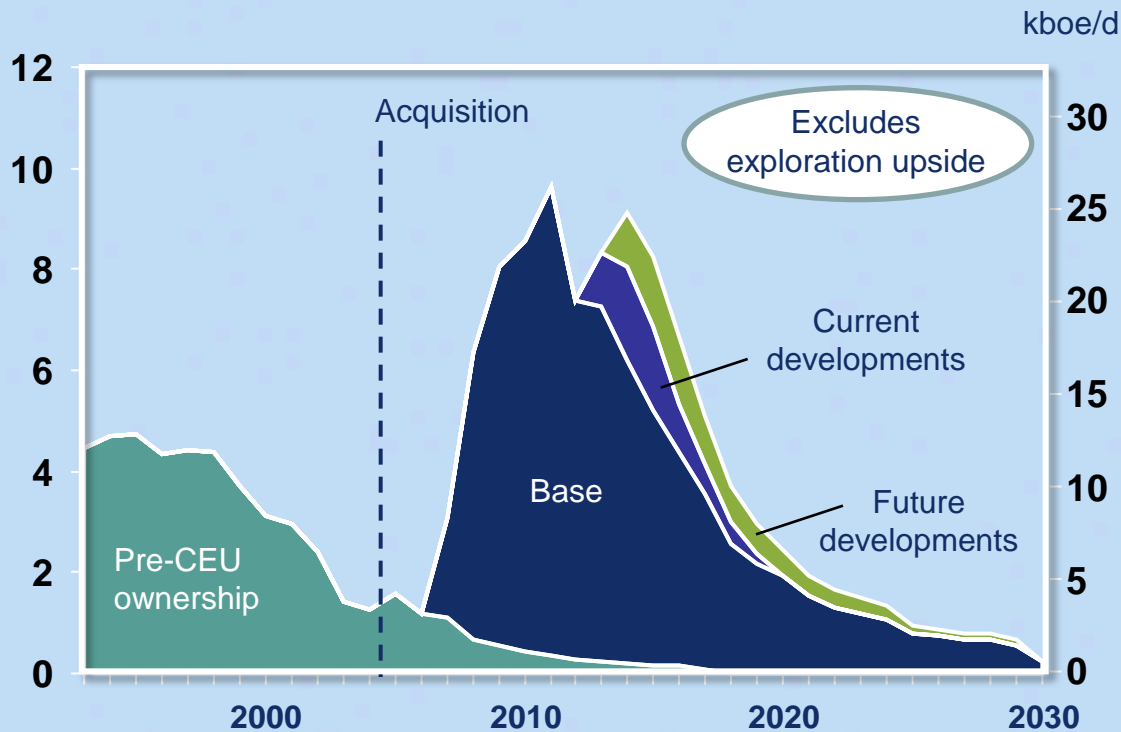
- First to apply multi-frac horizontal wells in carboniferous reservoirs when developing Chiswick in 2007
- Replicated our expertise with carboniferous reservoirs in the GMA to Chiswick Phase II and are looking at options for Grove
- A similar development planned for Kew in 2012
- Performance on all fraced wells has been strong to date, with sustained high production
- The expertise is transferable to other parts of our business and to new regions and plays, e.g.:
 - Ensign (start-up Q1 2012)
 - Annabel East (start-up 2013)

Case study 3: Greater Markham

Applying subsurface capabilities has been transformational

Redeveloping the Greater Markham Area hub

Centrica share of production, mmboe/a



- Following acquisition production was increased through the development of the Grove and Chiswick fields
- 7 producing fields now tied back to Markham hub
- Only 10% of hub output comes from the principal Markham field
- Production rates from subsequent developments exceeding initial expectations
- 3 further wells planned in the GMA in 2013-14
- Additional measures including operational excellence and additional 3rd party volumes secure the long term future of the GMA

Maximising asset value

Three case studies demonstrate our distinctive capabilities

Distinctive capabilities

World-class stewardship of production hubs

Delivering challenging mid-size capital projects

Targeted exploration in known basins and subsurface models

Targeted, strategic acquisitions

Case studies



Case study 1: Morecambe

Extending field life by maximising production and increasing efficiency

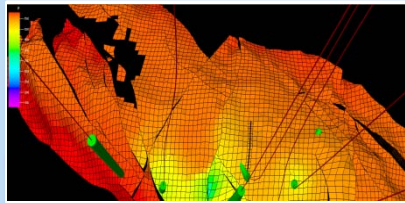
Leverage by: applying model to other assets



Case study 2: F3-FA

Accessing new reserves using innovative technology

Leverage by: re-using F3-FA in future discoveries



Case study 3: Greater Markham

Creating value from our subsurface expertise in tight gas fields

Leverage by: transferring to other regions/plays

Covered in the International Growth case studies

Q&A

