

IGAS ENERGY PLC

# *Unconventional Gas in the UK*

*November 2010*



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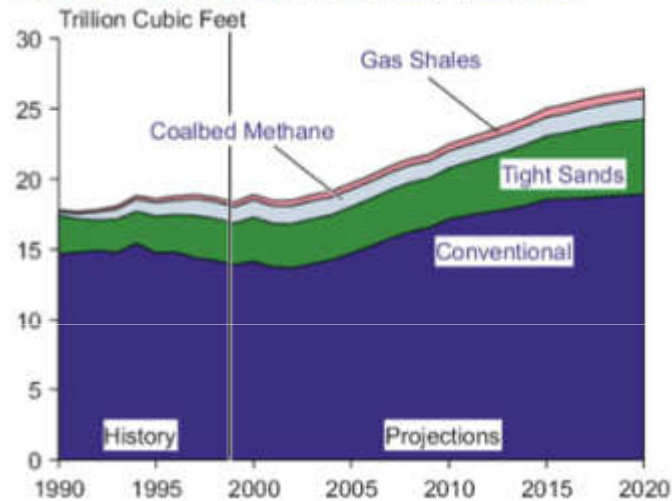
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# So what happened in the US?



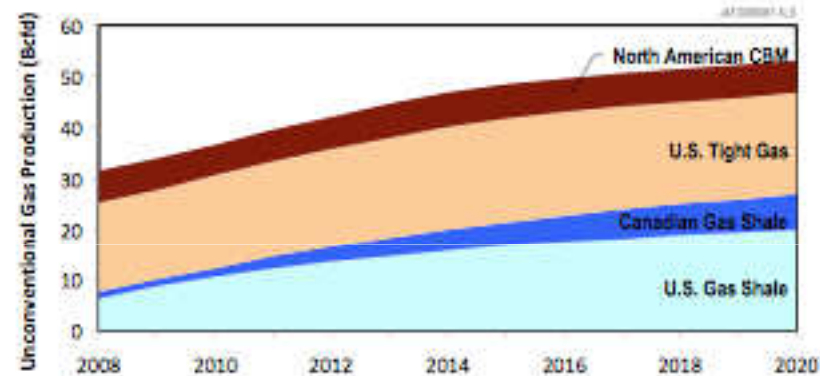
Figure 1. Natural Gas Production, 1990-2020



Sources: **History:** Advanced Resources International, Inc. (ARI). **Projections:** Energy Information Administration, *Annual Energy Outlook 2000*, DOE/EIA-0383(2000) (Washington, DC, December 1999), reference case.

- At the turn of the century...
- Shales and CBM were predicted to be contributing around 3tcf per year to US production

## Projected North American Gas Shale and Unconventional Gas Production\*



Source: Advanced Resources International (2009)

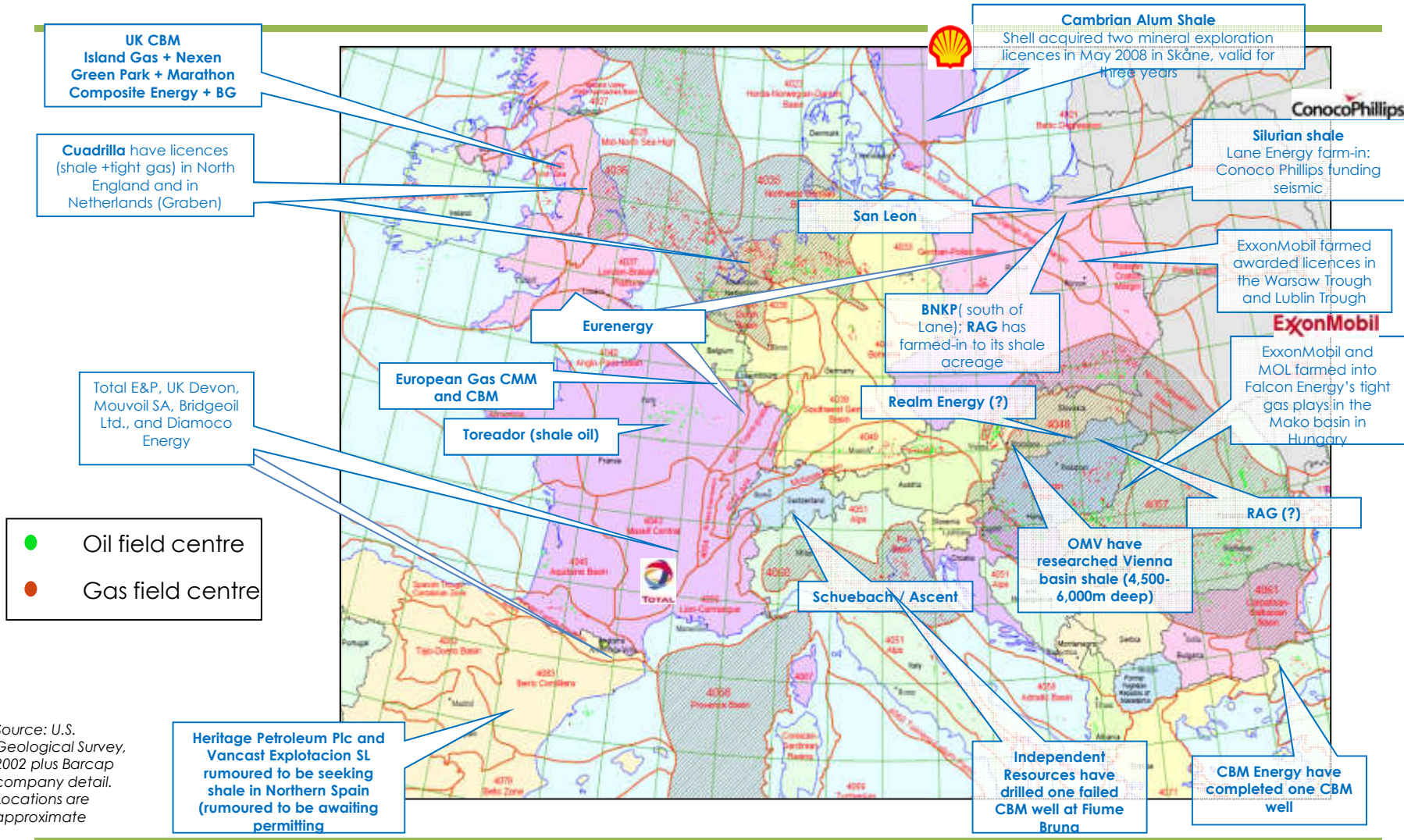
\*Assuming sufficient demand and a natural gas price (\$US, Henry Hub) of \$7/MMBtu.

11 | ARI/IEE/EPRI | December 7, 2009



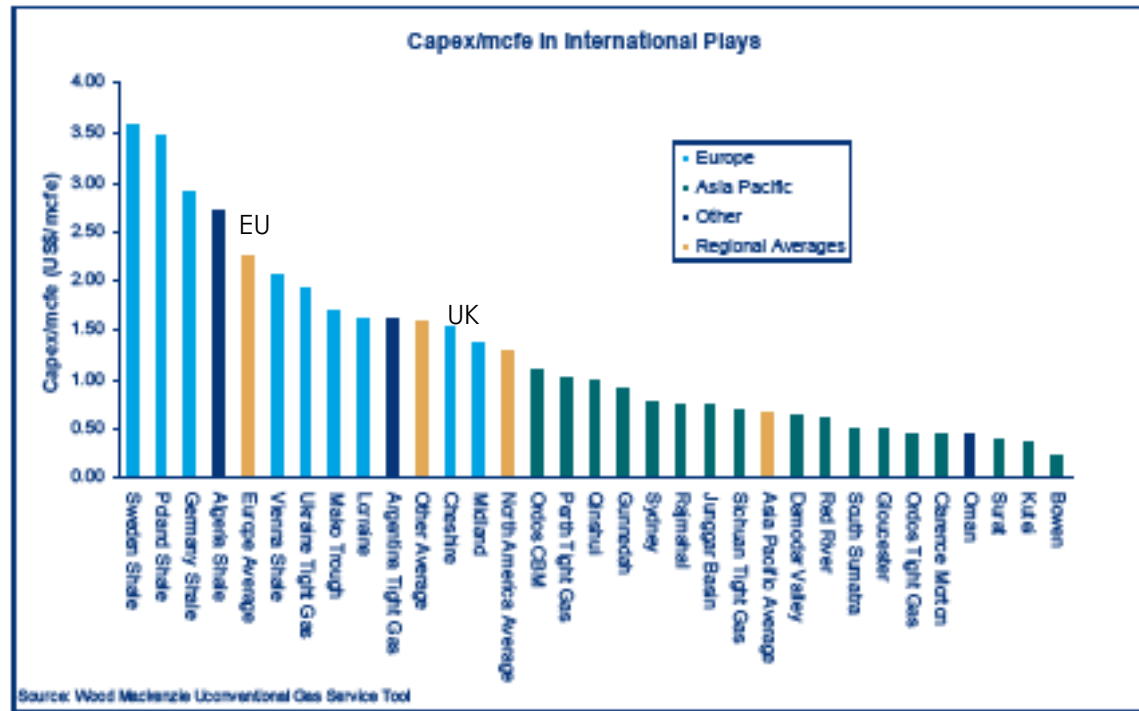
..they now already contribute circa 15tcf per annum and are still growing.  
The overall unconventional space contributes more than 50% of US gas production

# Unconventional Gas changing the landscape....



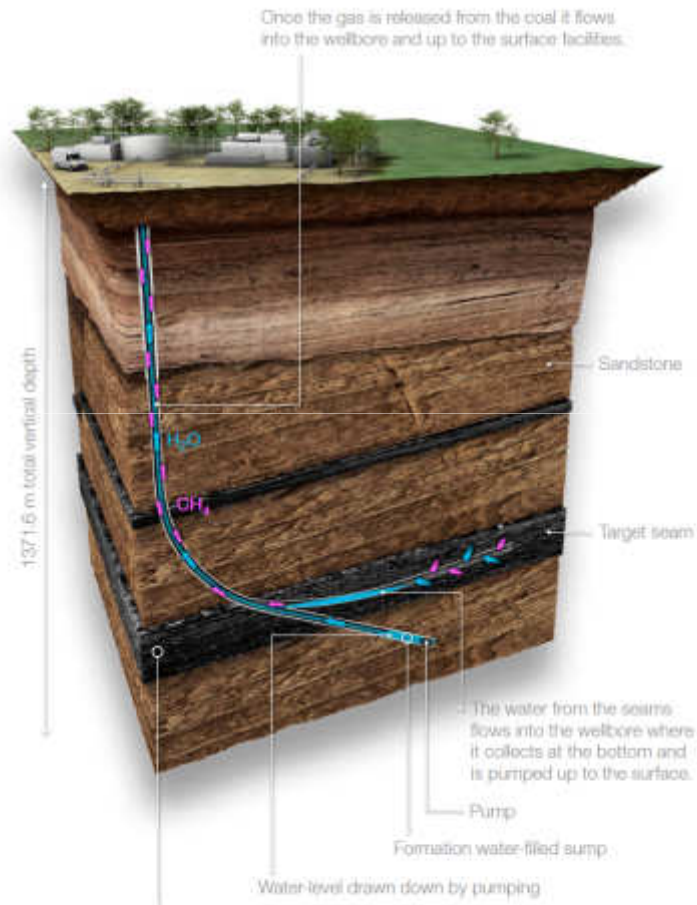
Source: U.S. Geological Survey, 2002 plus Barcap company detail. Locations are approximate

# Unconventional Gas changing the landscape....



Unit capex calculated for a 500 bcf development in each play. Costs include drilling, completion, leasehold, facilities, pipeline tie-in, and lease acquisition. The total is divided by gross volumes to calculate the unit metric.

# How do you get the Gas out?



Once the gas is released from the coal it flows into the wellbore and up to the surface facilities.

The water from the seams flows into the wellbore where it collects at the bottom and is pumped up to the surface.

Coal contains a natural system of interconnected fractures called cleats. The cleats provide the pathways that enable the water to be drained out of the coal seams to release the gas.

# What do you need to make it work ?

- Rocks
- Gas in the rocks
- Flow Gas
  - “geological” permeability
  - Well completion
- Access at surface
- Access to market



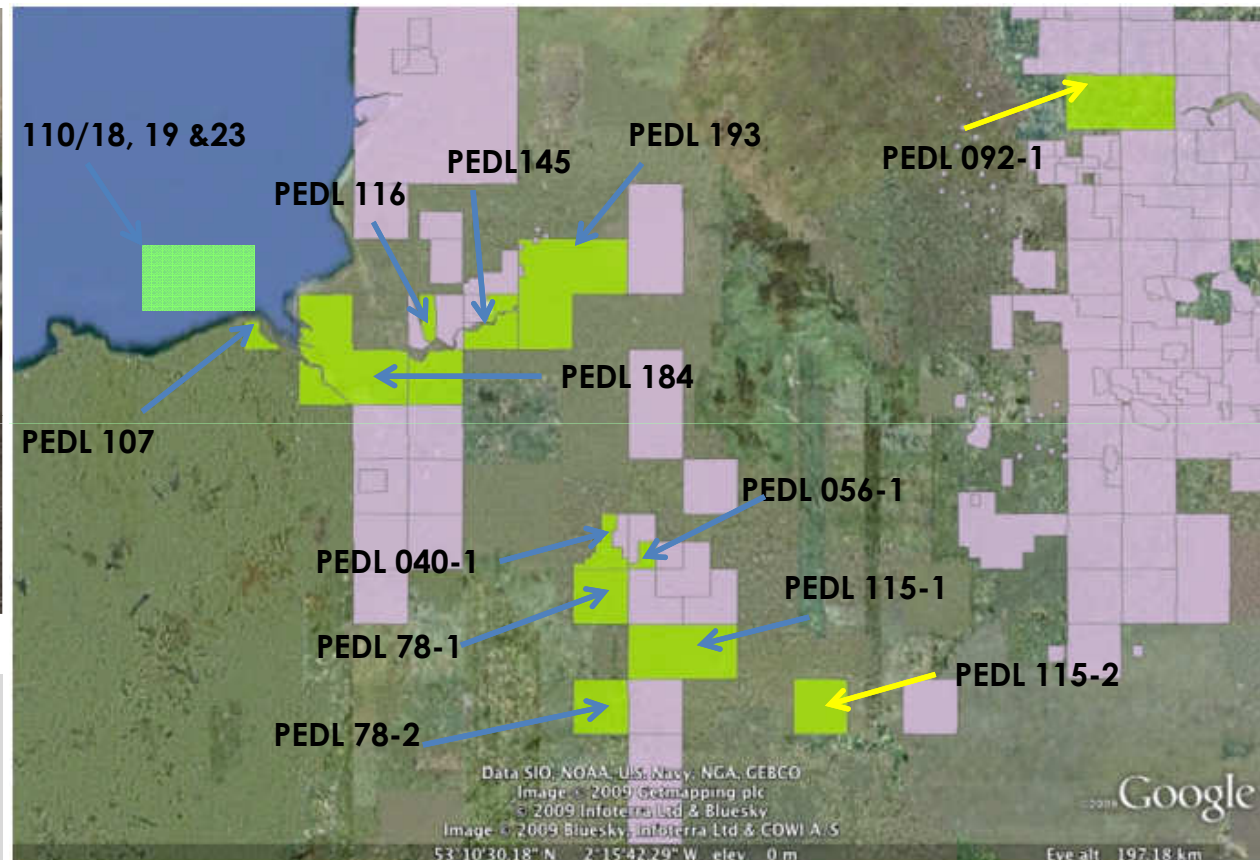
# IGas- Un-Conventional Gas in the UK



- Acreage ✓
- Exploration ✓
- Appraisal ✓
- Pilot Production ✓
- Surface Access ✓
- Market Access ✓
- Full production 2011



# Acreage position



- Licence interests between 20% and 100%
- Licence Partner Nexen Inc



# Keele Park Pilot Production Well

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- Well completed and rig de-mobbed
  - Expected sequence of coals well developed
  - Slotted liner set in lateral
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# Keele Production Test



- IGas production testing equipment installed
- De-watering has now commenced
- Production data will follow over next few months

# Doe Green Production Site



- Encouraging production profile
- Work-over enhanced results
- More than 18 months of production and generation history



# Doe Green Forward Plan



- Potentially increasing operations at site
- Planning for two additional wells submitted
- Analysing the Fracc results on DG1
- Objectives
  - Increase production from existing wells
  - Prove well completion techniques for full production sites
  - Investigate potential of stimulation
  - Optimise de-watering approaches

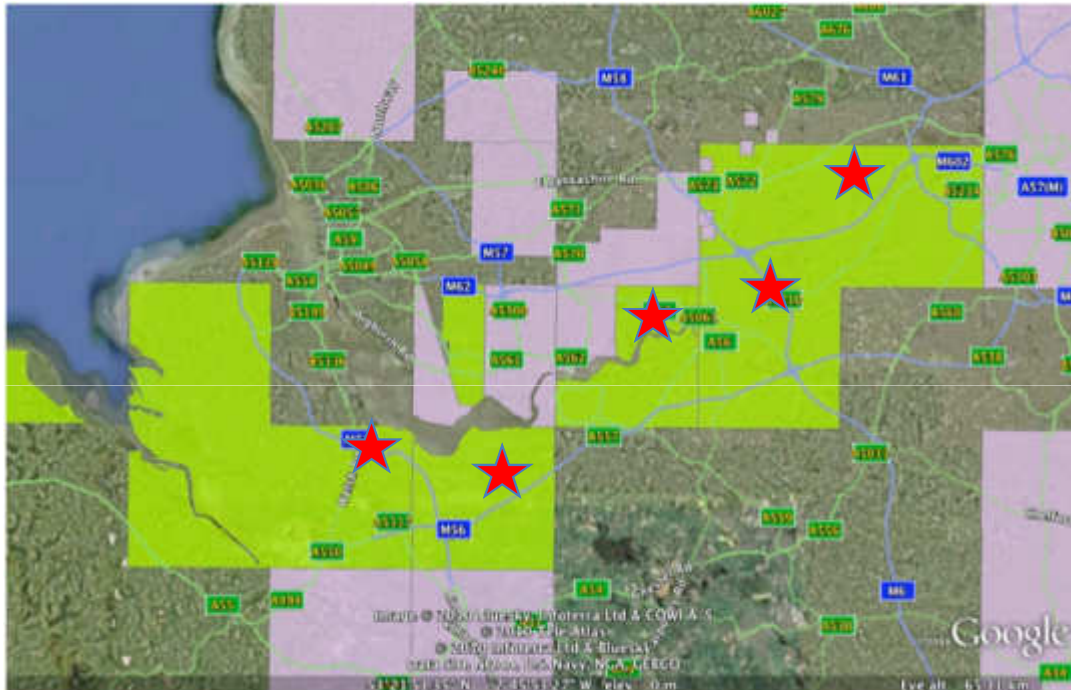


# Point of Ayr

- Number of sites both on-shore and off-shore identified
- On-going discussions with local land owners and stakeholders towards permitting a site



# Permitted sites

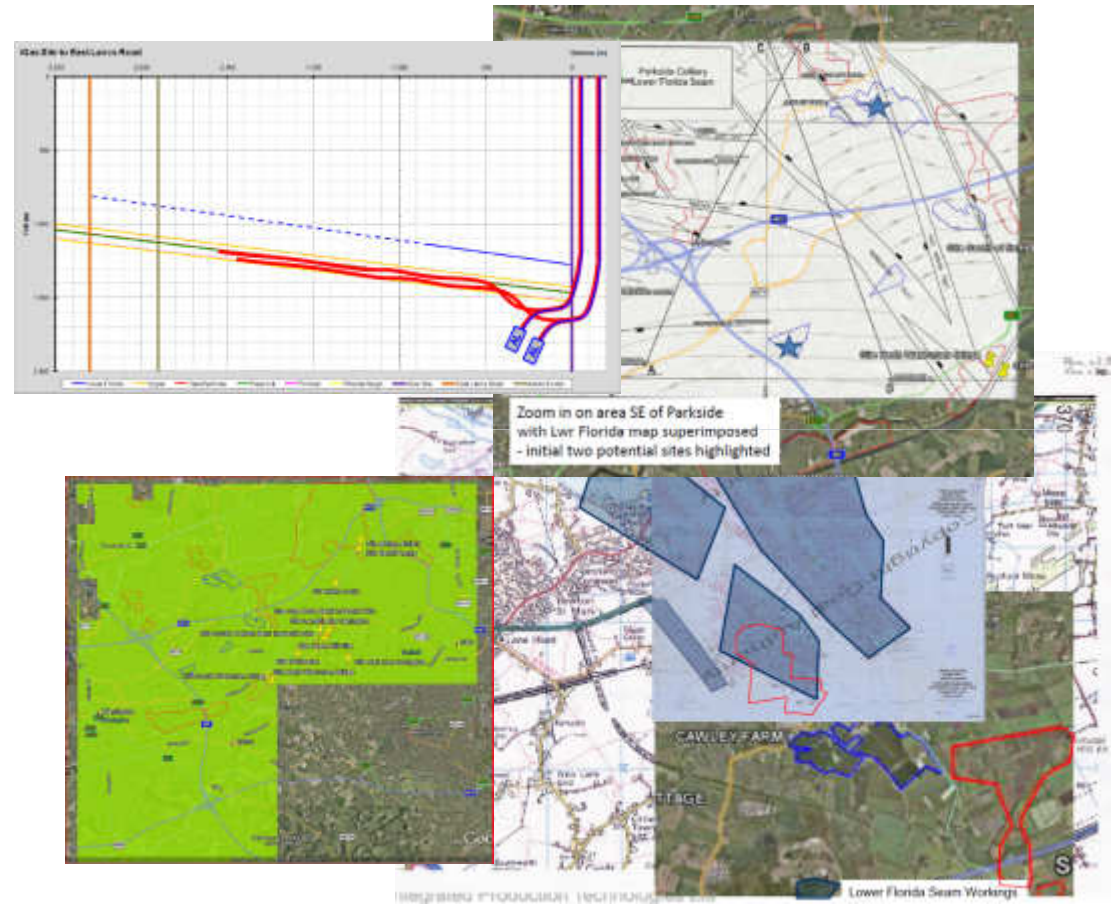


- Seven full production sites now permitted
- Five now permitted on Peel estate at:
  - Ellesmere Port
  - Ince Marshes
  - M6 junction 21
  - Barton Moss
  - Trafford Centre
- Three granted under delegated powers
- Further applications pending
- Further sites and landowners under discussion

# First Full Production Site



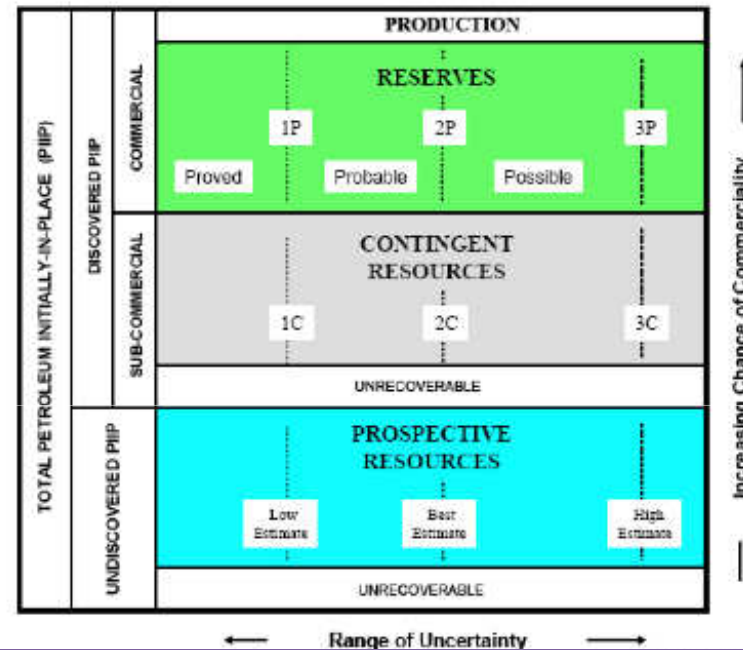
- Site screening on-going
- Concept engineering of well designs and export solutions begun
- Discussions with local land owners and stakeholders underway
- Drilling solutions identified and contract negotiations begun on rigs and services
- On target for delivery in 2011



# Ongoing Delivery - Resources

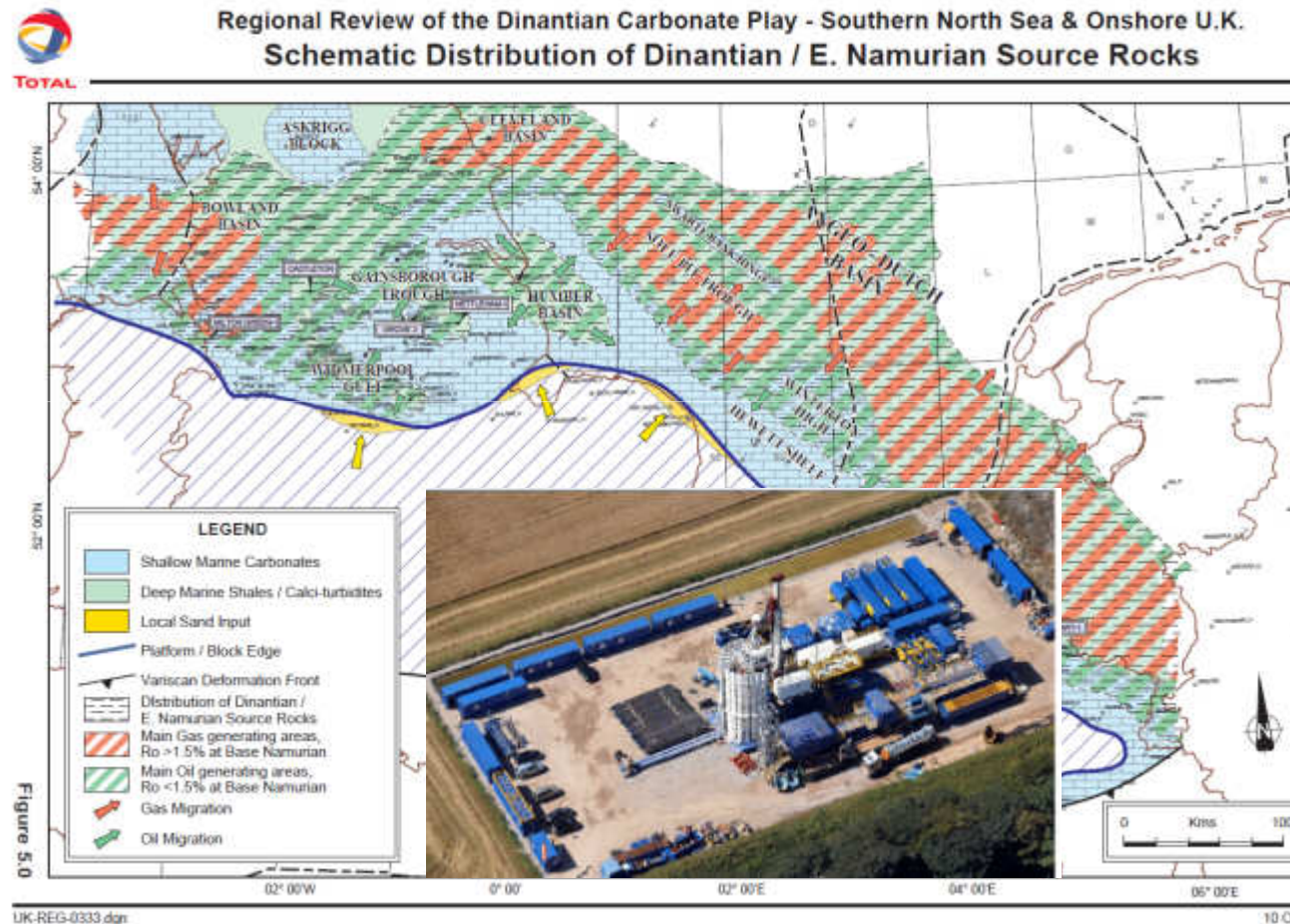


- GIIP Competent persons report – Equipose Solutions
- Contingent Recoverable Resource report - DeGolyer and MacNaughton
- IGas will update the reports at end 2010 to include shale gas resources



Equipose CBM GIIP	Low	Mid	High
2009	2,293Bcf	3,823cf	8,092Bcf
DeGolyer and MacNaughton Contingent Resource	1C	2C	3C
2009	554Bcf	807Bcf	1,176Bcf

# Shale Resource – up to 1.9Tcf net in place



- Extensive Shale resource across acreage
- Known to be hydrocarbon bearing and significantly anticipated to be in gas window
- Pressure regime unknown
- IGas commissioned independent study on potential resource
- IGas will seek to core shale in-situ when possible
- Production tests being carried out by others elsewhere in Bowland/Holywell shale

# Up-coming News flow

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## 2010

- Results from Keele Park
- Further Doe Green work program

## 2011

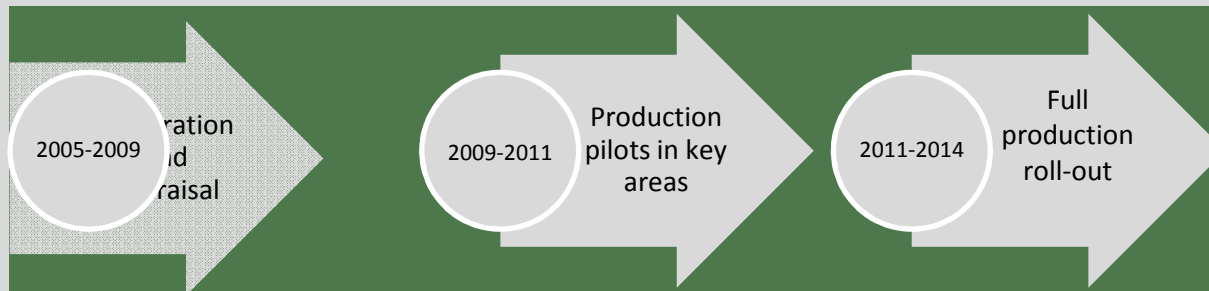
- Point of Ayr results
- Results of resource/reserves updates
- Full scale production site



# Summary – Positioned for Delivery



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**Delivering Secure Gas,  
Onshore**