# Winter Outlook 2006/7

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**GASSCO** 

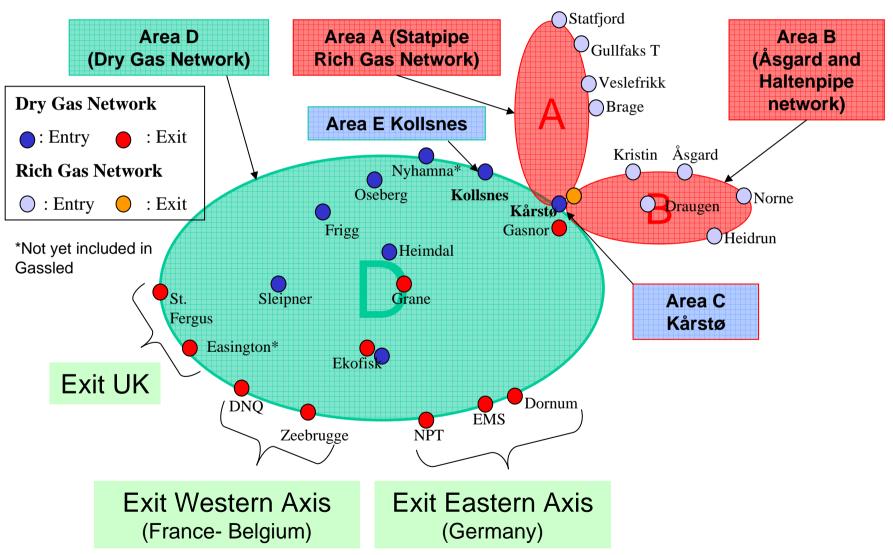
# The Norwegian Gas Transportation System GASSCO



- 6600 km of large diameter, high pressure pipelines; five platforms; large on-shore processing facilities & receiving terminals.
- Langeled will increase total pipeline length by 1200 km in 2006 and 2007.
- Landing points in Germany, Belgium, France and UK.
- Approx 85 BCM dry gas transported in 2005. Rising to 120 BCM in 2010.
- Approx 8.5 million tonnes of NGL produced.
- An integrated system linking most Norwegian upstream production units & downstream European transport systems.

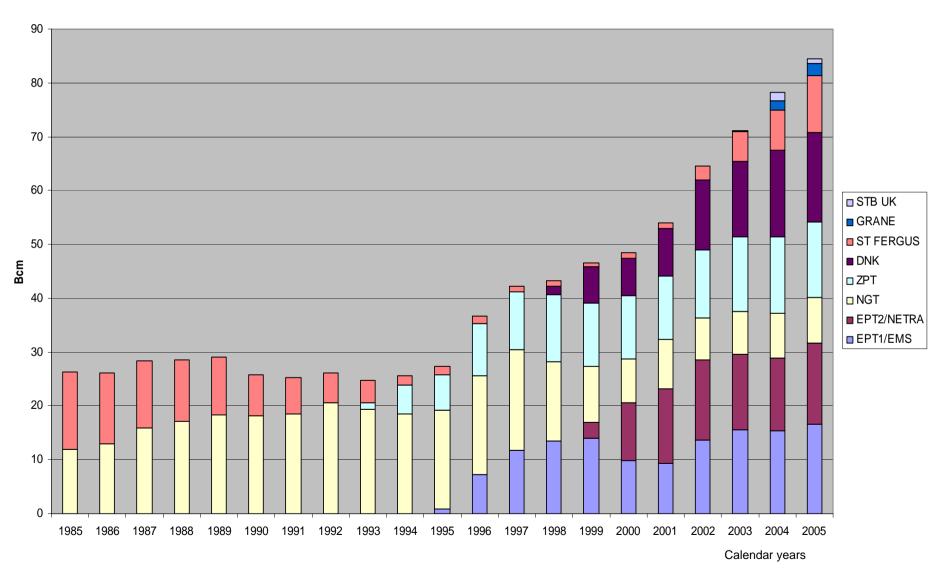
**Gassled Areas** 

## **GASSCO**



# Annual gas deliveries 1985-2005

## **GASSCO**



Regularity GASSCO

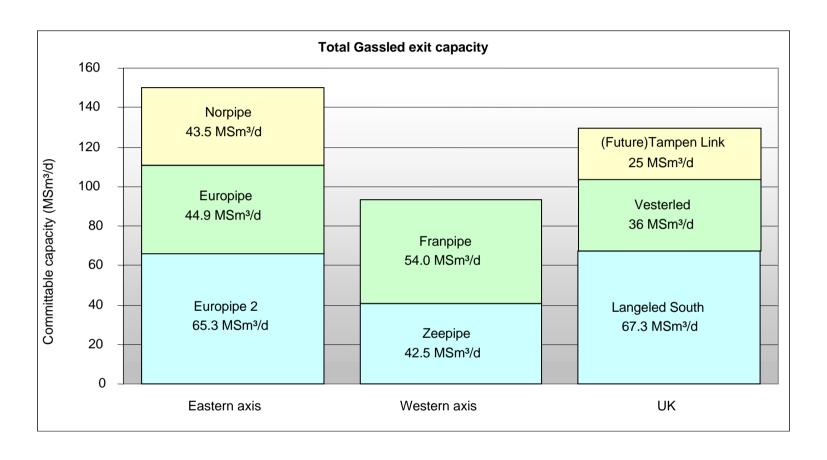
- For the Total system:
- Total year to date deliveries to April 2006 was 30.70 Billion Sm3
- Total year to date deliverability to April 2006 was 99.85%
- Total year to date deliveries to April 2005 was 29.85 Billion Sm3
- Total year to date deliverability to April 2006 was 98.98%

Regularity GASSCO

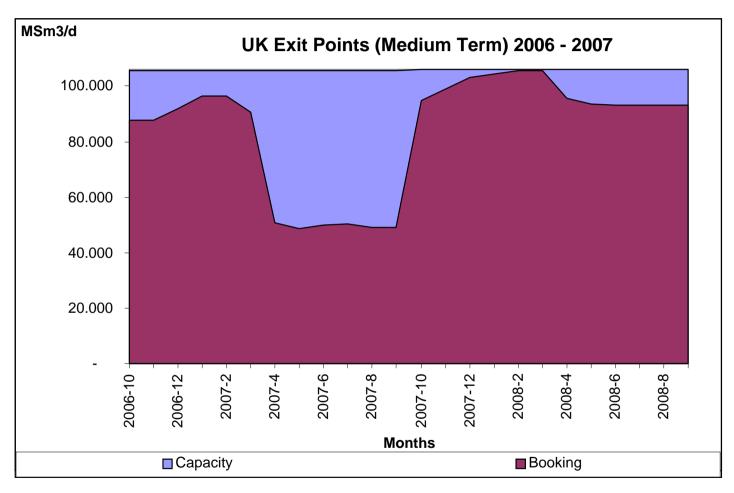
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#### For the UK:

- Total year to date deliveries at St Fergus to April 2006 was 3.75 Billion Sm3
- Total year to date deliverability at St Fergus to April 2006 was 99.17%
- Total year to date deliveries at St Fergus to April 2005 was 4.14 Billion Sm3
- Total year to date deliverability to April 2005 was 97.80%



Existing and planned Area D exit capacity is 353.5 MSm³/d in 2006 increasing to 378.5 MSm³/d in 2007.



NB Tampen link is not included in these figures.

Gas Quality

Considerations



### Comparison of Wobbe Index & ICF

### **GASSCO**

- Wobbe Index, ICF and SI are subject to GS(M)R in the UK.
  - UK has a regulated WI of 47.2 MJ/Sm3 51.41 MJ/Sm3 and in an emergency 46.5 MJ/Sm3 - 52.85 MJ/Sm3
  - NCS has a regulated WI of 48.3 MJ/Sm3 52.80 MJ/Sm3
    - UK has a max ICF of 0.48 and SI factor 0.6, whilst in an emergency ICF can be 1.49
    - NCS has no such comparable standard.
- EASEE-gas proposes harmonisation at 13.6 kWh/m3 15.81 kWh/m3
  [Equivalent to 47.0 MJ/Sm3 54.0 MJ/Sm3] and
  the elimination of factors such as ICF, SI and Yellow Tip Index by Oct 2010.

#### Schematic of the NCS Infrastructure **GASSCO** Nyhamna Volume Heimdal Kollsnes Oseberg Volume Volume Volume Etanor Volume Kårstø HRP Volume Grane St. Fergus Volume Volume Sleipner Draupner SLR Volume Easington Ekofisk Volume Volume Volume ERF Emden 1 (NPT) Emden 2 (EMS) Dornum Dunkerque Zeebrugge Volume Volume Volume Volume Volume

## Vesterled - Wobbe Index and ICF

### **GASSCO**

- Vesterled delivers Norwegian gas into the UK system. Deliveries are blended with gas from other sources at Total's St Fergus terminal before re-delivery to National Grid.
- A nitrogen plant is installed at St Fergus to dilute Vesterled gas.
  This is required on a few days each year.
- Gas through Vesterled improves UK gas supplies by reducing the average CO<sub>2</sub> content of the mixed stream. In return Vesterled gas benefits by having it's ICF reduced on days when it might otherwise be above the 0.48 limit.
- The risk associated with interdependency is the potential need to curtail Vesterled flows when blending gas is not available and vice versa.

## Langeled - Wobbe Index and ICF

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- Gas delivered via Langeled requires blending at Sleipner to meet the UK specification. On most days this will solve the mismatch.
- During maintenance and unplanned outages mixing gas may not be available. For short duration events ballasting with nitrogen could meet WI and ICF specifications. Nitrogen storage tanks to treat equivalent of 1 days maximum throughput are to be installed for Oct 2007.
- Longer interruptions in availability of mixing gas could result in gas destined for the UK being diverted to Continental Europe where it would meet gas quality specifications.
- The mismatch between UK and Continental specifications could create potential security of supply consequences for the UK whilst Continental Europe is able to accept supplies refused by the UK.

Proposals GASSCO

 The Norwegian GCV and Wobbe Index specifications match the UK's emergency values. However, ICF and SI indices are unique to the UK.

- These are a barrier to entry into the UK and should be removed.
- Upsets and maintenance can affect the potential to blend NCS supplies and deliver maximum volumes of gas into the UK and
- Total's facility at St Fergus has nitrogen injection installed but curtailment may still be required on "rainy days"
  - Relocation of the measurement points at each Entry Point can resolve some problems.
  - Relaxation of the ICF and SI specifications also help to reduce the problem in the short term.

**Publication** 

of Near-Real Time

Information



- The recently approved modification UNC 006 requiring publication of near-real time information by sub-terminal is not supported by Gassco.
  - A UK Shipper will not be able to determine whether they are individually affected. This could lead to multiple actions by Producers, Shippers and NGG addressing the same problem, which will fuel volume uncertainty (and price risk). In Gassco's opinion this is counter-productive to enabling interconnecting systems to be operated efficiently.
  - Gassco is bound by Confidentiality Agreements and has no mandate from either Gassled Shippers or Producers to pass on confidential and/or other commercial information.
  - However, as at present, Gassco will provide information to enable interconnecting systems to be operated safely and efficiently.

# Conclusions



## Concluding Remarks

### **GASSCO**

- The Langeled pipeline will increase capacity from Norway to the UK in 2006 and further in 2007 by three-fold.
- No significant quantity of "new" NCS gas is being produced in 2006 above last years production. However, Ormen Lange arrives in 2007.
- Norwegian shippers will decide which markets are best suited to supply, but are expected to honour long term sales agreements.
- Gas quality may become an issue on "rainy days". Curtailments may result towards the UK market but not Continental Europe.
- Publication of near-real time information is an issue, Gassco contest the benefits arising from the recent modification. Furthermore, Gassco has no mandate to comply.