Development of Donghae-1 Gas Field, Offshore Korea

by

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1 June 2006

Korea Gas Corporation
Reservoir Location

- Uleung Basin
- 58km away from Ulsan coast
- 1972, First Exploratory Drilling
- 2004, Commercial Production Beginning
Structural Map

- **Donghae-1 Gas Field**
- **Shale-filled Channel**
- **Gorae VIII-1**

Legend:
- Red: Newly discovered gas sandstone
- Orange: Gas sandstone, Donghae-1 Field
- Gray: Shale filled submarine canyon

Scale: 0-1 km
Reservoir Properties

- Depth: 2,600~2,700m
- Porosity: 0.25
- Water Saturation: 0.3
- Pressure: 3,600psi
- Pay thickness: 100m
Donghae-1 Gas Field

- **Reserves**
  - 250 bill CFT of Gas
  - 2.6 MMbbl of Condensate

- **Daily Production**
  - 50 million cubic feet
  - Condensate: 1,500 barrel per day

- **Production started July 2004**
- **Production Period 15 years, 2004-2018**
Production Facilities

Onshore Structures

Offshore Production Facilities

Pipeline

Subsea Production Facilities
Donghae-1 Gas Field
Process Scheme

Offshore Facilities

- Gas Compression
- Gas Dehydration
- Bulk Water Separation
- Liquid Dehydration
- Water

Pipeline

- Gas Dewpointing
- Sulg Catcher

Onshore Facilities

- Condensate Stabilization
### Production Facilities

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Sub-sea Production Control System

- 3 Subsea X-mas Trees
- 3 Flowlines
- Production Control System
- Umbilical Lines
Platform

- Production Facilities
- Living Quarter
- Deck
Offshore Production Facilities

- Bulk Water Separator
- Gas Compressor
- Gas Dehydrator
- Liquid Dehydrator
- Metering
Onshore Production Facilities

- Gas/Condensate Separator
- Slug Catcher
- Condensate Stabilizer
Concluding Remarks

- Donghae-1 Gas Field, Offshore Korea
  - First Production of domestic-origin gas in Donghae-1 Gas Field
  - The Possibility of Oil resources in the Korean Offshore
  - Gas Storage in Depleted Gas Reservoir for future PNG