

MOL's answers to challenges of energy dependency in Central and Eastern Europe

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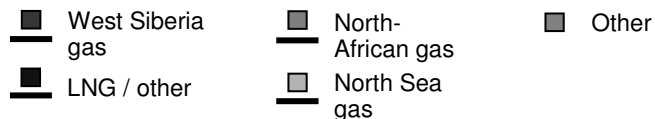
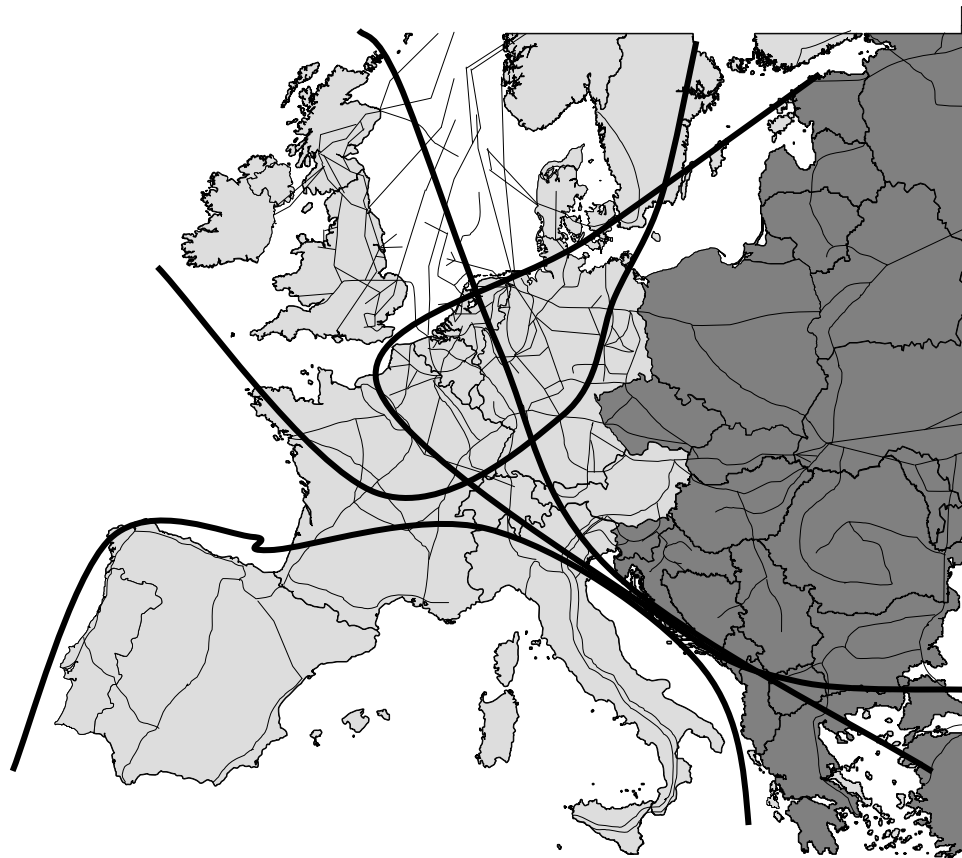
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Central Eastern European region provides an illustrative example of the challenges arising from globalizing gas markets

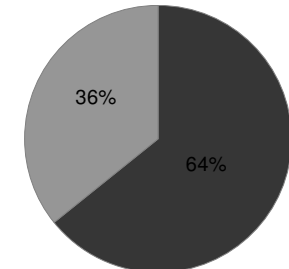
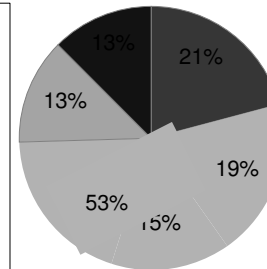
Competitive radius of gas sources in EU



EU 15

EU 12

SUPPLY SOURCE



INFRASTRUCTURE

- | | |
|---|---|
| <ul style="list-style-type: none"> ▶ Well developed transmission network ▶ Sufficient interconnections ▶ Advanced LNG infrastructure | <ul style="list-style-type: none"> ▶ Mashed networks ▶ Lack of interconnections ▶ Transmission systems are working mainly on country level |
|---|---|

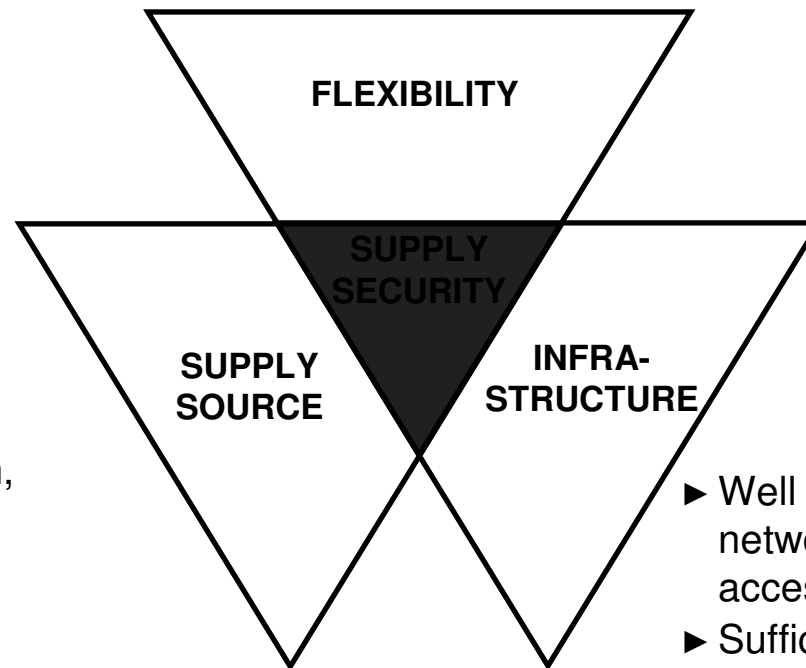
FLEXIBILITY

- | | |
|---|---|
| <ul style="list-style-type: none"> ▶ High flexibility due to available LNG terminals and storage capacity ▶ Availability of energy exchanges and spot trading | <ul style="list-style-type: none"> ▶ Flexibility problems stemming from insufficient storage capacities ▶ No connection to the global LNG market ▶ Long term contracts |
|---|---|

Reliable source, infrastructure and flexibility will determine long term energy supply security in CEE region

Three pillars of CEE energy supply security

- ▶ Availability of energy exchanges and spot trading
- ▶ Available physical flexibility (pipe and storage)



- ▶ Access to competing gas sources: Russian, Caspian, LNG
- ▶ Competitive, efficient and liquid regional gas market

- ▶ Well developed transmission networks with available access capacities
- ▶ Sufficient interconnections

Nabucco: the answer for resource adequacy in the region

SOURCE: Nabucco



Main strategic goals

- ▶ Opening a new gas supply corridor for Europe
- ▶ Raising the transit role of the participating countries along the route
- ▶ Contribution to the security of supply for all partner countries
- ▶ Strengthening the role of the gas pipeline grids

Key facts about Nabucco

- ▶ Consortium members are: OMV, MOL, RWE, Transgaz, Bulgarian Energy Holding, Botas; 16,67% share each
- ▶ Pipeline length: 3,300 km
- ▶ CAPEX investment: ~EUR 7,9 bn.
- ▶ Construction:
 - ▶ Phase I: 2011-2014
 - ▶ Phase II: 2015-2018
- ▶ Start of operation: 2014
- ▶ Transport capacity:
 - ▶ Phase I. 8,0 bcm/y
 - ▶ Phase II. 15,5 bcm/y
 - ▶ Phase III. 25,5 bcm/y
 - ▶ Maximum: 31,0 bcm/y

Recent developments

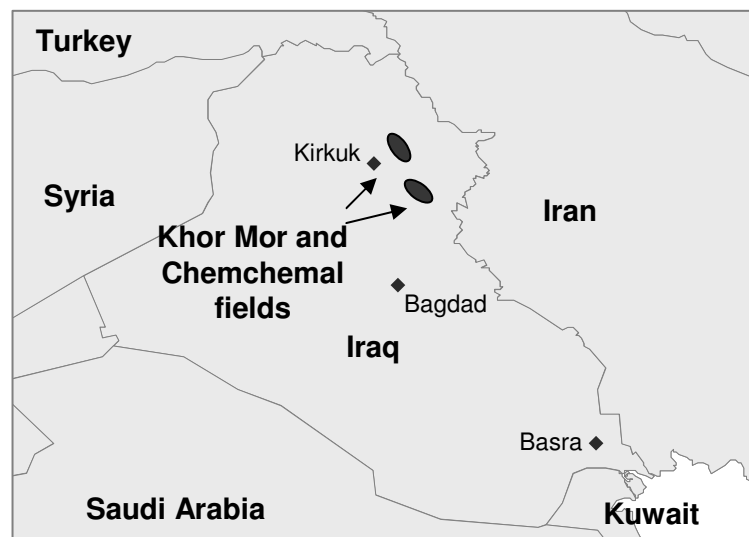
- ▶ IGA signed
- ▶ Negotiations of the PSA started
- ▶ Application for 200 mln EUR EEPR grant
- ▶ EBRD and EIB funding is expected
- ▶ Exemption from TPA obtained

MOL's 10% stake in Pearl provides MOL marketing possibilities ranging from regional sales opportunities to European export

SOURCE : MOL's participation in Pearl Petroleum Company

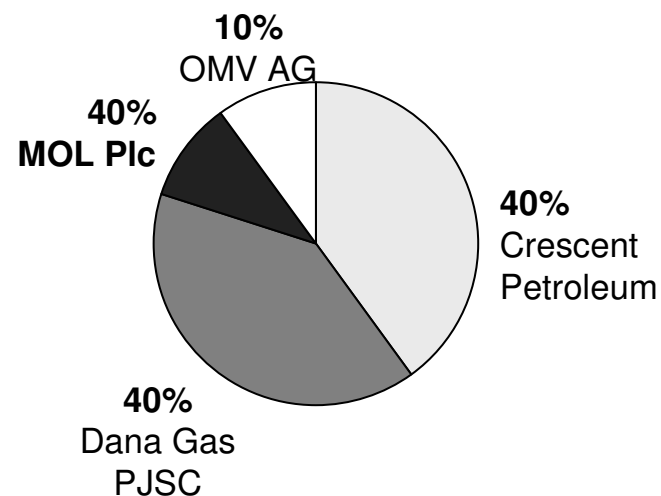
Pearl Petroleum Company

- ▶ Pearl was established as a 50-50% joint-venture of Dana Gas PJSC and Crescent Petroleum, as an SPV to developing two giant gas-condensate fields (Khor Mor and Chemchemical) in North-Kurdistan, Iraq:
- ▶ USD 605 mn has already been invested, and further USD 8 bn capex is planned to develop the companies' assets also facilitating the subsequent exports of surplus gas into neighboring countries, including Turkey and beyond into Europe



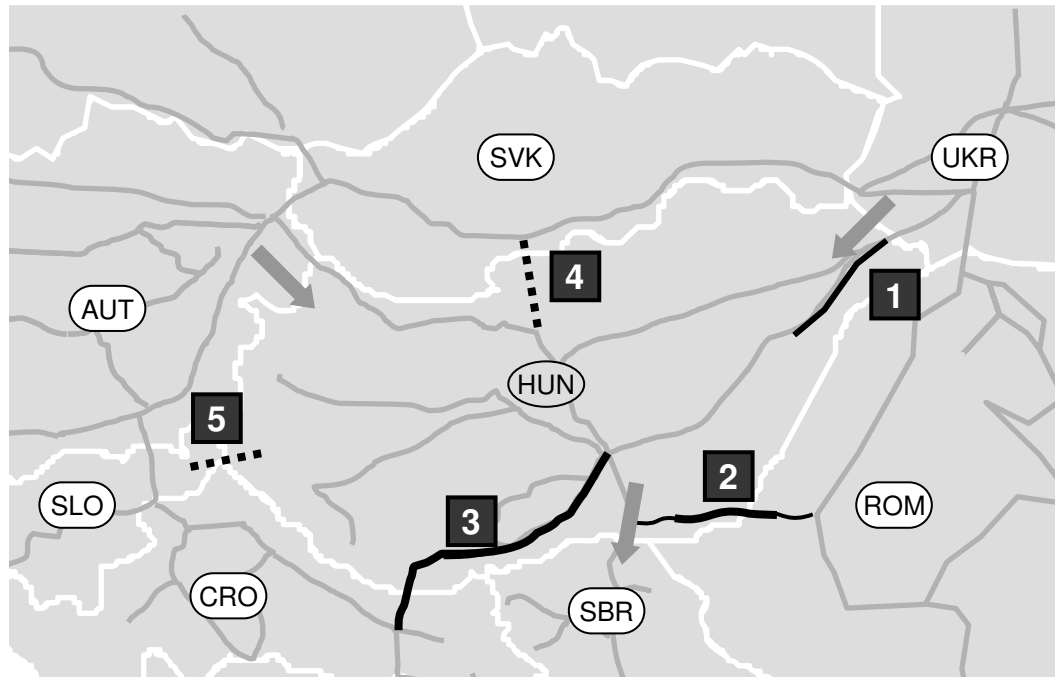
Deal description

- ▶ MOL acquired 10 % of Pearl Petroleum Company Ltd. The deal was closed on 15 May 2009
- ▶ Marketing possibilities: Natural gas production should be provided to the local industries as a first priority while the excess gas can be exported, thus produced gas from the two fields could also feed Nabucco



Interconnection projects are key infrastructural elements for developing a regional gas market in CEE

INFRASTRUCTURE : Interconnection projects of FGSZ Plc. at a glance



1 Ukrainian import capacity debottlenecking

- ▶ Additional 30 mcm/d import capacity
- ▶ Completed in 2009

2 Interconnection with Romania

- ▶ Capacity: 5 mcm/d
- ▶ Completion: 2010 Jan
- ▶ Majority of capacities booked from LT
- ▶ EERP support

3 Interconnection with Croatia

- ▶ Capacity: 18 mcm/d
- ▶ Completion: mid 2011
- ▶ Capacities to be tendered

4 Interconnection with Slovakia

- ▶ MoU signed with eustream in 2009
- ▶ Open season ongoing
- ▶ Capacity to be defined
- ▶ No FID yet

5 Interconnection with Slovenia

- ▶ MoU signed
- ▶ Feasibility study ongoing
- ▶ No FID yet

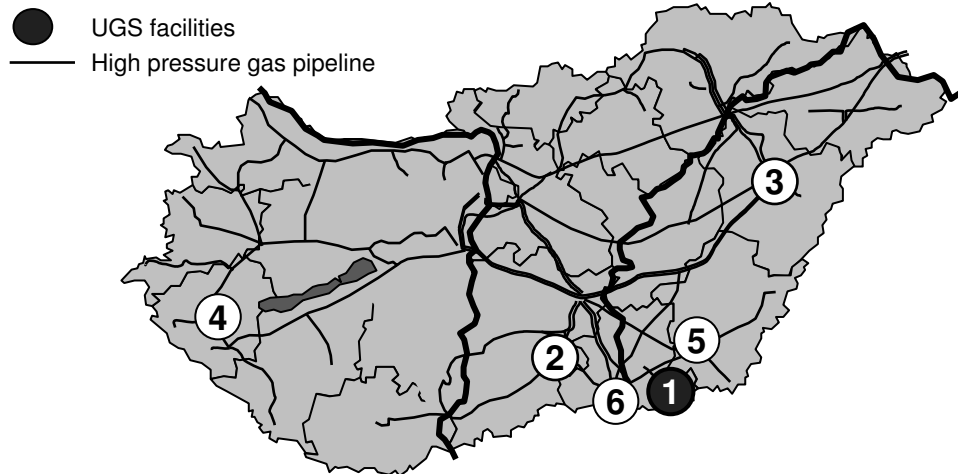
Key facts on Hungarian gas transmission system

- ▶ FGSZ Plc.: Owner and unbundled operator
- ▶ Transmission network is 5300 km long
- ▶ 2 entry points from import sources (Ukraine, Austria)
- ▶ 1 exit point towards Serbia
- ▶ 12 entry points from domestic gas fields
- ▶ 5 entry points from domestic gas storage facilities

The Szőreg strategic storage facility will provide uninterrupted gas supply in case of any supply disruption

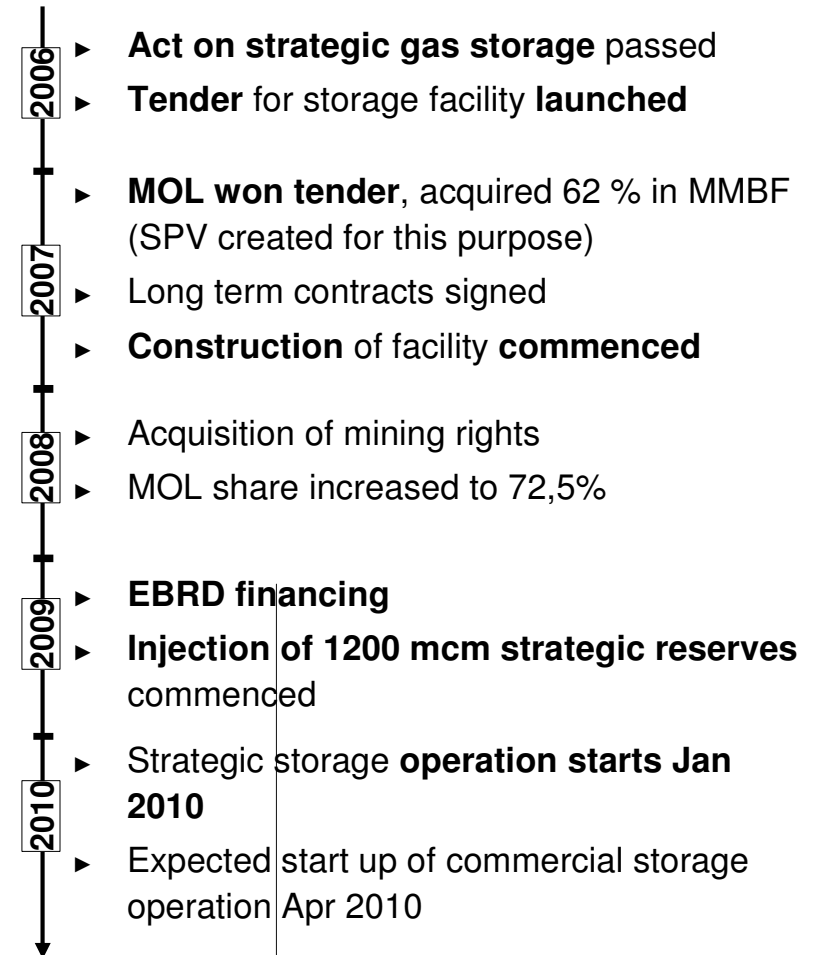
FLEXIBILITY : Strategic storage in Hungary

Storage capacities in Hungary



UGS facility	Mobile capacity [mcm]	Peak capacity [mcm/d]
① Szőreg (MMBF)	1200 / 700	20 / 5
② Zsana	1570	24
③ Hajdúszoboszló	1440	20
④ Pusztaderics	340	3
⑤ Kardoskút	280	3
⑥ Algyő-Maros-1	110	1
	Σ:4440	Σ:56
	Σ1200	Σ:20

Development of MMBF Plc (Szőreg UGS)



NETS aims to facilitate the development of a competitive, efficient and liquid regional gas market that also reinforces security of supply

FLEXIBILITY: NETS initiative

Project vision

- ▶ To facilitate the development of a competitive, efficient and liquid regional gas market that also reinforces security of supply
- ▶ Finding the necessary measures to create an integrated regional infrastructure platform among the national TSOs in CEE, and thereby fostering regional and cross border trading activities

