

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

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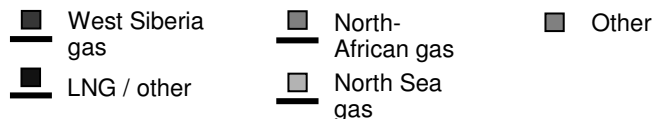
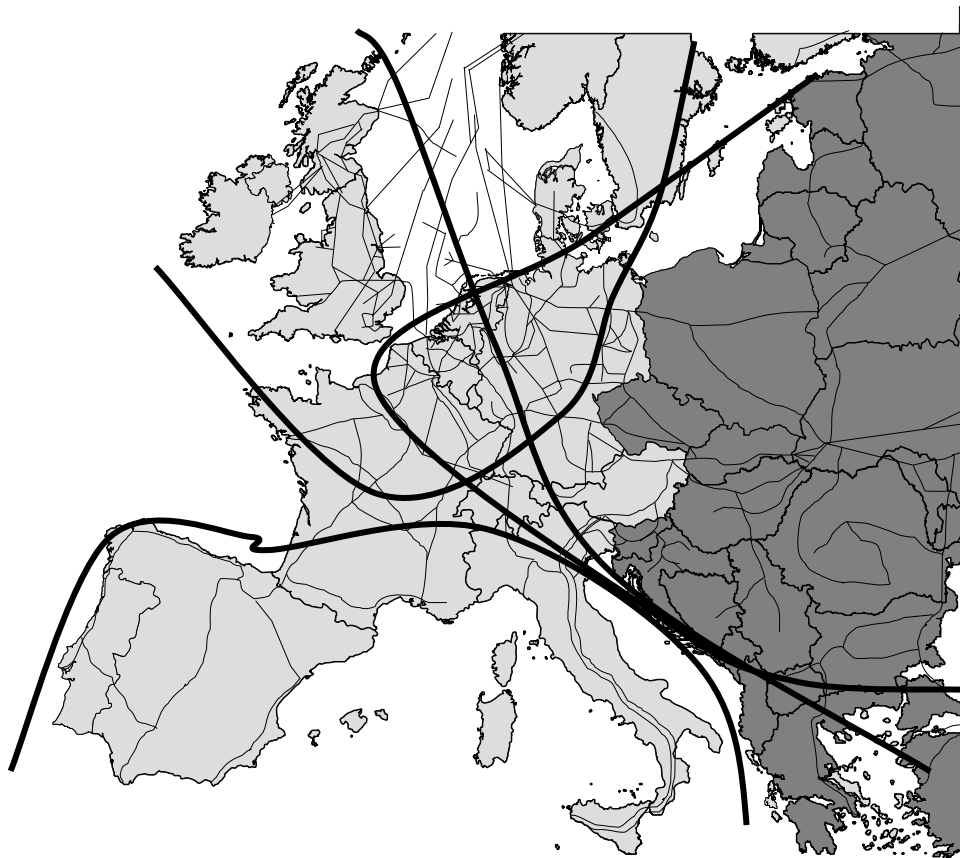
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# Central Eastern European region provides an illustrative example of the challenges arising from globalizing gas markets

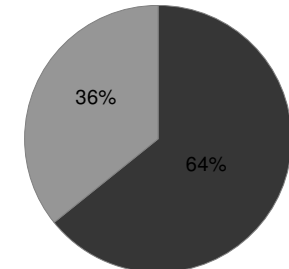
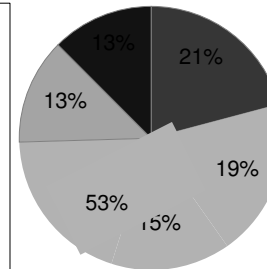
## Competitive radius of gas sources in EU



## EU 15

## EU 12

### SUPPLY SOURCE



### INFRASTRUCTURE

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

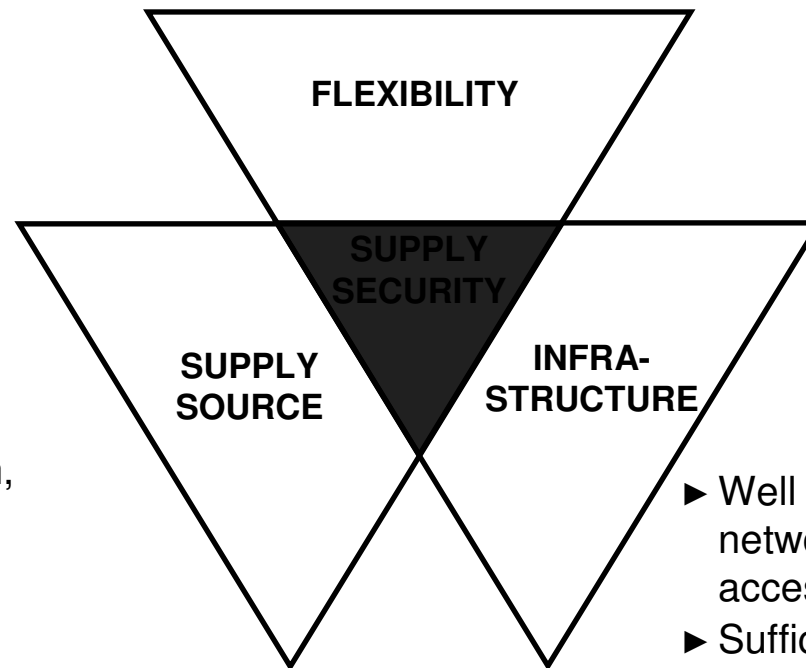
### FLEXIBILITY

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

# 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

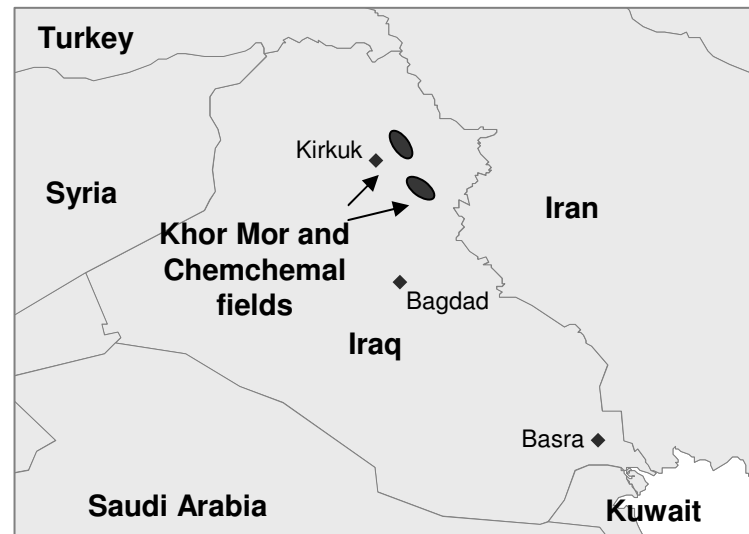
- ▶ IGA signed
- ▶ Negotiations of the PSA started
- ▶ Application for 200 mln EUR EEPR grant
- ▶ EBRD and EIB funding is expected
- ▶ Exemption from TPA obtained

# 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

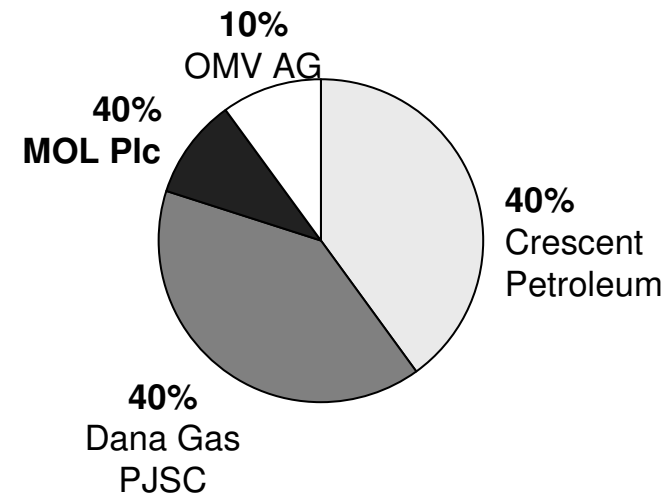
## Pearl Petroleum Company

- ▶ 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



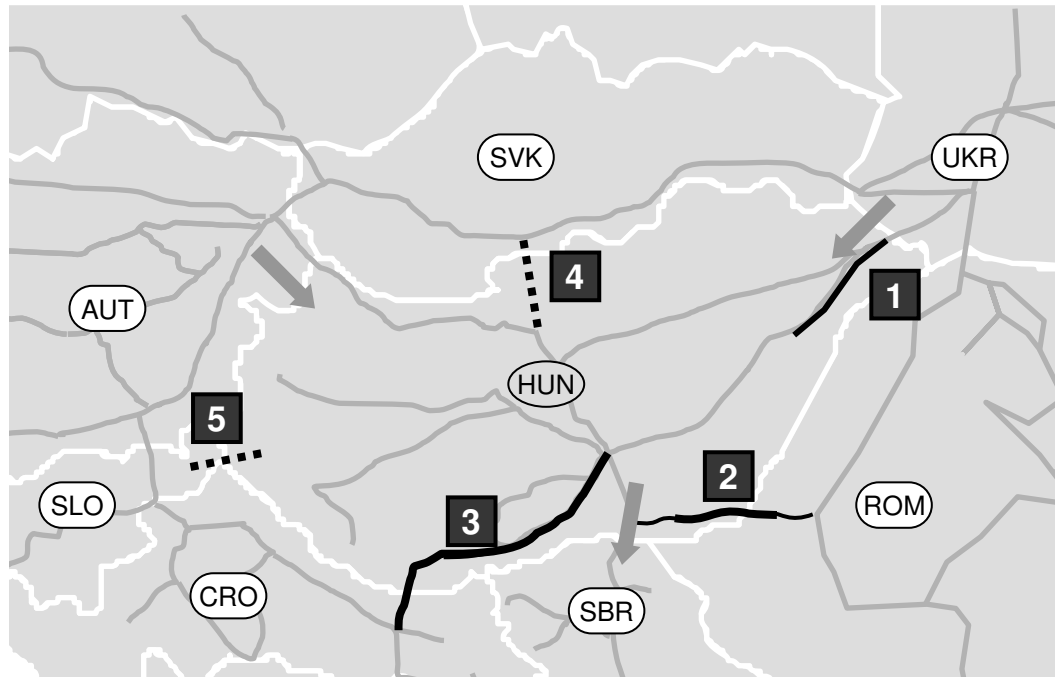
## Deal description

- ▶ 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

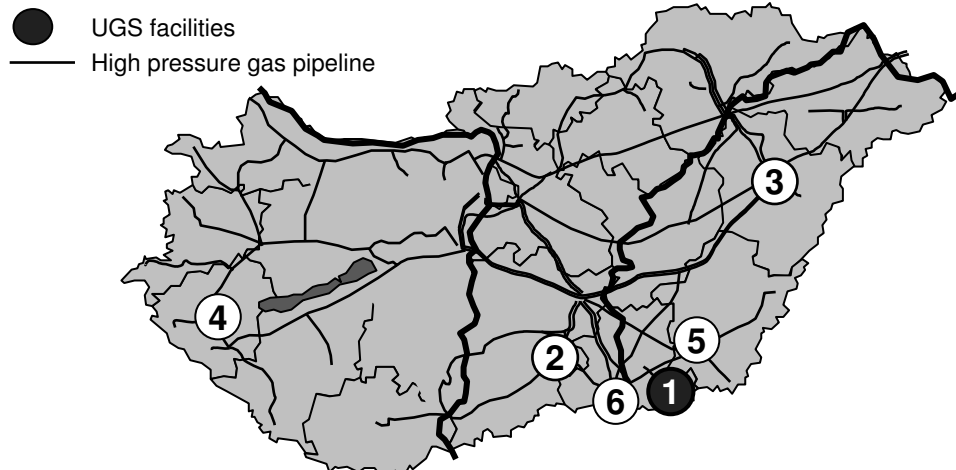
### Key facts on Hungarian gas transmission system

- ▶ 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

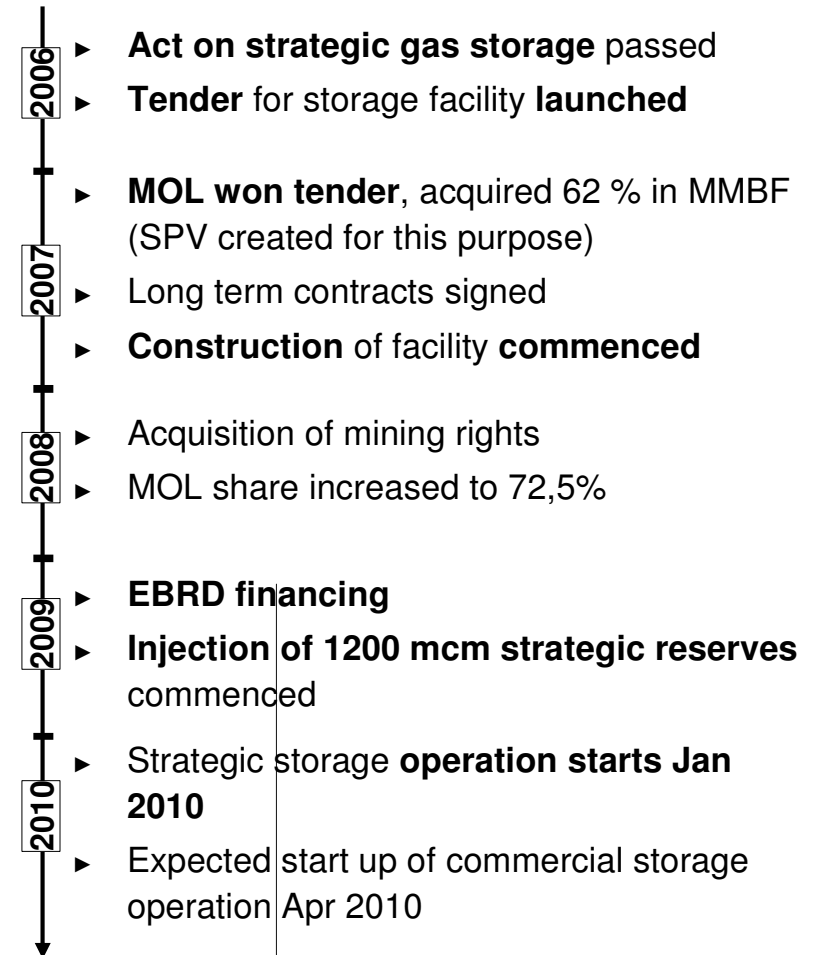
## FLEXIBILITY : Strategic storage in Hungary

### 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
	<b>Σ:4440</b>	<b>Σ:56</b>
	<b>Σ1200</b>	<b>Σ:20</b>

### 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

