

# Coal - a lasting reality in the region's energy mix?

The Next 40 Years: Advancing EU Energy Objectives in East Central Europe  
Budapest, 4-5 October 2012

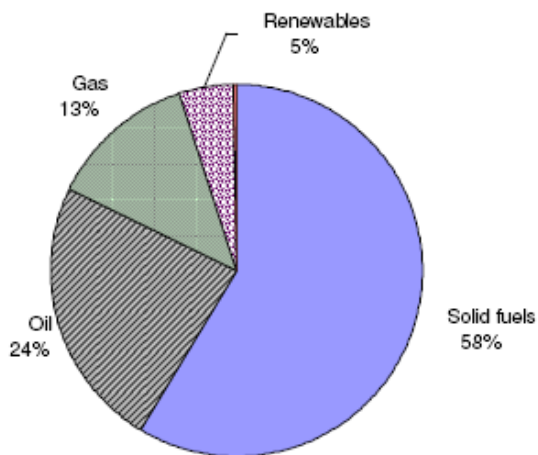
**Agata Hinc**

Managing Director

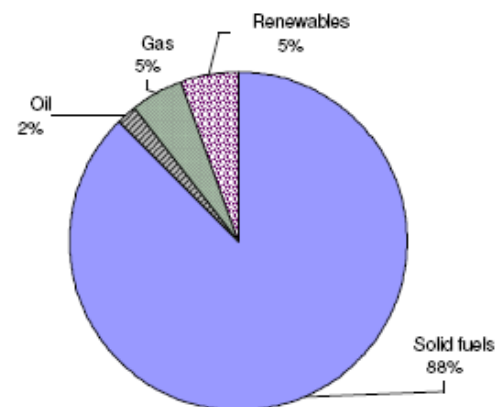
demosEUROPA - Centre for European Strategy

# Poland

**2004 Primary Energy Supply**



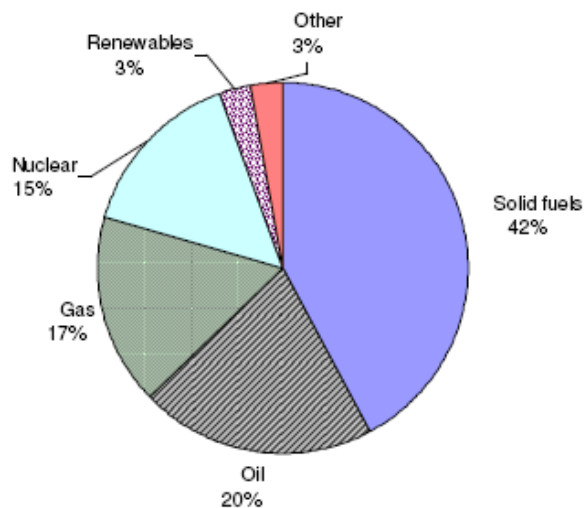
**2004 Domestic Production**



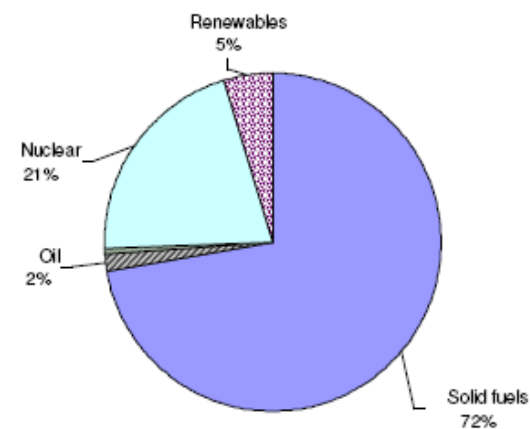
*Source: Energy mix fact sheet, European Commission, 2007*

# Czech Republic

**2004 Primary Energy Supply**

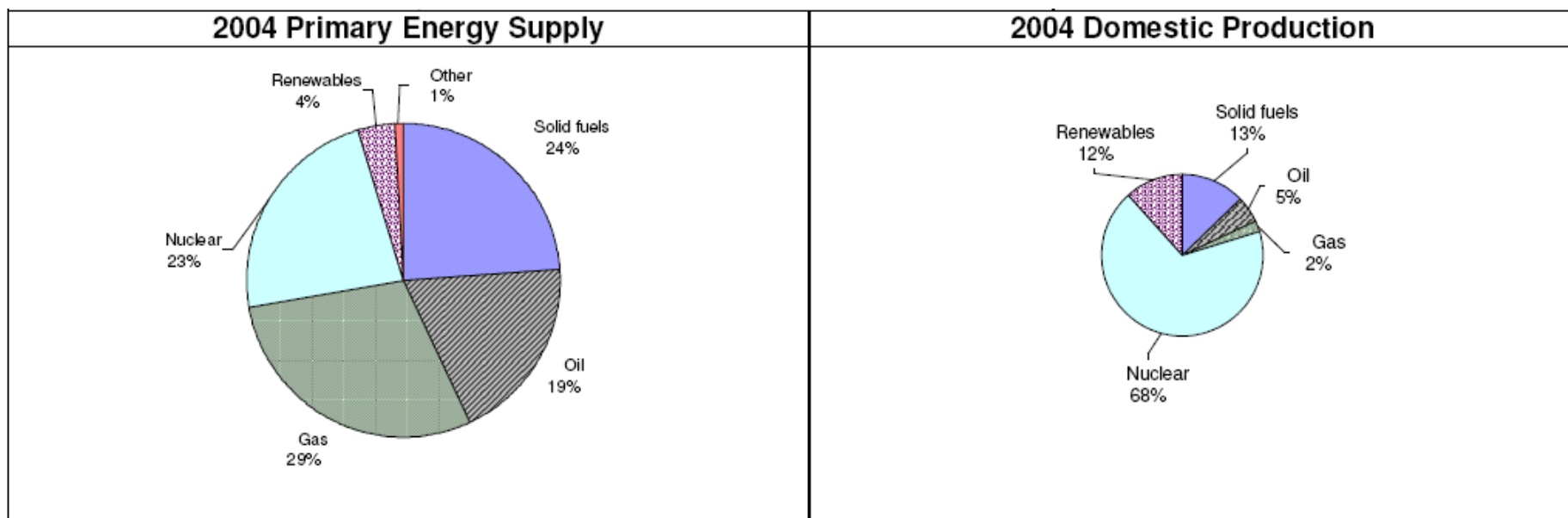


**2004 Domestic Production**



*Source: Energy mix fact sheet, European Commission, 2007*

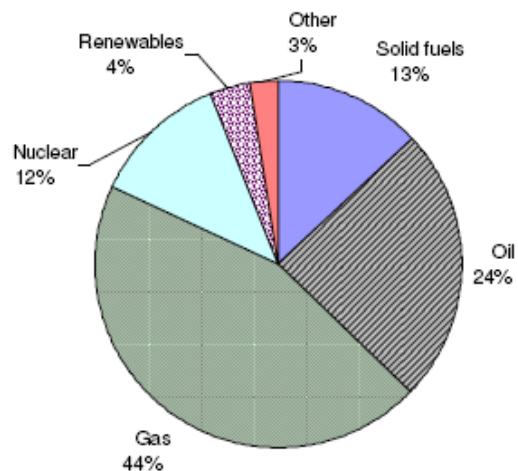
# Slovakia



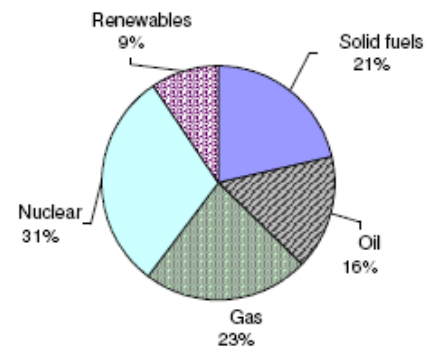
Source: Energy mix fact sheet, European Commission, 2007

# Hungary

**2004 Primary Energy Supply**

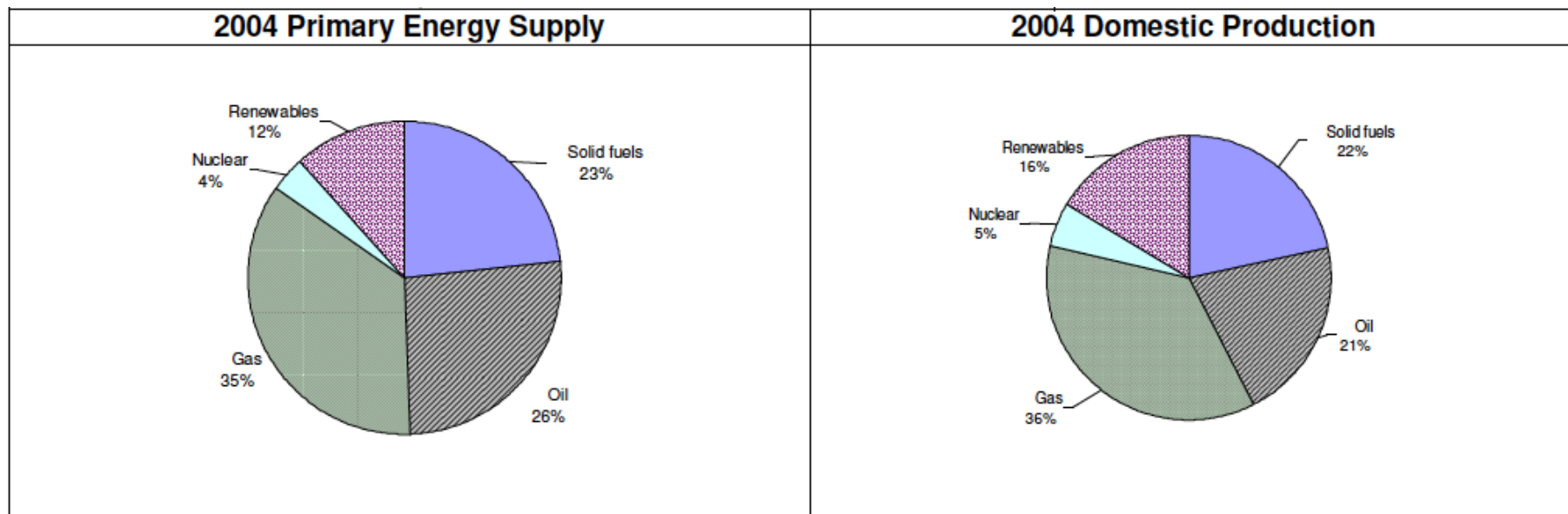


**2004 Domestic Production**



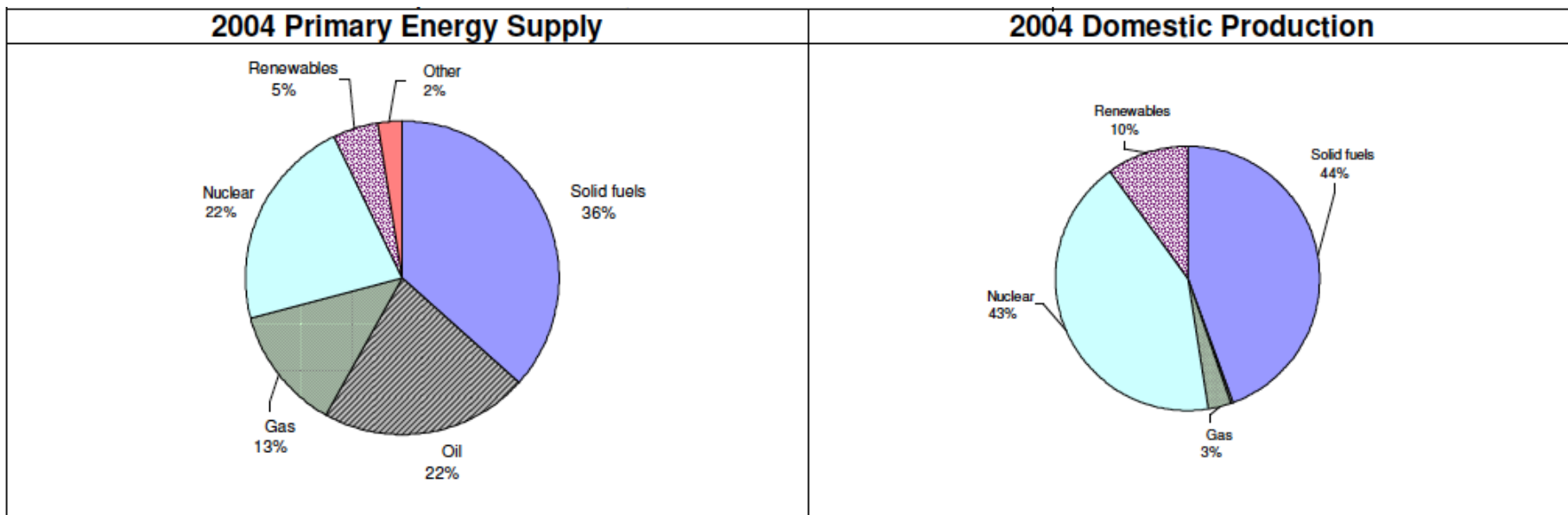
*Source: Energy mix fact sheet, European Commission, 2007*

# Romania



Source: Energy mix fact sheet, European Commission, 2007

# Bulgaria



Source: Energy mix fact sheet, European Commission, 2007

## East Central Europe countries (Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria)

	Primary Energy Supply	Domestic Production
Solid fuels	33%	43%
Gas	25%	11.8%
Oil	22.5%	8%
Nuclear	13%	29%
Renewables	5.5%	7.7%
Other	1%	0.5%



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**Problem No 1**

**COAL**

## East Central Europe - energy dependence

Energy dependency of the V4 countries on imports  
of primary energy sources

Country	1990 (%)	1996 (%)	2000 (%)	2007 (%)
Czech Republic	15.7	24.5	23.4	25.1
Hungary	50.4	52.6	56.1	61.4
Poland	2.2	5.2	11.2	25.5
Slovakia	76.7	74.3	66.0	69.0



Source: *Energy Mix in Central European Countries of the V4 Group: The Quest for Stability*, XXIst World Energy Council Montreal 2010

**Problem No 2**  
**ENERGY**  
**DEPENDENCY**

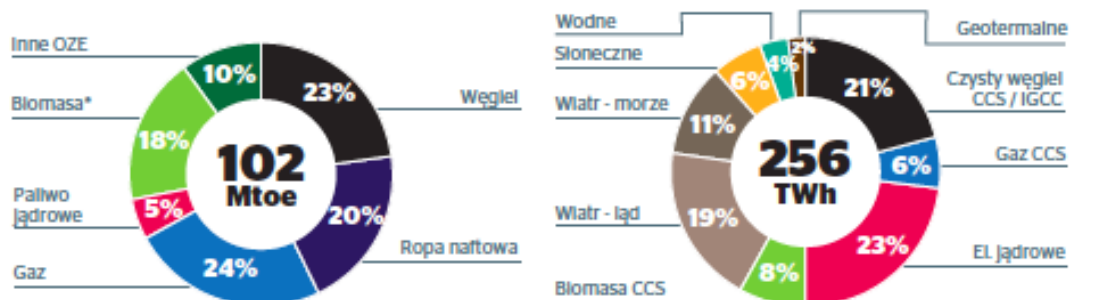
# Oil and gas pipelines from Russia



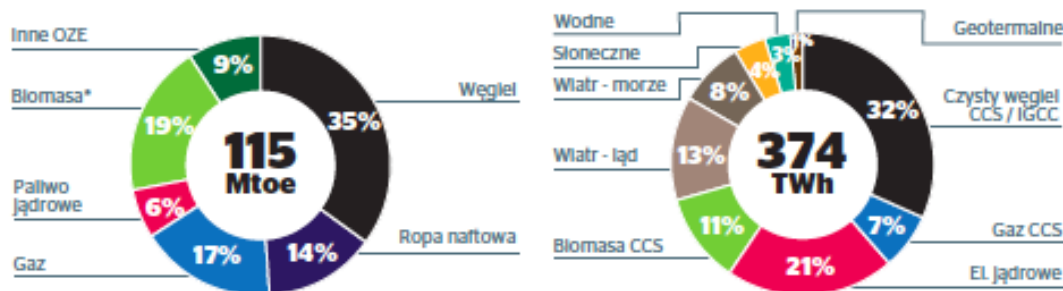
Source: US Energy Information Administration

# Solution one - energy diversification

Example: Poland -  
energy mix in 2050



Scenario 1  
- expensive CCS  
- no electric cars



Scenario 2  
- cheap CCS  
- electric cars

Source: *Mix Energetyczny, Institute for Structural Research, 2011*

## Solution two - Clean Coal Technologies

- above-ground coal gasification technology;
- underground coal gasification technology;
- underground coal bioconversion technologies;
- gasification technologies associated with gas-steam cycle (IGCC);
- coal combustion technologies in oxygen;
- enhanced oil and gas recovery (EOR / EGR);
- enhanced methane extraction (ECBM);
- production of synthetic gases and liquid fuels;
- Carbon Capture and Storage.

# CCS development in East Central Europe

## Financial incentives

- **European and international financial support**

European Recovery Plan; NER300; the Operational Program "Infrastructure and Environment"; the Operational Program "Innovative Economy"; the emissions trading system under the Kyoto Protocol (proposed 300 million PLN from AAUs); the new UE ETS (50% of revenues for environmental action); the Norwegian Financial Mechanism

# CCS development in East Central Europe

## barriers

- Lack of legal and regulatory frameworks
- Lack of strong political support
- Lack of political framework
- Lack of long-term financial framework
- Problems with public acceptance

# Can clean coal technologies be economic in the region?

**Only provided that  
the current policy of the EU is reshaped**

**Fact one - the political momentum is gone**

**Fact two - most of the EU CCS demonstration plants will not meet the 2015 deadline**

**Fact three - funding for CCS is not sufficient**

**Fact four - a new game changer occurred**

*"When the facts change, I change my mind"  
- John Maynard Keynes*



# CCS in Europe - the way forward?

**Scenario 1. Business as usual**

**Scenario 2. Reshaping the CCS policy**

**Scenario 3. Changing the EU energy  
and climate policy priorities**





# Thank you

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