European Gas Supply Diversification
The view of RWE

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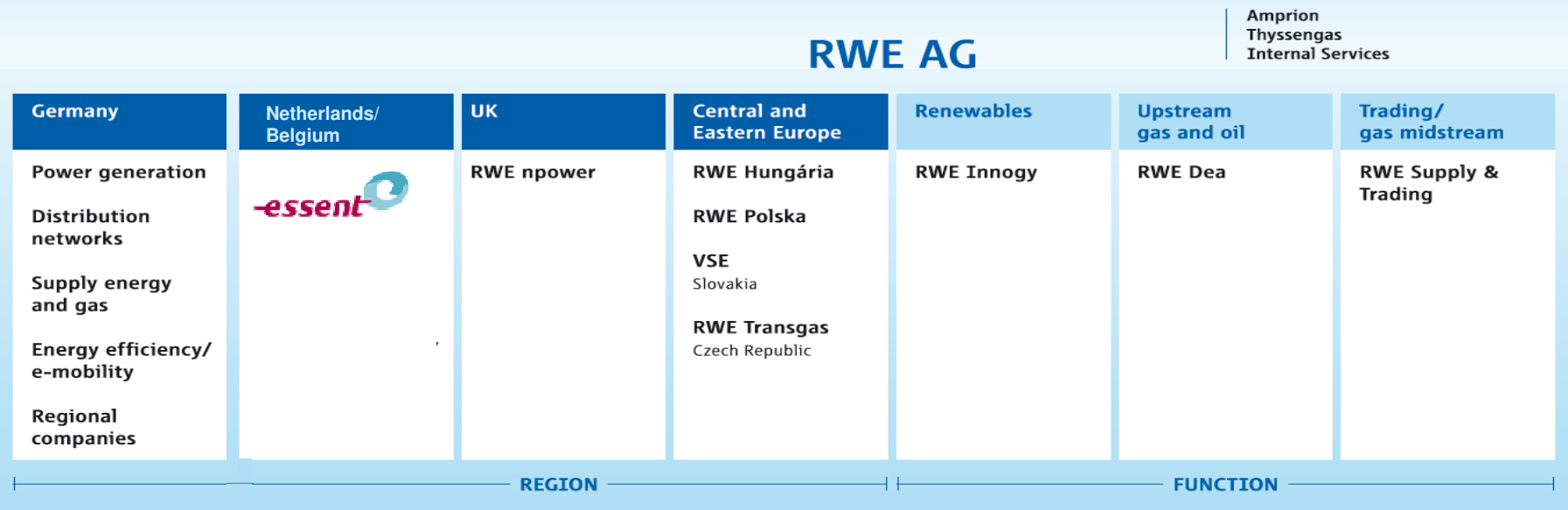
Agenda

- Introduction of RWE
- European Security of Supply post Ukrainian Crisis
- Nabucco project in context
- Conclusions and Outlook

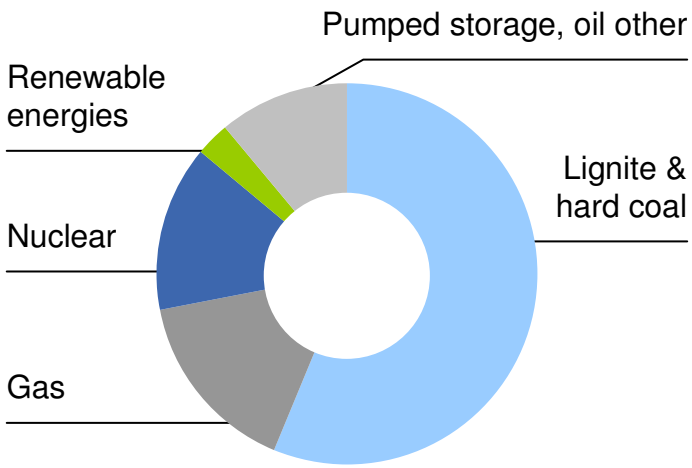
RWE is a leading European Gas & electricity company



- RWE serves 22 million electricity customers and 12 million gas customers in Europe
- RWE has leading market positions in Germany, UK, Czech Republic, Netherlands, Hungary - and is overall #3 in electricity and #6 in gas sales in Europe
- RWE had € 49 bn revenues, € 7 bn earnings and € 4 bn investment in 2008
- RWE has 51,200 MW electricity generation capacity (gas, coal, nuclear, renewable)
- RWE employs 66,000 people in 13 countries worldwide

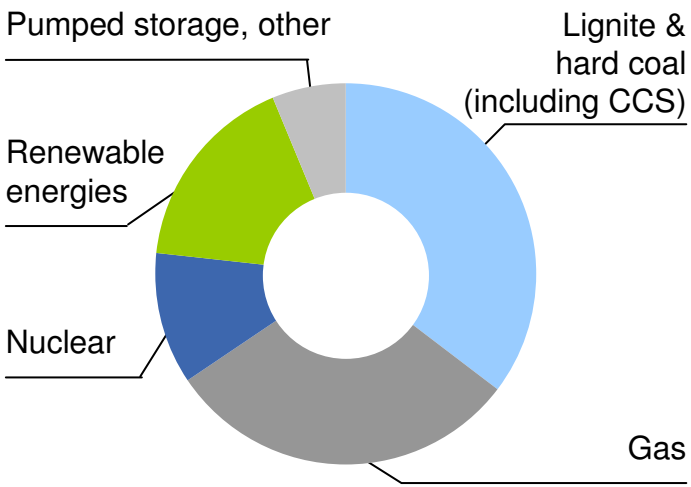
Power generation - RWE's vision: Double CO_2-free capacity in fuel mix by 2020; increase gas share to ~ 30%

Fuel mix 2007 (capacity in %)
Total generation capacity 2007: 46 GW



- High proportion of CO_2-intensive coal (56%)
- Low proportion of CO_2-free stations (17%) and low CO_2 gas-fired stations (16%)

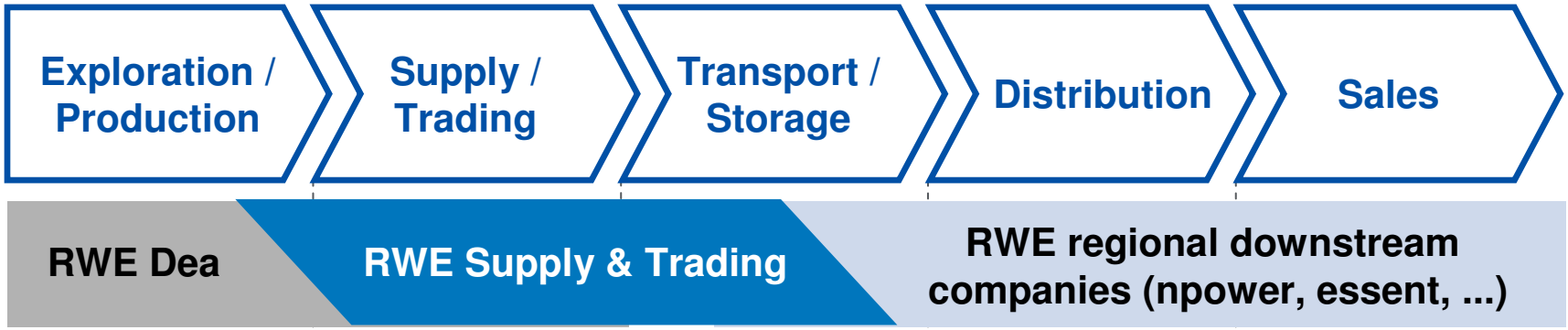
Vision fuel mix 2020 (capacity in %)*
Total generation capacity 2020e: ca. 60 - 70 GW



- Almost doubling CO_2-free capacity to ca. 30%
- Almost doubling low CO_2 gas-fired capacity to ca. 30%

* General underlying assumptions: extension of nuclear lifetime in Germany and realizing new nuclear projects in UK and CSEE markets.

Gas business: RWE covers the entire natural gas value chain: Upstream, Supply & Trading, Downstream[1)]



- Reserves and contingent resources: 208 mln cm OE
- Production: 105 kb/d of OE thereof >3 bcm/a gas production

- Gas supply: ca. 53 bcm/a
- Gas trading volume: ca. 103 bcm/a
- LNG regas & shipping: 9 vessels operating / on order

- Transport pipelines: 23,700 km
- Gas storage volume: ca. 6.1 bcm
- System operator in Germany and Czech Rep.

- Distribution pipelines: 92,800 km

- Gas supply: ca. 53 bcm/a (to customers and power plants)
- Gas customers: ca. 12 million
- Regional focus: Germany, UK, NL, Czech Republic, Hungary, Belgium

1) Including essent

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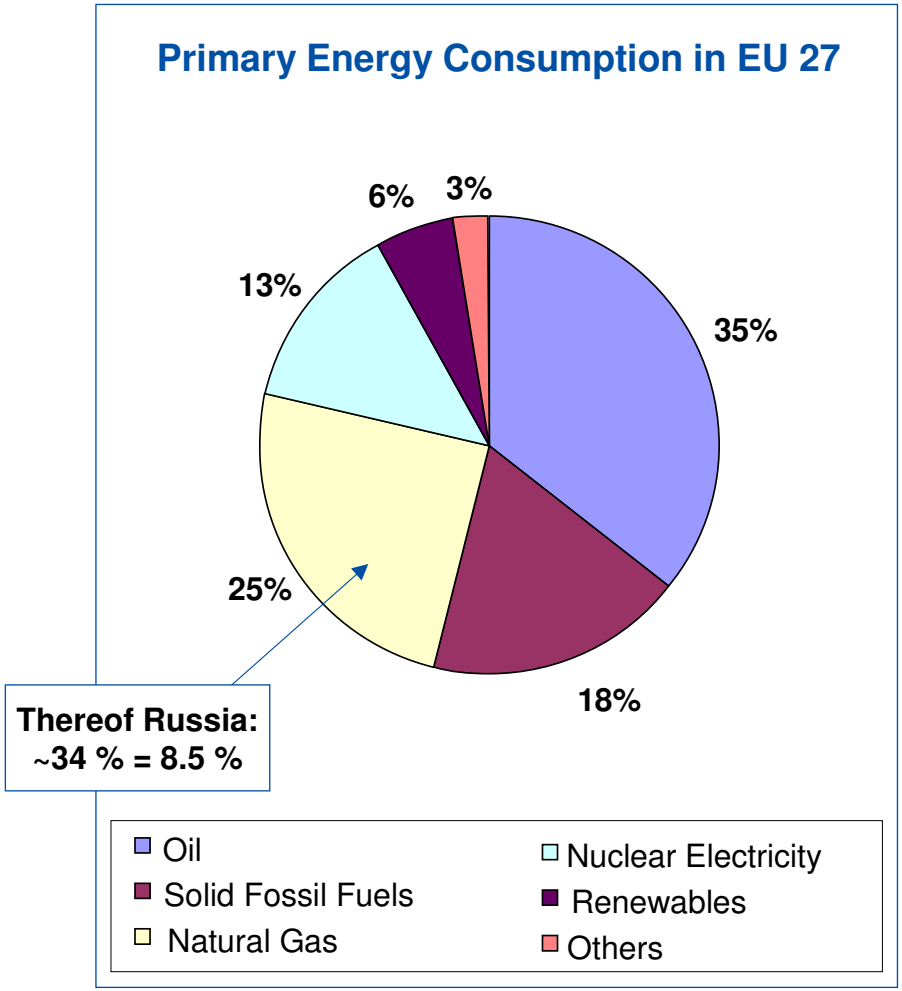
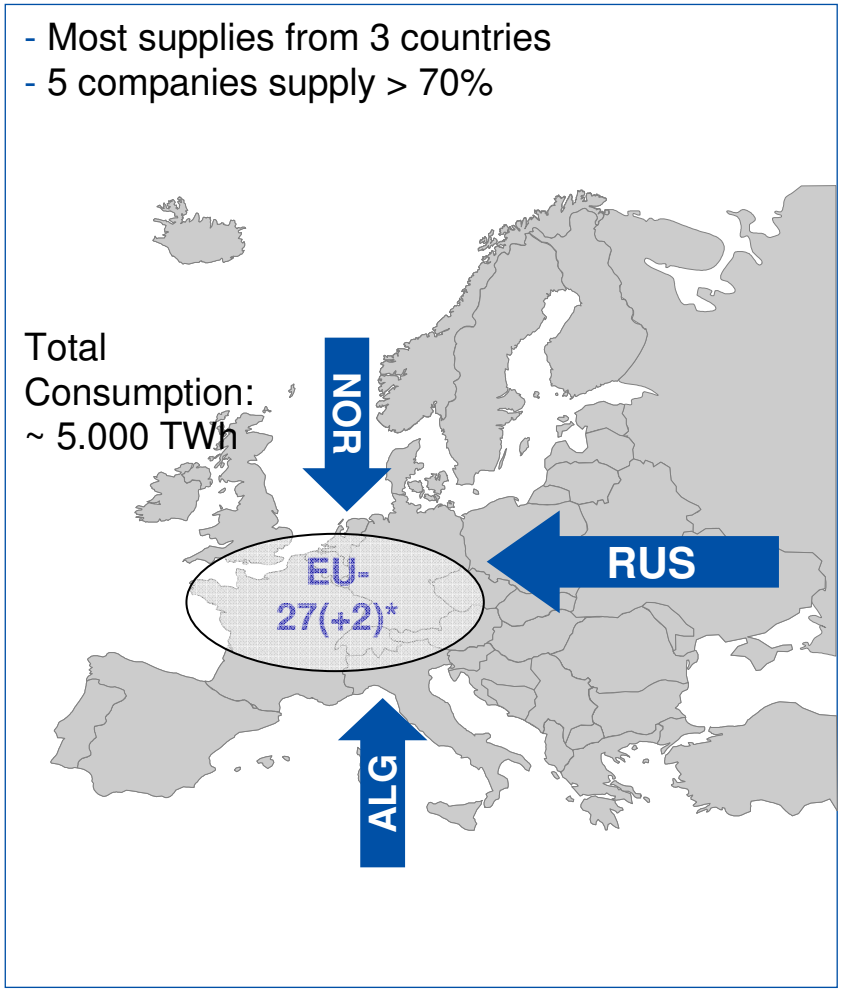
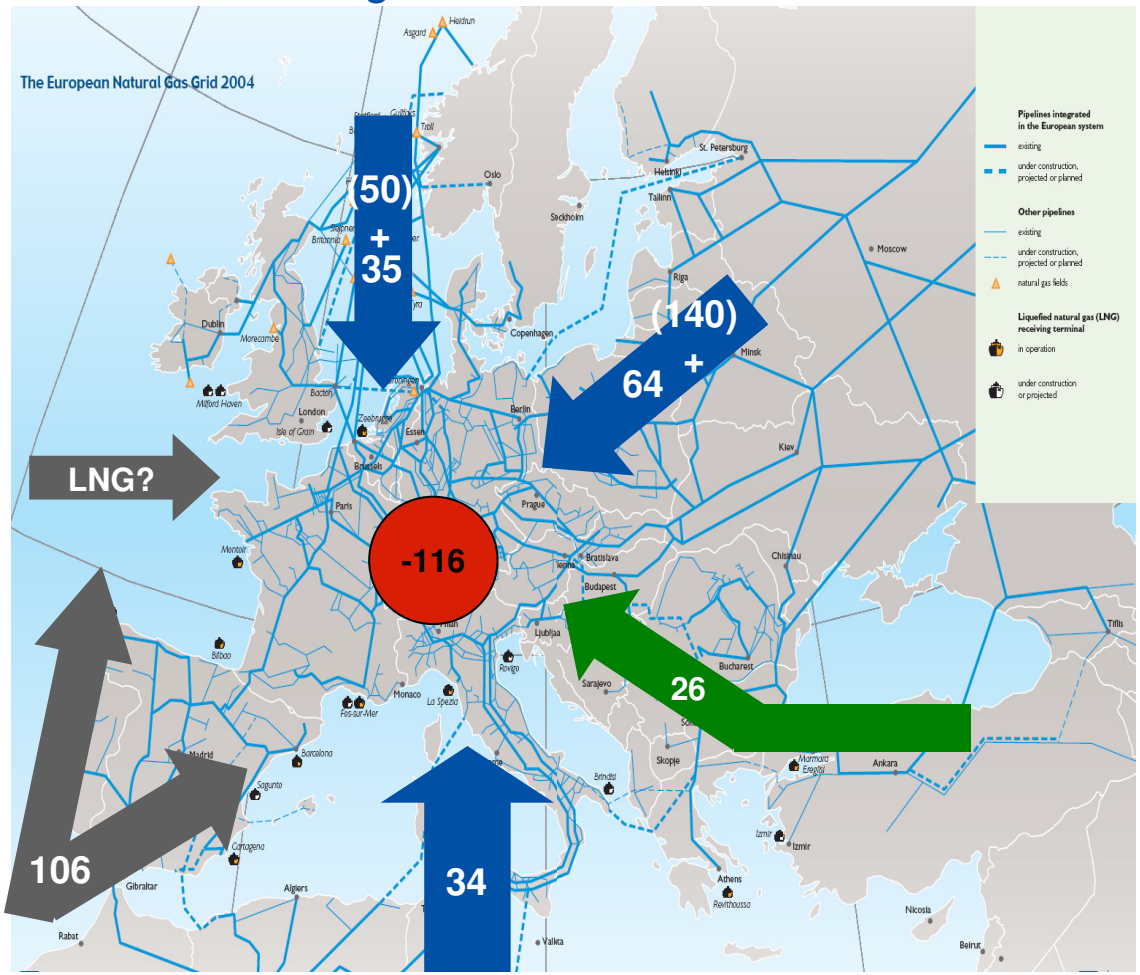
Primary Energy Consumption by Fuel in EU 27
- Natural Gas significant, not dominant
- But: Oligopolistic Supply Structure





Indigenous Decline increases Oligopoly Dependence

- Increase of Norway, North-Africa, Russia inevitable
- Caspian supplies and LNG needed to increase diversity
- Ukrainian crisis has generated momentum to accelerate diversification



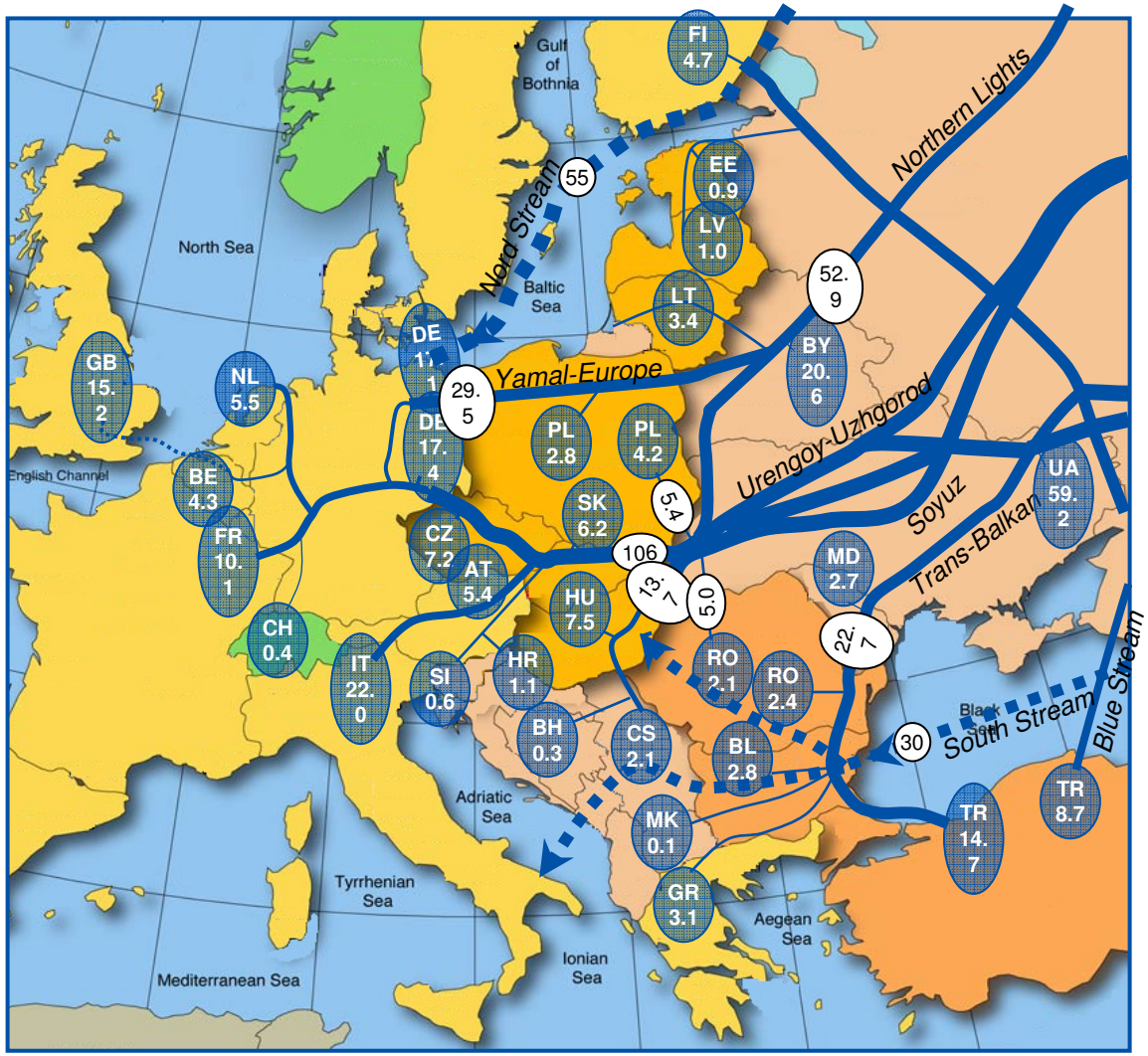
Additional gas supplies to Europe until 2020 bcm/a: ● Decrease of indigenous production until 2020

→ Via pipelines ➡ Via LNG

Source: CERA

EU 27 dependency on Russian gas ~ 34%

- Ukraine transits ~80% of Russian imports to Europe
- Russian-Ukrainian Dependency varies by country, largest in SEE



Country	Bcm
(GE) Germany	34.5
(TR) Turkey	23.4
(IT) Italy	22.0
(GB) Great Britain	15.2
(FR) France	10.1
(HU) Hungary	7.5
(CZ) Czech Republic	7.2
(PL) Poland	7.0
(SK) Slovakia	6.2
(NL) Netherlands	5.5
(AT) Austria	5.4
(FI) Finland	4.7
(RO) Romania	4.5
(BE) Belgium	4.3
(LT) Lithuania	3.4
(GR) Greece	3.1
(BL) Bulgaria	2.8
(SC) Serbia	2.1
(LV) Latvia	1.0
(HR) Croatia	1.1
(EE) Estonia	0.9
(SI) Slovenia	0.6
(CH) Switzerland	0.4
(BH) Bosnia and Herzegovina	0.3
(MK) Macedonia	0.1

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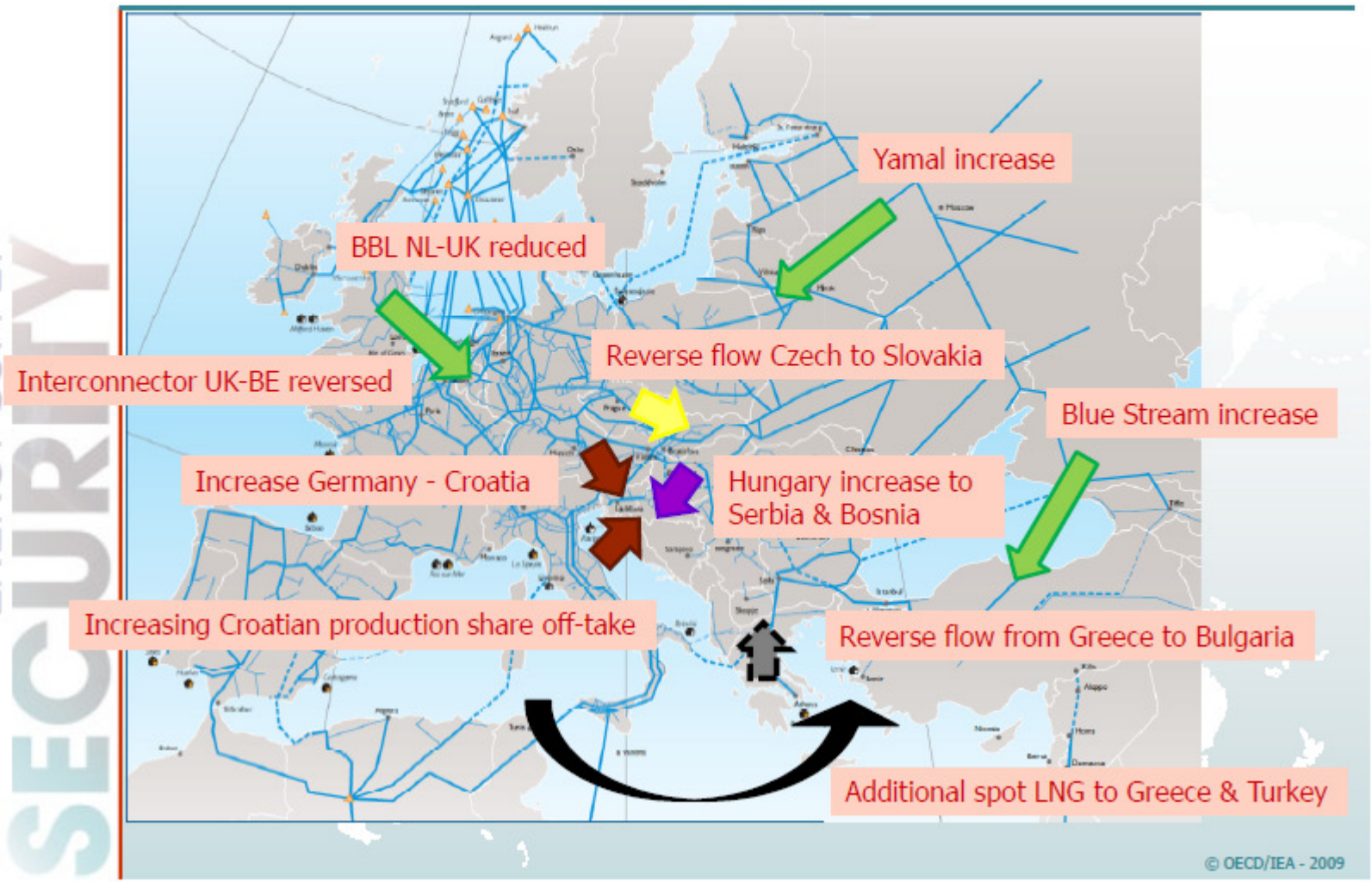
Sources: Annual Report of Gazprom 2007, Ukrtransgas 2007

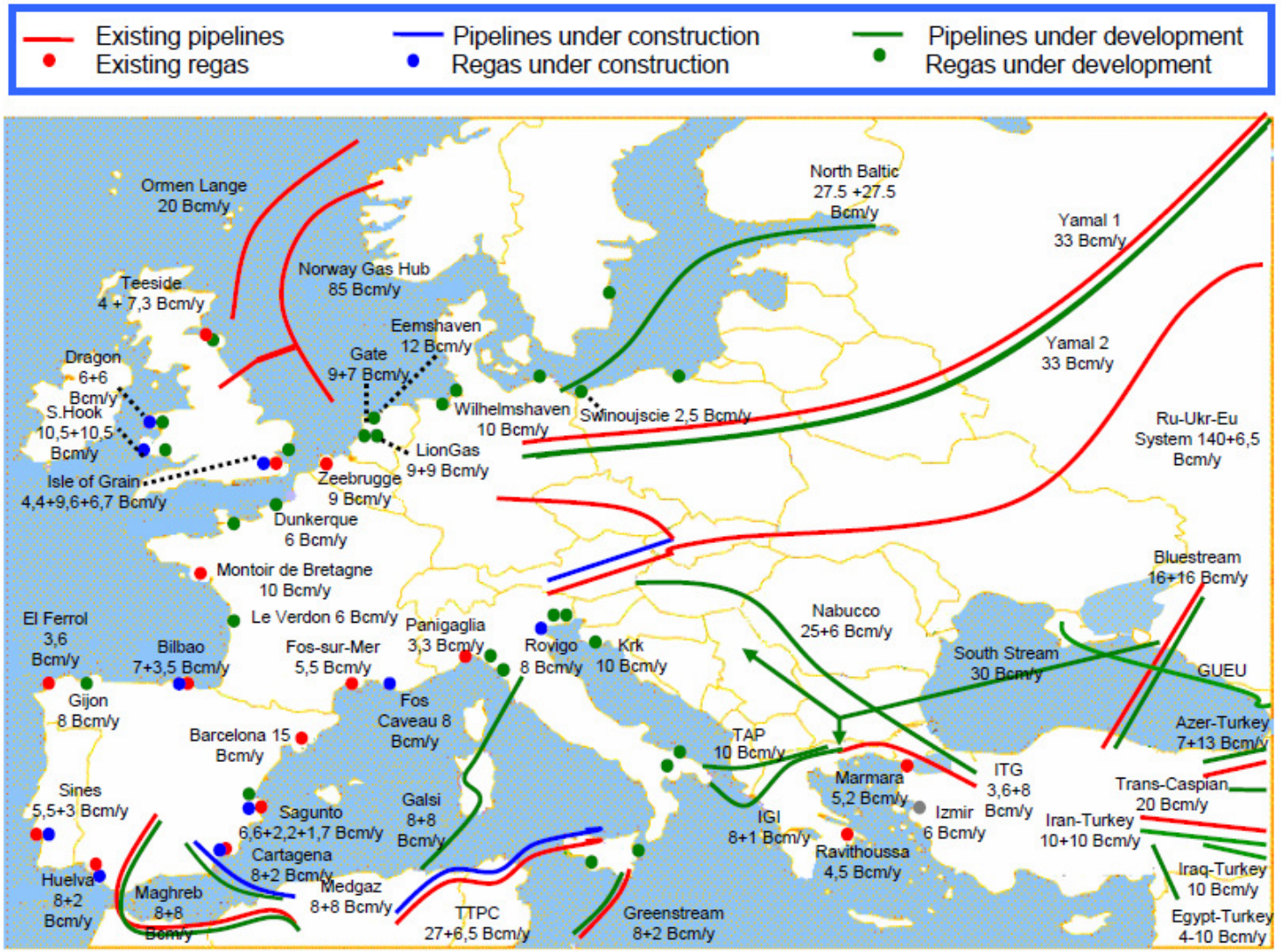
Multitude of Industry Actions Mitigated the Crisis

SEE countries with single physical flow dependency exposed

Around 18 Jan 2009



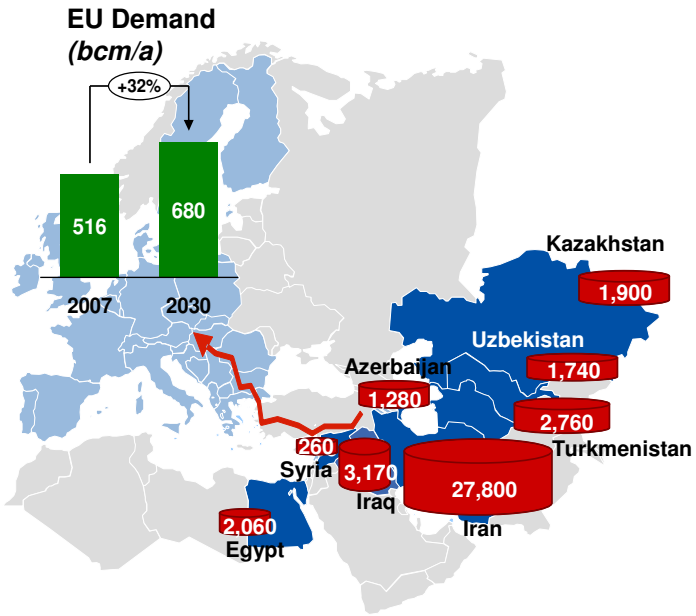
Europe needs: Diversification of Transit routes + LNG access



Even more important: Diversification of **Sources**
Nabucco would link Europe with Caspian Region

Middle East / Caspian

- The Middle East and Caspian Regions own significant gas reserves
- The region does not directly export gas to Europe – there is no transit route
- A gas pipeline to Europe opening the Southern Corridor would bring a multitude of benefits to the Middle East and Caspian Region, the transit countries and to Europe



Nabucco provides security of demand (upstream), security of price (upstream), security of transit (midstream), and security of supply (downstream)

Comparison Resource Potential

Russia:
47,700 bcm

Caspian Region:
82,600 bcm

Europe incl. Norway:
5,900 bcm

Source: BP Statistical Review 2008, Cera, OPEC 2007

Nabucco pipeline XXX Proven gas reserves bcm

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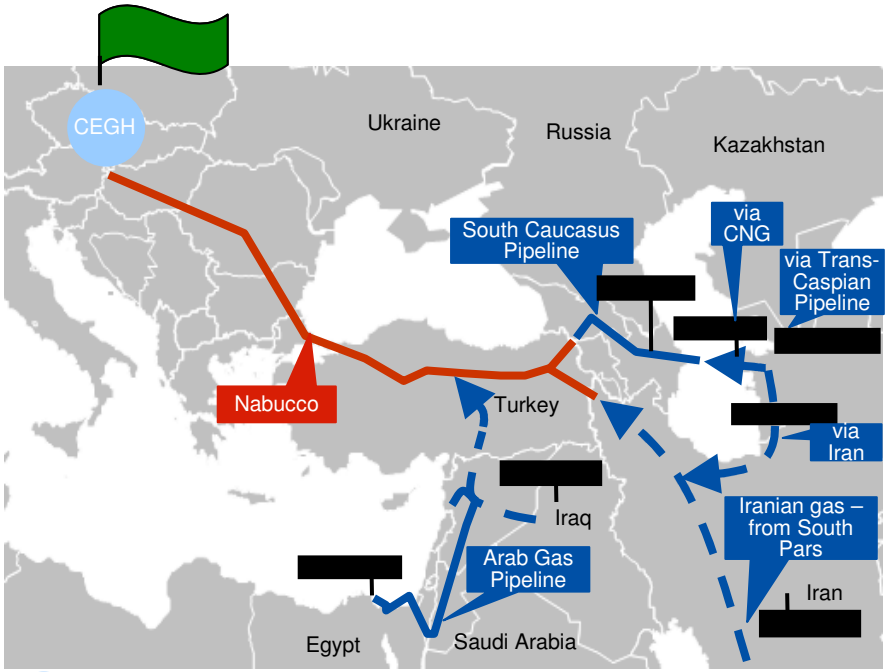
RWE pursues integrated Caspian strategy: Upstream, gas procurement and transit pipelines – Nabucco is the driving force

- **Develop required gas transport pipelines**
  - **Nabucco** linking RWE's markets in Europe to the Caspian Region's gas resource base
  - **CEC** to develop options to cross the Caspian
- **Gas upstream position in the Caspian Region**
  - **TKM**: Block 23 exploration licence
  - **KAZ**: >10 years of oil&gas production history
- **Gas Procurement from the Caspian Region**
  - **AZE**: Discussions with SOCAR
  - **TKM**: Negotiations of a 10 bcm/a contract
  - **KAZ**: MOU on coal gasification and gas exports with Samruk-Kazyna
- Cooperation on other energy projects if required

To attract supplies, attractive **producer's netbacks** from target market to wellhead are pivotal

Nabucco renders a very competitive netback



CEGH Central European Gas Hub (European gas market point)

2009 Price European gas market point EEO price forecast - Indexed LT contract-DE BASE (8760 h/a) *($/1,000cm / $/MMBtu)*

Nabucco Producer's Netback 2009 *($/1,000cm / $/MMBtu)*

Concept of netback price

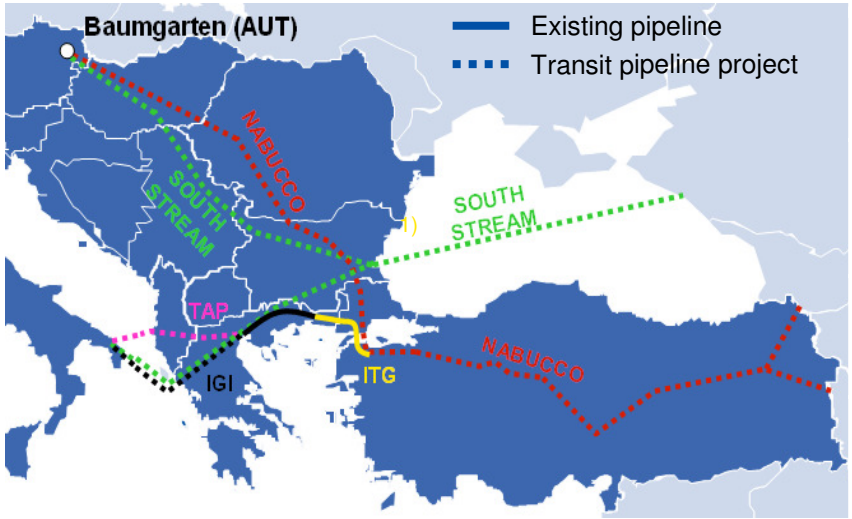
> To derive the gas purchase price from the supply countries a so called netback price is calculated

> A netback price is the difference between the import price in the target country minus the costs incurred by transporting the gas from the upstream/exporting country into the sales market:

Price at CEGH
- Nabucco transport tariff
- Transport price into Nabucco pipeline
  from gas upstream point

= Netback price for Nabucco gas

Southern Corridor gas pipeline project competition: Nabucco in competition for gas supplies, gas markets and financing



The Southern Corridor					
Projects	**Capacity (bcm/a)**	**Pipeline length**	**Capex (€ bn)**	**Start-up**	**Project owner**
Nabucco	25.5-31.0	3,300 km (+690 km)[2] =3,990 km	8.0	2014	RWE/OMV/MOL/Bo-tas/BEH/Transgaz
South Stream	63.0	3,200 km (+1,300 km)[2] =4,500 km	25.0[3]	2015	Gazprom (RUS)/ ENI (IT)
IGI[4]	10.0	807km (+2,690km)[2,5] =3.497 km	1.1	2012	Edison (IT)/ DESFA (GR)
TAP[6]	10.0	512km (+2,940km)[2,5] =3,452 km	1.5	2012	EGL (CH)/Statoil Hydro (NOR)

> 4 „competing“ pipeline projects
> Total „demand“ 114 BCM
> Lots of comparing „apples and oranges“ (e.g. on distance from wellhead to market)
> Geopolitical Background (control over exports to Europe)
> Will Financing constraints help resolve?

Nabucco has economic and strategic competitive advantages over other Southern Corridor pipeline projects based on publicly available data

High level assessment of Southern Corridor pipeline projects

	Tariffs **without** Fuel Gas and CO_2 cost	Nabucco 31 bcm/a	IGI	TAP	South Stream
Quantitative	> **Specific (per 100km) transportation tariff**[1)]	**"AAA" (€/1,000m³/ 100km)**	**"BB" (€/1,000m³/ 100km)**	**"B -" (€/1,000m³/ 100km)**	**"B" (€/1,000m³/ 100km)**
Quantitative	> **Total wellhead-to-market cost of transport**[2)]	**"AAA" (€/1,000m³)**	**"BB" (€/1,000m³)**	**"B" (€/1,000m³)**	**"B -" (€/1,000m³)**

Qualitative	> **Dedicated gas export route vs. dependence on additional parties for transit:** South Stream/Nabucco are largely dedicated lines, whereas IGI/TAP need to rely on Botas for transit through Turkey (lift-off tariffication under discussion)	Nabucco ✓ · IGI ✗ · TAP ✗ · South Stream ✓
Qualitative	> **Project status:** South Stream not selected a route nor started FEED studies and IGI/TAP are reliant on being granted competitive transit access to Botas system. Also TAP is constrained given it having signed a contentious Iranian gas supply agreement	Nabucco ✓ · IGI ✗ · TAP ✗ · South Stream ✗
Qualitative	> **Project "open" to third party shippers:** Only Nabucco grants sufficient access to transport capacity to interested shippers encouraging diversification and competition	Nabucco ✓ · IGI ✗ · TAP ✗ · South Stream ✗
Qualitative	> **Enhances European security of supply and competitive prices for customers:** South Stream (monopoly project) does not lead to supply source diversification. IGI/TAP are primarily dedicated to the Italian markets (Edison and EGL power stations)	Nabucco ✓ · IGI ✗ · TAP ✗ · South Stream ✗

1) Tariffs calculated with simplified model based on public data/assumptions comparable to Nabucco project.

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Conclusions and Outlook

- Increase of natural gas use necessary to enable low CO_2 fuel mix
- Rising import dependency & oligopolistic supply structure
- More diversity of transit and sources pivotal
- Linking Caspian Region resources and European demand obvious
- Competing pipeline projects cannibalize each other on securing supplies
- Nabucco is the economically most attractive project; and strategically the only one truly diversifying Transit AND Source