entsog

european network
of transmission system operators
for gas

Brussels – 28 October 2016

TYNDP 2017 Scenarios

Overview and achievement of EU targets

ENTSOG System Development Team

Image Courtesy of Thyssengas

4 Demand Scenarios

Scenario		Slow Progression	Blue Transition	Green Evolution	EU Green Revolution
Category	Parameter				
Macroeconomic trends	EU on track to 2050 target?	Behind	On track	On track – National ambitions	On track / beyond – EU level ambitions
	Economic conditions	Limited growth	Moderate growth	Strong growth	Strong growth
	Green ambitions	Lowest	Moderate	High	Highest
	CO2 price	Lowest	Moderate	Highest	Highest
	Fuel prices	Highest	Moderate	Lowest	Lowest
Heating sector	Energy Efficiency improvement	Slowest	Moderate	Fastest	Fastest
	Competition with electricity	Limited gas displacement by elec. (new buildings)	Limited gas displacement by elec. (new buildings)	Gas displaced by electricity (district heating, heat pumps)	Gas displaced by electricity (district heating, heat pumps)
	Electrification	Lowest	Moderate	High	Highest
Power sector	Renewables develop.	Lowest	Moderate	High	Highest
	Gas vs Coal	Coal before Gas	Gas before Coal	Gas before Coal	Gas before Coal
Transport sector	Gas in transport	Lowest	Highest	Moderate	Moderate
	Elec. in transport	Lowest	Moderate	Highest	Highest
Related ENTSO-E 2030 Visions		Vision 1	Vision 3	Vision 4	Vision 4

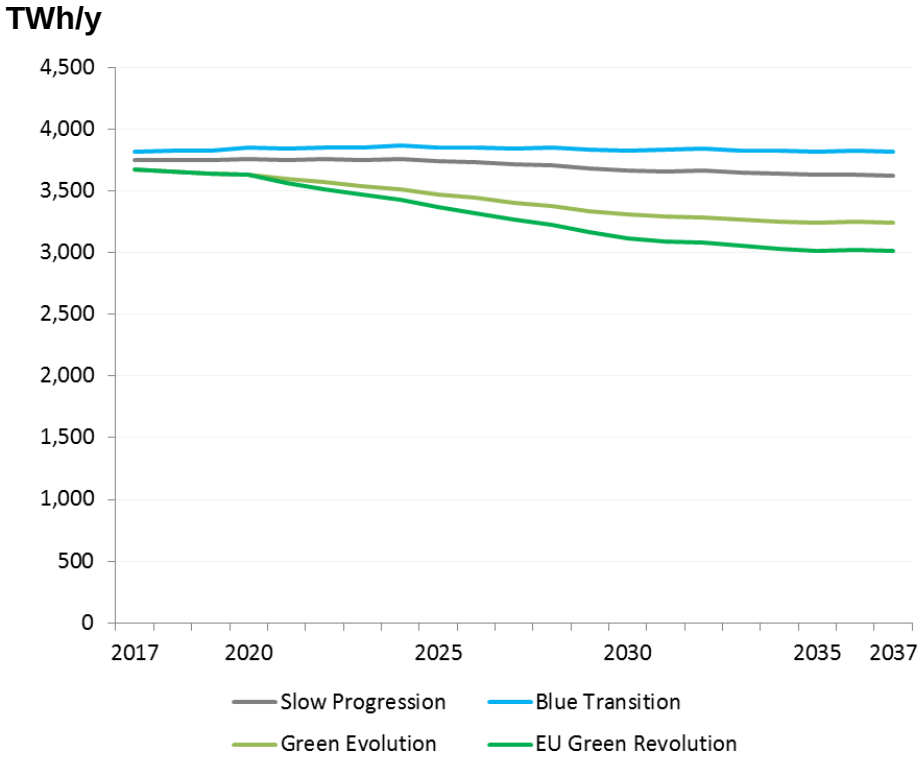
Sectoral gas demand

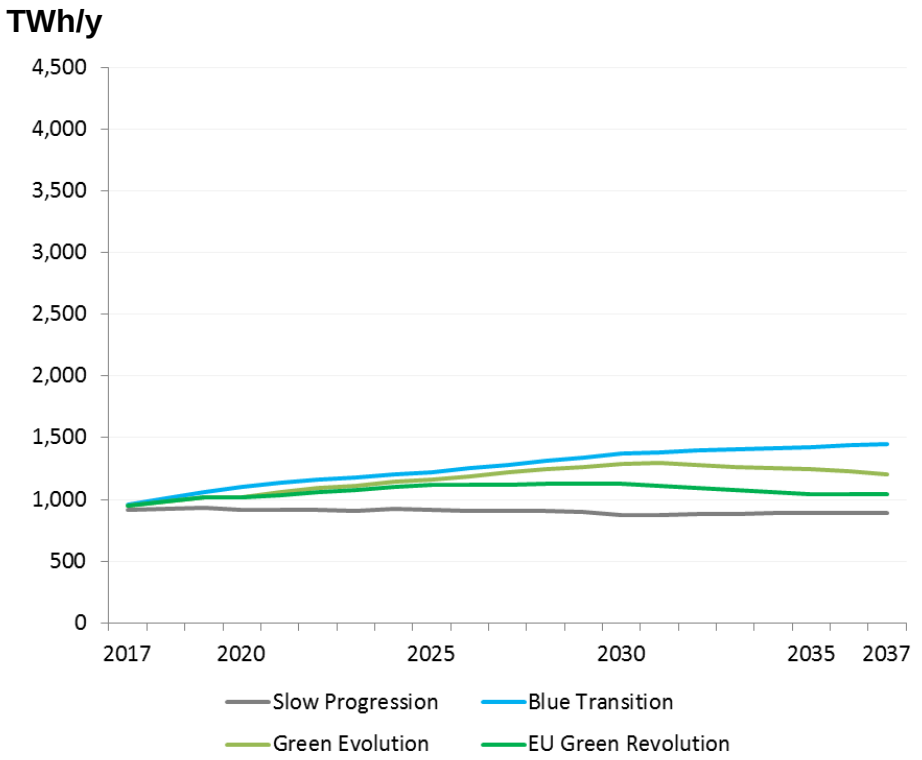
End-user demand

Stable to decreasing demand depending on **energy efficiency gains** and **electrification** of the heating sector

Gas for power demand

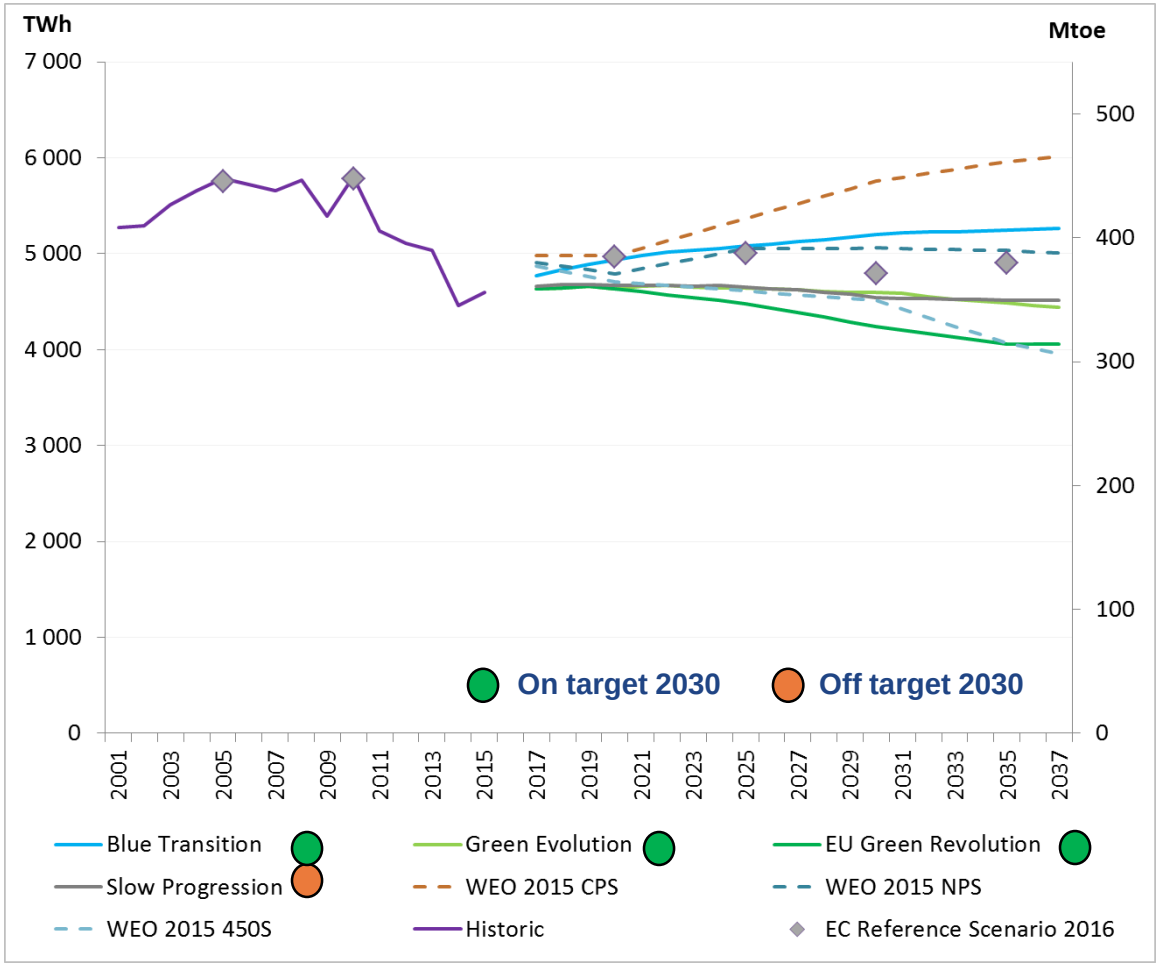
Stable to increasing demand depending on role of gas in **RES back-up** and **subsituting coal-fired generation**





End-user demand consist of the following demand: residential & commercial, industrial and transport

Overall gas demand

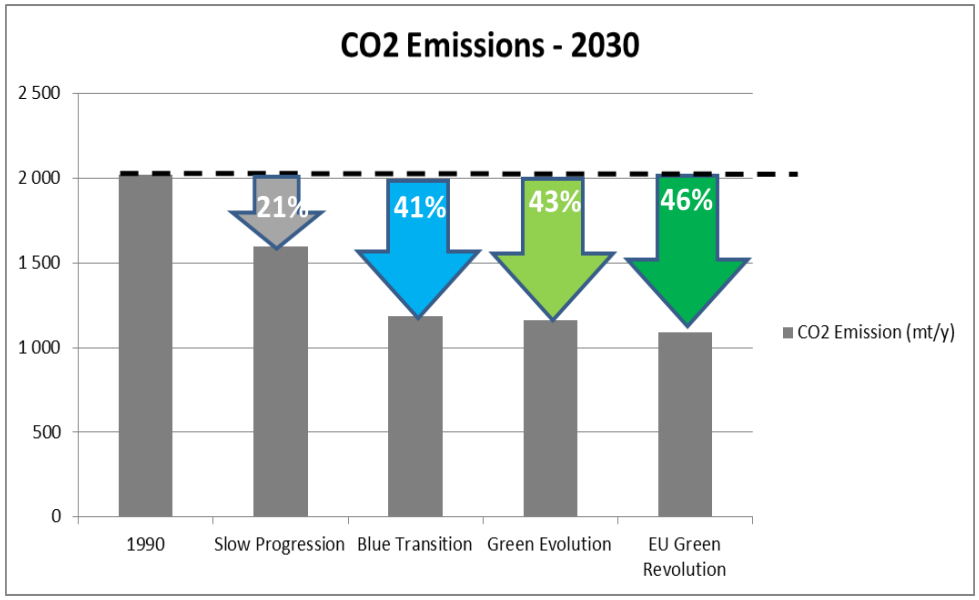


TYNDP assessment performed for the 3 on target scenarios

Several paths to achieving the EU targets

CO2 emissions

> The on-target scenarios achieve the target of 40% CO2 reduction compared to 1990



CO2 emissions in 2030 – overall power demand and gas end-user demand

Renewables

> TYNDP 2017 scenarios for power generation are based on ENTSO-E TYNDP 2016 Visions which comply with the **EU RES-E target**

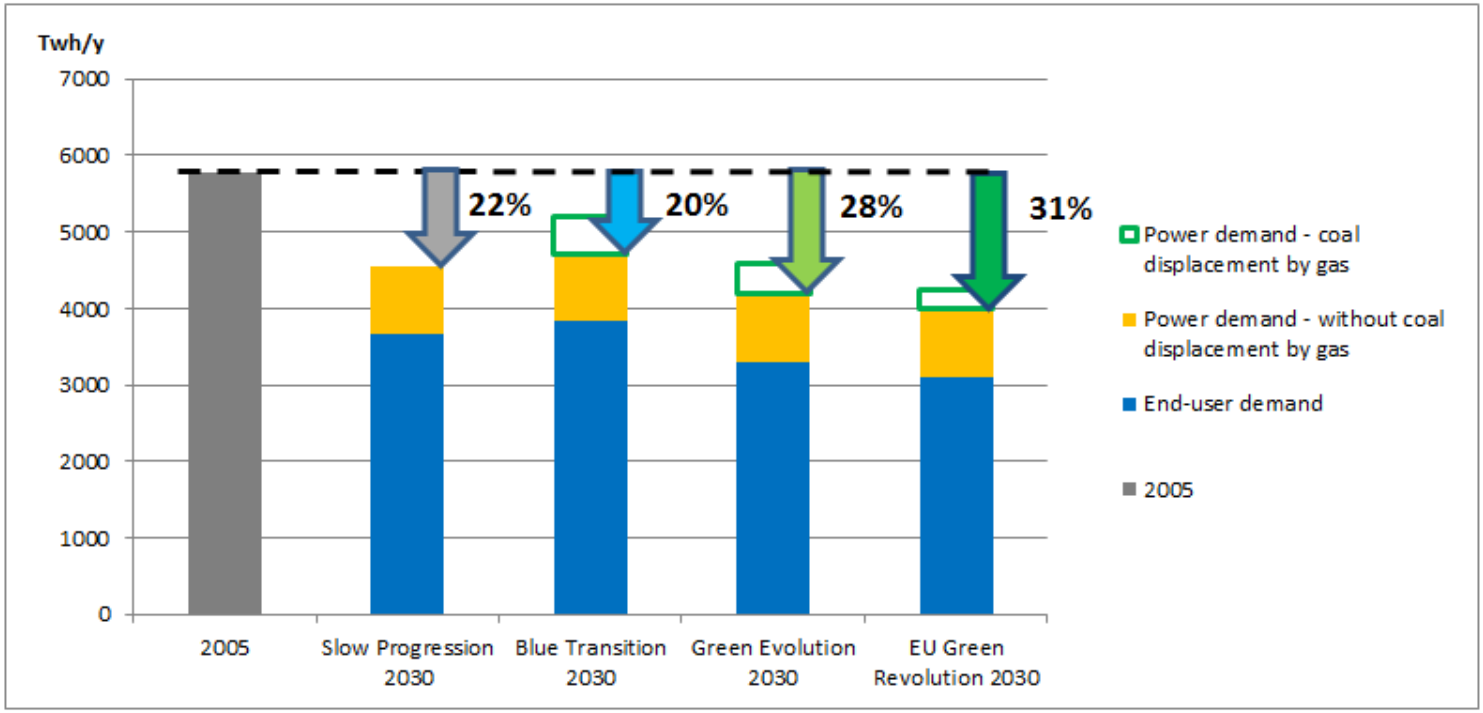
> TYNDP 2017 scenarios incorporate **biomethane,** a renewable gas source

When looking at targets' achievement in the gas and power sectors it shoud be kept in mind that targets are set globally accross all sectors

Several paths to achieving the EU targets

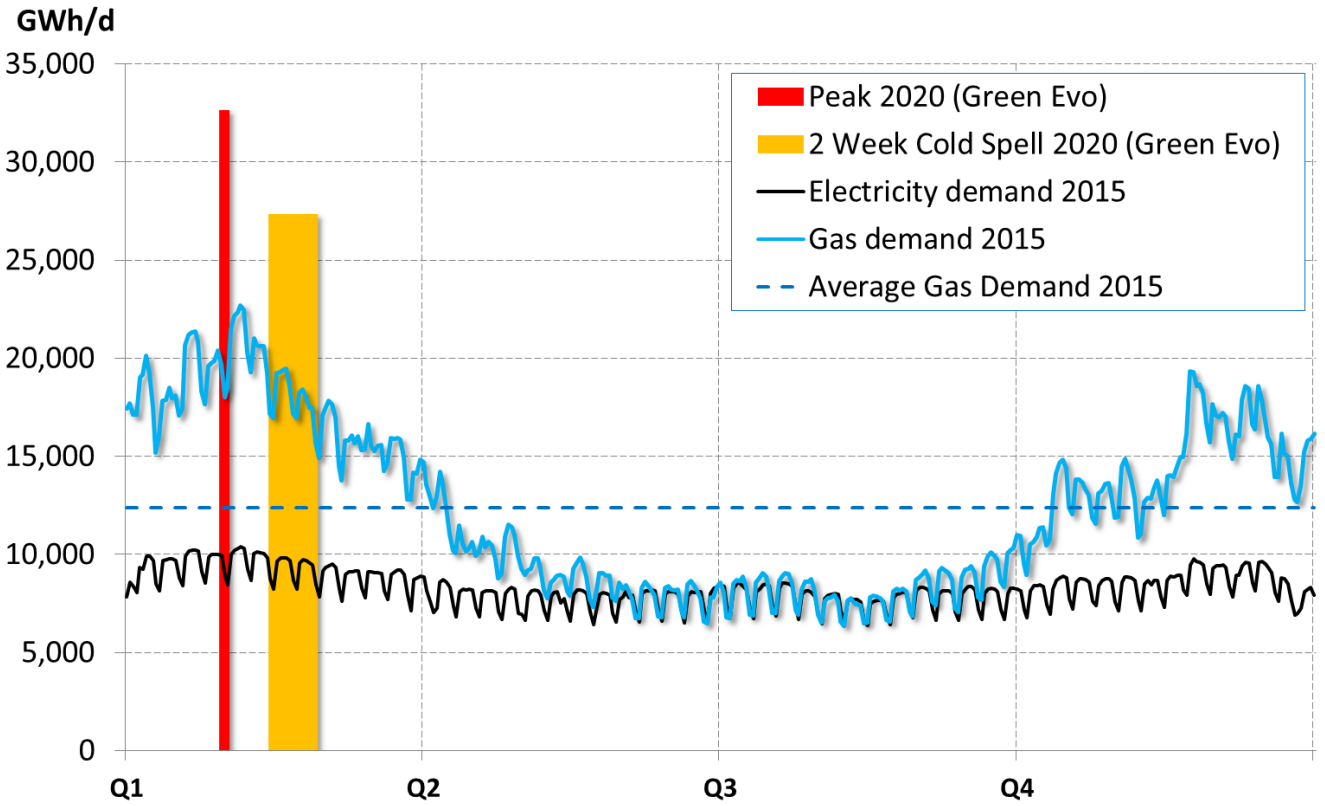
Energy Efficiency

- 27% (resp. 30%) targets set against the 2007 PRIMES baseline for 2030 (total primary energy). In reference to the **2005 level**, it corresponds to **20% gains** (resp. **23%**)
- Standard usages of gas already allow to achieve the EE target
- Gas displacing other fuels, such as for power generation, further increases the gains



When looking at targets' achievement in the gas and power sectors it shoud be kept in mind that targets are set globally accross all sectors

Gas network designed for peak situation



European gas and electricity demand – over the year and peak perspectives

Scenarios cover both average climatic year and peak perspectives

Scenarios - a key input to TYNDP assessment

There are several paths to achieving the EU targets:
the gas grid is to be assessed for these different paths

The gas grid needs to be fit both
for annual volume and peak situations

Thank You for Your Attention

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