

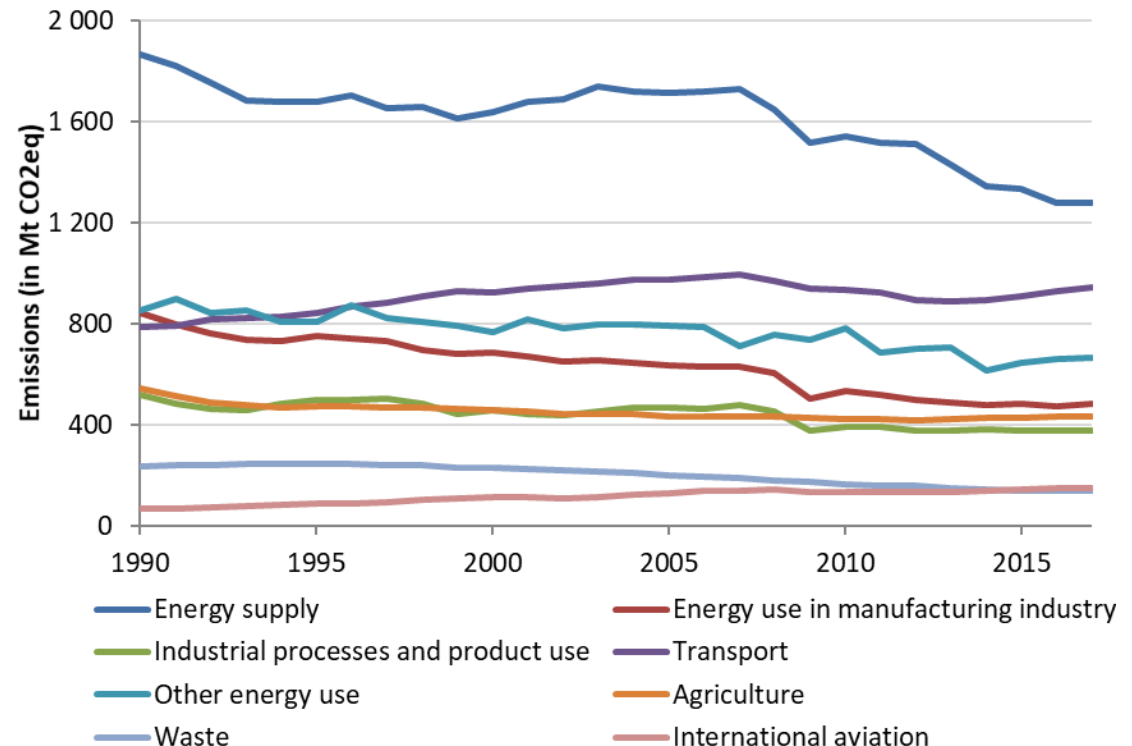


The long-term role of gas

How to foster the changing nature and role of gas ?

- The EU is about to achieve its 2020 targets
- Targets for 2030 are agreed in EU law
- Business as usual means -45% GHG emissions in 2030 (vs. 1990)
- Without increasing ambition: -60% emissions in 2050

Europe Today

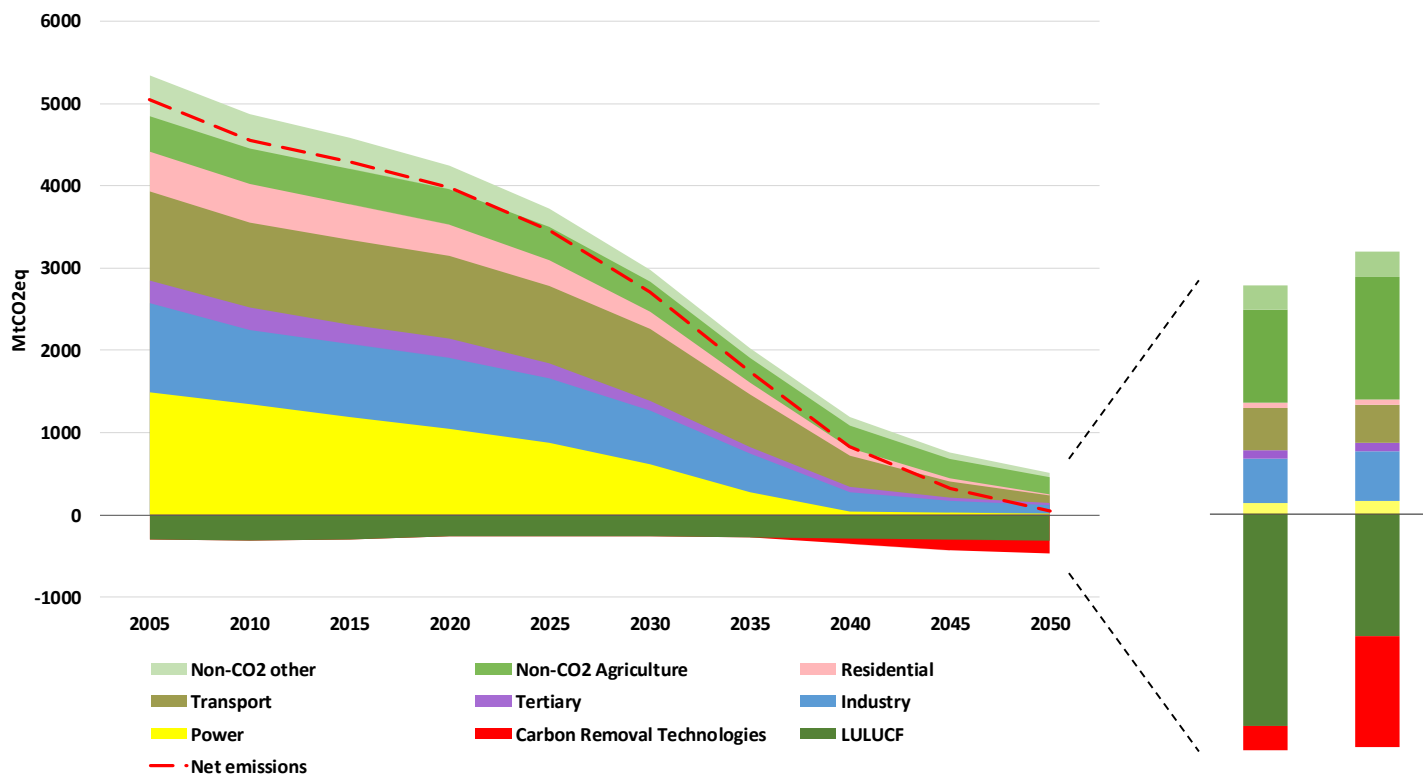


Analysed scenarios in line with Paris Agreement

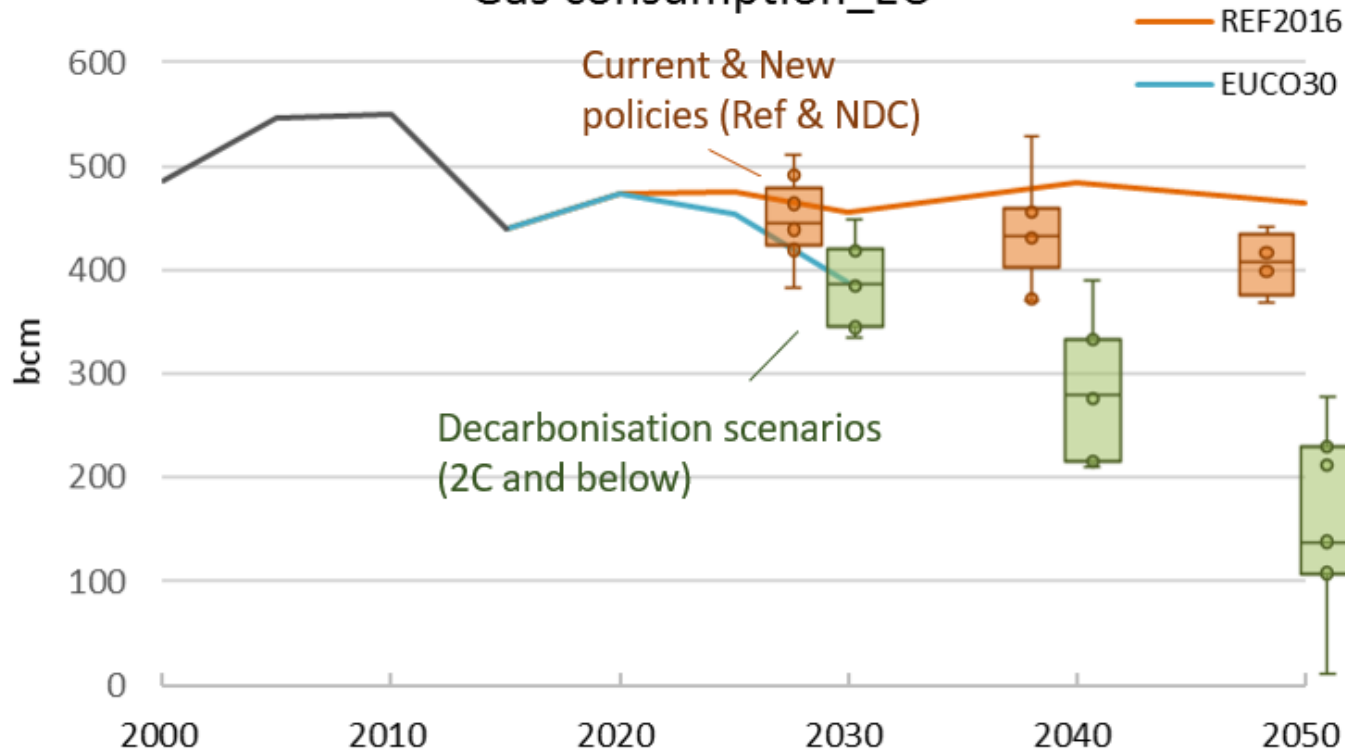
Long Term Strategy Options								
	Electrification (ELEC)	Hydrogen (H2)	Power-to-X (P2X)	Energy Efficiency (EE)	Circular Economy (CIRC)	Combination (COMBO)	1.5°C Technical (1.5TECH)	1.5°C Sustainable Lifestyles (1.5LIFE)
Main Drivers	Electrification in all sectors	Hydrogen in industry, transport and buildings	E-fuels in industry, transport and buildings	Pursuing deep energy efficiency in all sectors	Increased resource and material efficiency	Cost-efficient combination of options from 2°C scenarios	Based on COMBO with more BECCS, CCS	Based on COMBO and CIRC with lifestyle changes
GHG target in 2050	-80% GHG (excluding sinks) ["well below 2°C" ambition]					-90% GHG (incl. sinks)	-100% GHG (incl. sinks) ["1.5°C" ambition]	
Major Common Assumptions	<ul style="list-style-type: none"> Higher energy efficiency post 2030 Deployment of sustainable, advanced biofuels Moderate circular economy measures Digitilisation 				<ul style="list-style-type: none"> Market coordination for infrastructure deployment BECCS present only post-2050 in 2°C scenarios Significant learning by doing for low carbon technologies Significant improvements in the efficiency of the transport system. 			
Power sector	Power is nearly decarbonised by 2050. Strong penetration of RES facilitated by system optimization (demand-side response, storage, interconnections, role of prosumers). Nuclear still plays a role in the power sector and CCS deployment faces limitations.							
Industry	Electrification of processes	Use of H2 in targeted applications	Use of e-gas in targeted applications	Reducing energy demand via Energy Efficiency	Higher recycling rates, material substitution, circular measures	Combination of most Cost-efficient options from "well below 2°C" scenarios with targeted application (excluding CIRC)	COMBO but stronger	CIRC+COMBO but stronger
Buildings	Increased deployment of heat pumps	Deployment of H2 for heating	Deployment of e-gas for heating	Increased renovation rates and depth	Sustainable buildings			CIRC+COMBO but stronger
Transport sector	Faster electrification for all transport modes	H2 deployment for HDVs and some for LDVs	E-fuels deployment for all modes	<ul style="list-style-type: none"> Increased modal shift Electrification as in ELEC 	Mobility as a service			<ul style="list-style-type: none"> CIRC+COMBO but stronger Alternatives to air travel
Other Drivers		H2 in gas distribution grid	E-gas in gas distribution grid				Limited enhancement natural sink	<ul style="list-style-type: none"> Dietary changes Enhancement natural sink

All sectors have to contribute

GHG emissions trajectory in a 1.5°C scenario



Gas consumption_EU



Projections by:
 IEA_WEO, IEA_ETP
 JRC_GECO
 BP_Outlook 2018
 Shell_Sky
 Equinor_2018
 IRENA_GET2050
 Oko Institut_Vision EU28
 Greenpeace_Energy Revolution

Gas Market upgrading and modernisation

Upgrading the regulatory framework

Implementation of basic market rules and principles

Implementation of Network Codes

5 STUDIES

Regulatory framework fit for decarbonisation

New products and services of TSOs

Technology innovation/new gases in supply

STUDY ON-GOING

Alignment of the gas legislation

Institutional framework – electricity market design

Streamlining the legislation

Legislative process (evaluation, impact assessment,...

Madrid Forum: Regulatory framework enabling the energy transition

- Flexible as far as possible
- Removing potential regulatory barriers
- Providing market-based solutions
- Full and correct implementation of the gas Network Codes in all Member States remains a priority