THE ROLE OF GAS IN THE TYNDP SCENARIO

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RGI Webinar : “Of Pipes and Pylons”

THE ROLE OF GAS IN TYNDP ENERGY SCENARIOS

SHALL WE KEEP THE FIRE BURNING ?

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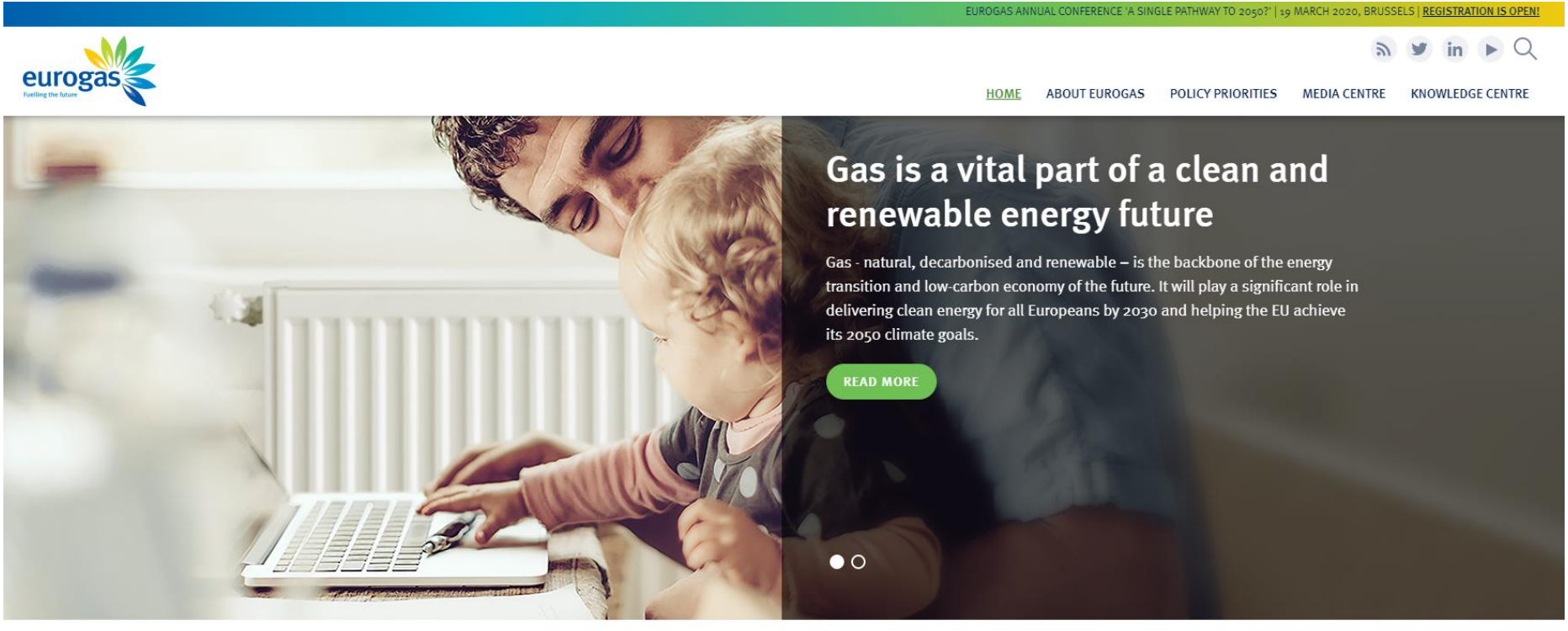
ALL YOU NEED IS GAS



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GAS IN TYNDP SCENARIOS

*decarbonised, either by natural gas imports with post-combustive CCU/s or any other technology
**natural gas converted to hydrogen at import point/city gate or direct hydrogen imports

Source : TYNDP 2020 Scenario Report

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WHY SO MUCH GAS?

The TYNDP narrative

- A “transition fuel” from coal
- Peak power flexibility
- Little structural change needed…

It would be so easy… if only all our gas could go “green”

WHAT ARE WE TALKING ABOUT?

Back-of-the envelope calculations

- Gas today : ~4500TWh ~450bn m³/y
  8 x the volume of Constance lake
- Biomethane equivalent:
  ~1/2 million biogas units
- Hydrogen equivalent:
  ~1 million onshore wind turbines

Data source : ESTAT, Eurobserv'ER, Wind Europe, EBA

All calculations are to be considered orders of magnitude that can vary substantially depending on the assumptions

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GAS : A RISKY GAMBLE

Analysis of some TYNDP assumptions

Imports	~1100 to ~2700 TWh gas to be fully zero-carbon	EXTREMELY DIFFICULT
GHG emissions	bio- and synthetic methane considered zero-carbon	IMPOSSIBLE
GHG emissions	~140 to ~400 MtCO2 to be captured by CCS and BECSS for gas only	EXTREMELY DIFFICULT
Hydrogen	~300 to ~800 TWh renewable electricity for hydrogen only	TO BE ASSESSED

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Analysis of bioenergy assumptions

Primary supply	>30% of primary energy supply will come from biomass by 2050	EXTREMELY DIFFICULT
GHG emissions	Biomethane (including from crops) considered zero-GHG	IMPOSSIBLE
Biomethane	x4 to x5 of current biomethane production by 2050	EXTREMELY DIFFICULT
Biomethane	All biogas will be converted to biomethane for direct injection i.e. no more CHP / electricity only	TO BE ASSESSED
Biomethane	~2/3 of biomethane will come from sequential crops (Gas for Climate study)	EXTREMELY DIFFICULT

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BUILDING AN ALTERNATIVE TO GAS

The importance of system integration

- Energy efficiency first
- Transport and heating electrification
- Ancillary services by renewables
- Virtual power plants
- Storage (including heat)
- District heating
- Behavioral changes
- Back-up options…

USEFUL LINKS

- https://eeb.org/library/decarbonisation-ngos-call-on-the-eu-institutions-to-stop-funding-fossil-fuel-infrastructure/
- https://www.pac-scenarios.eu/

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