

Managing the Transition

Energy Security and Modernizing
Energy Infrastructure

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ANA PALACIO

Energy Security and Modernizing Infrastructure

- Summary of the (EU) **gas conundrum** and its **geopolitical dimension** - Vladimir Putin, October 2021: "Those European companies that receive gas from Gazprom under long-term contracts receive it four times cheaper [than those who buy gas on the spot market]. It is not about a percentage figure but it is four times [cheaper]. And Gazprom does not make any super-profits."
- **Managing the transition** will depend fundamentally on **balancing GHG reduction** (priority: decarbonization) with **energy security** and its corollary of investment (**modernization**) in **energy infrastructure**.
- **Europe at the vanguard of the energy transition.** A committed pioneer to "green". Battleground for realism vs. dogma.
- Contradictions with nuclear and gas. Focus on Gas.

Managing the transition: The view from the EU



Energy transition: The world equation and Europe's position

- The limits of individual action: today EU contributes around 7% of global CO2 emissions (but rapidly reducing). Small “wins” are exponentially more difficult and costly.
 - China contributes 31% and India’s emissions are quickly growing (total for Indo-Pacific over 50%)
- The Social Cost of Carbon - Wide expert disparities: \$10/ton emitted vs. \$100,000/ton emitted
 - Concept created by Obama to evaluate environmental policies (and priced around \$51)
 - EU ETS market currently priced around 90€. Plans to implement Carbon Border Adjustment Mechanism
- The European Union as a regulatory superpower - missed opportunity of “golden” green rule?
 - Pioneer in the realm of climate change
 - The “Brussels Effect”, youth participation
 - Dogma is beyond regulation. Europe’s role requires balance
- European Green Deal: ambition to be first carbon-neutral continent. A reasonable green taxonomy.

Europe: Energy security vs. Green Deal

5 pillars of the EU Energy Union (2015)

Energy security

Security of supply

Affordable prices

Integrated internal energy market

Energy efficiency

Decarbonising the economy

Research & innovation

European Green Deal (2019)

Objectives

Net-zero by 2050

Economic growth decoupled from use of resources

"Inclusivity": Just Transition Fund

Supporting initiatives

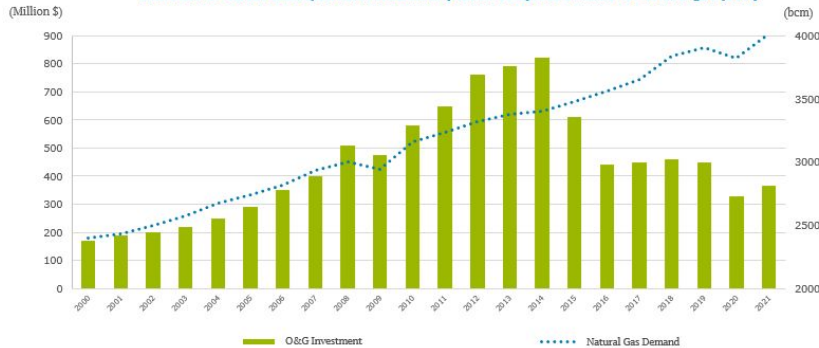
"NextGenerationEU" Recovery Plan (37% green)

"Fit for 55": reduce GHG emissions 55% by 2030
(compared to 1990 levels)

Conclusion: energy security has been overshadowed by environmental concerns

The Paradigm of Gas

Evolution of Global O&G upstream investment (Million USD) and demand for natural gas (bcm)



Source: Enagis, with data from IEA & BP Statistical Review (2021)

- Shift in EU in recent decades away from gas as “acceptable”
 - Decline in upstream exploration and move away from long-term contracts (Putin’s Oct. 2021 speech)
- Current market situation. Faulty projections
 - Surge in demand for gas (+4,6% in 2021 YOY)
 - Post-COVID rebound
 - Extreme weather events
 - Competition with Asian markets (Chinese demand for natural gas +12% in 2021, LNG +17.2%)
 - Inadequate gas storage and infrastructure. Delays in Europe’s Energy Union
 - Geopolitical tensions and weaponization of gas
 - Investor attitudes: (BlackRock) Larry Fink’s Annual Letter to CEOs
- Energy *transition*: gas and nuclear as “transitional” sources
 - IEA predictions for 2050:
 - In NZE scenario, the world will continue using gas, oil, and coal
 - Only 49% of economy will be electrified
 - Of the rest, around 24% will be petroleum products, 28% biomass and 20% hydrogen (and derivatives - should be decarbonized)

The EU Taxonomy

Objective

Standardize sustainability criteria in relation to the EU's climate objectives

- The classification of an activity as "sustainable" impacts costs of financing (such as ability to receive Green Bonds) and ability to attract investment. Aim is to establish a set of undisputed rules for sustainability disclosures
- In the future, Taxonomy rules may be used in state aid, public procurement, tax and other EU regulatory frameworks

Controversy

Inclusion of nuclear and natural gas in January 2022

- Complex legal instrument, aka "Complementary Delegated Act"
- Expected legal challenges: pushback from Austria, Luxembourg and Spain

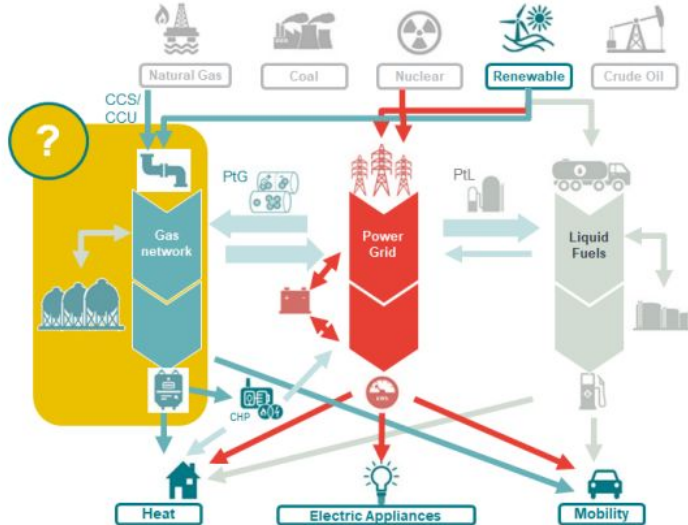
Allegations

Gas: Greenwashing
Nuclear: "do not harm" principle

- Less than 1/3 of global emissions stem from publicly-listed firms controlled by institutional investors.
- Carbon taxes/prices to prompt market allocation of capital?
- Nuclear: the need for pedagogy

Challenges & Perspectives

The role of gas infrastructure in a decarbonized economy (excl. industry and agriculture)



Source: Frontier Economics

Note: This schematic illustration focuses on the energy supply and excludes the use of fuels or gases as raw materials ("feedstock") in the industry.

- "Greening" vs. Decarbonizing - what is our goal?
 - False dichotomy between "good" and "bad" energies
- Universality of climate change → universal transition
- Ambitions based on technological breakthroughs that have not yet materialized
 - Energy storage, decarbonized hydrogen, Small Modular Reactors (SMRs), CCUS
- Next steps
 - Incorporate realism - societal implications of transition must be taken into account - & honest dialogue
 - Reintroduce security of supply into energy dialogue
 - Improve messaging surrounding nuclear
 - R&D
 - Update energy infrastructure
 - Standardize ESG metrics
 - Review forecast methodologies