

Building a

to a Carbon Free Future

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Climate Change: a global and national challenge





Global energy consumption (2019)

The global energy consumption is HUGE..!!! 159 000 TWh ή **159 trillions of kWh**

Renewables & Nuclear 33% Fossil fuels 67% Electricity 17% Heating, transport, etc. 83%

Figure: Of the world's total energy consumption in 2019 (electricity & other), fossil fuels accounted for 86%. Electricity accounted for only 17% of the total consumption, of which 67% were from fossil fuels. Numbers are based on calculations using "direct method", and the figures will differ from reports that use the "substitution method". Sources: Our World In Data and Enerdata



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EU consumption

Total energy demand for 27 member states in 2019



 Oil:
 35%

 Natural Gas:
 23%

 RES & Alternatives : 16%

 Nuclear:
 14%

 Coal:
 12%

Europe vs Global Oil & Coal 47% vs 62%

Oil & Coal & Natural Gas **70%** vs **86%**

National Energy and Climate Plan

Greece currently imports three-quarters of its energy demand, including almost all of its oil and gas.

Based on pre-pandemic figures, our dependence on fossil fuels was approximately 82% compared to an estimated EU average of 70%.

The Greek government has laid out ambitious plans to reduce our reliance on heavily polluting fossil fuels like lignite and oil:

- phase-out of coal-based energy production by 2028 (or earlier)
- reduction of greenhouse gas emissions by 55% by 2030
- ensuring 40% of energy is sourced from renewable sources by 2030
- and very importantly increase of the share of natural gas in the national energy mix by 40% over the next decade.





Natural Gas: a bridging fuel during the Energy Transition



- Natural Gas is the cleanest of conventional energy technologies, generating 50% less CO2 than coal
- It provides baseload stability to our energy system which is crucial while we develop energy storage solutions and mitigate the challenges associated with the intermittence of renewables.
- It is a partner of the Energy Transition to RES, providing the required stable energy supply while new energy technologies are further matured.





Projected NG Demand in Greece & SE Europe

120

20

2010 2011 2012 2013

2014

2015

2016 2017

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2018

2019

2020

2021

2022

2023

2024

2025

2026



sented in the report "Eastern Europe Natural Gas Source: NG demands based Partnership (EE-NGR)Three Seas Initiative North-South Corridor Market Integration Study": 2020, USAID Report





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Greece: SE Europe Energy Hub





Energy corridor: facilitating major transportation routes
Significant oil & gas related infrastructure in place and under development





Gas to Electricity Gas for Transport



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Greece – Energy Transition New Possibilities

Exciting new possibilities where the industry can contribute towards the success of the energy transition

- 1. Development of local gas resources to reduce dependency on imports and provide lower cost local energy source
- 2. CCS projects to actively reduce CO₂ emissions across industries both on national & regional level
- **3. Synergies** with tentative deep water floating windfarm projects, and underground energy storage **to accelerate penetration of RES and reduce cost**
- 4. Possibility & infrastructure for hydrogen projects



Do we have enough time ?



- Two of the five largest gas plays discovered since 2016 are found in the East Med and are <u>both onstream</u>.
- Zohr and Tamar outperform almost all other gas discoveries since Tupi (2006)

East Med faster than the rest of the world



after J. Collard, Westwood Global Energy Group (2021)



Do we have enough time ?

Is it still possible to successfully grow the regional upstream hydrocarbon industry?



YES

The region has at least **30-year horizon**

to develop and monetize its natural gas deposits **leveraging hydrogen prospectivity**



NG

Building a Bridge to a Carbon Free FUTURE

Understanding Synergy Opportunities

RES

CCS

1



How and why will this Decarbonisation pathway develop?



IOCs have acquired

or plan to develop

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Thank You

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