διανομή αερίου
αττικης
ΕΤΑΙΡΕΙΑ ΔΙΑΝΟΜΗΣ ΑΕΡΙΟΥ ΑΤΤΙΚΗΣ Α.Ε.

The critical role of natural gas in the transition of the Greek Energy Market

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Natural Gas Market | The evolution

1995:
First Gas Law
(Law 2364)

2001:
Establishment of EPAs (Gas Distribution Companies)
DEPA in cooperation with private investors (Shell, ENI)

2005:
Liberalization of the natural gas market
establishment of DESFA, the National NG System Operator (Law 3428)

2015:
Full liberalization of the retail NG market
Eligibility status for industrial customers

2017:
Unbundling of Distribution & Supply Companies
Establishment of EDA Attikis - Eligibility status for large commercial customers

2018:
Activation of suppliers to retail market
Eligibility status for all the customers

Natural Gas Market I Key players

RAE

An independent administrative authority for the regulation of the electricity and gas markets in Greece in accordance with the provisions of EU Directive 2009/75

Import → **Transmission** → **Distribution** → **Supply**

International Suppliers

- ✓ Import of n.g. mainly from Gazprom, Sonatrach (LNG) and BOTAS through long-term contracts.
- ✓ Entry points in the country: "Kipoi", "Sidirokastro", "Revithousa" for LNG
- ✓ TAP pipeline is under construction.

Large Importers

- ✓ 3 large importers of n.g. in Greece (DEPA is by far the biggest).

National NG System Operator

- ✓ DESFA is the owner and operator of the national natural gas transmission system in the Greek market.
- ✓ It serves retail market gas suppliers as well as its own industrial customers and large electricity producers (DEI, Protergia, Elpedison, Heron)

DESFA
Hellenic Gas Transmission System Operator S.A.

Natural Gas Distributors

- ✓ Establishment of three (3) n.g. distribution companies from January 2017 (full unbundling of distribution & supply operations).

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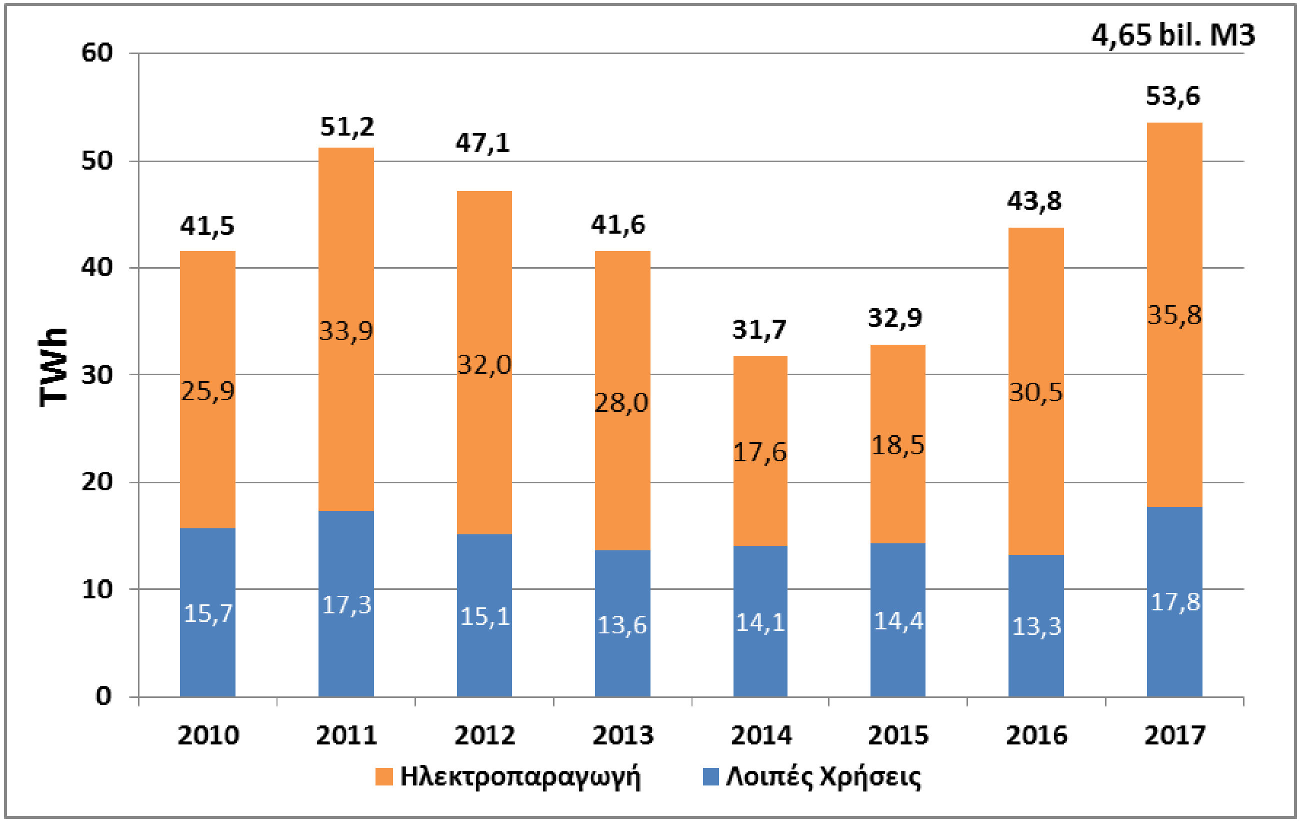
EDA THESS
GAS DISTRIBUTION COMPANY
THESSALONIKI - THESSALIA S.A.

Suppliers of Gas Retail Market

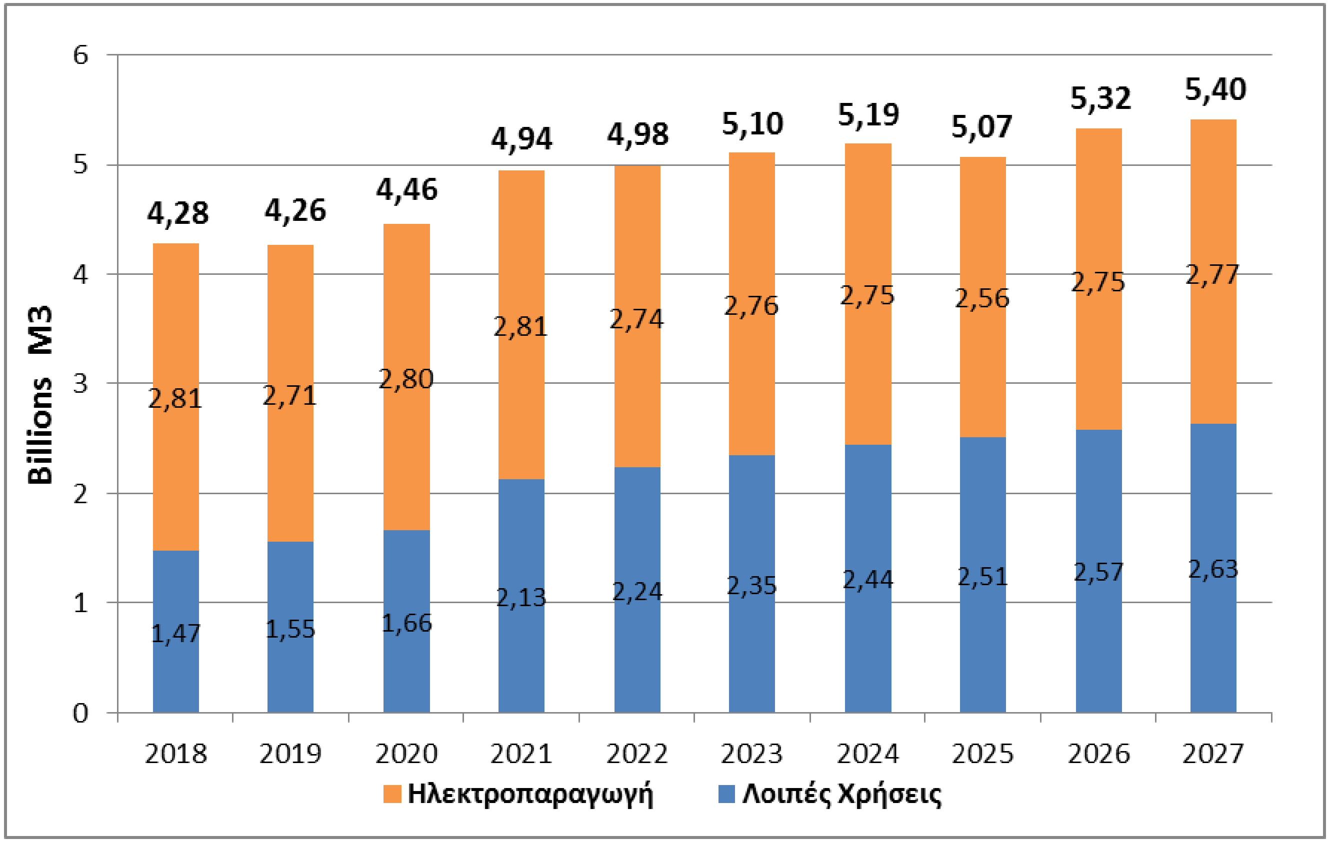
- ✓ Full liberization of natural gas retail market from 01.01.2018 for all customer categories (residential, commercial, industrial)

N.G. consumption 2010-2017



Source: RAE (2017)

N.G. forecast consumption till 2027



Source: DESFA (2017)

Price forecasting

	2015	2020	2025	2030	2035	2040
Crude Oil **(€$_{2016}$ /MWh)**	28,9	42,8	56,6	62,4	65,1	68,9
Natural Gas **(€$_{2016}$ /MWh)**	25,0	27,3	34,7	37,8	40,3	41,7
Lignite **(€$_{2016}$ /MWh)**	7,2	10,3	11,4	13,6	14,4	15,0

Source: National Plan for Energy & Climate (2018)

The contribution of the N.G. in the national targets for Energy & Climate

Greenhouse gas emission reductions & environmental targets

✓Achieving quantified targets to reduce national emissions of specific air pollutants

Increasing RES contribution to energy consumption

✓ At least 30% share of RES in gross final energy consumption

Achieve energy savings in final consumption

✓ At least 7-7.3 Mtoe cumulative energy savings

Change consumption standard & type of fuel consumed to final consumption

Enlargement of N.G. use in final consumption

Source: Natural Strategic Plan for Energy & Climate (2018)

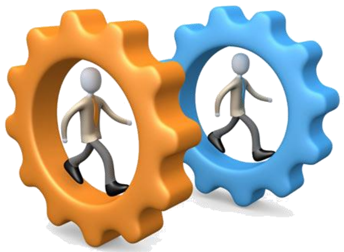
Strategic Pillars & Key Distribution Challenges

Safety

- ✓ Goal Zero

Sustainable development

- ✓ Increase penetration
- ✓ Fair & equal treatment of network users



Operational excellence

- ✓ Optimization of operations and processes
- ✓ Innovation

Hellenic Key Distribution data 2018

44.000 new connection contracts

430.000 active customers

43% penetration
(on active network)

3,7 mil. € subsidy

41,5 mil. € CAPEX
(in network & SL's)

10,2 TWh distribution volume

Hellenic Distribution Forecast till 2023

210.000 new connection contracts

50% increase in active customers

12,7 mil. € subsidy

400 mil. € CAPEX
(in network & SL's)

14 TWh distribution volume

Objectives for the next years

- ✓ Increase usage of natural gas & as a result increase value of distribution network >50% vs. 2016
- ✓ Investments in gas networks of ~2 bil€ in the period 2020-2030
- ✓ Development of highly competitive gas retail market
- ✓ Ensure the smooth, secure, reliable and uninterrupted operation & monitoring of the Distribution Networks
- ✓ Equal access for the Distribution Network Users Distribution
- ✓ Development, inspection, maintenance, replacement and upgrading of the Distribution Network
- ✓ New CNG and small scale LNG infrastructures

N.G. Contribution to energy market's transformation

- Efficient use of energy
- Completion of the energy market
- Security of supply
- Technological Excellence
- Development of international collaborations

Conclusion

- N.G. infrastructures lead in a smooth de-carbonization through the use of cleaner, flexible, efficient and economical source of energy
- New n.g. infrastructure will enable the increase of Renewables in country's energy mix
- New n.g. infrastructure will increase interconnections with other countries and security of supply in all state-members
- Market development and increase of competition will further improve the environmental footprint and prices offered to end users
- Infrastructure will be able in the future to transport gas or H_2 produced from renewable sources

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Thank You!