

Presentation to IENE's 24th Energy Conference

«Energy & Development 2019: "Energy's Pivotal Role in Economic Growth"»

November , 2019

***Natural?* Gas:**

**“Energy for the future
in a changing landscape”**

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Head Strategy & Corporate
Development

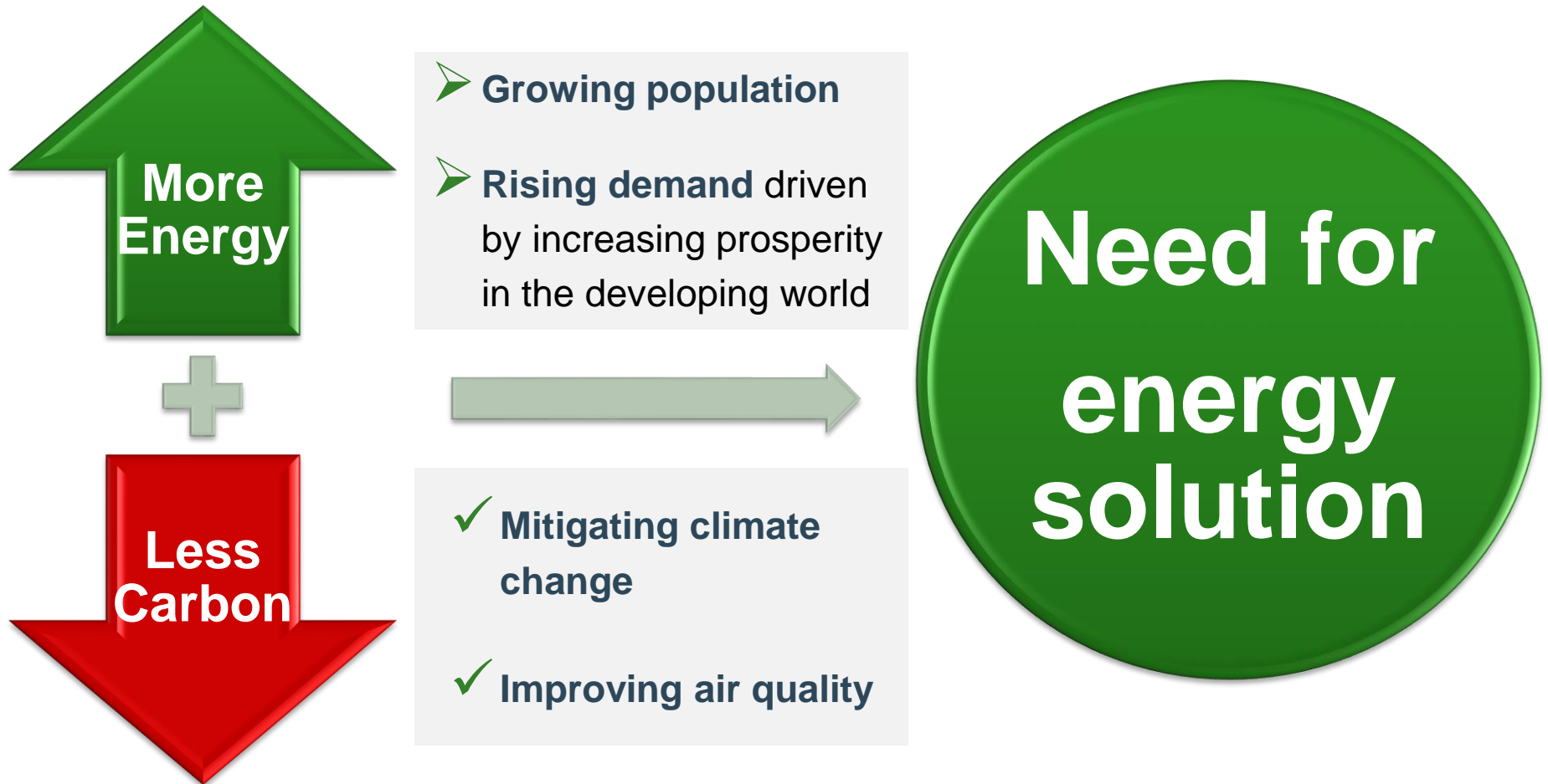
Overview

■ **Global energy trends**

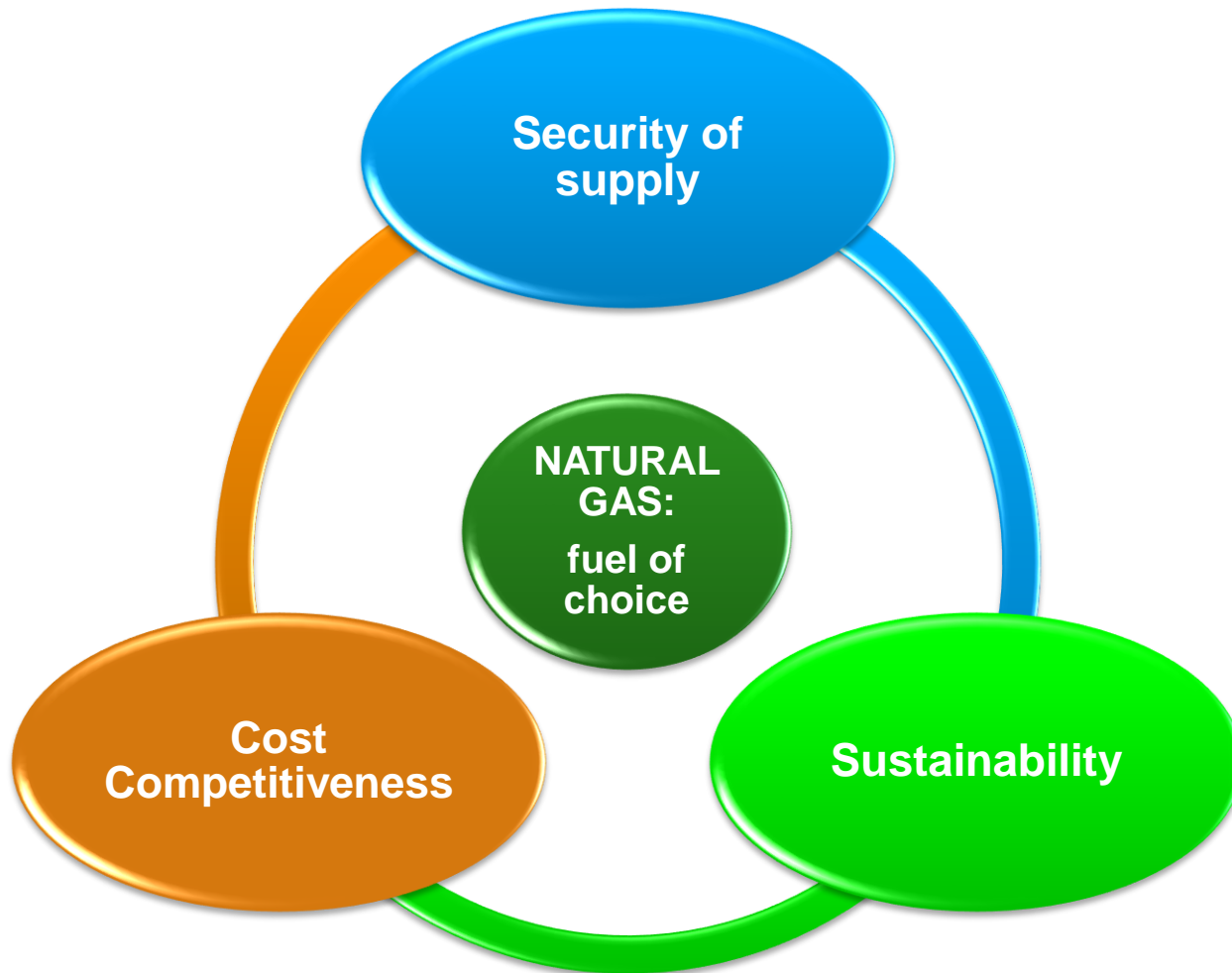
■ Greek energy market at a tipping point & SEE

■ DEPA strategic positioning and ambition

The Energy Challenge



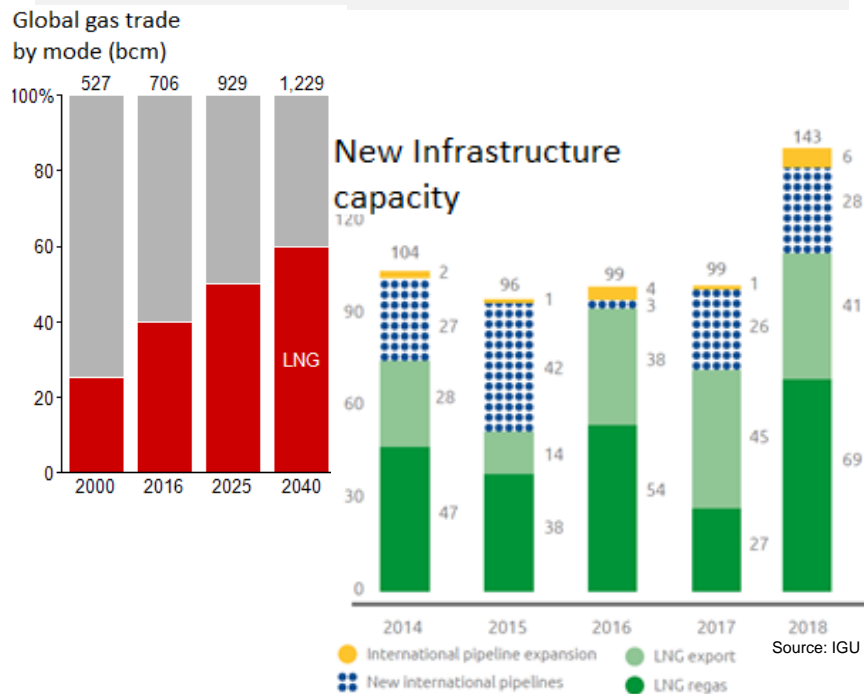
Natural Gas is well positioned vs. other fuels



Natural Gas Market: Changing Landscape

From piped to LNG

- LNG infrastructure growing more rapidly than pipeline capacity
- LNG is gaining larger share of global gas trade flows



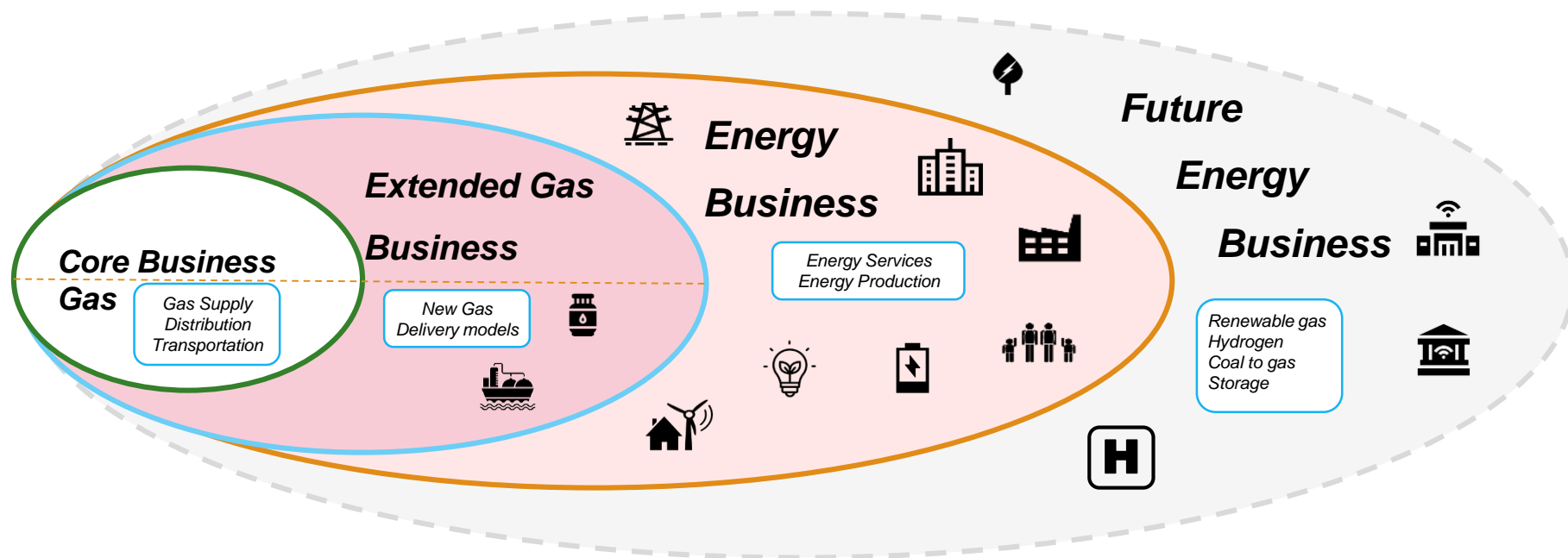
From LTCs to Spot

- Long-term contracts and oil indexation used to provide certainty in natural gas prices.
- However, given recent **price volatility**, contracts can risk locking customers into **high price differentials** between spot and term prices
- Towards a “**contract free**” market

From mega Infra to local investments

- Local or Regional infrastructure, as well as SSLNG technologies, have the potential to **offer greater access** to gas in emerging markets that International projects are lacking
- **Bypass** of “critical” countries to avoid **geo-political risk**
- Opportunities to increase flows, diversify supply, offer flexibility

From Gas Business to Energy Business



From commodities to services, with customer/territory at center

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Greek and SEE market under transformation

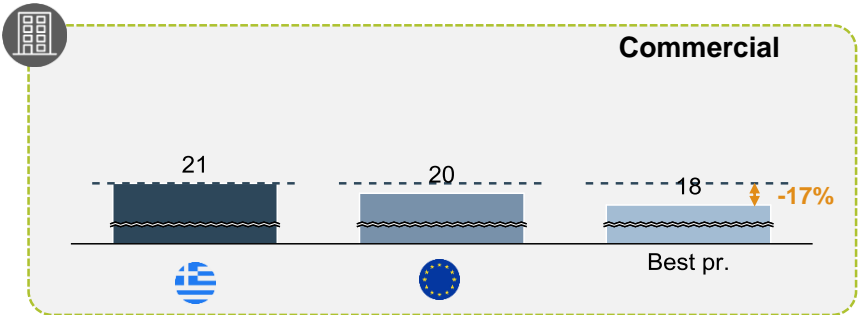
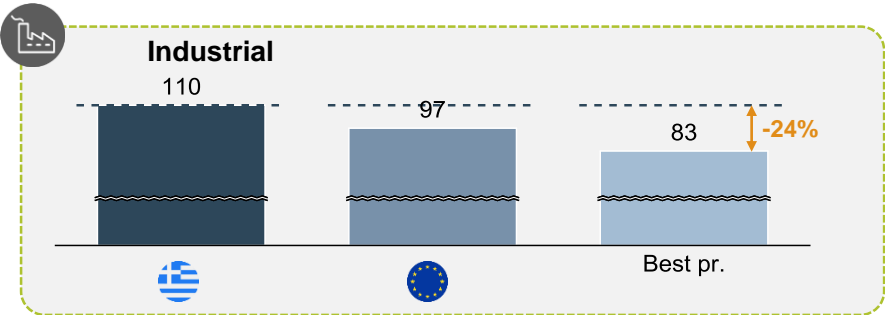
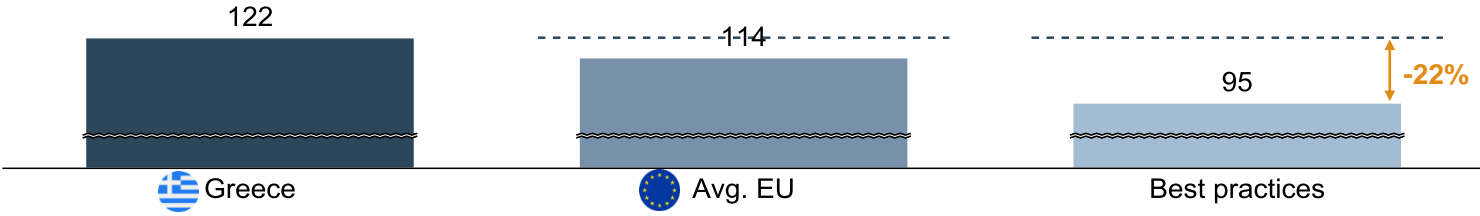
Key market trends: overview

	NATURAL GAS DEMAND EVOLUTION	Stronger role of gas expected in Greece mainly driven by lignite production reduction and distribution network expansion, although potential threat from RES
	SEE «REGIONAL HUB» DEVELOPMENT	Greece to become a gas regional hub (strategic positioning in SEE area) and more interconnected to EU hub , increasing cross-border trading in the mid-term
	LIBERALIZATION AND NEW MARKET RULES	Regulatory changes promoting competition , threatening incumbent mkt share and fostering full-fledged market mechanisms (EU power “target model”)
	MORE COMPETITIVE WHOLESALE MARKET	Wholesale market with increasing space for new importers (especially LNG), both among DEPA’s competitors and large users trying to disintermediate supply
	DOWNSTREAM PLAYERS & OFFERING	Trend towards a dual fuel “playing field” with open competition between gas & power incumbents and IPPs leading to increasing switching rates
	ENERGY EFFICIENCY OPPORTUNITY	Energy efficiency becoming a strategic imperative, as efforts lagging behind despite good opportunity potential (higher energy intensity and energy cost vs. EU)
	OIL-BASED FUEL SWITCH POTENTIAL	Huge portion of energy demand still linked to oil products , with high potential of switching to cleaner and more efficient sources

Energy efficiency: a strategic imperative for Greece, which is reacting later than other markets, with wide gaps to fill in terms of energy saving

ENERGY EFFICIENCY

Energy intensity, ktoe/B\$ at PPP in 2017



Comparison with EU performance shows significant energy savings opportunities for Greece (up to 5 Mtoe when achieving best practice level)

Note: Energy intensity evaluated as Primary Energy Consumption on Gross Value Added; PPP, Purchase power parity; Best practices are Denmark (92), Italy (95), UK (95)
Source: Analysis on Eurostat data

Challenges that Greek gas market has to tackle down

**Catching up
international
market
movements...**

- **Changing perspective:**
 - Gas Market → Energy Market
- **LNG displaces piped gas**
 - LNG share in Greek gas market is around 40% in 2019

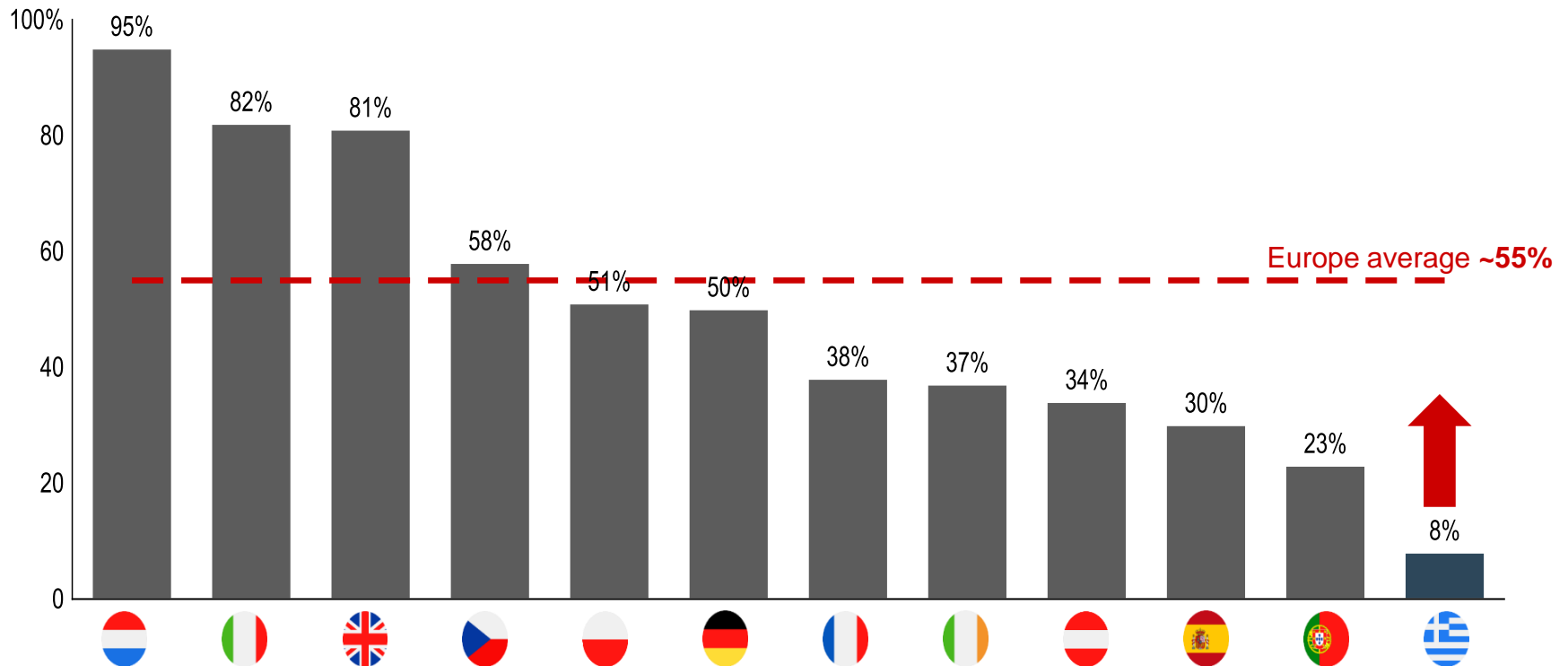
**...but
simultaneously
cover regional
and national
needs**

- **Increasing demand driven mainly by:**
 - Power Generation sector: further decarbonization
 - Retail market: low gas penetration comparing to EU average
 - Alternative uses: exploiting potential of fuel switch
- **Market opening: From local to regional market**
 - Cross-border trading opportunities unlocked by new interconnections with adjacent markets
- **Integration with already matured EU markets**

Greece needs to close the gap in natural gas penetration vs. other European countries

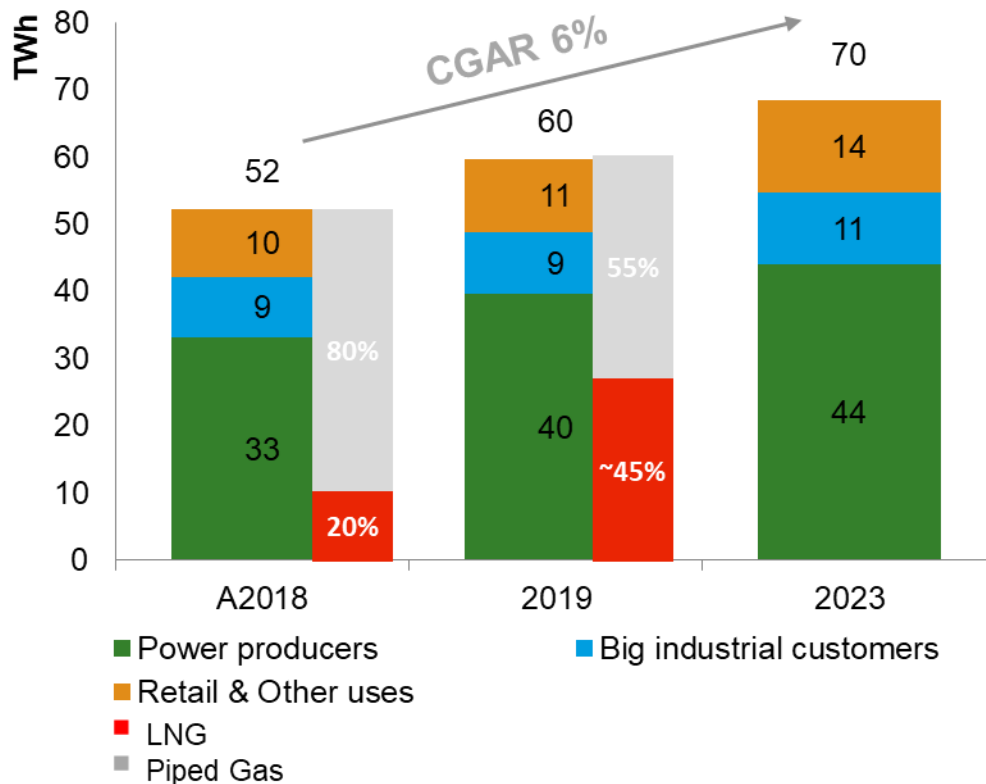
Gas penetration in European countries, % of customers with natural gas in 2018

Gas penetration in european countries (%)



Higher role of gas expected in Greece driven by lignite unit reduction in power generation, increasing gas access and new uses

Greek natural gas demand evolution, 2018- 2019E- 2023E



Key highlights

- LNG is gaining share over piped gas. The **LNG flows** in the Greek market are **more than doubled** comparing to previous year
- Increase in **gas-fired power generation** mainly driven by significant switch from lignite to gas, in line with governmental policies to expedite decarbonization
- Increase in **Retail & SME segment demand** due to further development of **distribution networks** as per DSOs' development plans
- **Export opportunities** possibly unlocked by **new interconnections** with adjacent markets with significant volumes from **2022/23**
- **Alternative uses** (SSLNG/CNG) developing from 2021 **exploiting potential of fuel switch**, though low sizable volumes expected

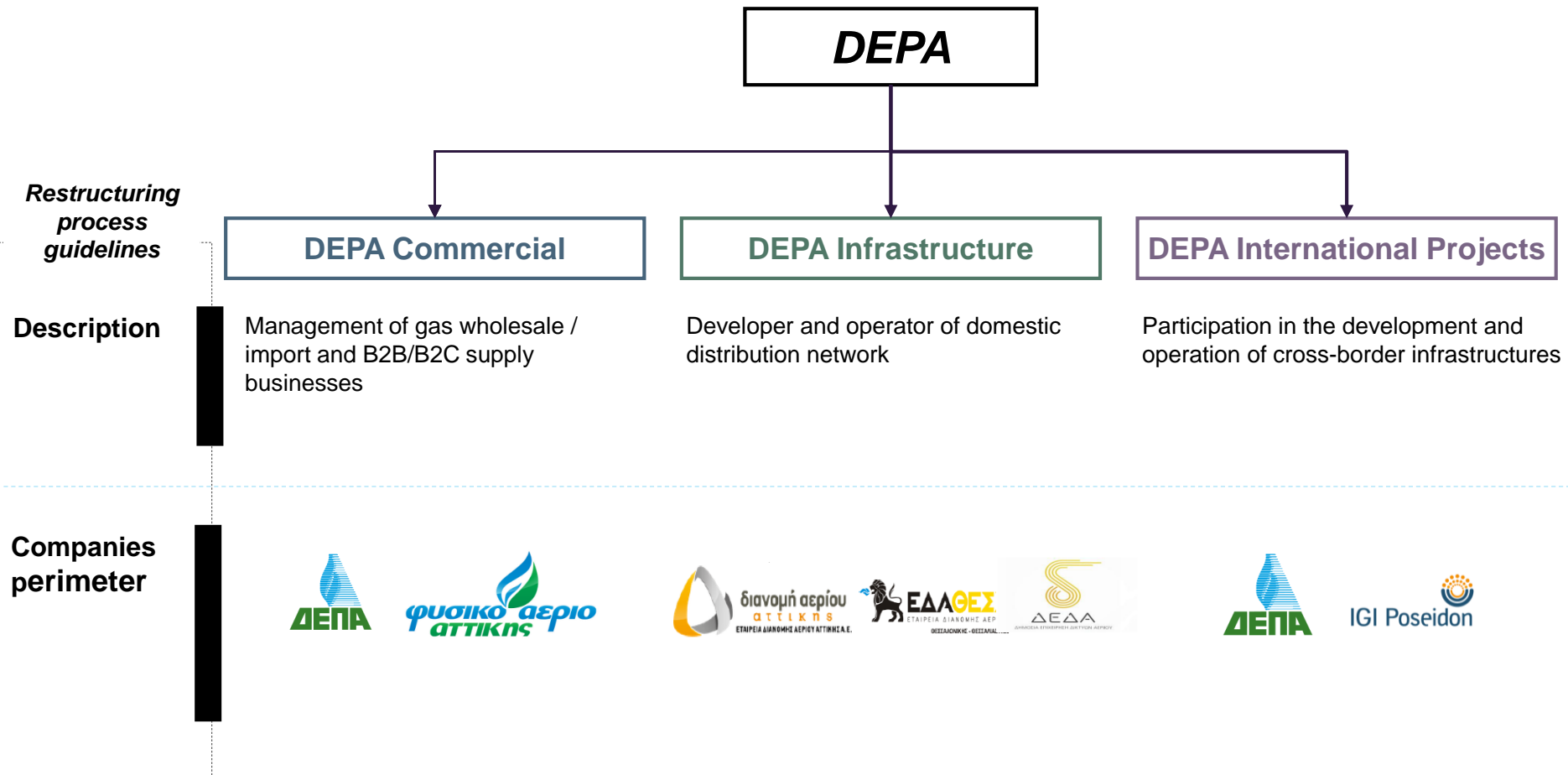
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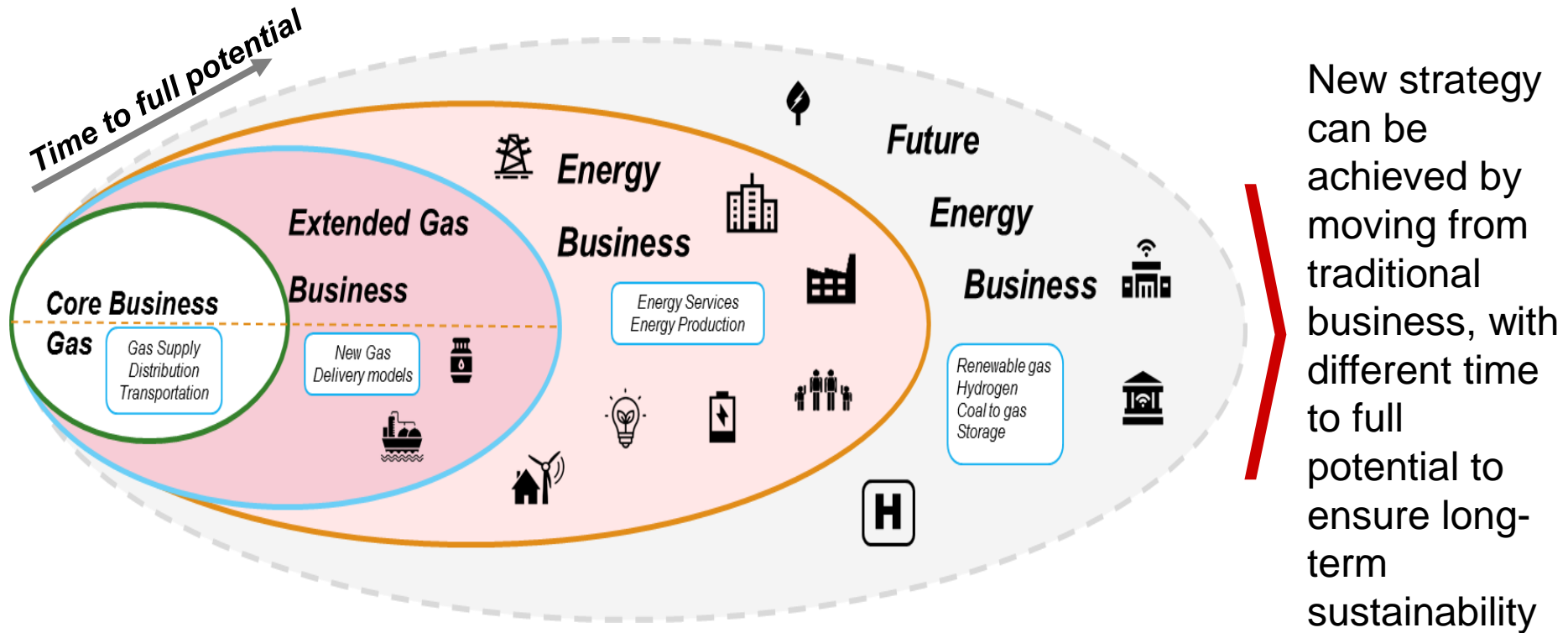
■ **DEPA strategic positioning and ambition**

DEPA Restructuring

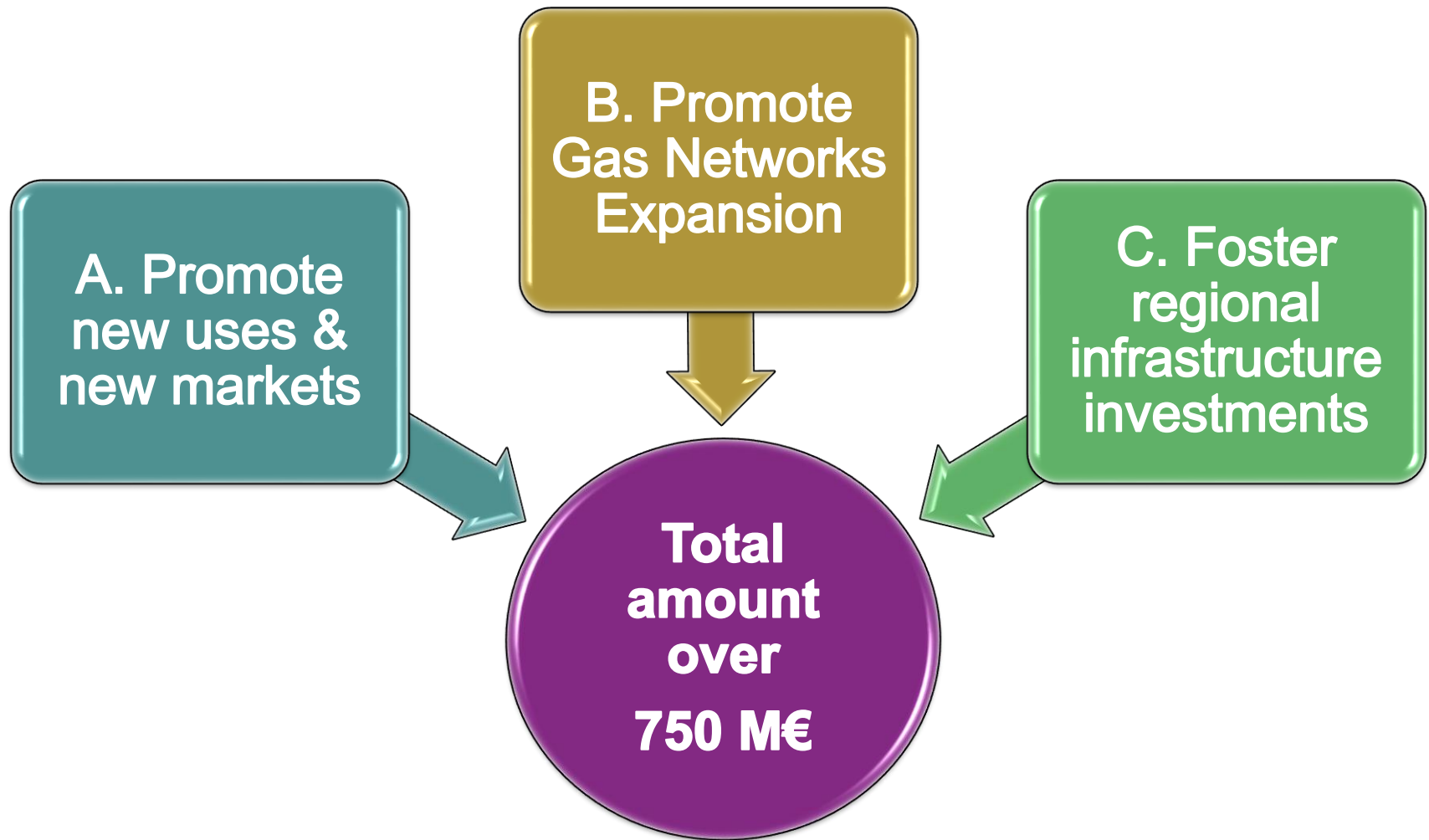


Adapt in the new environment

Strategic path of DEPA

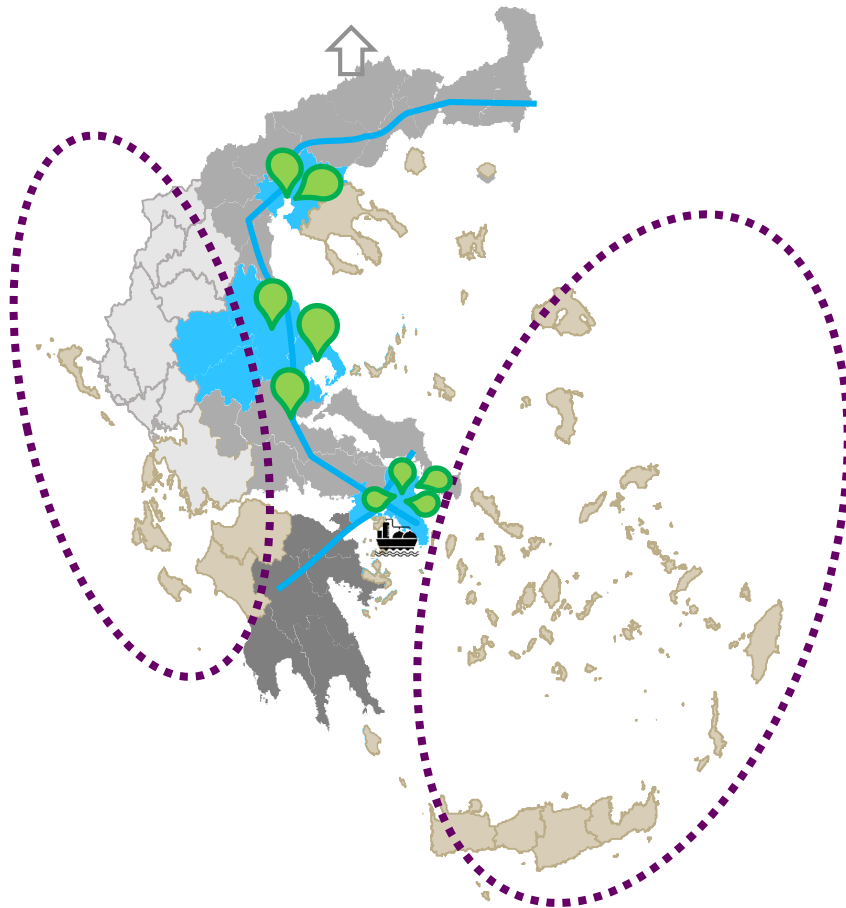


The role of DEPA in the new environment: DEPA's Group related Investments

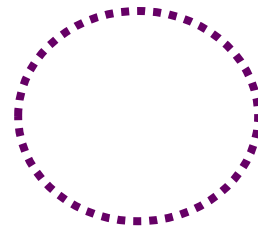


The role of DEPA in the new environment:

A. Promote new uses & new markets



- Gas for road transport – developing CNG refilling stations national network



- Deploy CNG for remote regions
- Introduce Small Scale LNG for remote areas and maritime/ road transportation



- bunkering









- Cross-border trading/sales
- Energy services

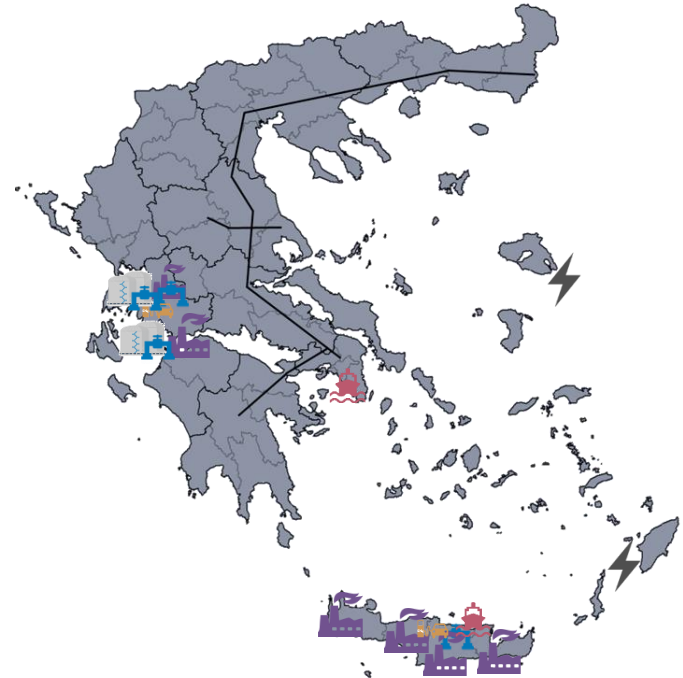
Main HP pipeline

DEPA is Leading the Way to LNG in Greece

SSLNG project

Market Targets

-  Bunkering
-  Power Production
-  Remote Industrial/Commercial Customers
-  Remote Distribution Networks
-  Distribution networks with LNG terminals
-  Gas for transportation



Projects that DEPA participates:

- Poseidon Med II
- BlueHUBS
- SuperGreen

Construction of
LNG bunkering
vessel (3,000 m3)
Piraeus Home
Port

Establish
SSLNG in
Greece &
East Med

Ensure
availability
of LNG in
region

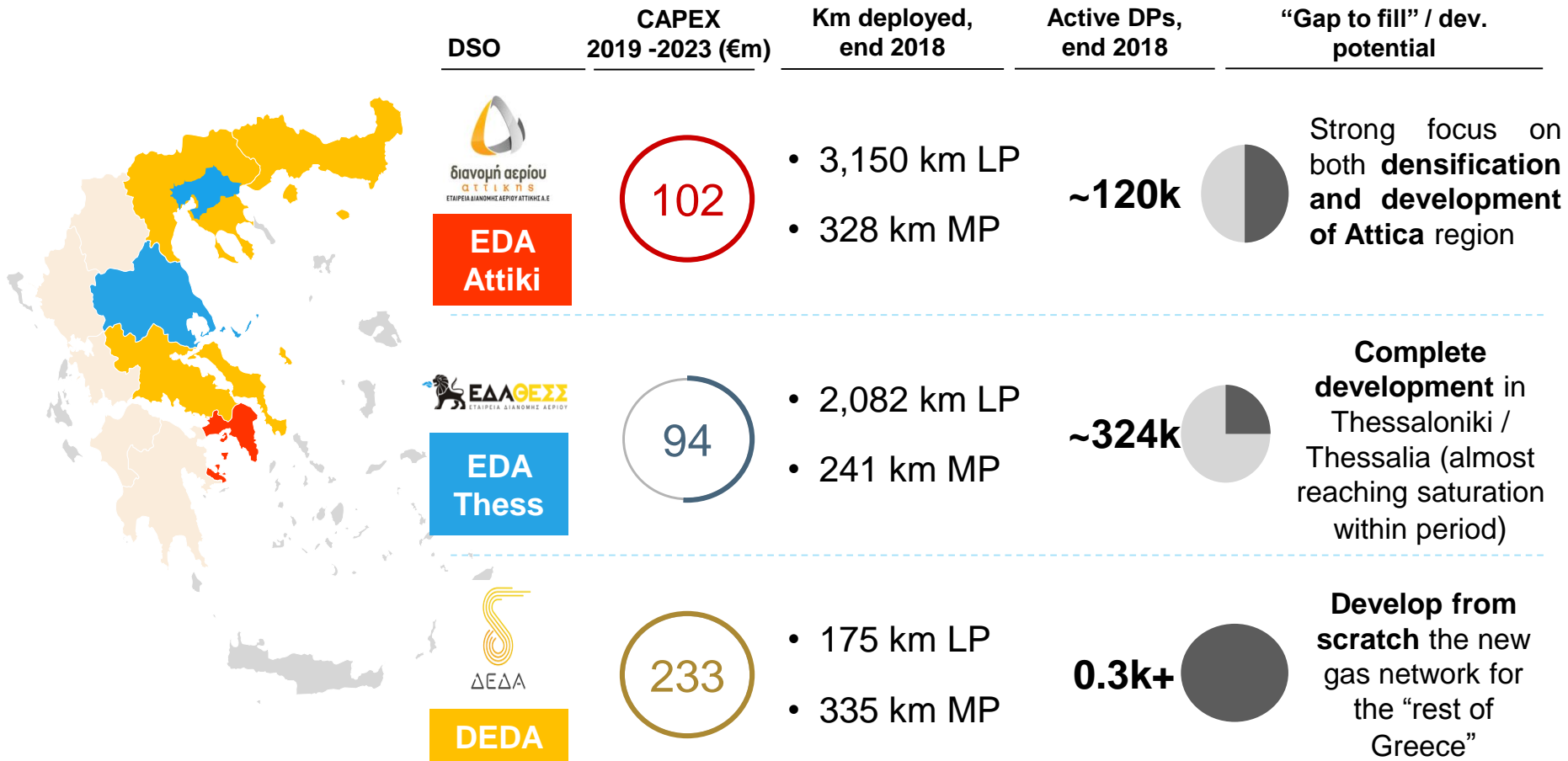
Advancing
commoditization
of regional
market

Vessel expected to be commissioned by Mid 2022

The role of DEPA in the new environment:

B. Develop substantially the distribution network

Greek natural gas distribution footprint

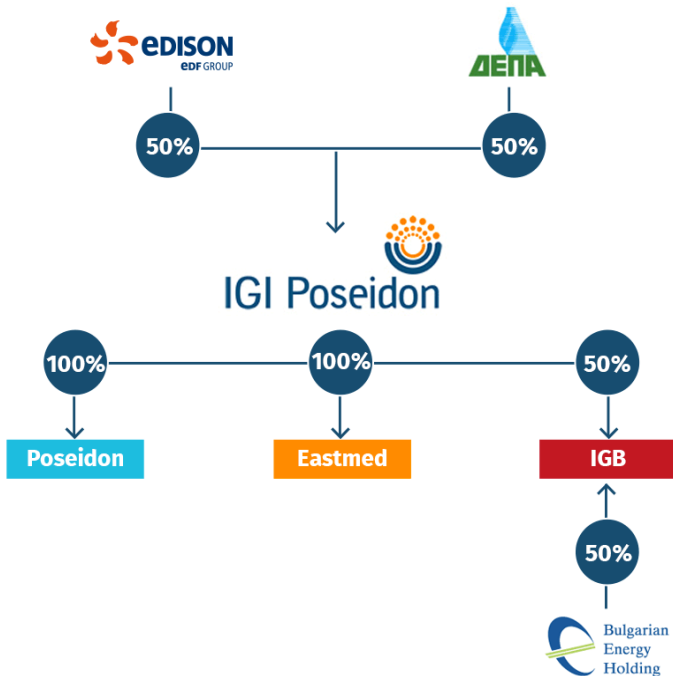


Note: Figures based on management estimates

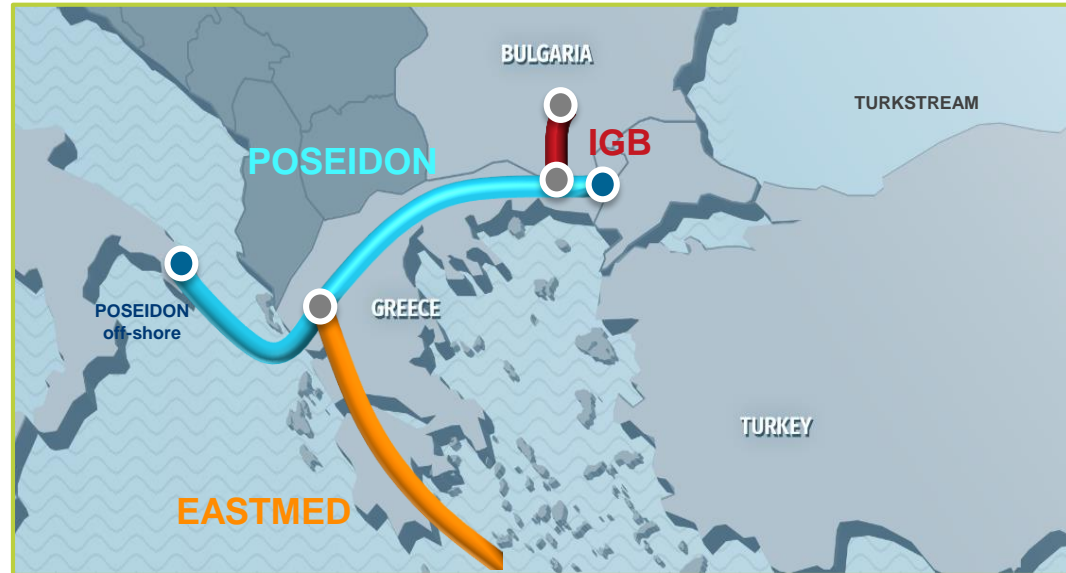
The role of DEPA in the new environment:

C. Foster regional infrastructure investments

IGI Poseidon shareholding/project structure



Key projects: overview



Status
/ COD

COD: H1 2023
Development under completion

COD: H1 2025
Development phase to be completed through 2019-2021

COD: beginning of H2 2021
Under construction

CAPEX (€m)		
Poseidon*	EastMed*	IGB
3.400	5.200	248

* CAPEX Poseidon & East Med; 2022E, not committed

Conclusion

- ✓ **(Natural ?) Gas**

A pillar in the transformation of the energy market

- ✓ **Greek natural gas market:**

The challenge for parallel Transformation and Development

- ✓ **DEPA**

A cornerstone for the transformation and development of the Greek energy market