



# Cyprus Oil Gas Association

Under the auspices of the Cyprus Chamber of Commerce and Industry

NICOSIA May 7th 2014

“Forum on Visegrad Group-Eastern Mediterranean Energy Cooperation”

UNIVERSITY OF CYPRUS



Membership  
East Med Industry Developments  
Prospects and Investment Potentials

[www.cyoilgas.org](http://www.cyoilgas.org)

**Presented by: Andy Varoshotis** BSc, MBA, IAFP, EIET, MSDT  
Energy Technology - Strategy - Investment Advise



# New Frontiers for Cyprus

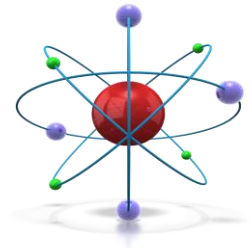
*"Building the new energy economy"*

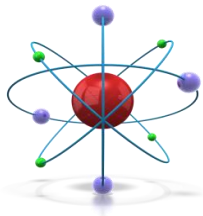
# Cyprus Oil & Gas Association Membership

The Cyprus Oil and Gas Association (COGA) was founded under the auspices of the Cyprus Chamber of Commerce and Industry, with the aim of serving the interests of the companies and professionals in the oil and gas industry.

## Our Objectives:

1. To protect and promote the interests of our members.
2. To provide a forum for discussion on issues of common interest.
3. To promote co-operation and B2B among members.
4. To promote the development of local resources in the oil, gas and petrochemical industries.
5. To collaborate with local and international research centres and institutions to stimulate skills development programs and training in Cyprus.
6. To promote, research, innovation and new Energy Technologies.
7. To Attract Foreign Direct Investment in SPV's for Industry Infrastructure Projects.
8. To become the regional industry share value hub.





## Ordinary Members:

Any multi-discipline Oil & Gas operator, drilling company, seismic data provider, petrochemical laboratory, importer or exporter of petrochemical products, land storage carriers, field licensee, equipment manufacturer, by-product engineering company, oil and gas consulting firm, marine engineering, oil and gas shipping, LNG bulk carriers, oil tanker operators, company that provides services to clients in the Oil, Gas and Petrochemical industry and satisfies the following conditions is eligible for Each applicant, as described above, shall be reviewed and approved by the Board of Directors.

## Associate Members:

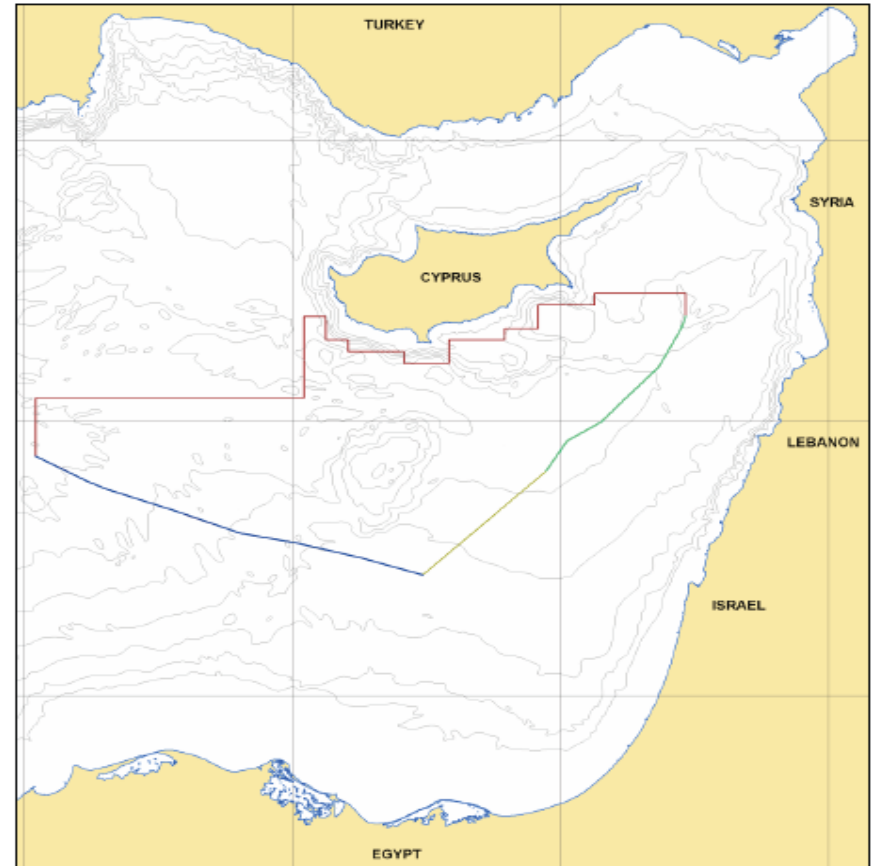
Associate Membership will be opened to all service providers, engineering companies providing services to the Oil, Gas and Chemical Industry but not eligible to join as Ordinary Members.

Example: Environmental companies, corporations and individuals involved in activities such as specialist studies in plant safety / loss prevention, design subcontract, manpower supply, sales and/or services of equipment/materials, fabrication of equipment packages, and construction of facilities. Associate members can be legal, secretarial, auditing, management consultancy, financial services, facility architects and civil engineering designers, oil and gas asset finance companies, engineering professors and students in the related field. The Board has the right to expand the list on its discretion to cover other related fields.

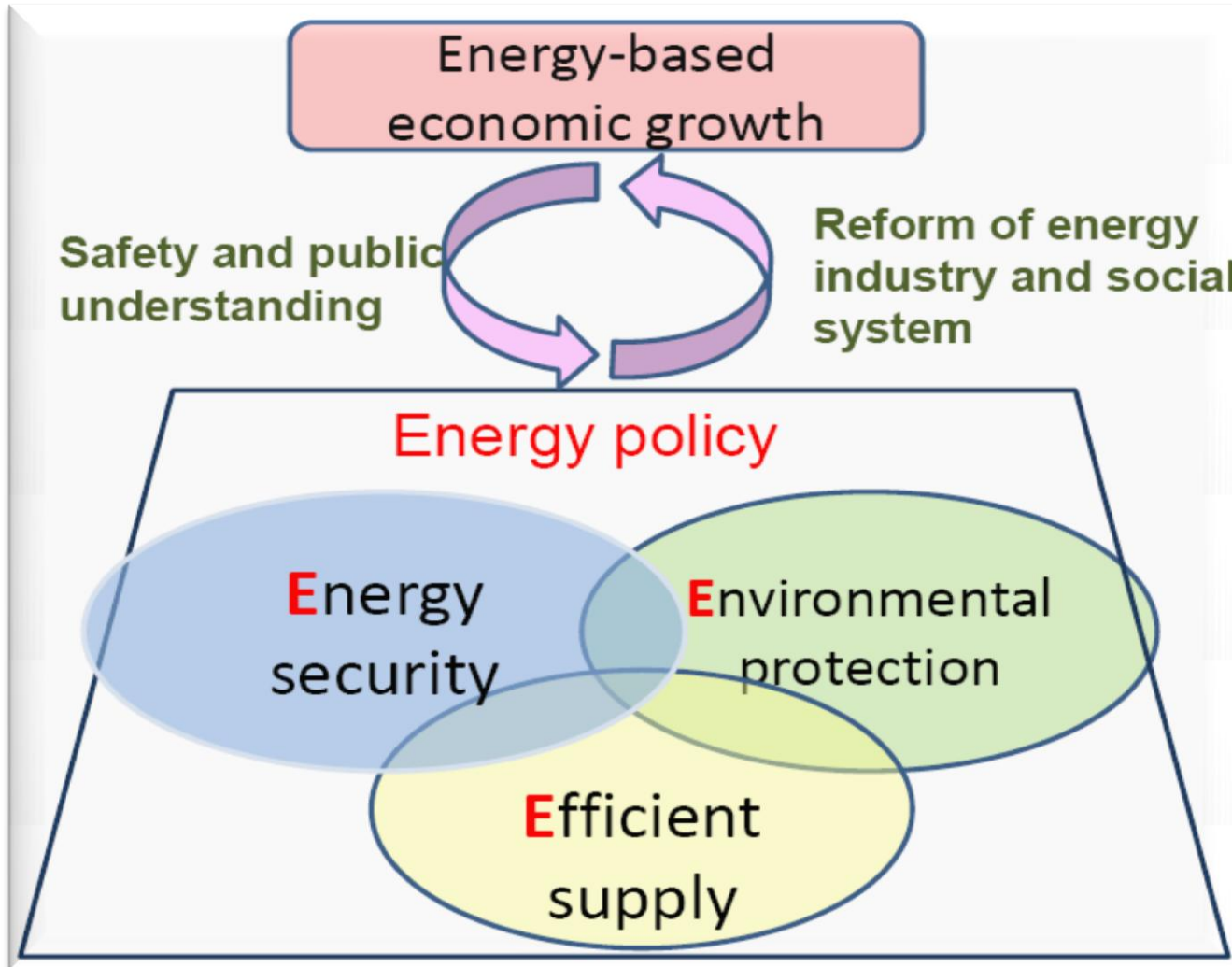
# Maritime Boundaries

## International Bilateral Agreements

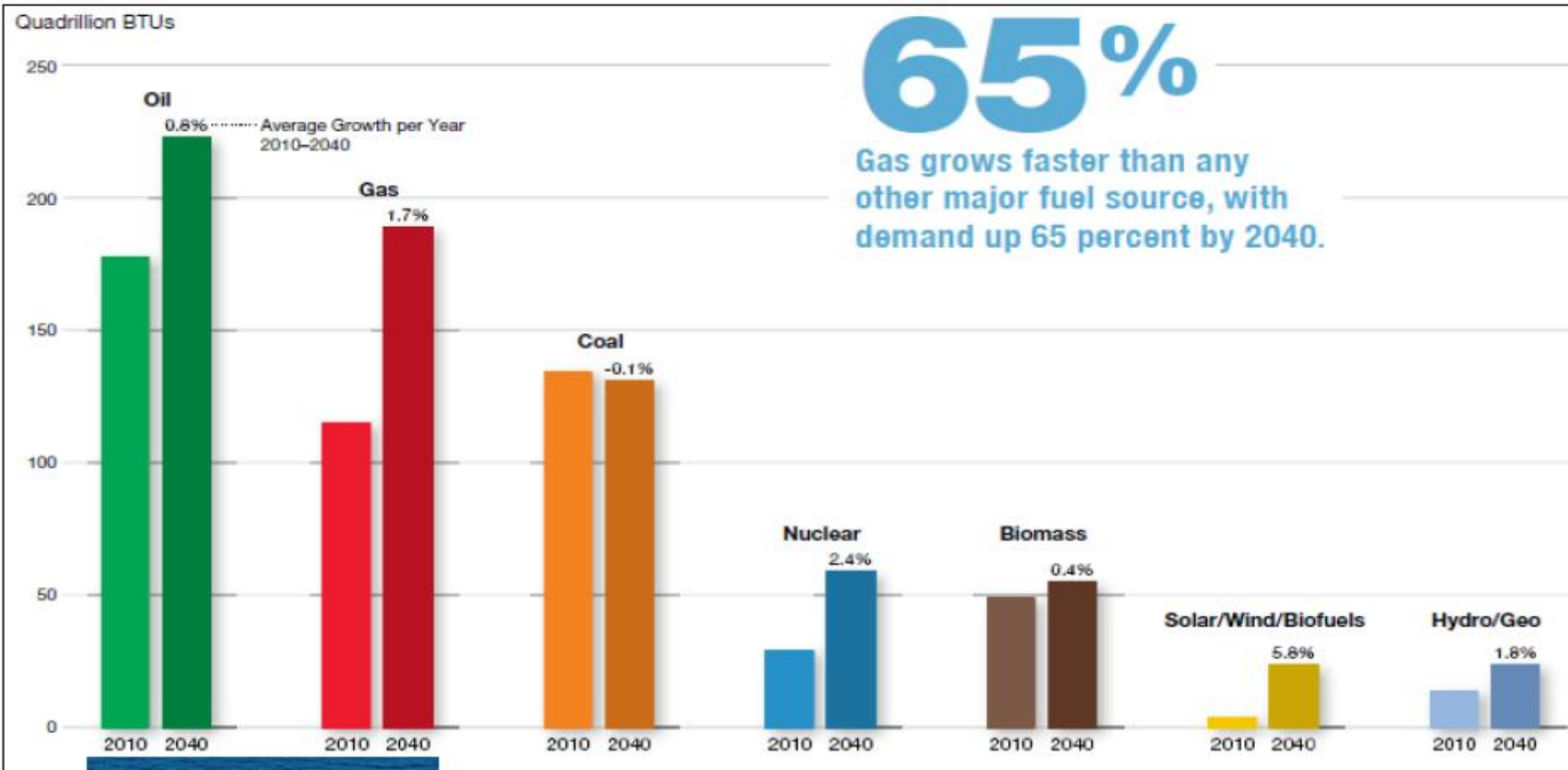
- ▶ Arab Republic of Egypt
  - ◇ Delimitation of the EEZ (2003)
  - ◇ Framework Agreement concerning the development of cross-median line hydrocarbon resources (2006)
  - ◇ Confidentiality Agreement (2006)
- ▶ Lebanon
  - ◇ Delimitation of the EEZ (2007)
- ▶ Israel
  - ◇ Delimitation of the EEZ (2010)



# New Cyprus Economy?



# Oil & Gas Will Dominate the Energy Mix



Source: ExxonMobil

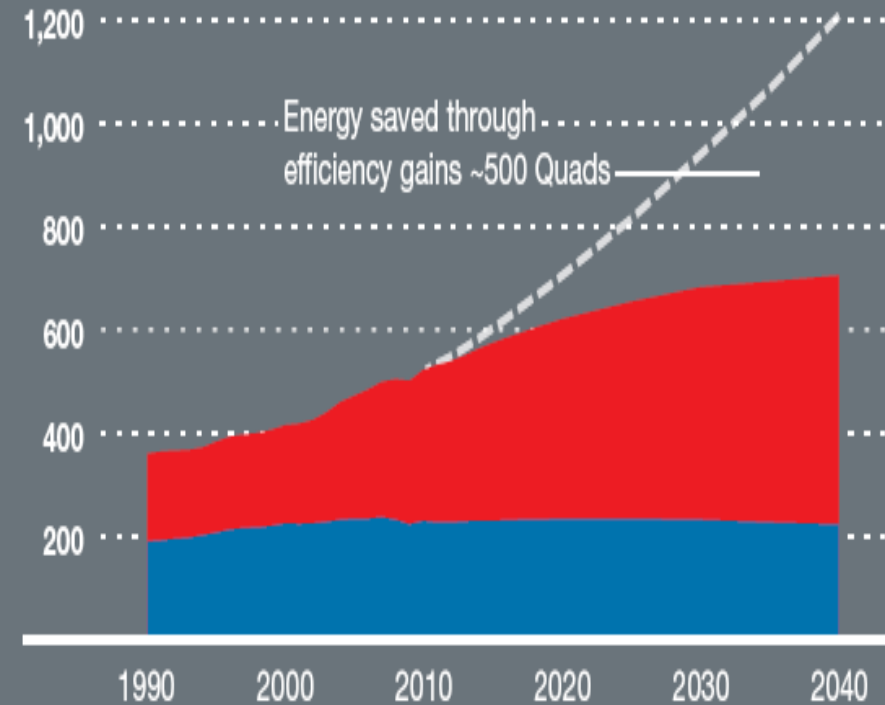


**Oil and Gas will continue to dominate the energy mix**

## Global Energy Demand

■ OECD<sup>(1)</sup> ■ Non-OECD

(quadrillion BTUs)



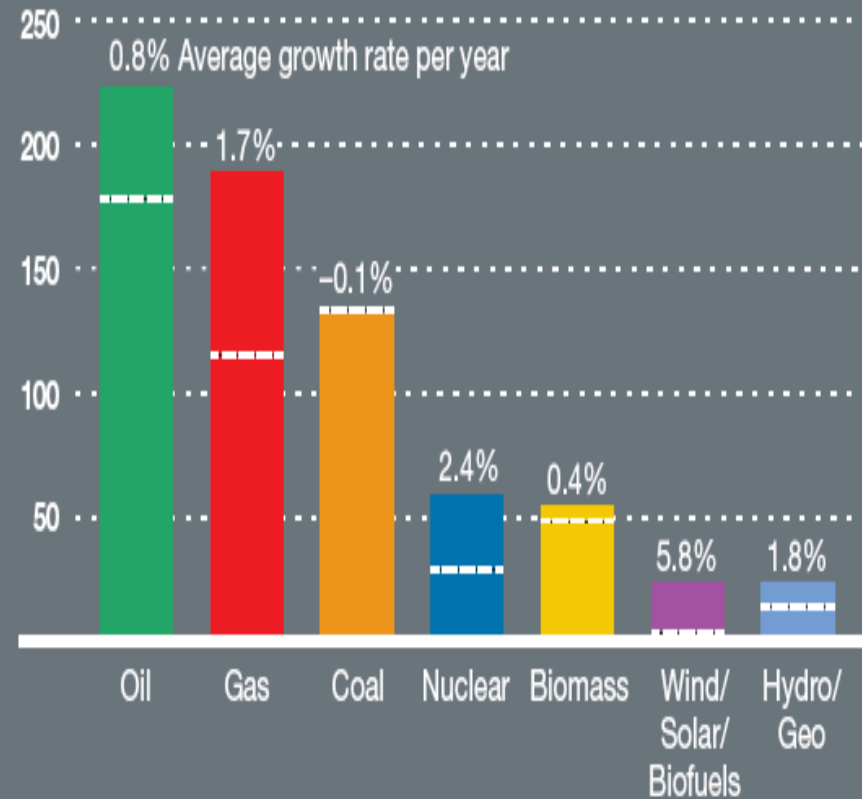
(1) OECD = Organisation for Economic Co-operation and Development.

Source: ExxonMobil, 2013 *The Outlook for Energy: A View to 2040*

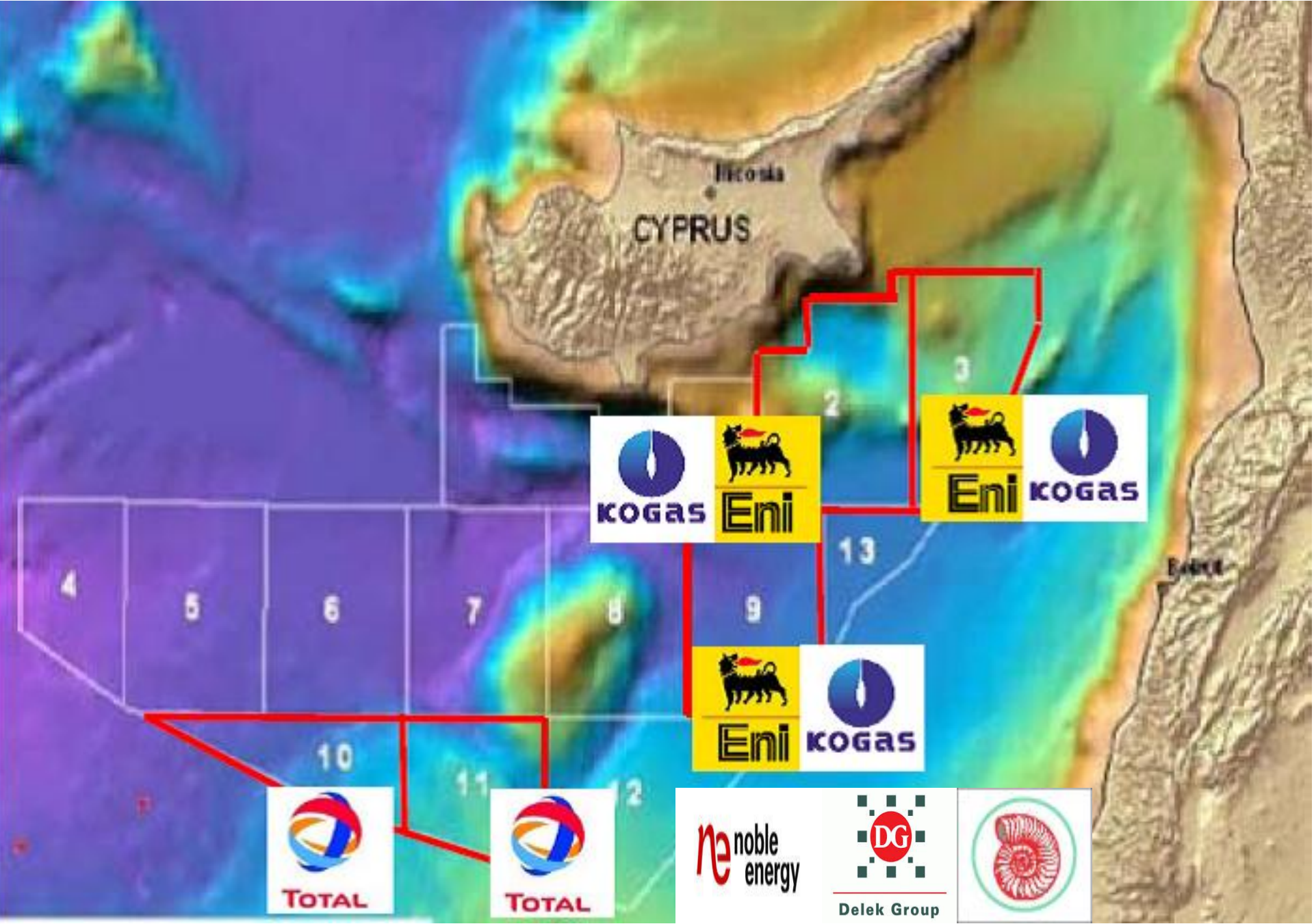
## Global Energy Mix

--- 2010 □ 2040

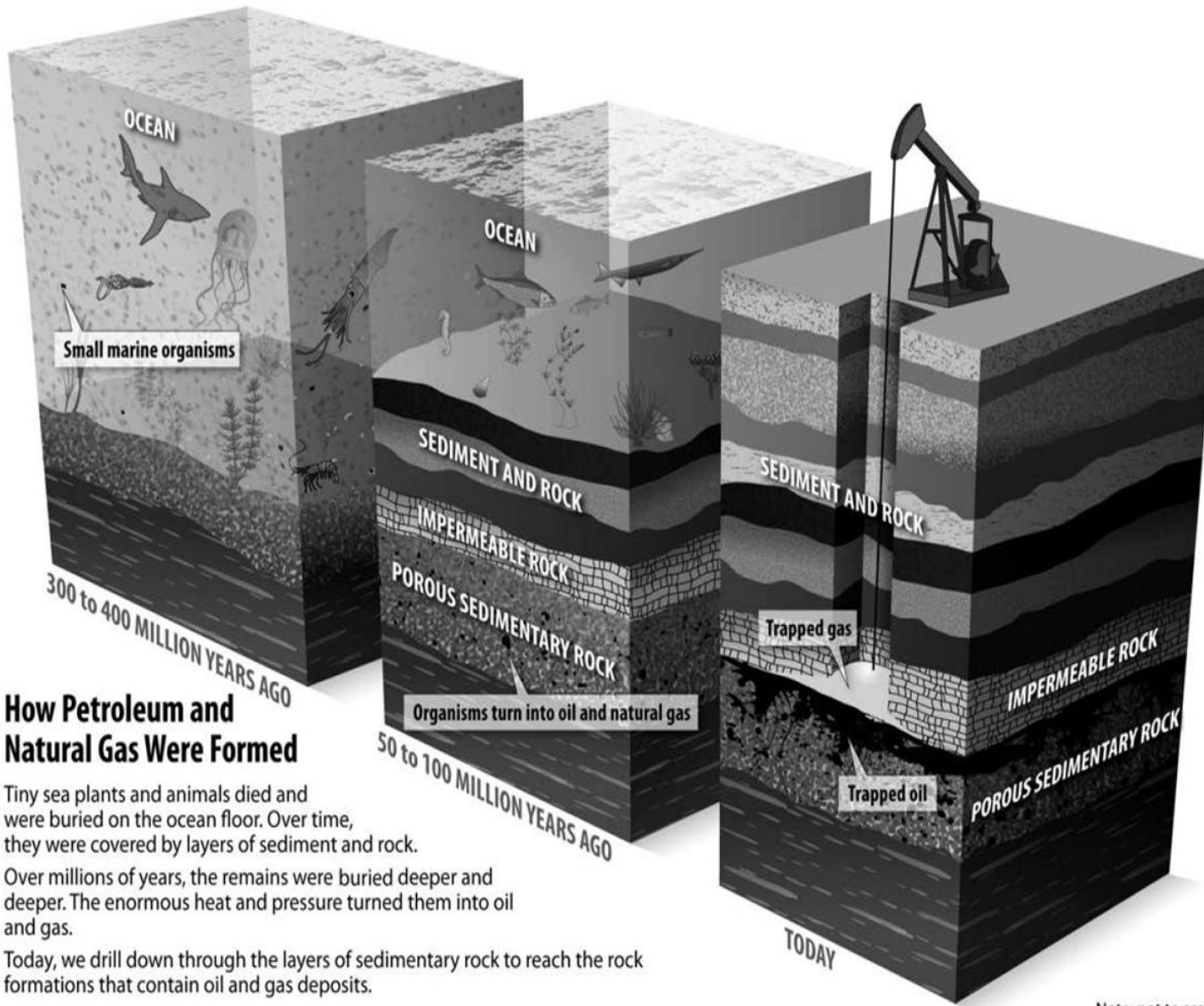
(quadrillion BTUs)







Source: Ministry of Energy, Commerce, Industry and Tourism.

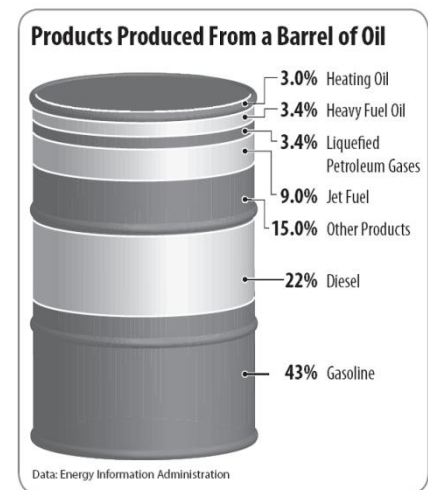
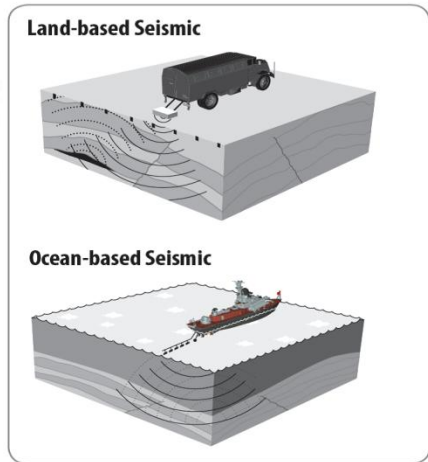


## How Petroleum and Natural Gas Were Formed

Tiny sea plants and animals died and were buried on the ocean floor. Over time, they were covered by layers of sediment and rock.

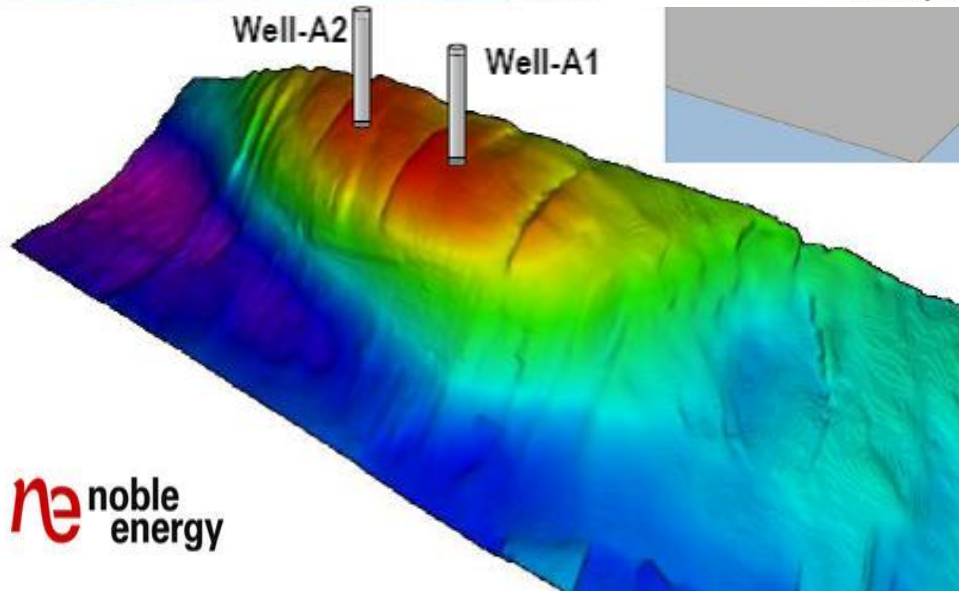
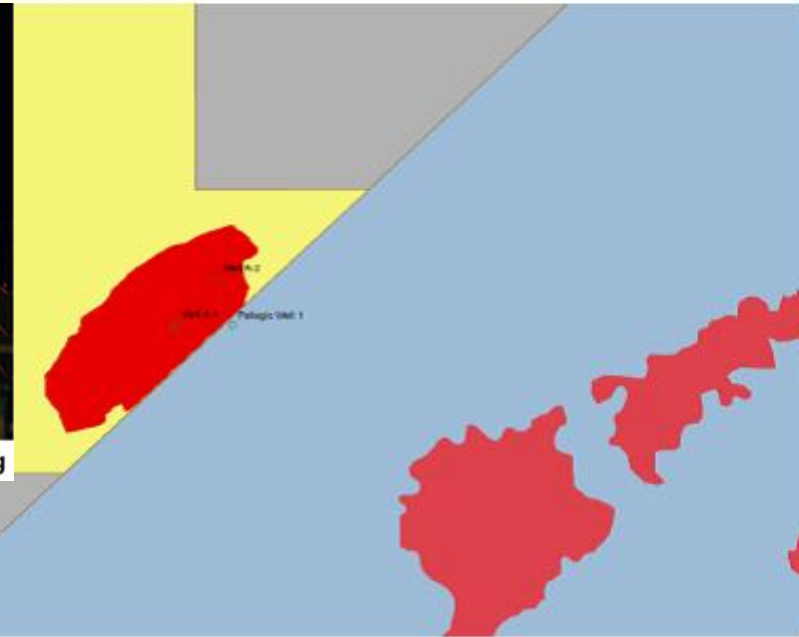
Over millions of years, the remains were buried deeper and deeper. The enormous heat and pressure turned them into oil and gas.

Today, we drill down through the layers of sedimentary rock to reach the rock formations that contain oil and gas deposits.



Note: not to scale

# Exploration Activities – Block 12



	Water Depth (m)	Total Depth (m)
Well-A1	1,688	5,860
Well-A2	1,730	5,950

- ▶ The drilling of the "Appraisal Well" is anticipated to commence in June 2013

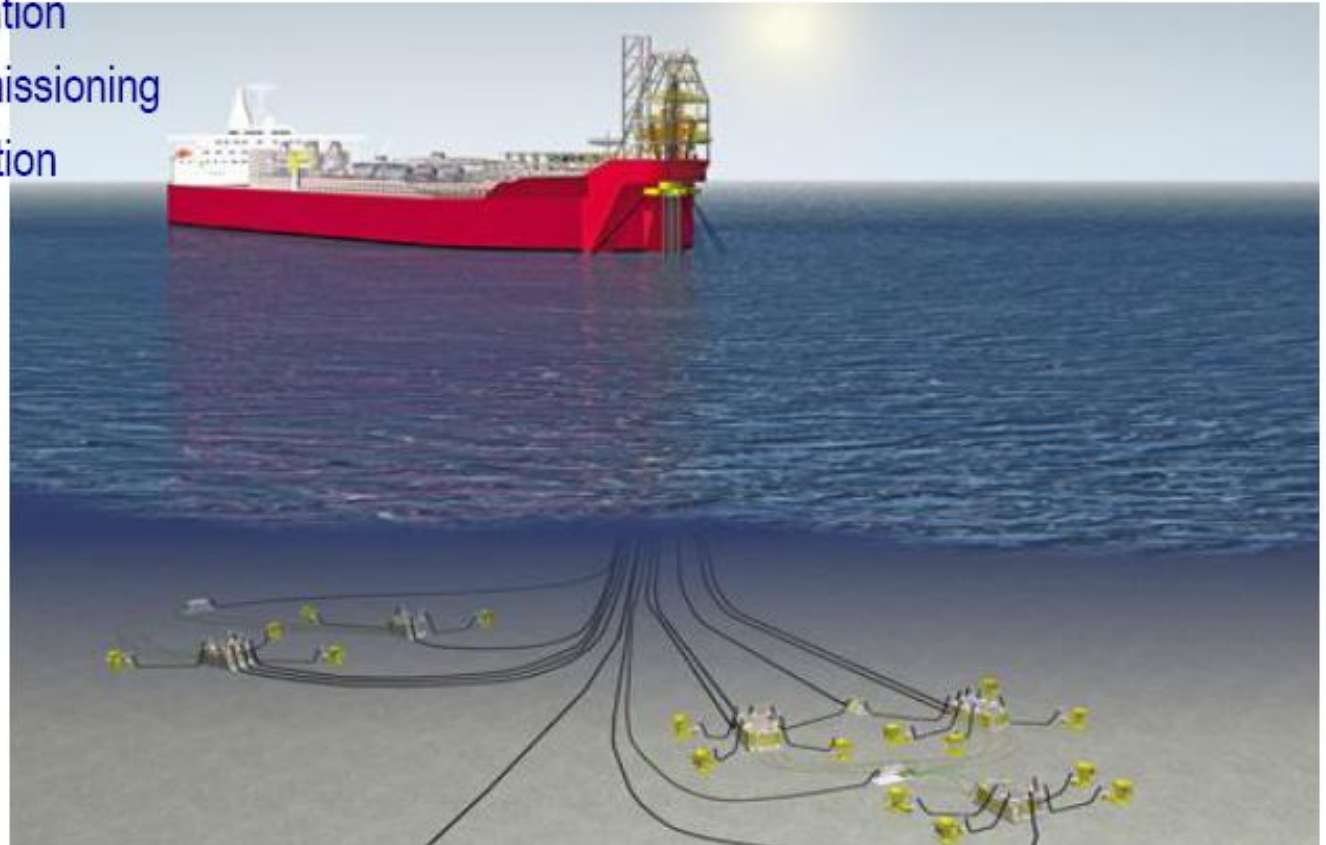
# Cyprus Aphrodite - Block 12

*"A New Milestone in Cyprus History"*



# Block 12 – Development Plan

- ▶ Verification (exploratory) well drilling
- ▶ Reservoir appraisal and assessment
- ▶ Studies on the installation of offshore and onshore equipment
- ▶ Production drilling and well completion
- ▶ Subsea system installation
- ▶ Deep water host commissioning
- ▶ Export pipeline installation



## Upstream

Exploration, Development,  
and Production

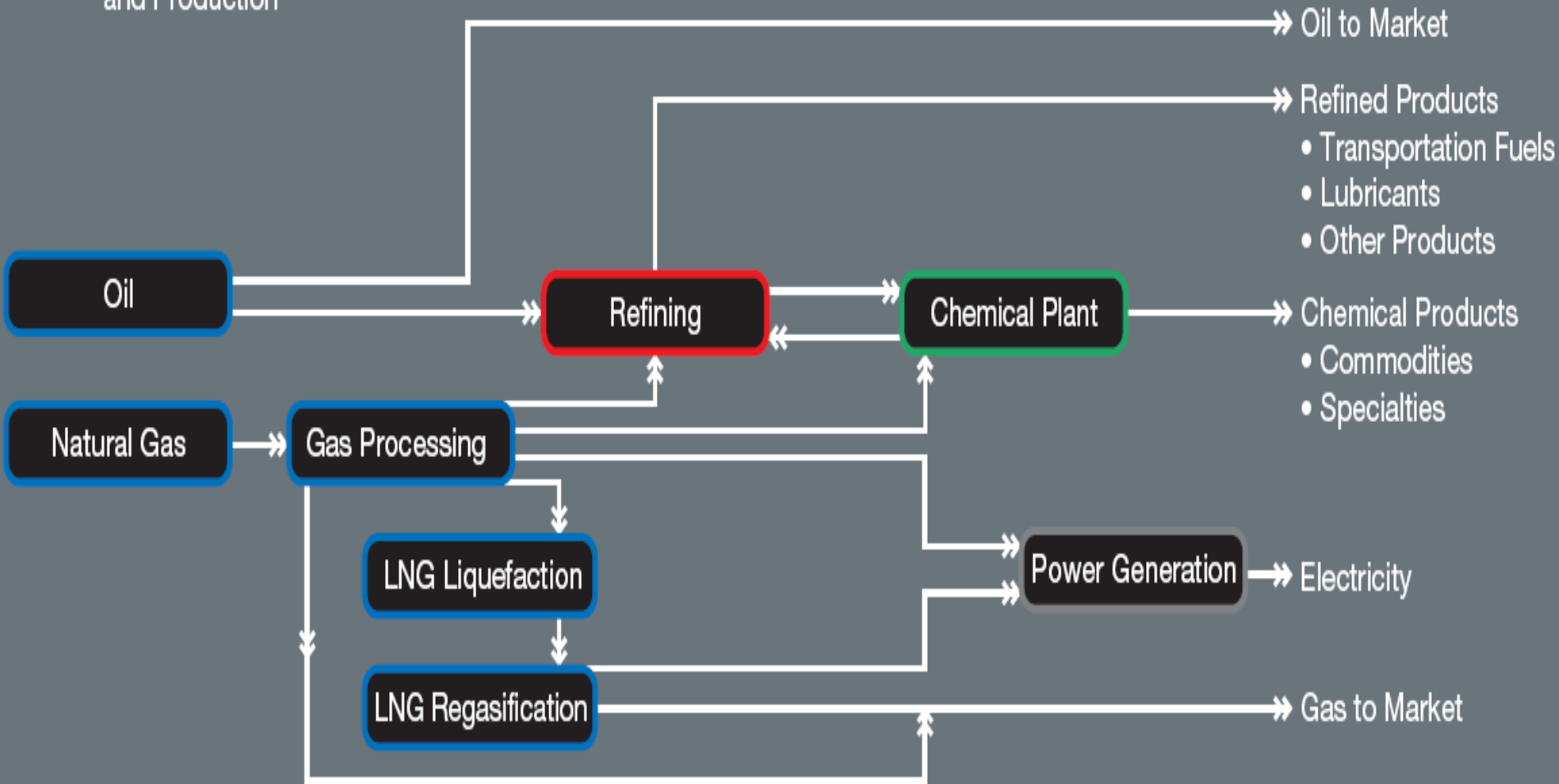
## Downstream

Refining and Marketing

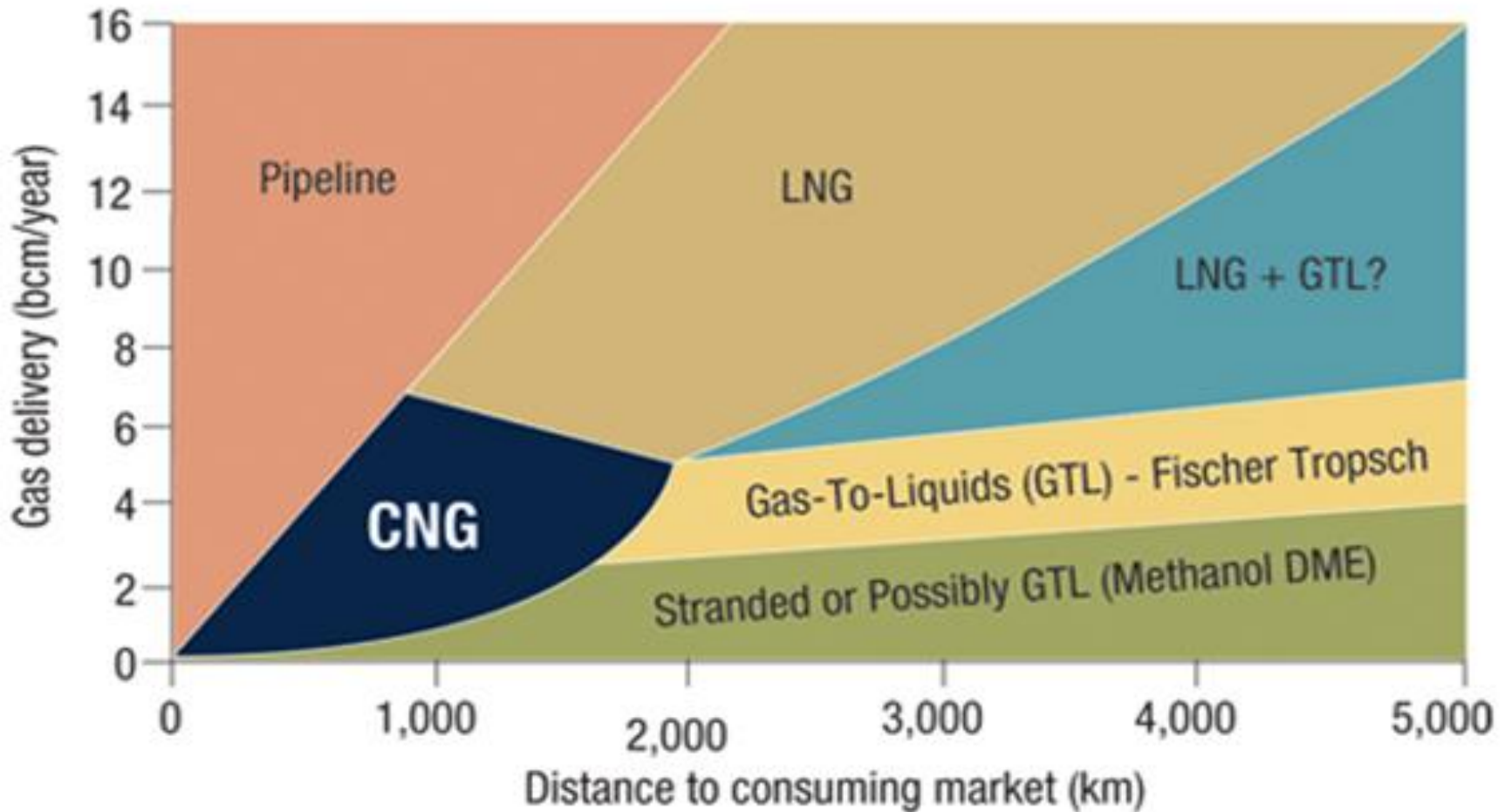
## Chemical

Manufacturing and Marketing

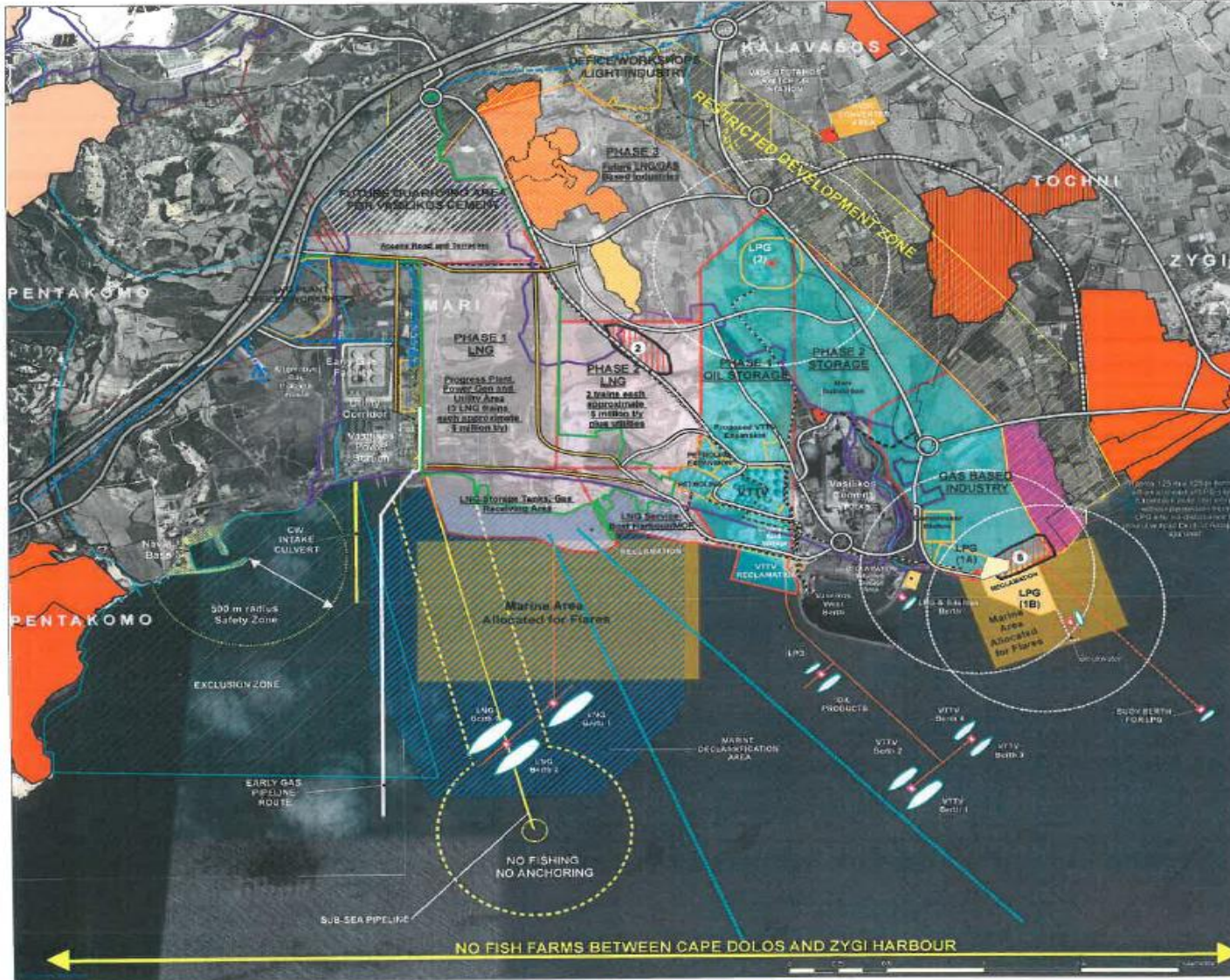
## Consumer



## Efficient Options for Monetizing Natural Gas



# VASSILIKOS MASTERPLAN



**Legend**

- District Boundary
- Community Boundary
- River/Watercourses
- Land Expropriated for the Vasilikos Energy Centre
- Ancient Monuments
- Industry Offices and Workshops
- Gas Based Industries Zone (SE) and Tank Farm Zone (W & NW)
- LNG Zone
- Proposed National Gas Pipeline Routes
- Existing 132kV Overhead Line
- Pipeline Corridor LPG and Tank Farm Zone
- Pipeline Corridor VTVV
- Pipeline Corridor Petrolina
- Pipeline Corridor EAC
- Main Gas Pipeline Corridor

**Existing Planning Zone**

- Development Zones (Residential and Tourist Zone)
- Heavy Industry Zone B2
- Animal Husbandry Zone Δ1

**Proposed Planning Zone**

- Tochni Development Zone to be Abolished
- Mari Development Zones to be Gradually Abolished
- Mari Animal Husbandry Zone to be Gradually Abolished

**Road Network**

- Motoway (Nicosia-Limassol)
- Primary Distributor Class A (Old Nicosia-Limassol Road)
- District Distributor Class B
- District Distributor Class B (2nd Phase)
- Main Local Network
- Main Local Network (Temporary)
- Private Road
- Road Proposed by Department of Town Planning and Housing to be redesigned

**Note:**  
 MOP: Material Offloading Facilities

Ministry of Energy, Commerce, Industry and Tourism

Master Plan for the Vasilikos Area

Master Plan of the Vasilikos Area

Scale	1:10,000 @ A1	Date	31 October 2007
Author	MM	Checked by	AK
Approved by		Approved by	AGUS

**POTEN & PARTNERS**

**ALA Planning Partnership**

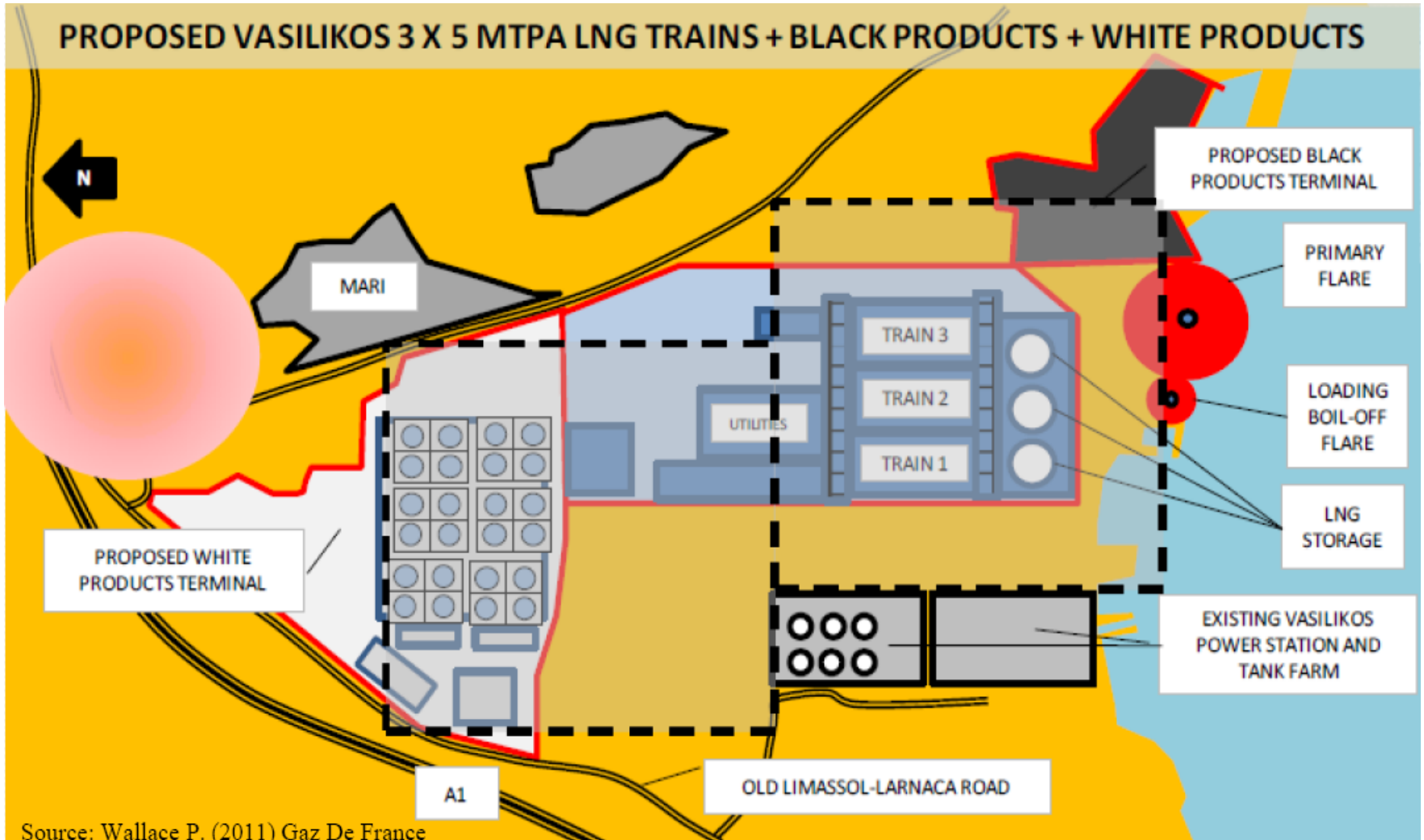




# VASSILIKOS LNG TERMINAL



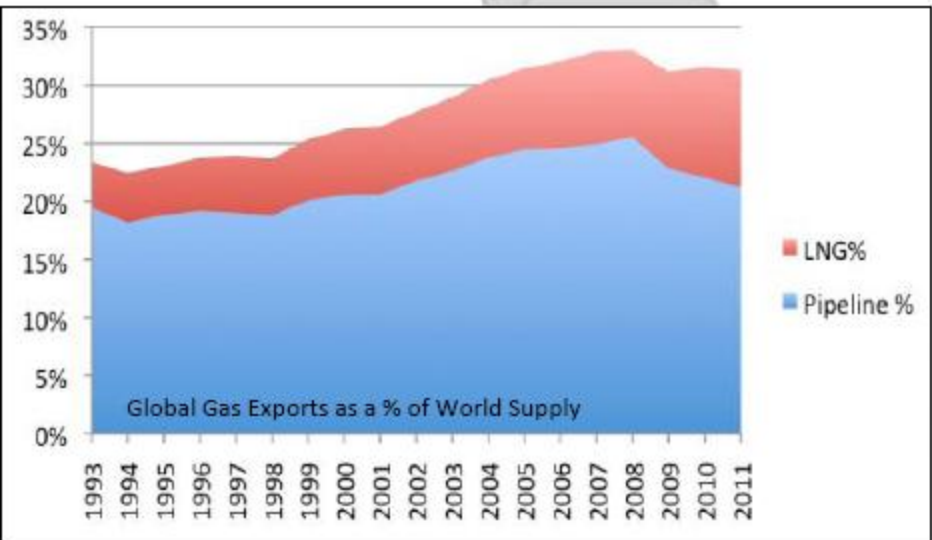
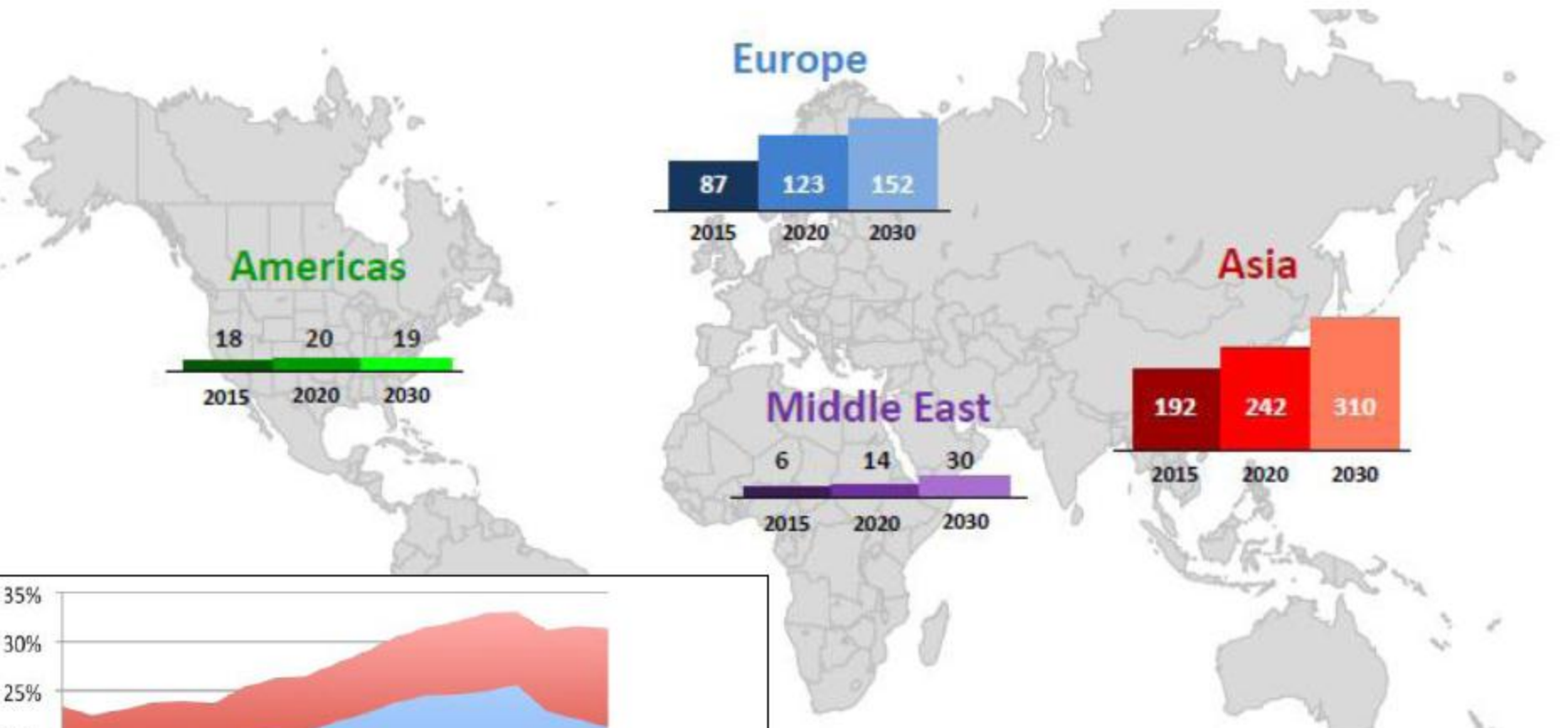
# EXPORTING POSSIBILITIES (LNG)



## LNG SHIP & FSRU



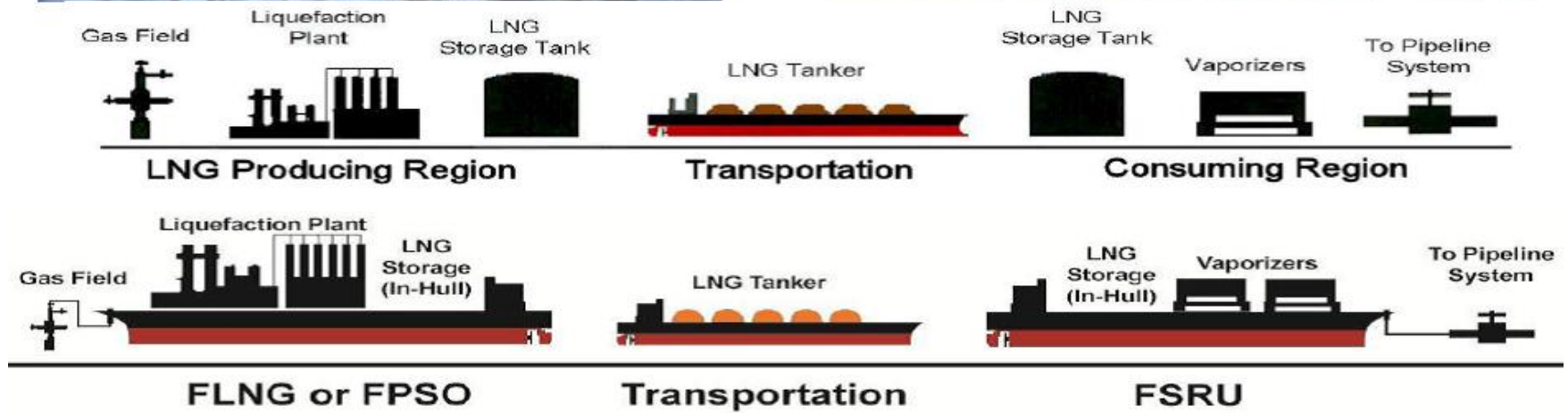
# Demand Will Drive LNG Growth



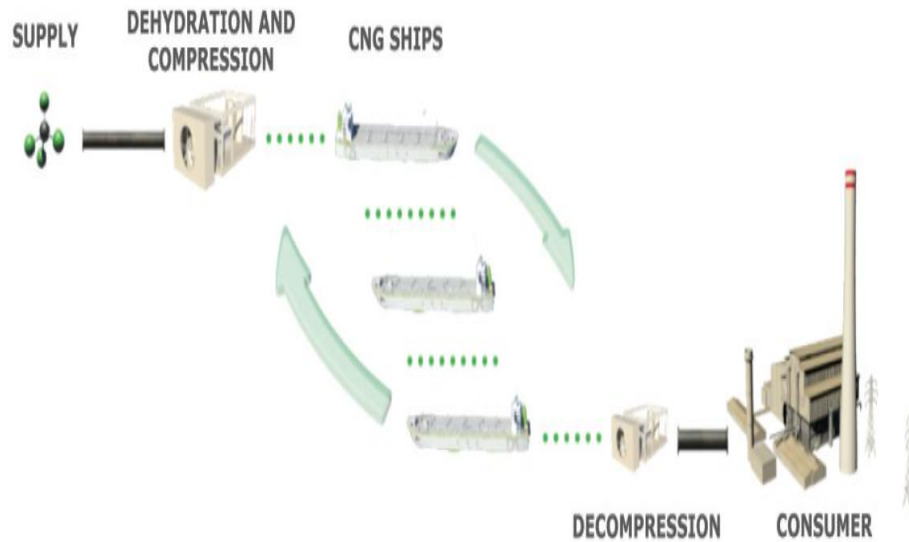
## Regional LNG Import Outlook (mtpa)

From 303 mtpa (~40 Bcf/d) in 2015 to 511 mtpa (~68 Bcf/d) in 2030 – 3.5% CAGR  
 ~ 14 mtpa average growth (~three 4.5 mtpa trains)

# Traditional vs. Full-Floating LNG Chain



# COMPRESSED NATURAL GAS (CNG)



Source: Stenning (2012).

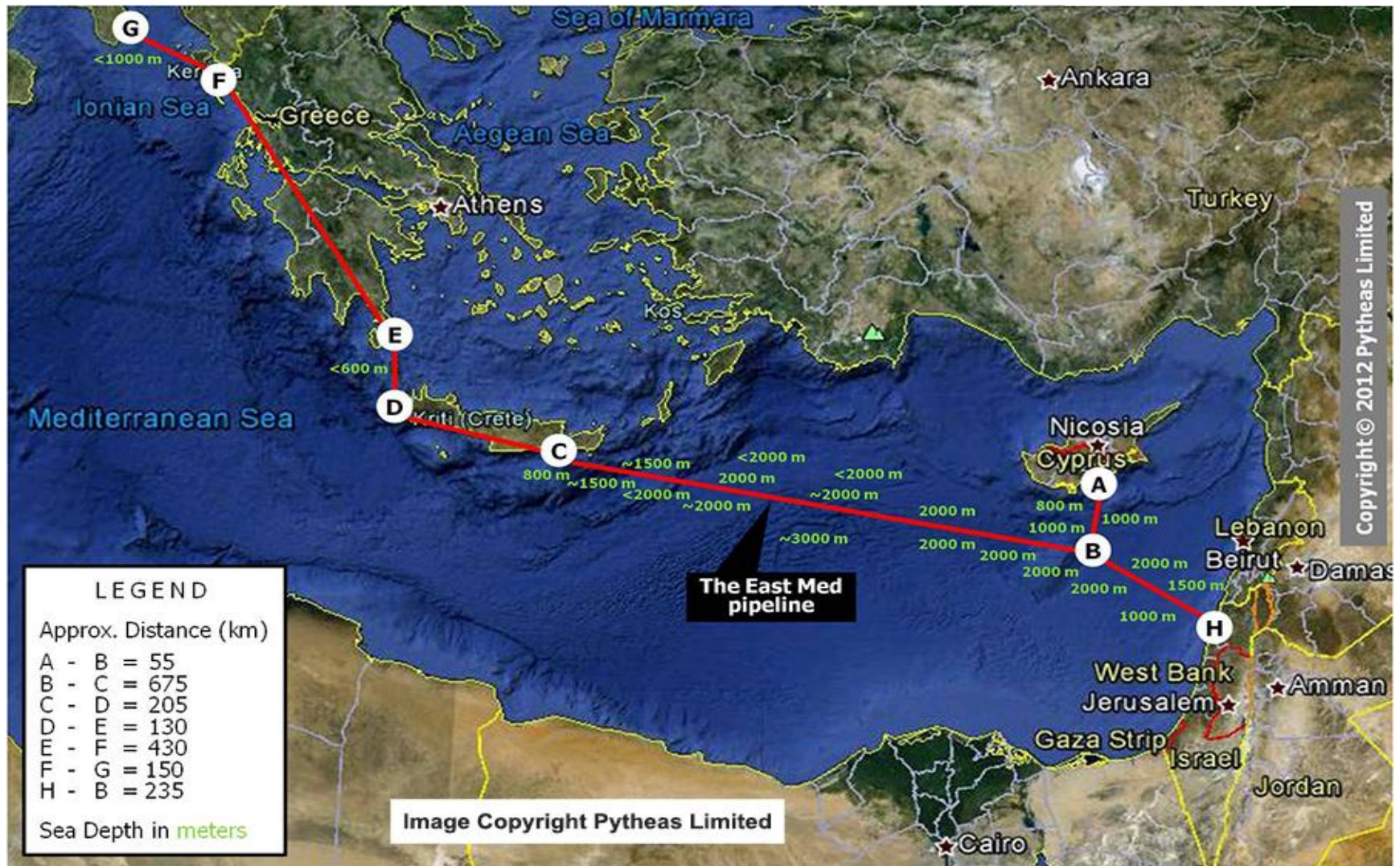
Produced by The MIT Energy Initiative,  
Massachusetts Institute of Technology

In collaboration with The Cyprus Institute

Sponsored by The Cyprus Research Promotion Foundation

August 2013

# Pipeline to Europe? Geopolitical Debate



The priority is to build a liquefied natural gas (LNG) terminal, but a pipeline could have advantages for Europe.



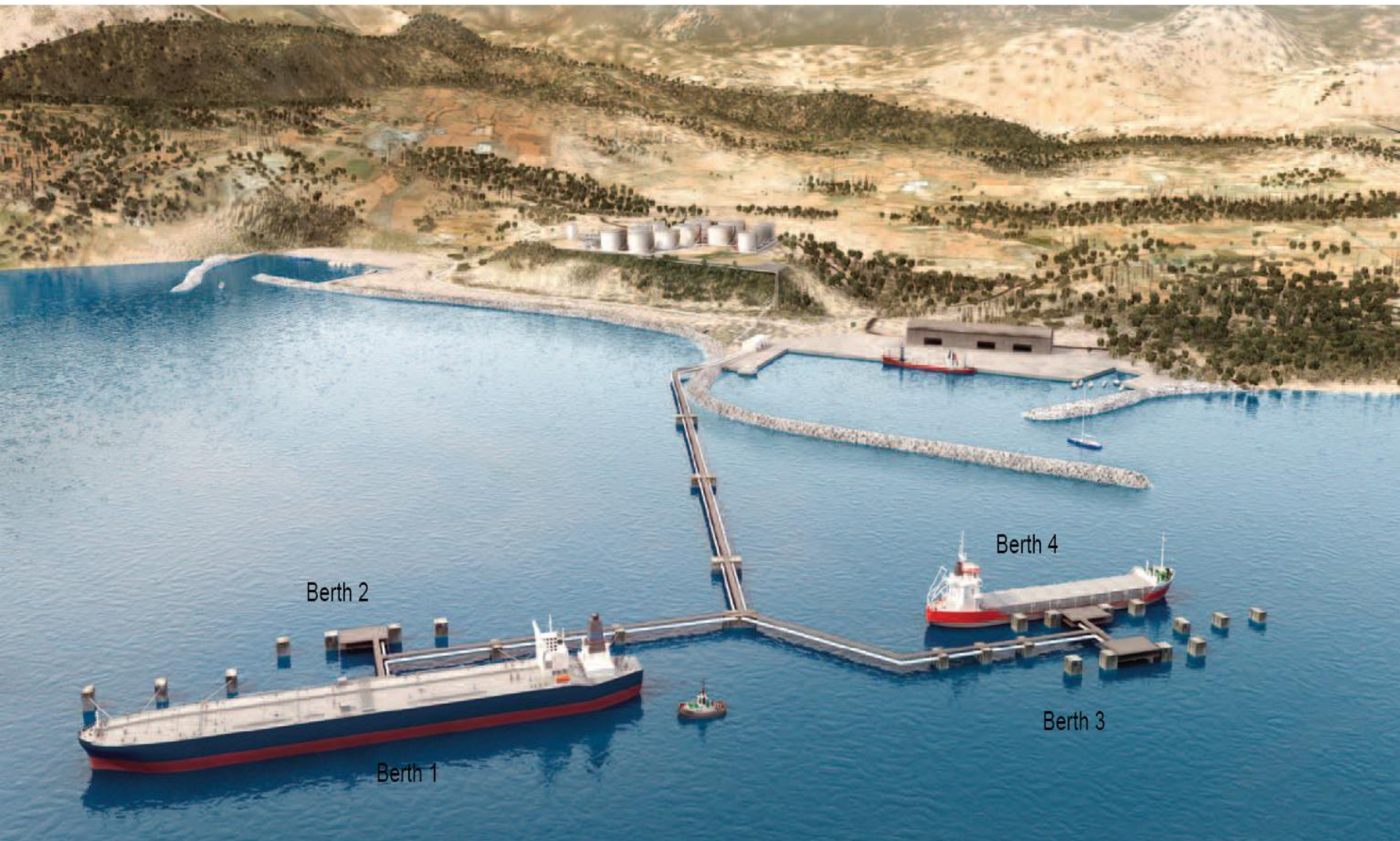
# Pipeline to Turkey? Geopolitical Debate

The numbers are there. Israel's current gas reserves total 25-37 trillion cubic feet. Cyprus, still in the early exploration phase, claims it has 60 tcf. The U.S. Geological Survey said in 2010 the Levant Basin, which covers Israel, Cyprus, Syria, Lebanon and the Gaza Strip, contains an estimated 123 tcf.



The Republic of Cyprus reportedly rules out allowing a pipeline to Turkey through its exclusive economic zone until there's been a settlement to the Cyprus Problem.

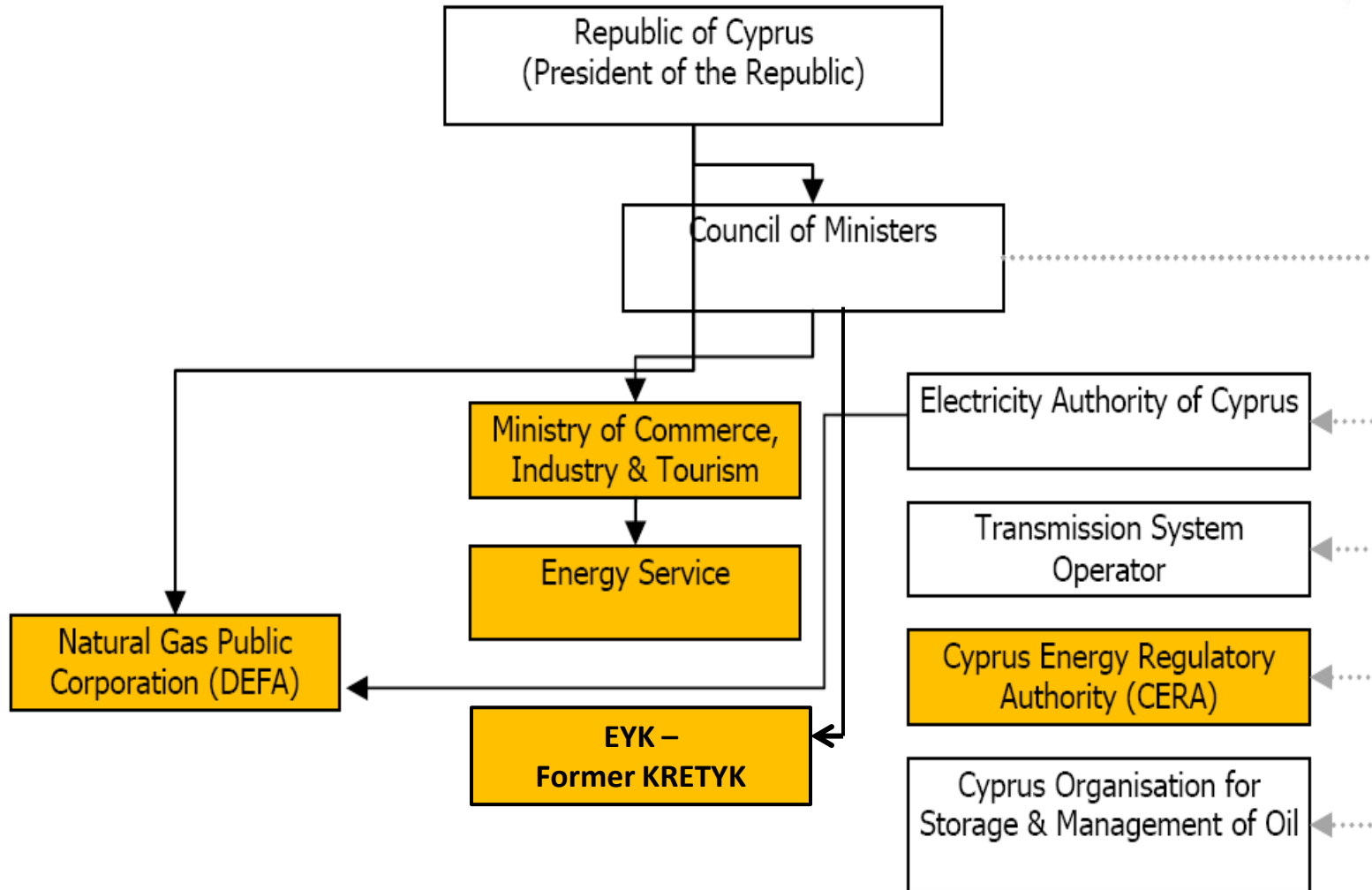
According to some analysts Israel's not likely to agree to a costly LNG plant on Cyprus if there's no pipeline to Turkey. It wants a firm answer by early 2014.



## Cyprus Shipping Ranks No 3 in EU in the 10 top in the World



## STRUCTURE OF CYPRUS ENERGY AUTHORITIES





## THANK YOU FOR YOUR ATTENTION

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### Contributors



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