

Cyprus Potential Role in the East Med Energy Developments

NATURAL GAS IN THE EASTERN MEDITERRANEAN -
OPPORTUNITIES AND CHALLENGES

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SABANCI UNIVERSITY,
ISTANBUL, TURKEY

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CERA's Legal Status

- CERA is the National Energy Regulatory Authority of Cyprus and was established by the Law on Regulating the Electricity Market of 2003, N.122/(I) 2003.
- CERA's main task is regulating and supervising Cyprus Energy Market (Electricity & Natural Gas) and Electricity and NG Undertakings
- CERA participates in the EU Regulators Bodies CEER & ACER



European Energy Policy

EU OBJECTIVES

**Promotion of
competition**

**Security of
Supply**

**Protection of
the
Environment**

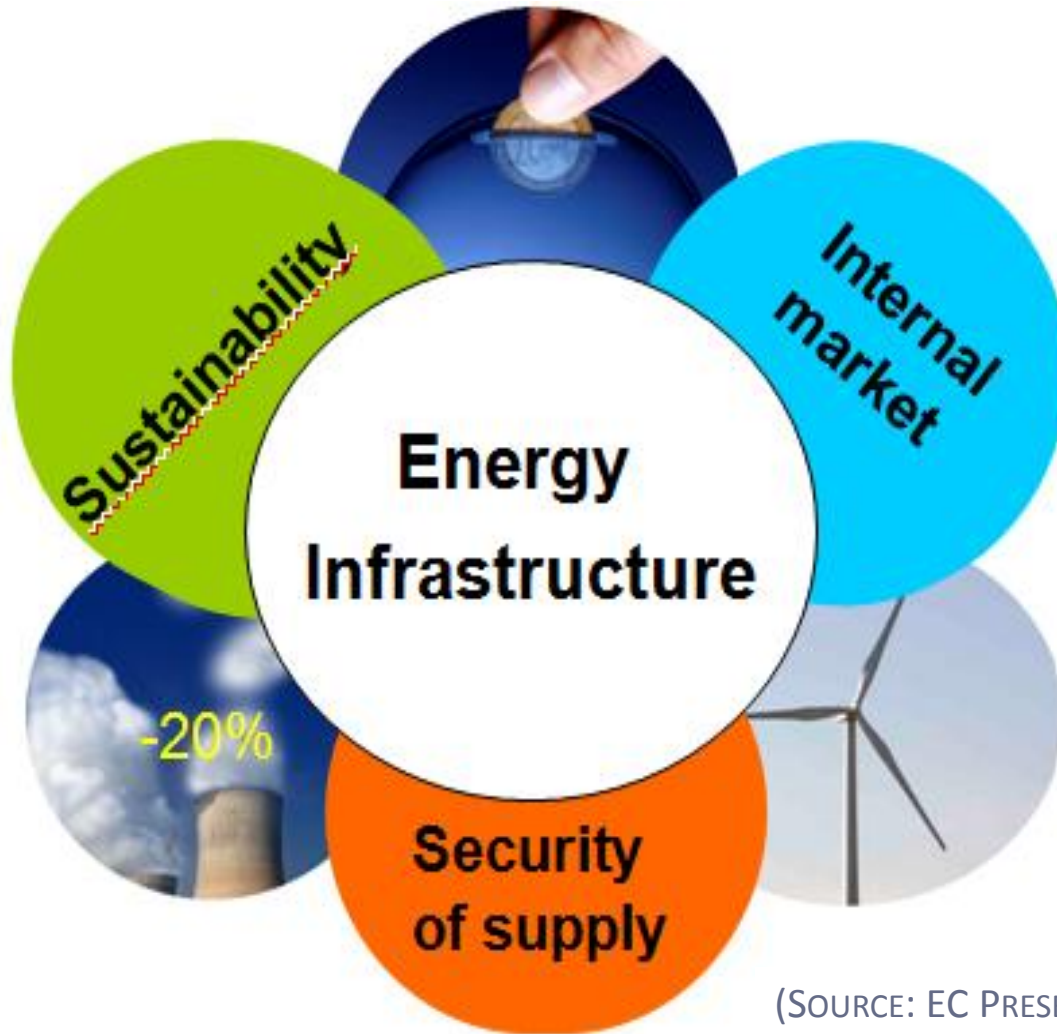
3rd EU Energy Package – Legislative framework

The aim of the third energy package is:

- ❖ the creation of a fully operational **internal electricity & NG market** with enhanced **competitiveness**,
- ❖ the **secure supply** of electricity & NG that is of vital importance for the development of European society,
- ❖ the implementation of a **sustainable climate change policy**,
- ❖ the provision of a **real choice for the consumers** in all EU countries, that will help to keep prices as low as possible and increase standards of service and security of supply.

Energy Infrastructure

The heart of EU energy and climate policy goals



Included under the flagship initiative “Resource efficient Europe”



(SOURCE: EC PRESENTATION TO NRAS)

Infrastructure Priorities



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- Natural Gas
- Electricity
- Electricity and natural gas
- Oil and natural gas
- Smart interconnected grids in the EU

On 14 October 2013, the European Commission has adopted a list of 248 key energy infrastructure projects.

These projects have been selected by 12 regional groups established by the new guidelines for trans-European energy infrastructure (TEN-E).

Carrying the label "**projects of common interest**" (PCI) they will benefit from:

- faster and more efficient permit granting procedures and
- improved regulatory treatment.
- possible financial support from the Connecting Europe Facility (CEF), under which a €5.85 billion budget has been allocated to trans-European energy infrastructure for the period 2014-20.

The list of PCIs will be updated every 2 years.

Cyprus Participation in Corridors (1)



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- Natural Gas
- Electricity
- Electricity and natural gas
- Oil and natural gas
- ▨ Smart interconnected grids in the EU

Cyprus has been included in the:

➤ **Southern Gas Corridor ("SGC")** for the transmission of gas from the Caspian Basin, Central Asia, the Middle East and the Eastern Mediterranean Basin to the Union to enhance diversification of gas supplies.

The EU has identified a number of partner countries for this initiative, such as Azerbaijan, Turkey, Georgia, Turkmenistan, Kazakhstan, Iraq, Egypt and Mashreq countries.

Cyprus Participation in Corridors (2)

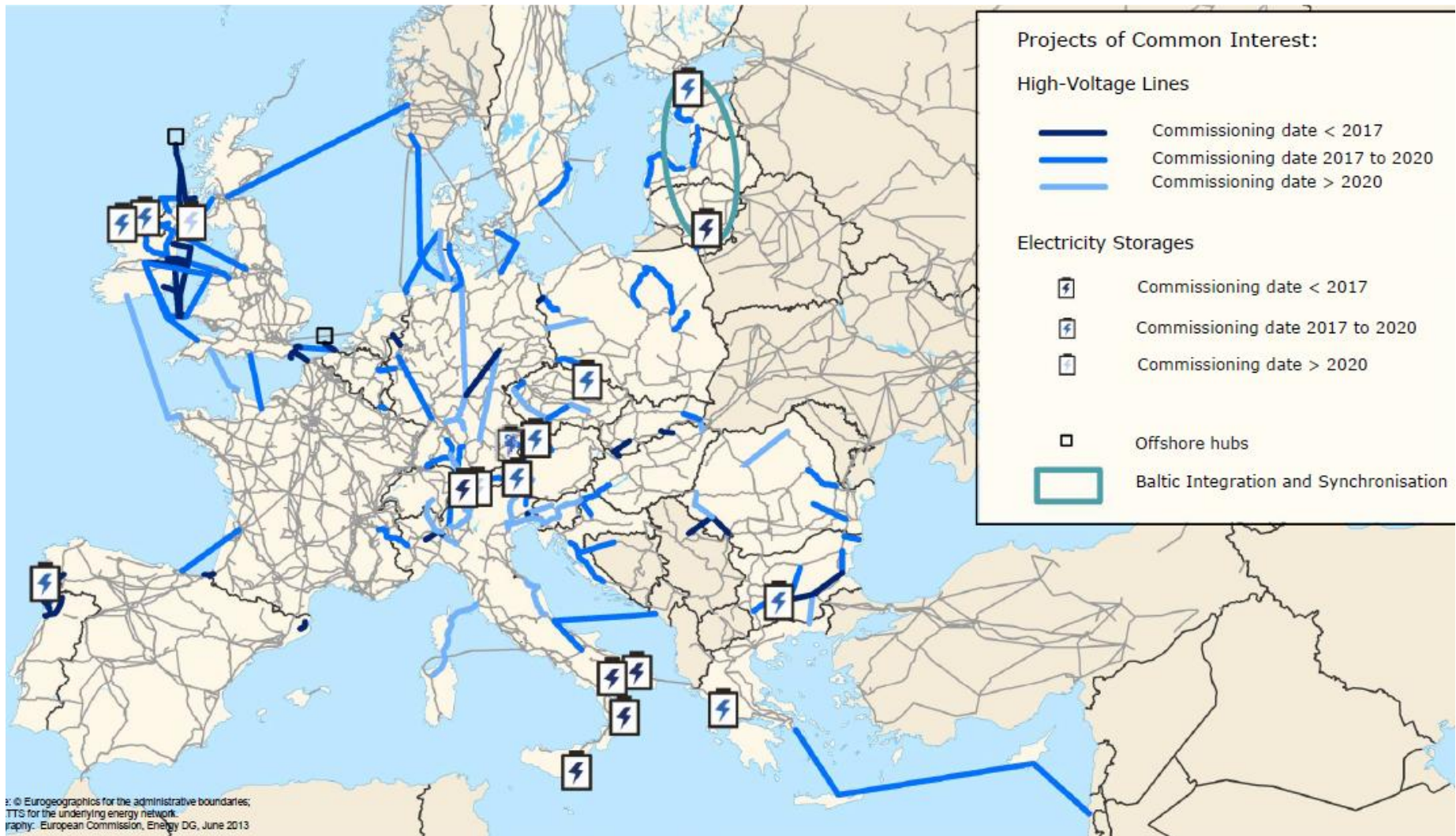


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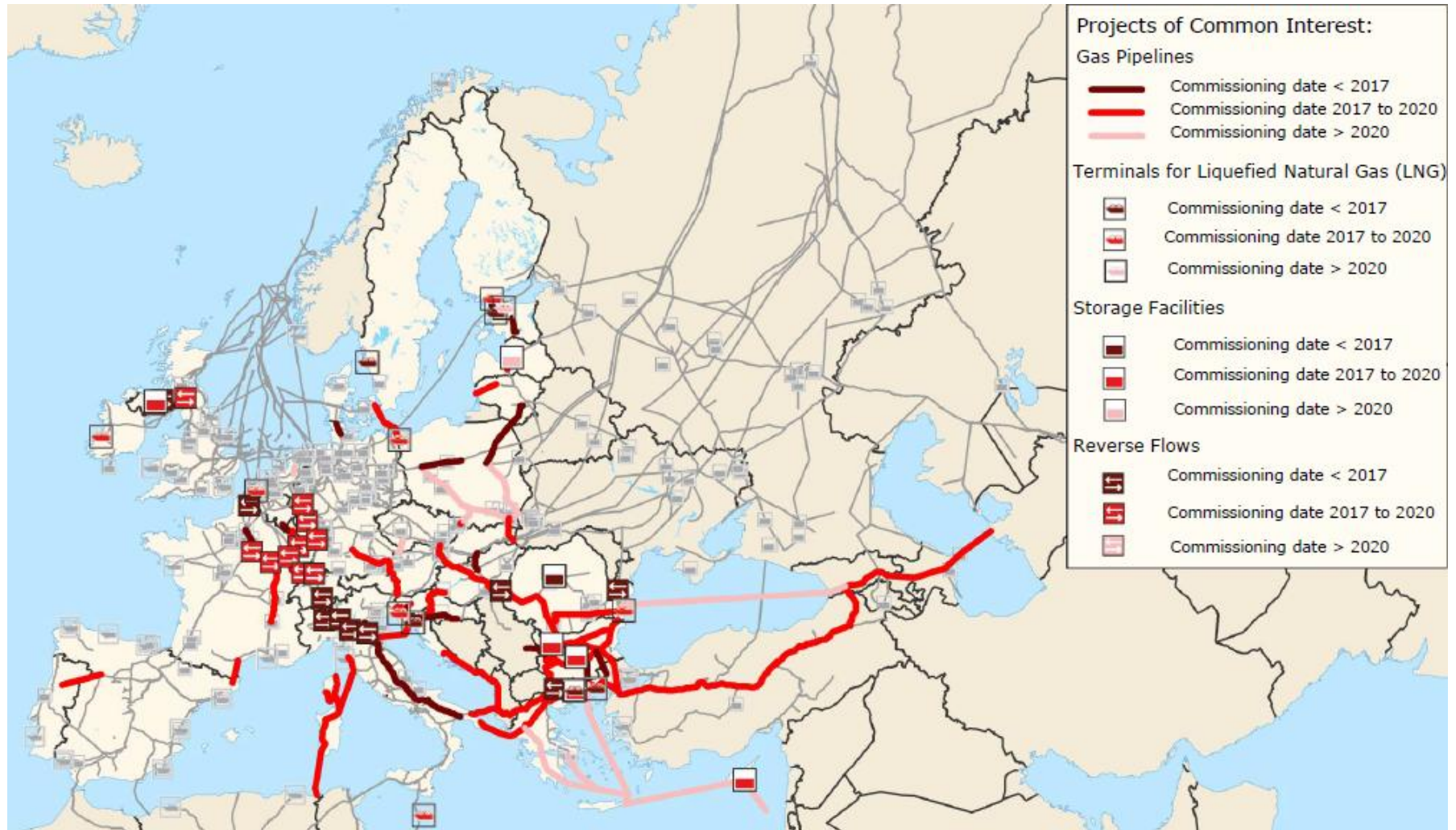
- Natural Gas
- Electricity
- Electricity and natural gas
- Oil and natural gas
- ▨ Smart interconnected grids in the EU

➤ Electricity priority corridor “North-South electricity interconnections in Central Eastern and South Eastern Europe” (NSI East Electricity) which is related to interconnections and internal lines in North-South and East-West directions with a view to completing the internal market and integrate generation from renewable energy sources.

Energy Infrastructure – Electricity



Energy Infrastructure – Natural Gas



East Med International Bilateral Agreements

□ Arab Republic of Egypt

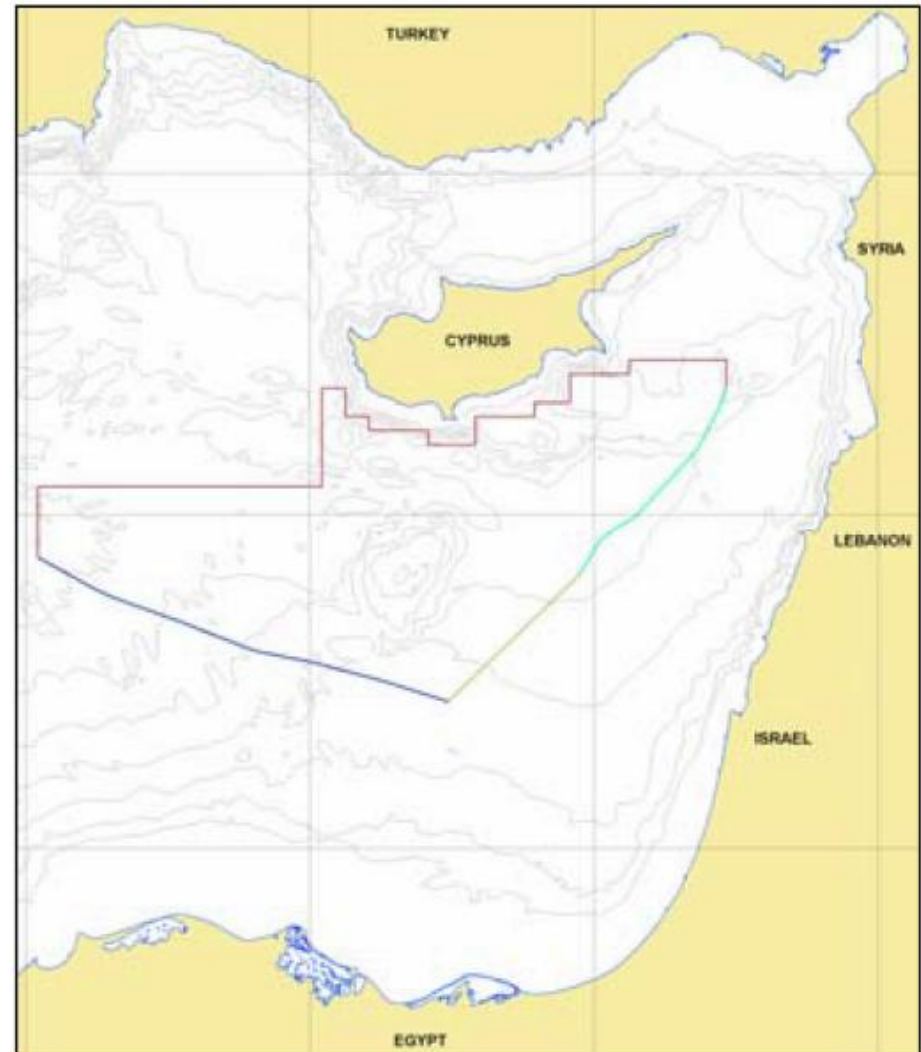
- Delimitation of the EEZ (2003)
- Framework Agreement concerning the development of cross-median line hydrocarbon resources (2006)
- Confidentiality Agreement (2006)

□ Lebanon

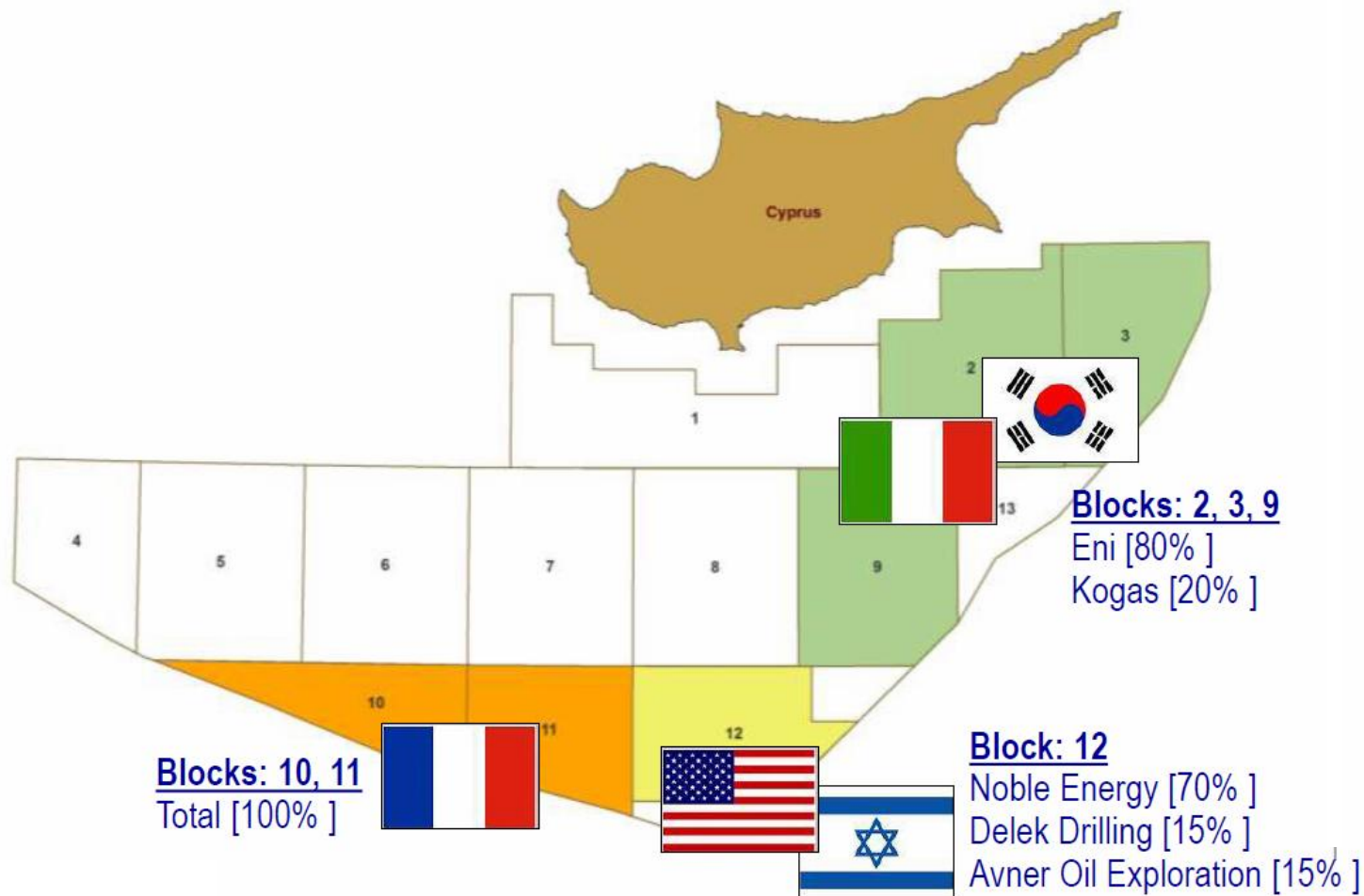
- Delimitation of the EEZ (2007)

□ Israel

- Delimitation of the EEZ (2010)



Exploration licenses – 1st & 2nd Round



(Source: MCIT)

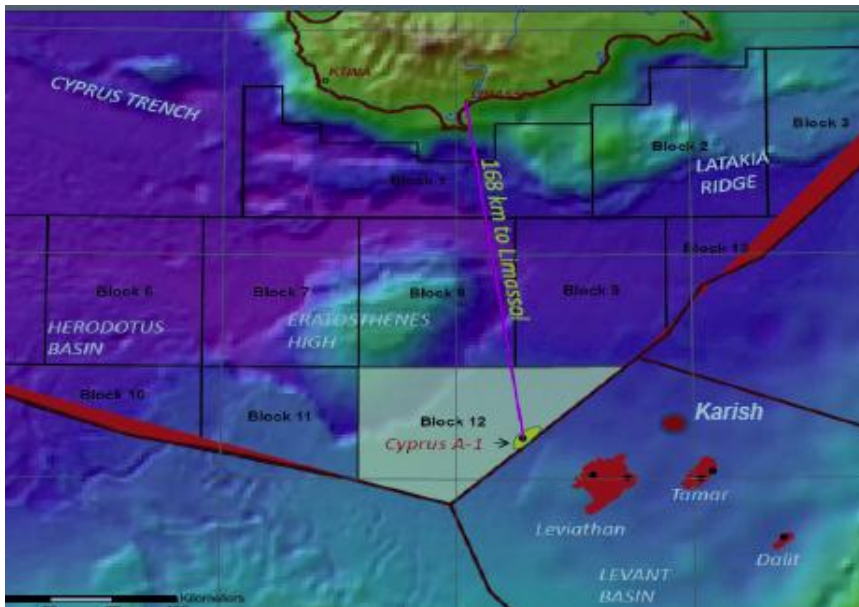
Cyprus Offshore Exploration – Current Status (1)

- ❑ In December 2011 the success of the first well offshore Cyprus was announced.
- ❑ In October 2013 the appraisal well confirmed the presence of very large quantities of good quality natural gas in Block 12. The preliminary results estimate the hydrocarbon reserve between 3.6tcf and 6tcf with a gross mean resource of 5tcf.
- ❑ There are good indications from recent seismic surveys of another six smaller gas fields in Block 12, with two of these estimated to hold 2 tcf each. **Noble Energy, Delek Drilling** and **Avner Exploration** plan to start exploration drilling at one of these fields in Q4 2014.



Cyprus Offshore Exploration – Current Status (2)

- ❑ **ENI/Kogas** who are the Contractors of **Blocks 2, 3** and **9** will be completing their seismic survey program by December 2013 , with exploration drilling scheduled late 2014, and completion scheduled by mid 2015.
- ❑ **Total** who is the Contractor of **Blocks 10** and **11**, with potential both for oil and gas, has now completed the seismic survey program, with exploration drilling scheduled in Q1 2015.



The confirmation of the presence of significant quantities of natural gas reserves in the EE Zone of Cyprus, along with the presence of major Natural Gas Fields in the Levantine Basin, signals the start of a new era for Cyprus.

An era during which Cyprus must claim a key position in the regional energy map and can be transformed into a **regional energy hub**.

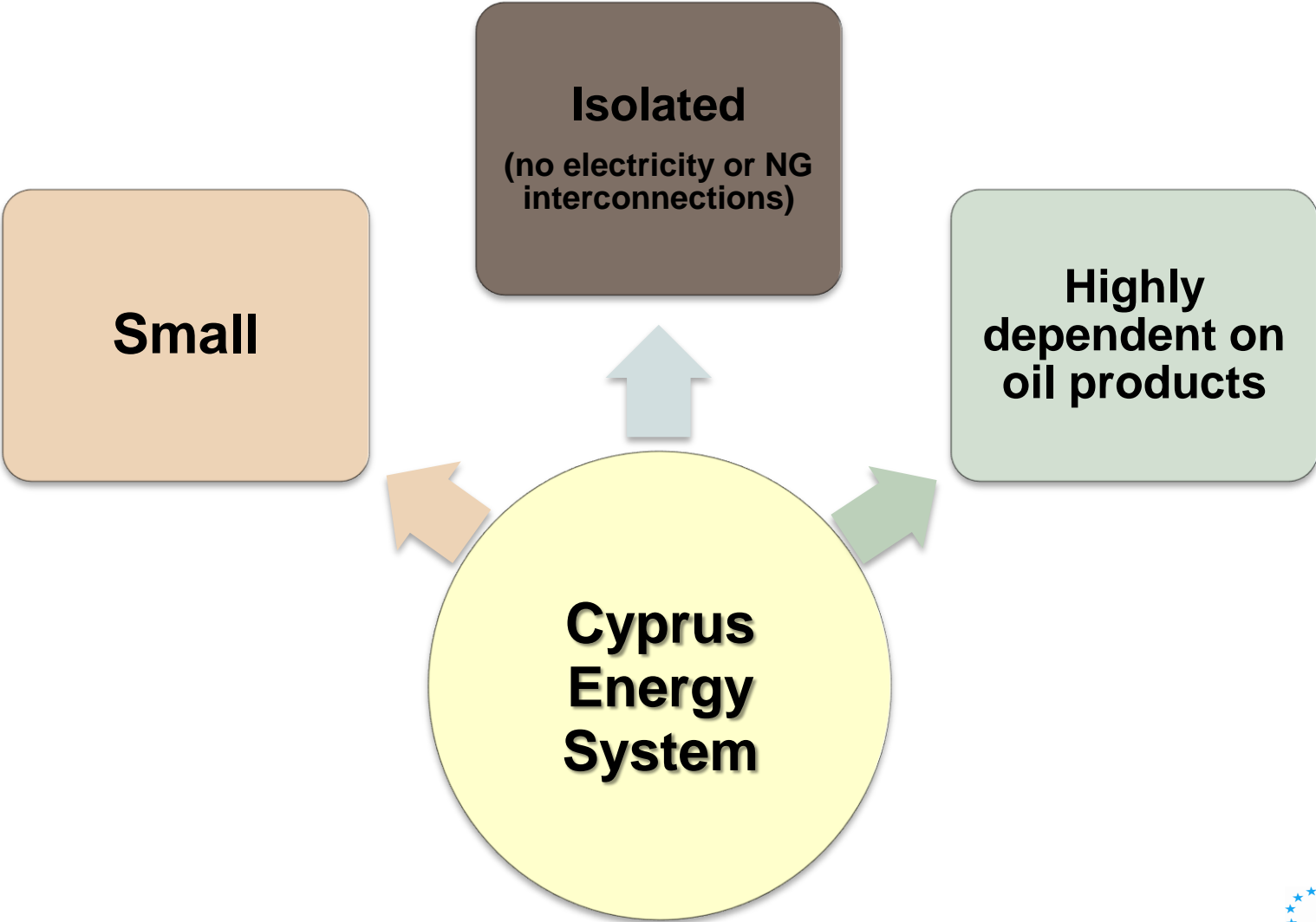
Levantine Offshore Current Status

- ❑ Commercial production from Israel's Tamar field started at the end of March 2013. Leviathan is about to enter the market.

Following the decision by Israel's High Court to ratify the government's decision to allow export of 40% of current proven reserves, Israel, Noble and its partners have started reviewing all possible gas export options. These include:

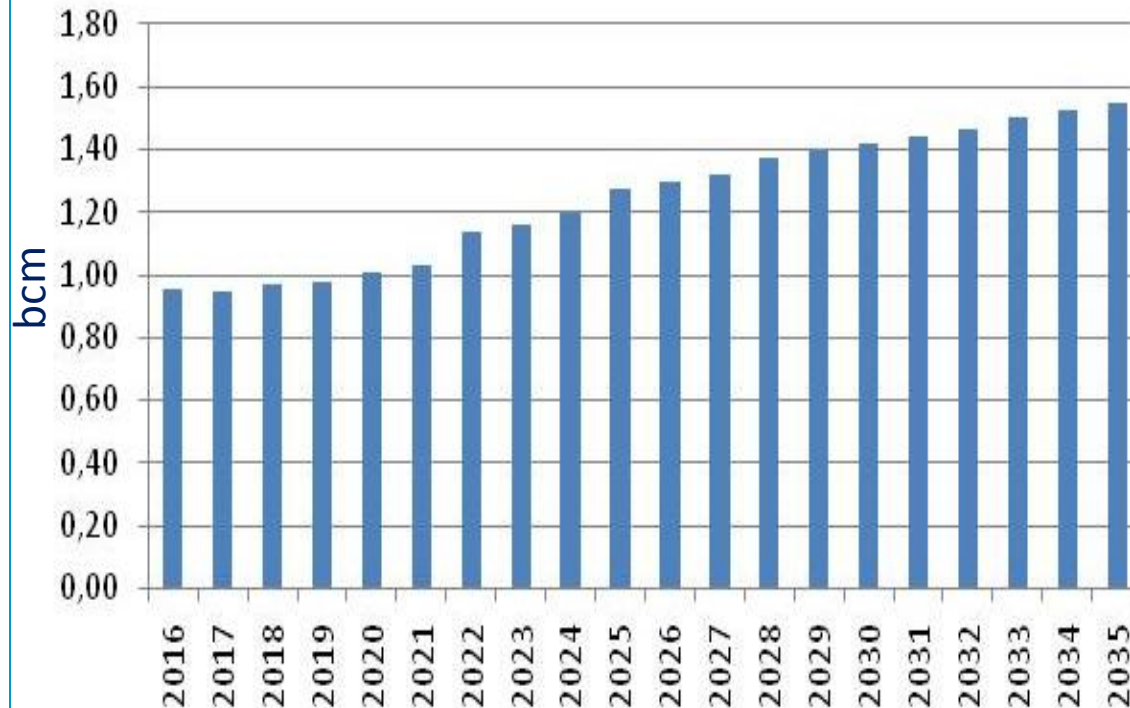
- ❖ Cyprus LNG terminal,
 - ❖ pipeline to Greece for Greece's own use and/or exports to Europe,
 - ❖ Pipeline to Turkey for Turkey's own use and/or exports to Europe and even
 - ❖ Pipeline to Jordan, pipeline to Egypt and export through one of Egypt's non fully utilised LNG terminals.
-
- ❑ Lebanon is about to start its first bidding round.

Cyprus Energy Data



NG Sector - Cyprus Energy Data

Natural Gas is not yet available in Cyprus

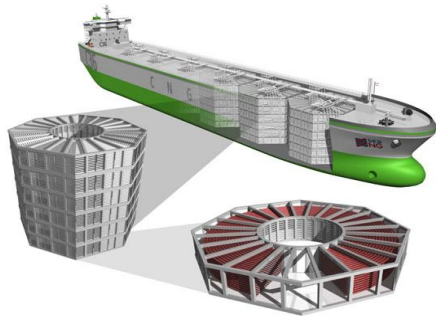


It is estimated that approximately 25 bcm of NG will be necessary for power generation purposes until the year 2035.

Consequently, large quantities of NG are available to be exported.

NG Export options

- ❑ Export of NG to Greece through an underwater pipeline.
- ❑ Establishment of a floating liquefaction unit



- ❑ Establishment of a NG Compression Station

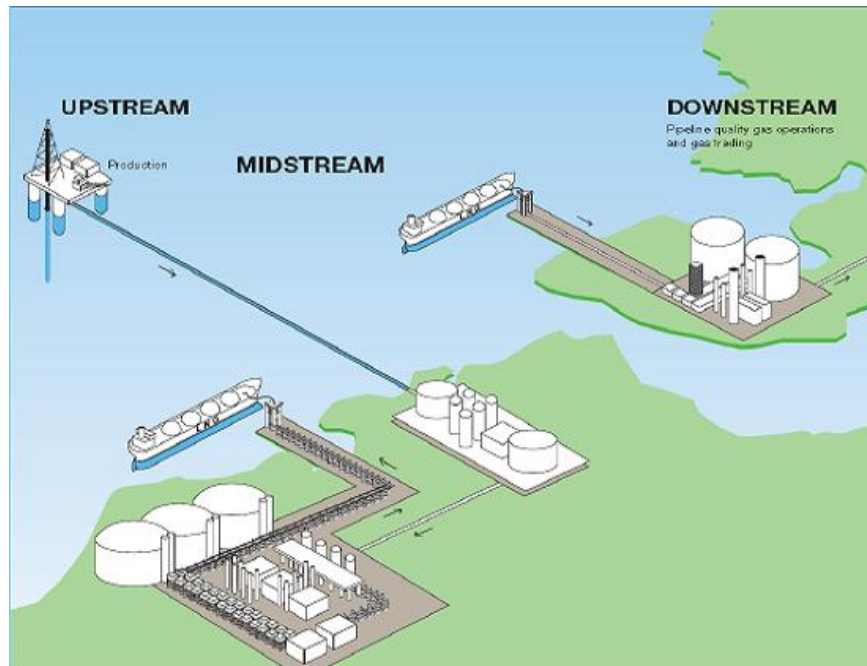
- ❑ Establishment of a Power Generation Station with a capacity of 2000MW
- ❑ Establishment of a GTL unit



- ❑ **Establishment of an LNG Liquefaction plant**

Cyprus Liquefaction Plant

Cyprus has chosen, as the first and main export option the development of an **LNG export terminal**.

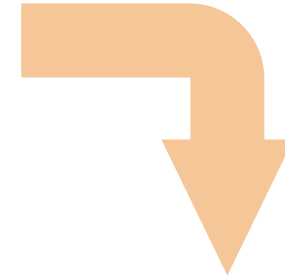


LNG Chain

Through the development of the **LNG Liquefaction plant** the key objective of the transformation of Cyprus into a regional energy hub in the Southern eastern Mediterranean will be accomplished.

Cyprus Liquefaction Plant

Main Strategic Goal of Cyprus



IN LINE TO EU POLICY

- ❑ Diversification of Energy Supply
- ❑ EU Security of Supply,
- ❑ Flexibility,
- ❑ Storage

Transforming Cyprus to an energy exporting country

Cyprus signed in June 2013, a **Memorandum of Understanding with Noble Energy International, Israel's Delek Drilling and Avner Oil** , stating their intent for the development of a natural gas liquefaction plant on the island.

A **Memorandum of Understanding** between Cyprus and **Total** who is also interested in participating in the development of a gas liquefaction terminal was also signed in October 2013.

Currently Cyprus is into advanced negotiations to agree and sign the LNG Project Agreement.

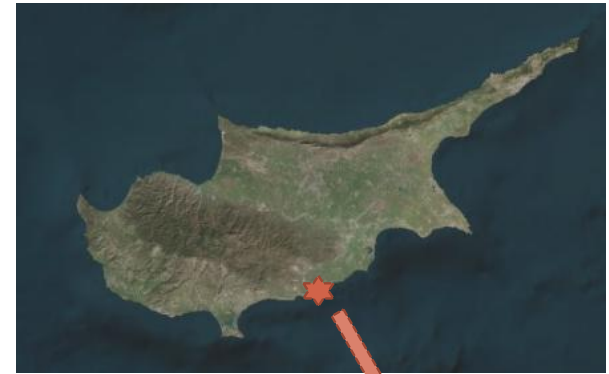
According to the time schedule:

- ❖ Signing of the LNG Project Agreement by December 2013.
- ❖ Completion of LNG sales, secure investment/funding, completion of the FEED and select the EPC contractor and reach FID by mid 2016.
- ❖ Start construction in 2016.

Transforming Cyprus to an energy exporting country

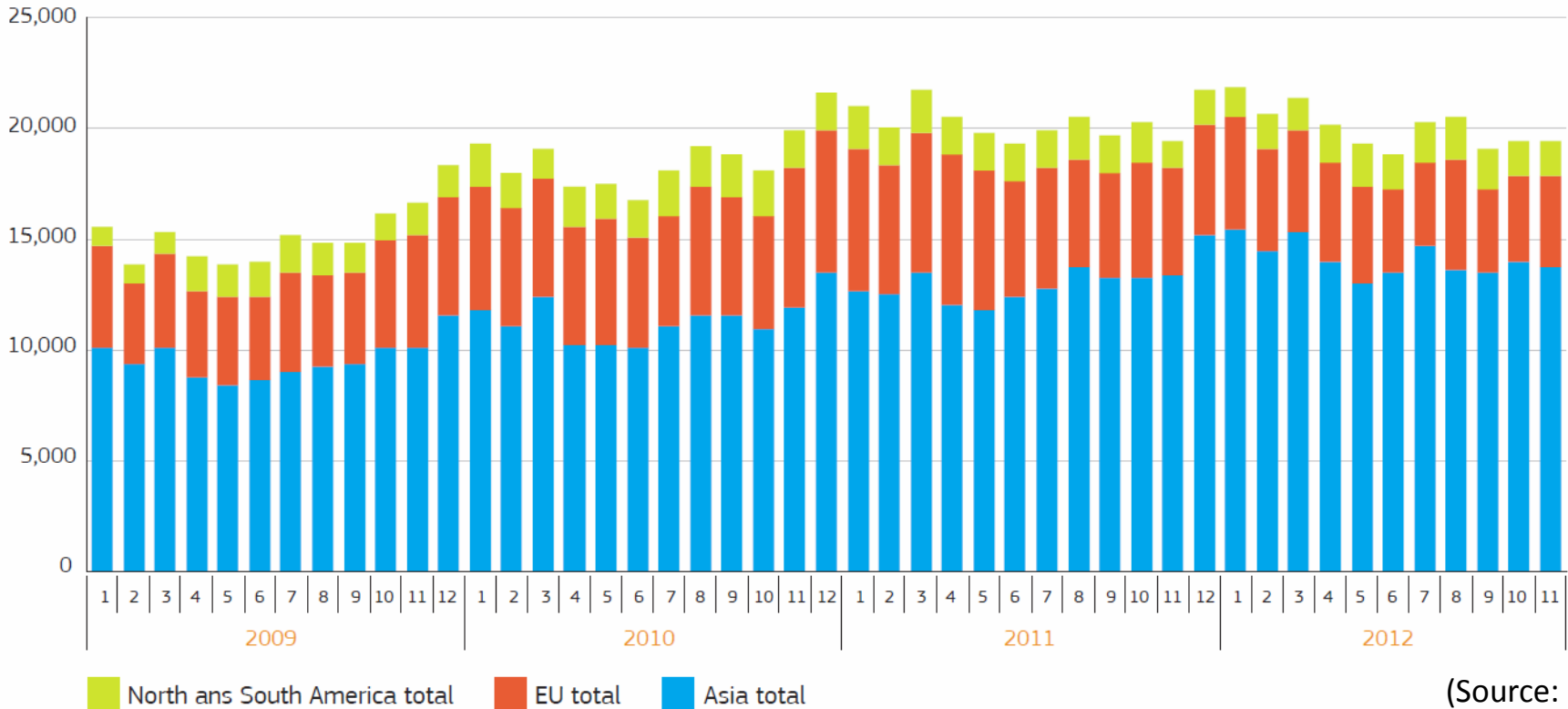
The Liquefaction Plant is the fundamental and necessary infrastructure that will allow the export of natural gas from the Eastern Mediterranean to European and global markets.

With the timely establishment of the LNG Plant, Israel and Lebanon will be able to bring their gas to Cyprus for liquefaction, making it possible to create a world class LNG hub at Vasilikos.



World LNG Imports by Region

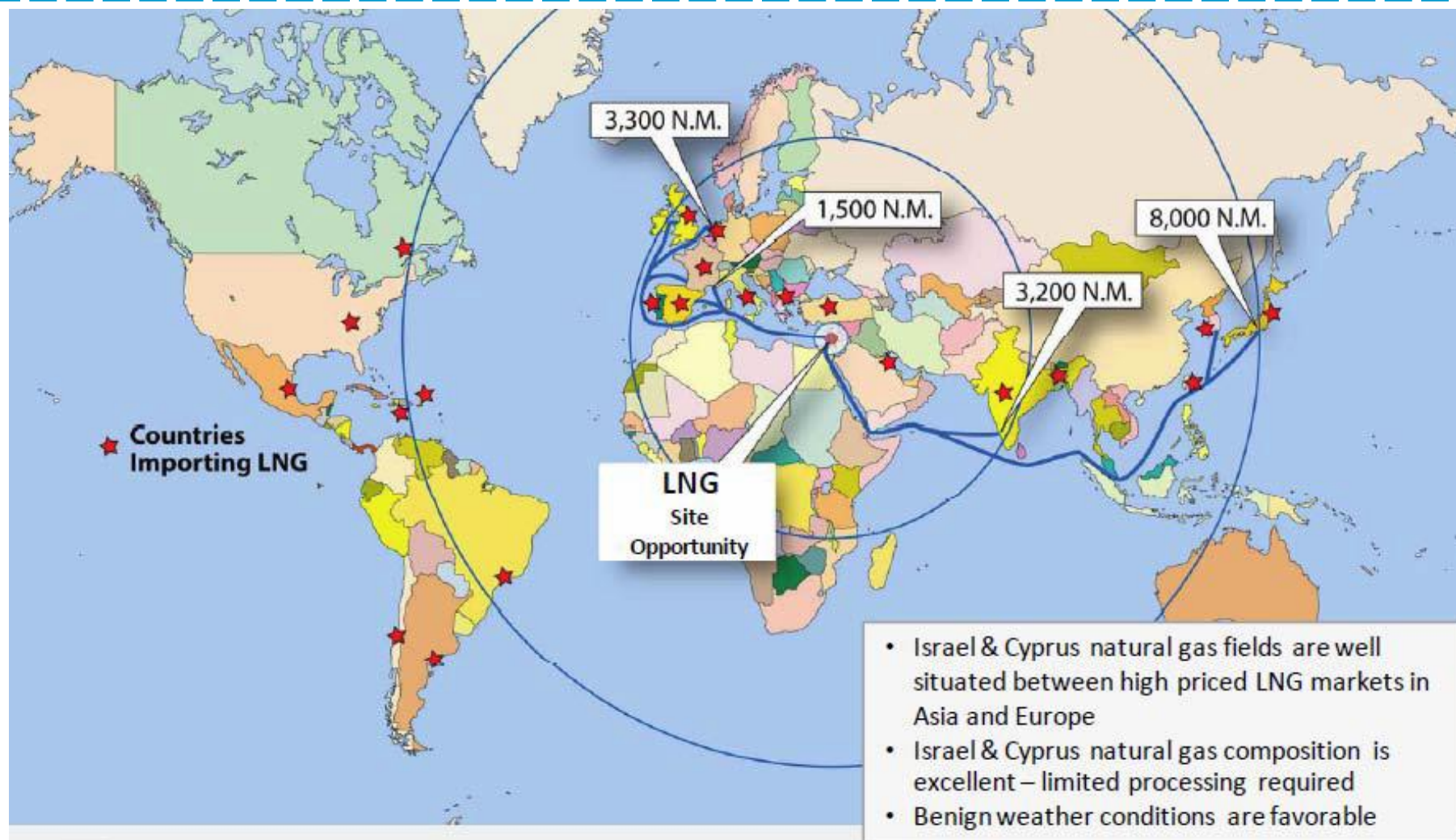
thousand metric tonnes



(Source: EC)

In absolute terms, the **Asia-Pacific region increasingly depends on global LNG supplies**, a trend that has intensified over the period 2007-2011 with near doubling of Qatari supplies. EU stable demand – Supply Shortage expected after 2025

Transforming Cyprus to an energy exporting country



Source: CNHC

Conclusions – Next Steps

- ❑ Developing an **LNG Terminal** is the best option of exporting natural gas to European and Asian Markets.
- ❑ Successful LNG Project Development – Transforms Cyprus into a **regional energy hub** and an **energy and political bridge** between EU and Middle East Countries.
- ❑ The energy sector is a **key area of cooperation** between the countries of the region which can also constitute a **ground of stability**.
- ❑ Following solution of the Cyprus problem, gas could be exported to Turkey's market under commercial terms and considering market conditions.
- ❑ Eastern Mediterranean developments in the energy sector provide excellent opportunities for **COOPERATION** between the Mediterranean countries to the benefit of their people.

Cyprus Potential Role in the East Med Energy Developments

THANK YOU FOR YOUR ATTENTION



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