




E and SE Mediterranean: a rising global energy star to secure European natural gas supplies

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All the information, maps and data included in this presentation are already in the public domain in presentations and articles from numerous conferences, events and social engagement meetings, as well as in mass media, held during the last years from different authors, amongst them governmental officials and private investors.

Any opinion and or conclusion in this presentation reflects solely personal view of the author, based on his mental impressions from his long academic and professional experience and does not impose or make any recommendation to any direct or indirect business or investment proposal.

The author would like to express his appreciation to Hellenic Petroleum for employing him 1982 2020 and offered to him the opportunity to serve the Greek upstream sector. The author would like express his deep gratitude to his colleagues, who throughout all these years, taught him and joined him working intensively to explore our country to discover oil and gas.

The energy crisis and the war in Ukraine led in:

Heightened
energy security



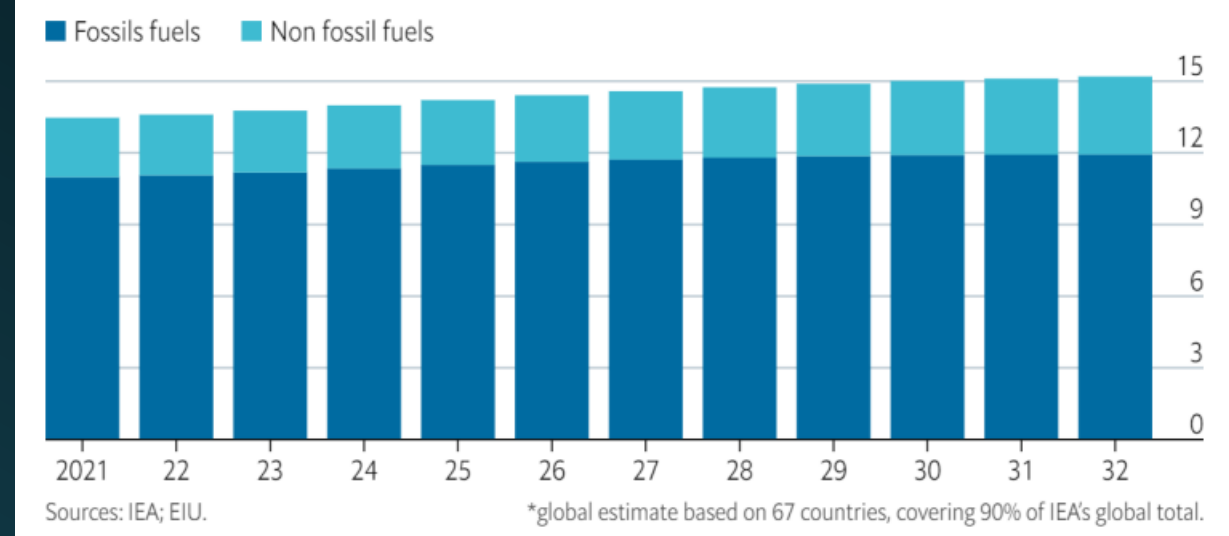
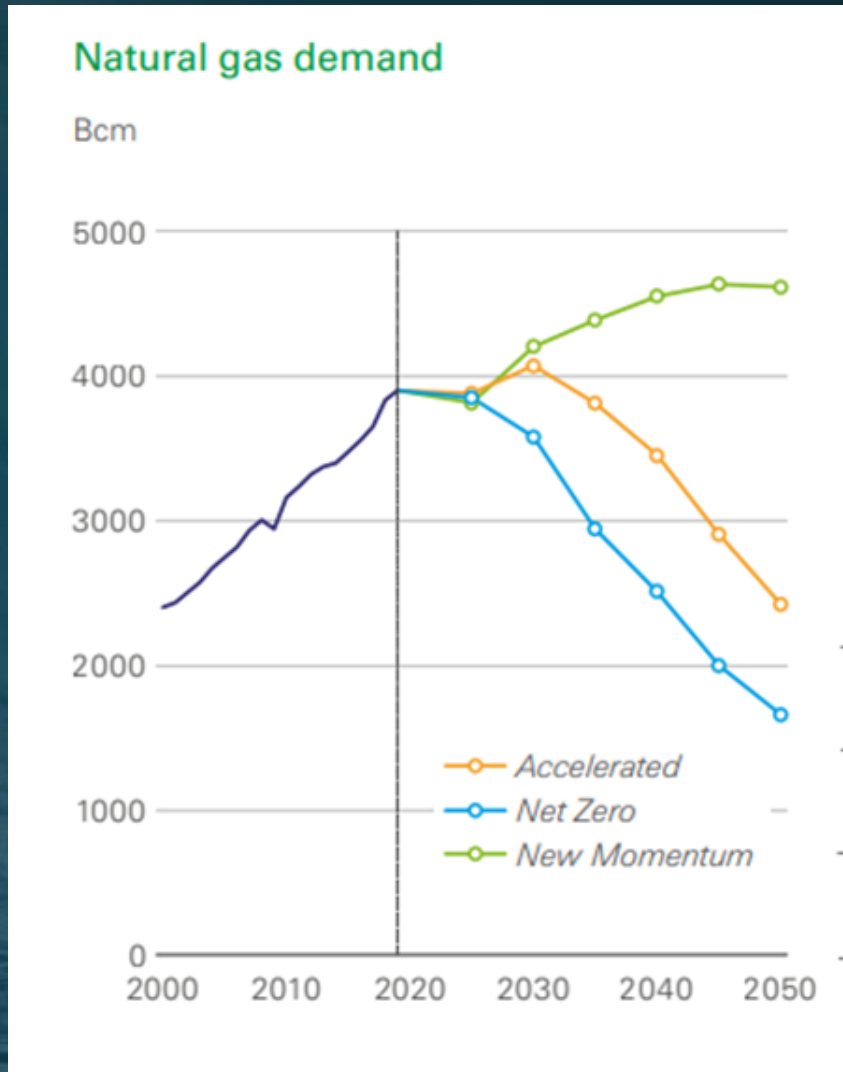
Weaker
economic growth



Changing mix
of global
energy supplies



Natural gas will contribute significantly in the global energy mix for decades



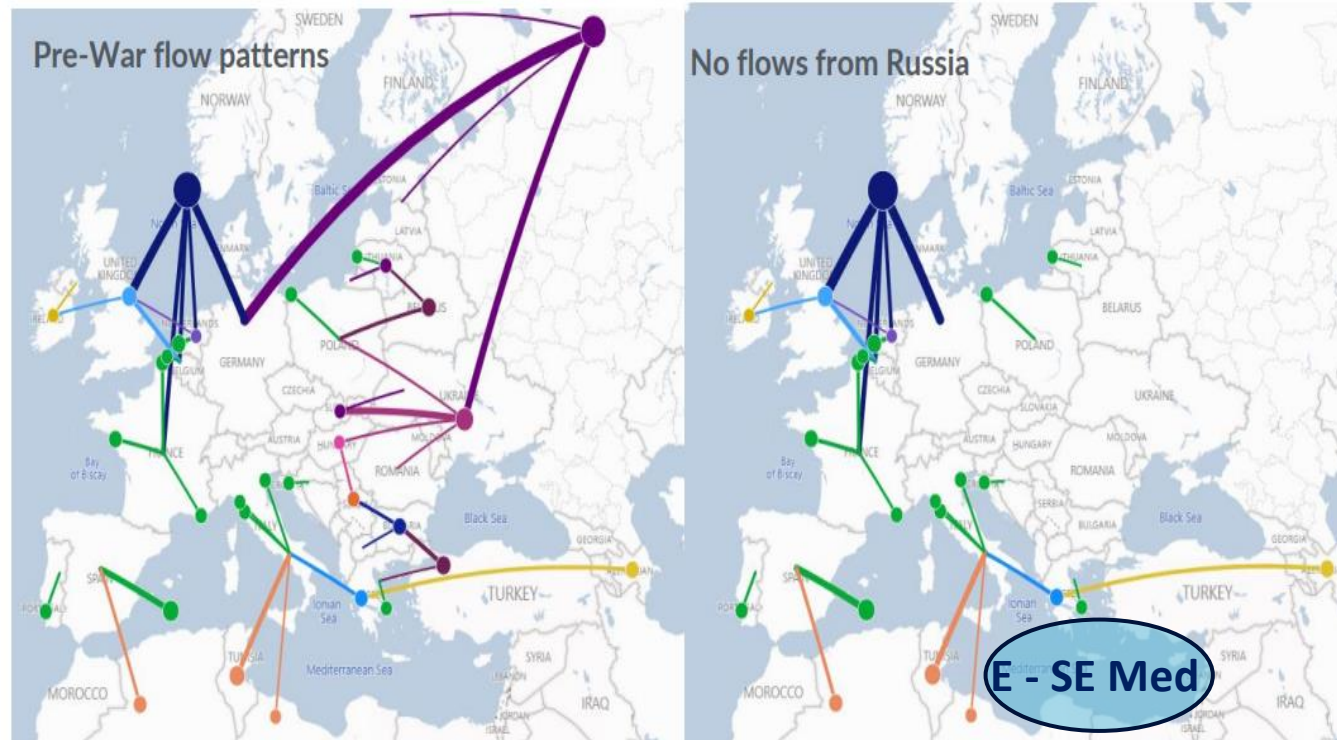
Total fossil fuel consumption will increase in next decade (IEA forecast based on 67 countries covering 90% of global total)

Global natural gas demand might increase at New Momentum Scenario by 15% until 2050 (BP Energy Outlook 2023)



EU is looking ways to replace the Russian gas supply disruption

Russian gas supply disruption challenge in EU



- EU imported about **160 bcm of Russian gas in 2021** (140 bcm by pipelines)
- In 2021 worldwide LNG production was **513 bcm**
- **375 bcm LNG go to Asia** (i.e. 138 bcm available for others)
- **EU Regas capacity ca. 200 bcma**

- Additional Gas Pipeline supplies can come from Algeria (+9bcm/y to Italy), Norway and Azerbaijan/Middle East via TAP doubling (+10bcm/y to Greece, Italy and Balkans). **Majority of new supplies will need to come as LNG**

Greece: following 2 years recession, back to full speed exploration works in 2022

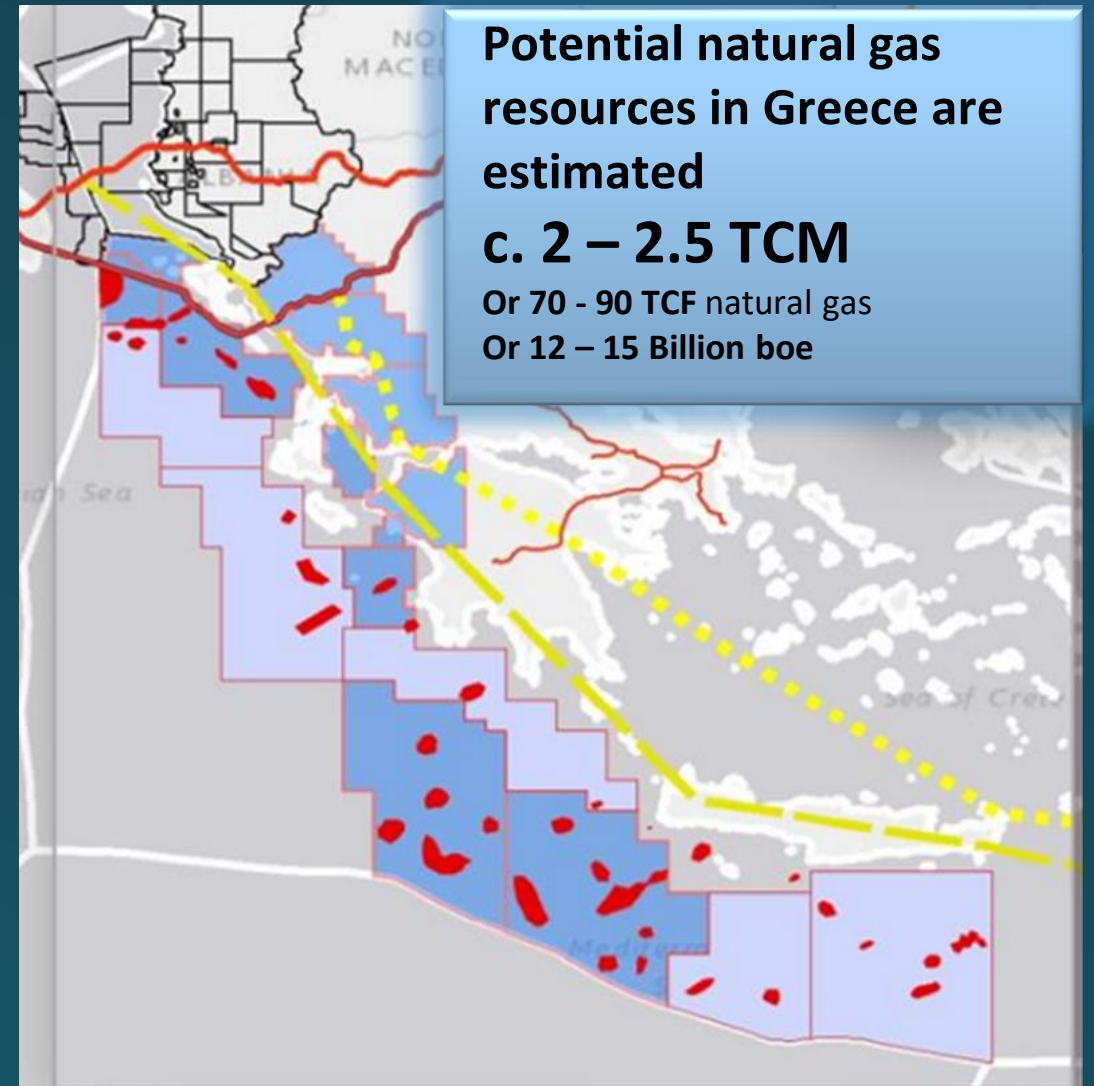
- Following a rapid licensing activity and **successful exploration works in 12 blocks** during 2014 – 2019 the upstream sector experienced a **“black out” for two years** (2020 - 2021) due to negative political and ecological reactions
- **TotalEnergies and Repsol** left the country and **four blocks were relinquished** without completing even the minimum contractual exploration program
- **The European energy crisis** and its consequences forced the **Greek government to push the operators** to continue fulfilling their contractual commitments
- As a result **seven offshore 2D and 3D seismic surveys shot during 2022** in 5 blocks, while wells are planned in other 2 blocks upon approval of the environmental studies



Source: HEREMA

Greece: high expectations from promising geological structures

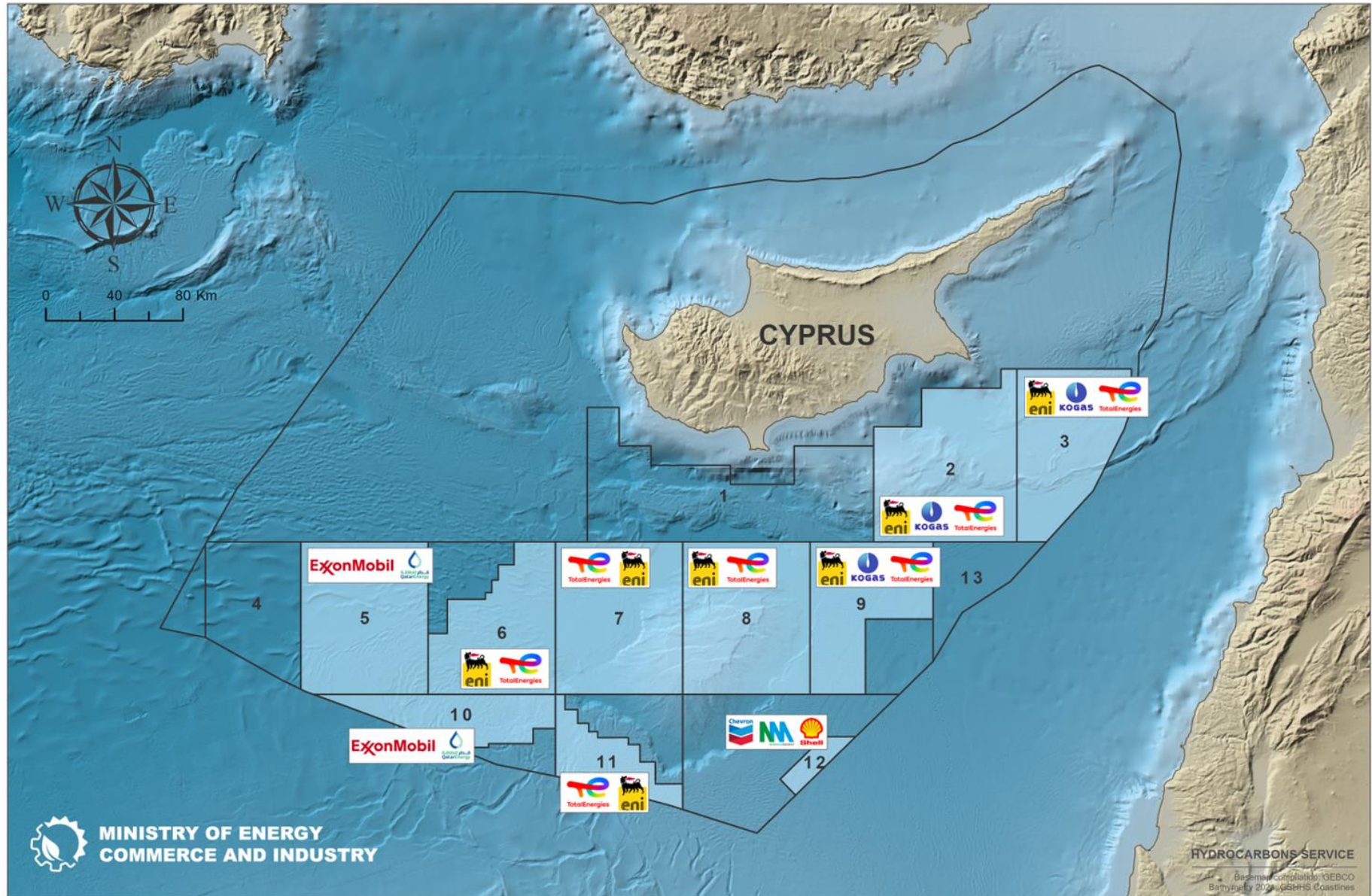
- Based on the interpretation of the existing legacy 2D seismic data and the 2D multi client seismic survey (PGS 2012) there are mapped c. **40 geological plays and prospects**
- The integration of legacy geological, geochemical geophysical and drilling data leads to an estimation that country's **potential natural gas resources are up to 2 – 2.5 TCM**
- These geological plays and prospects **require further exploration** studies (geological and geochemical work, 3D seismic, wells) before will be declared as hydrocarbon discoveries



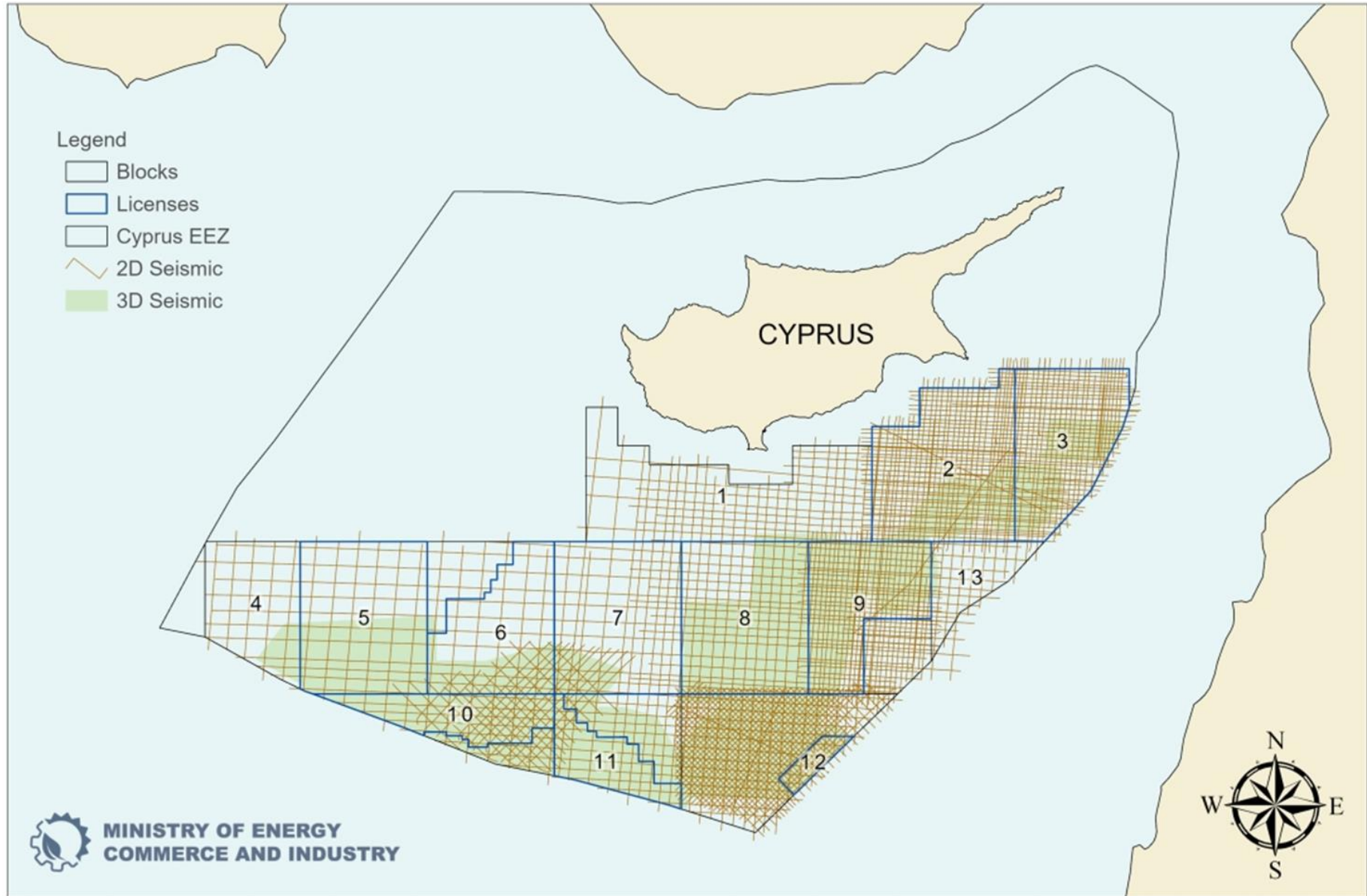
Source: HEREMA, study IENE, published reports and studies

REPUBLIC OF CYPRUS

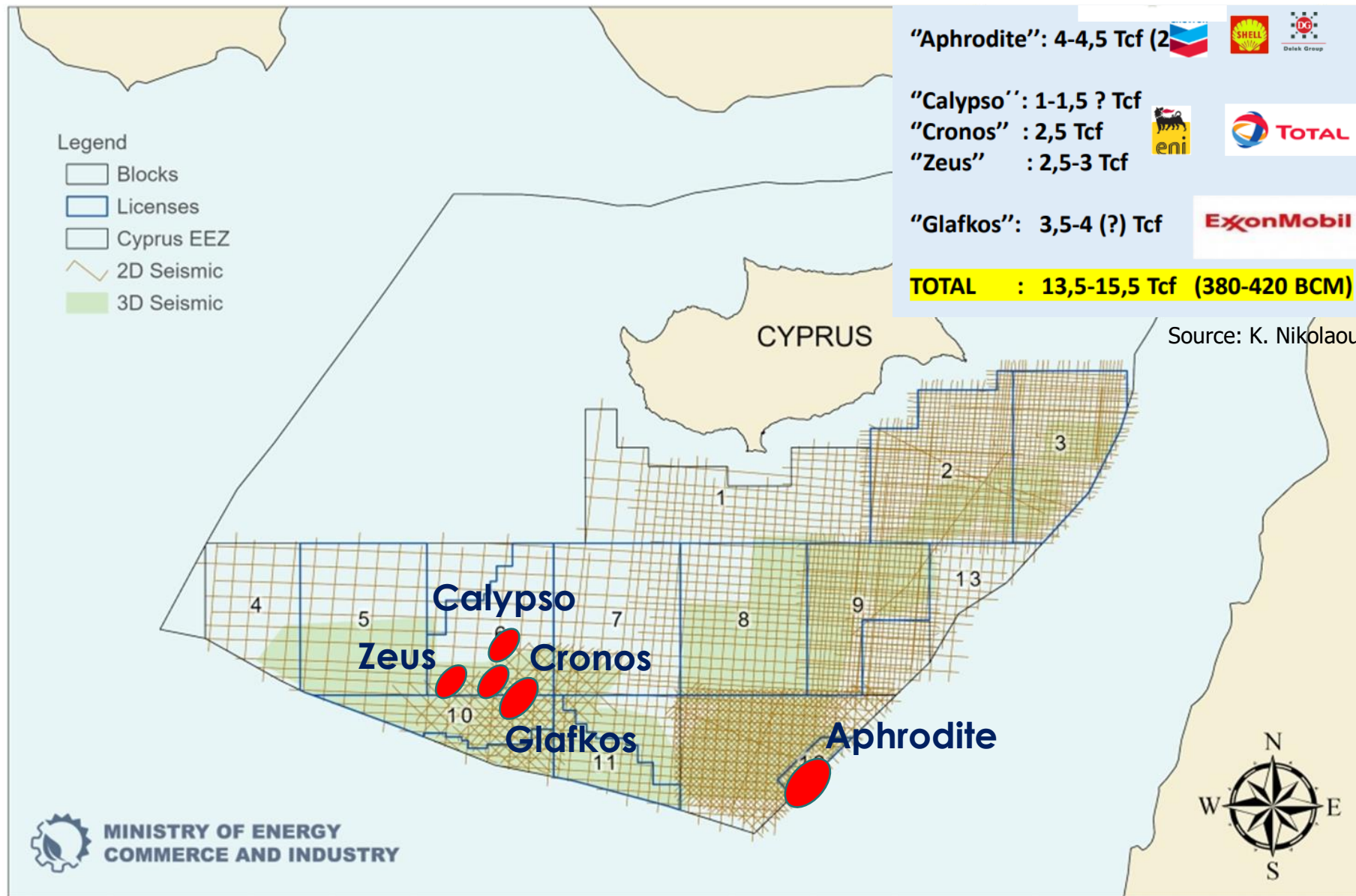
Offshore Exploration and Exploitation Licenses

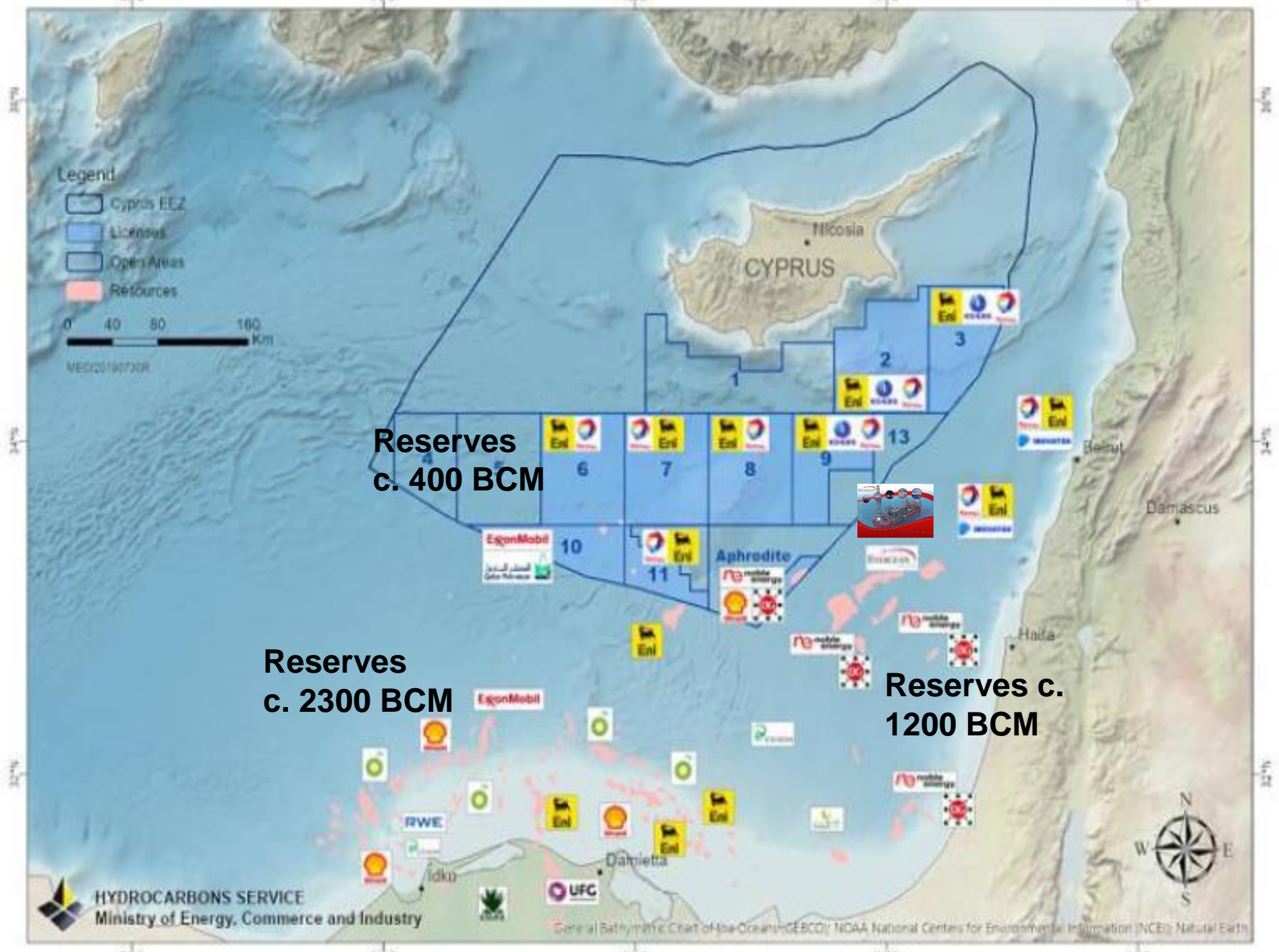


Seismic surveys Offshore Cyprus



Natural gas discoveries in Cyprus





Current main activities in Cyprus

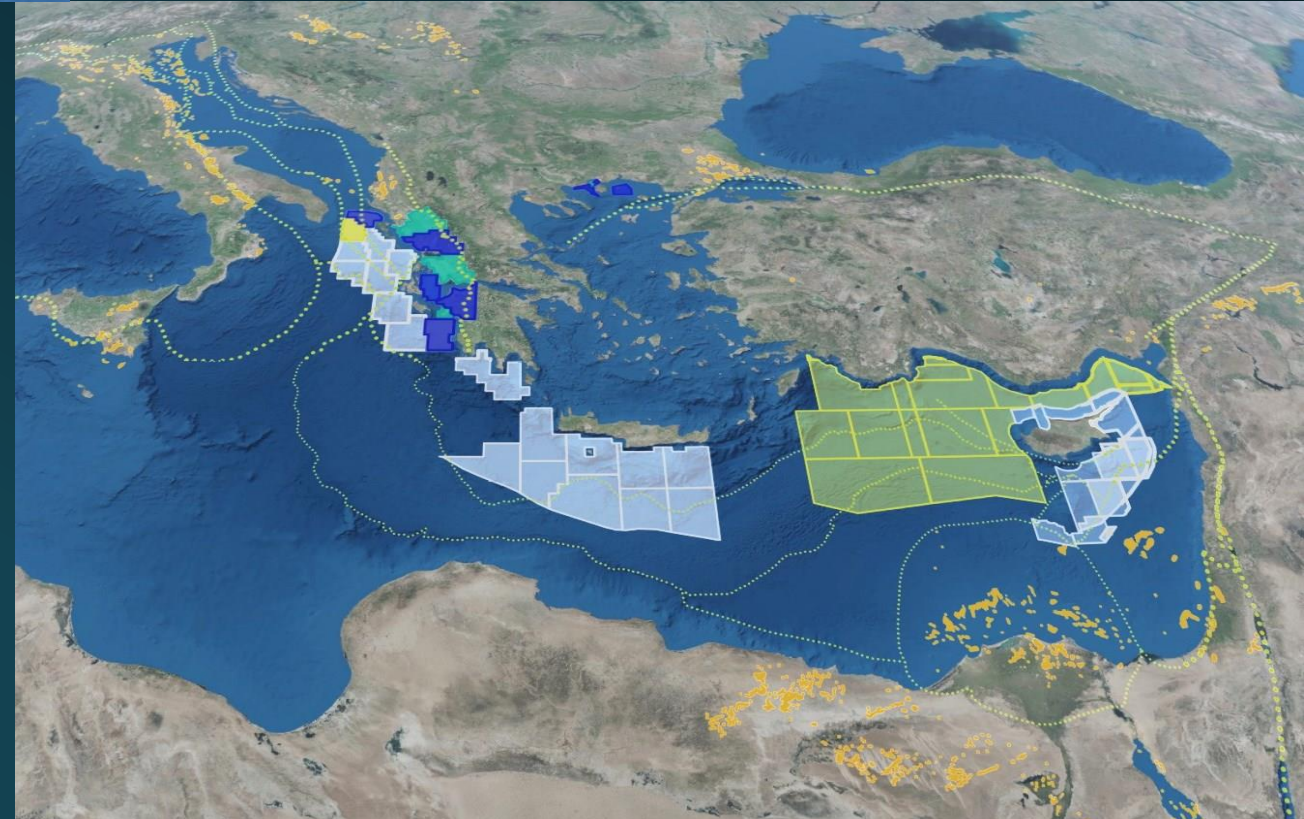
- **Cyprus Vision** PGS completed the first phase of reprocessing all the existing 3D seismic data (4 surveys shot 2013 – 2017 covering 14750 sq km in blocks 9-10-11-12)
- In progress the well **Aphrodite – 3** to appraise Aphrodite natural gas field (operator Chevron, block 12)
- JV of ENI (operator 50%) and TotalEnergies (50%) are working for a **fast track development** of the discoveries in **block 6 (Kalypso, Cronus, Zeus)**
- **Energean** is considering **piping** natural gas from its **Israeli discoveries to Cyprus**
- Ministers of Energy of **Cyprus and Israel** announced last week that are considering an **LNG plant onshore Cyprus** to transfer the Israeli and Cypriot natural gas
- **Minister of Energy** of Cyprus will **announce on 29th of May** to all operators active in Cyprus the new **governmental energy policy**



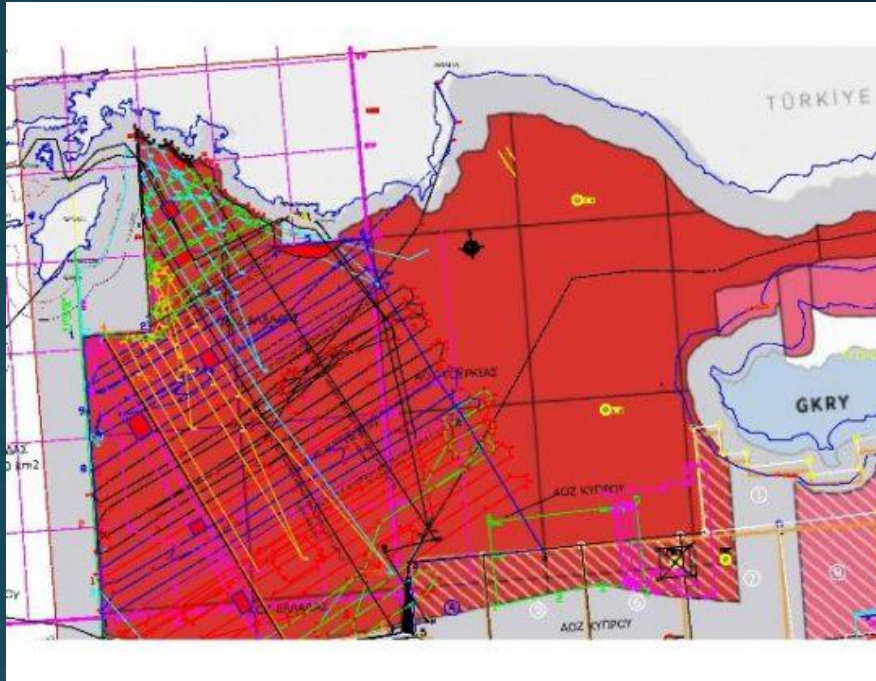
Licensed blocks in Greece and Cyprus based on international rounds

(white line indicates Greece's and Cyprus's EEZ according to International Law and are illustrated in the EU official "Sevilla map" – source T. Kariotis))

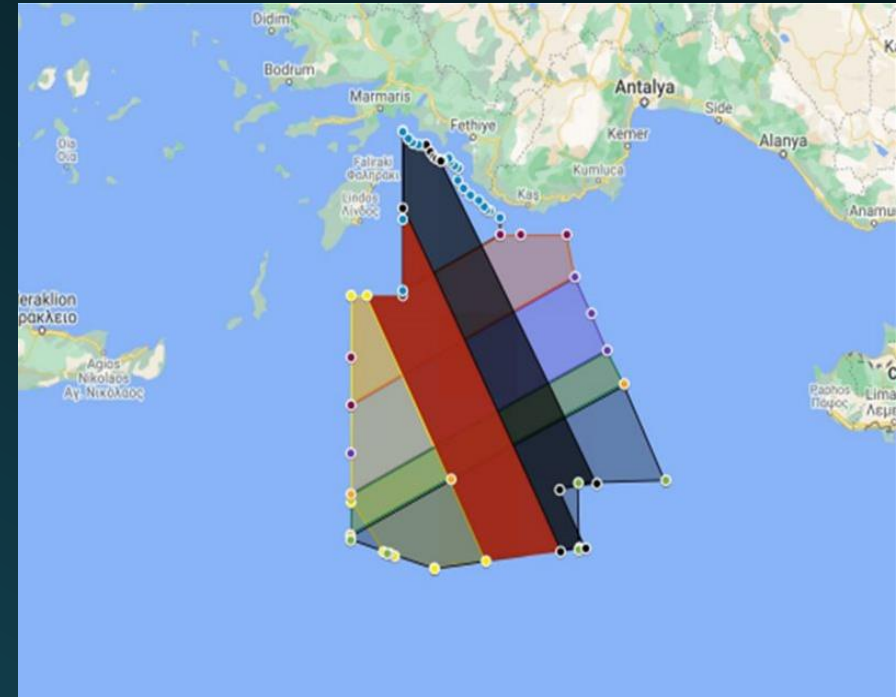
- **Turkey, since 2009, is granting illegally to TPAO offshore areas in SE Med (eastern to 28° meridian crossing Rhodes) trespassing Greece's and Cyprus' EEZ against the International Law.**
- TPAO in these blocks (in yellow) shot several seismic surveys and drilled wells (2017 -2020)



2020: Turkish seismic vessel Oruc Reis acquired seismic data in SE Med trespassing Greek and Cypriot EEZ against International Law

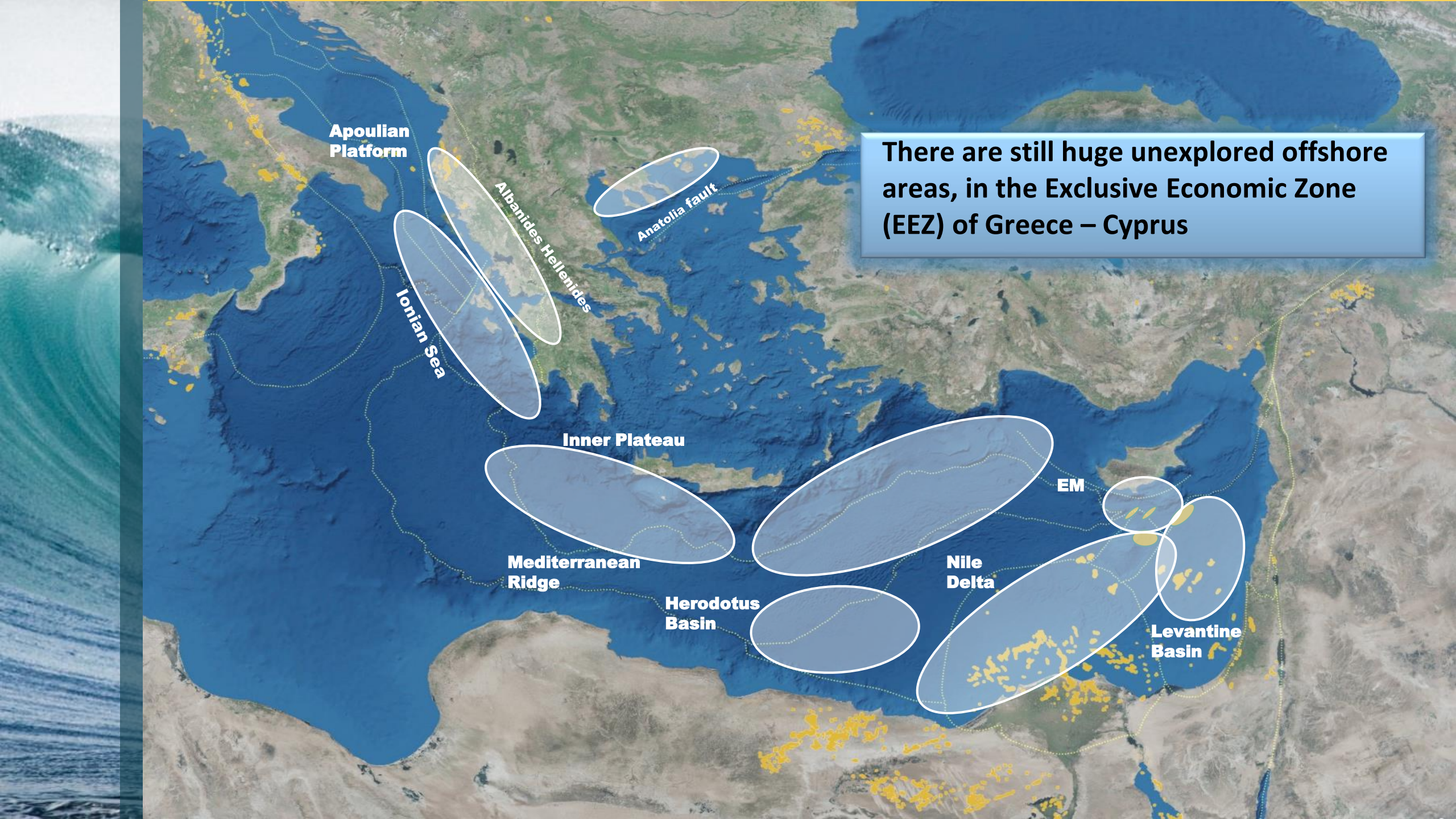


Oruc Reis seismic survey inside illegal licensed areas from Turkish State to TPAO



Oruc Reis seismic surveys trespassing Greek and Cypriot EEZ

Source: published reports



Apoulian Platform

Ionian Sea

Albanides Hellenides

Anatolia fault

Inner Plateau

Mediterranean Ridge

Herodotus Basin

Nile Delta

EM

Levantine Basin

There are still huge unexplored offshore areas, in the Exclusive Economic Zone (EEZ) of Greece – Cyprus

E and SE Med the existing natural gas resources could feed Europe, replacing the disrupted Russian gas and the depleting northern gas fields

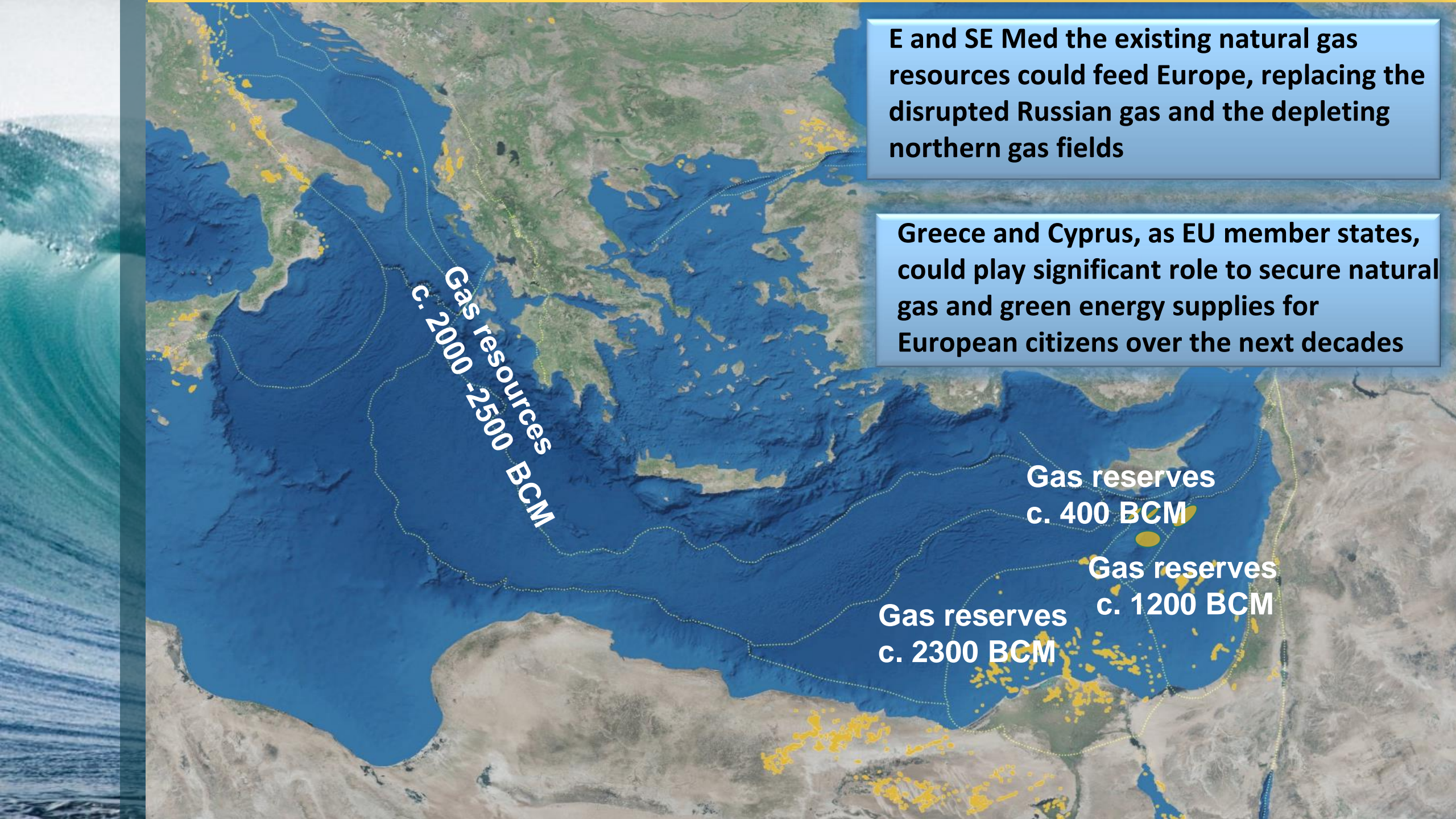
Greece and Cyprus, as EU member states, could play significant role to secure natural gas and green energy supplies for European citizens over the next decades

**Gas resources
c. 2000 -2500 BCM**

**Gas reserves
c. 400 BCM**

**Gas reserves
c. 1200 BCM**

**Gas reserves
c. 2300 BCM**



E - SE Med hydrocarbons resources: a rising global energy star to secure European gas supplies

➤ Several options exist to monetise & transport hydrocarbons from the current and potentially producing countries in E - SE Med (Egypt, Israel, Cyprus, Lebanon, Greece etc) to consumers (local markets, Europe and Asian market etc)

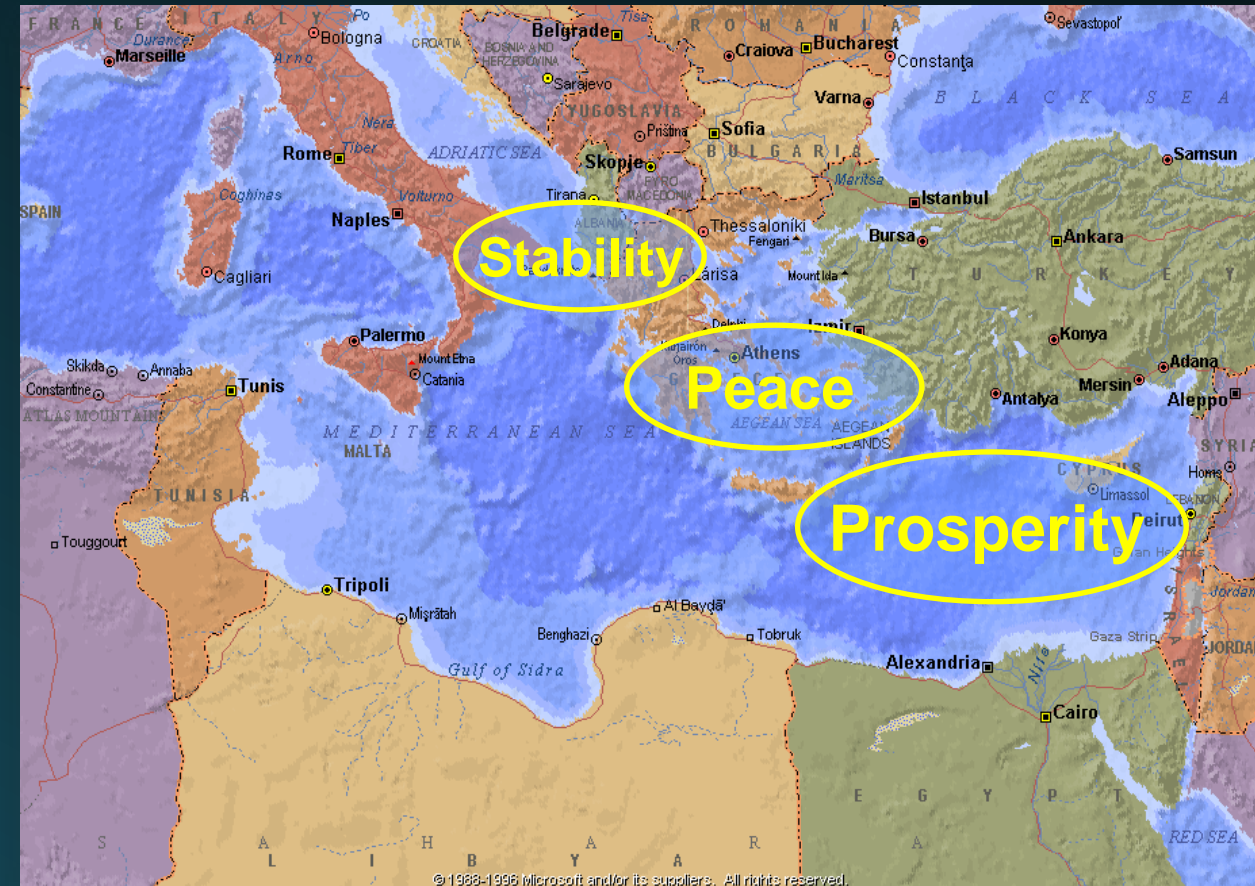
- *EastMed pipeline to Greece and then to European market*
- *Existing Egyptian LNG plants*
- *New LNG plant in Cyprus*
- *New and existing pipelines to nearby local markets*



E - SE Med hydrocarbons resources for stability, peace and prosperity of the countries in the area

➤ The only viable solution requires **all neighboring and all involved countries** in the area and the **stakeholders** must, without terms and asterisks, to:

- **Strictly comply and respect the International Laws and Treaties**
- **Recognise and accept the borders and EEZ of each country**
- **Honor the existing decisions of the United Nations**





*Many thanks
for your kind
attendance*