



**Πόροι υδρογονανθράκων στη ΝΑ
Μεσόγειο.**

**Πυλώνας προοπτικής για ενεργειακή
αυτάρκεια, ασφάλεια εφοδιασμού και
ευημερία στην περιοχή και την Ε.Ε.**

Παρουσίαση για το συνέδριο
ΟΙ ΕΝΕΡΓΕΙΑΚΟΙ ΠΟΡΟΙ ΤΗΣ ΑΝ.
ΜΕΣΟΓΕΙΟΥ ΚΑΙ Η ΑΞΙΟΠΟΙΗΣΗ ΤΟΥΣ
Προκλήσεις και προοπτικές

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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.



Agenda

❖ Upstream business and hydrocarbon potential in SE Med region
*(including some major geopolitical facts *)*

- Greece
- Libya
- Egypt
- Israel
- Lebanon
- Cyprus

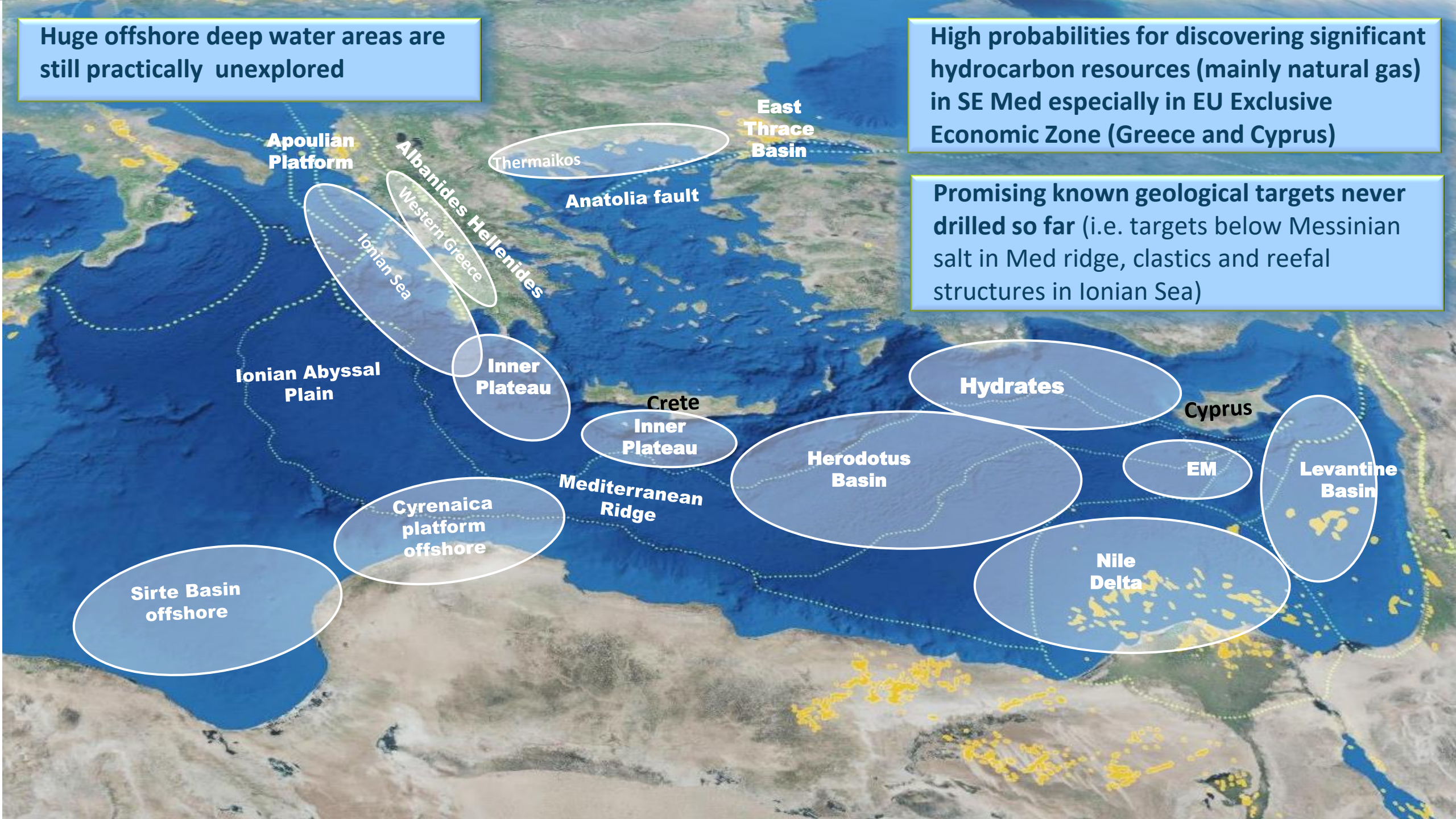
❖ Lessons learnt from a story from the past ...

** Request: as we are invited in a scientific non political forum and all geopolitical references are facts presented in a subjective format, please let's avoid political debate*

Huge offshore deep water areas are still practically unexplored

High probabilities for discovering significant hydrocarbon resources (mainly natural gas) in SE Med especially in EU Exclusive Economic Zone (Greece and Cyprus)

Promising known geological targets never drilled so far (i.e. targets below Messinian salt in Med ridge, clastics and reefal structures in Ionian Sea)





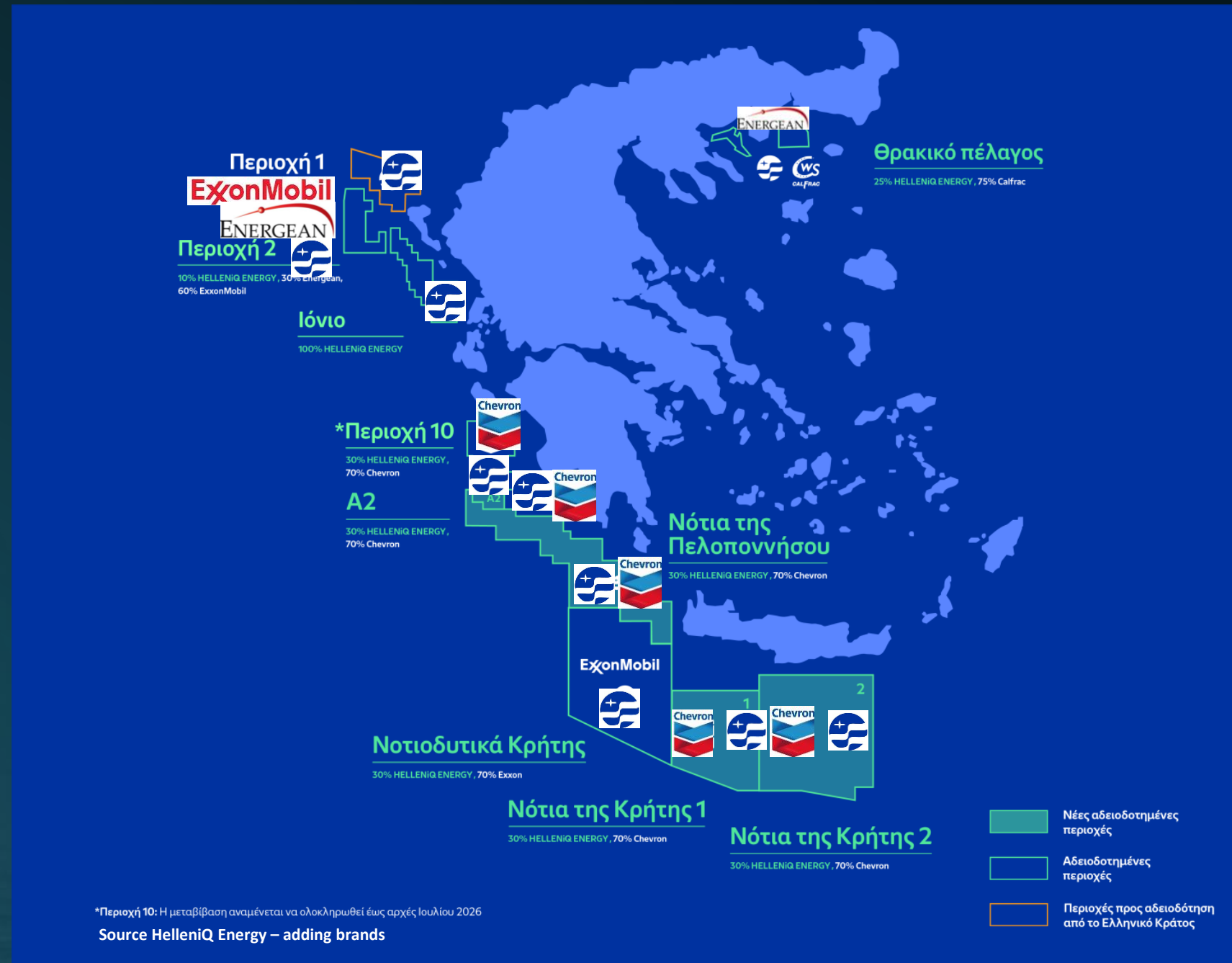
Greece

- ❖ The last 10 years, following international bid rounds, **16 blocks** in Ionian Sea, around Crete and onshore W. Greece licenced.
- ❖ **Seven blocks** relinquished without concluding the committed exploration works, while two majors left (Total and Repsol). HEREMA should consider asap to award the areas again (open door round)
- ❖ More than **40 promising geological structures** are mapped from seismic data – remain to be further explored
- ❖ Large offshore promising areas in Greek EEZ are almost **unexplored** (Thermaikos, west Ionian Sea)
- ❖ Potential **resources** in all Greek promising areas are estimated to be c.**2000 – 2500 BCM (70-90TCF)**
- ❖ Currently the main players are the US majors **Chevron and ExxonMobil** and in JVs with **HelleniQ Energy** (ex Hellenic Petroleum) and **Energean**

Chevron entered the country participating in international round jointly with HELLENiQ ENERGY in the blocks South of Crete 1 and 2, South of Peloponnese and A2, while farmed in block 10 acquiring 70% with HELLENiQ ENERGY 30%

ExxonMobil left from W. Crete block while farmed-in in **Block 2** joining ENERGEAN and HELLENiQ ENERGY (well is scheduled for 1Q2027)

Exploration works are in progress in blocks **Ionian, 10, SW. Crete** with positive results



Greece

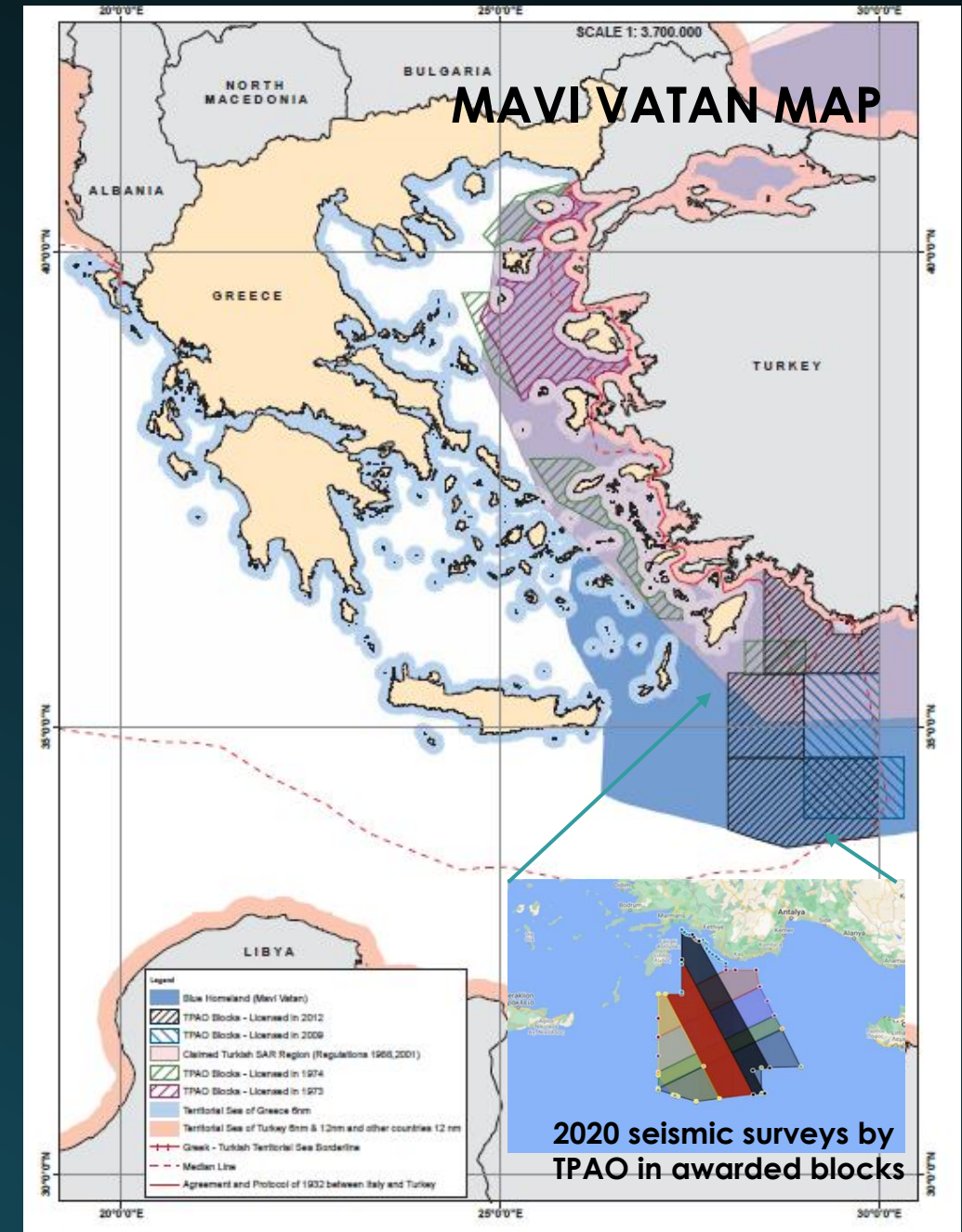
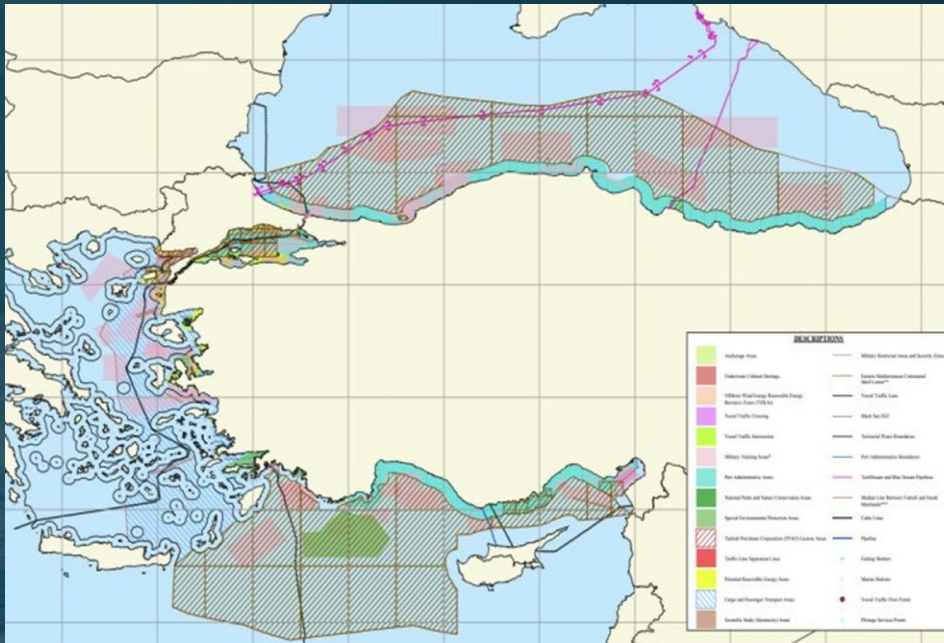
- ❖ *During the last fifty years the exploration in the country was not continuous and conclusive mainly due to lack of political support and funding contrary to the positive geological, geochemicals and geophysical studies and the relevant findings*
- ❖ *Following the offshore Katakolon discovery and the positive drilling findings in Ionian Sea (1982 – 84) the drilling activity stopped*
- ❖ *This is mainly due to lack of continuous and consistent political support from all the governmental parties, existing bureaucratic obstacles and “a la cart” actions from activists.*
- ❖ **Today's government recently changed energy policy supporting hydrocarbons exploration**

Greece published April 2025
Maritime Spatial Planning map
(Directive 2014/89/EU) having signed
agreements with Italy and Egypt
delimitating EEZ
The map reflects **maximum Greek EEZ**
as per **UNCLOS**, International Law of
Sea and EU maps



Turkish Institute DEHUKAM, published June 2025, **Maritime Spatial Planning** reflecting political vision of **Mavi Vatan** (Blue Homeland October 2018)

Türkiye awarded blocks to TPAO and at the same time threatens Greece with “**casus belli**” if extends the Greek territorial waters from 6 n.m. to 12 n.m.



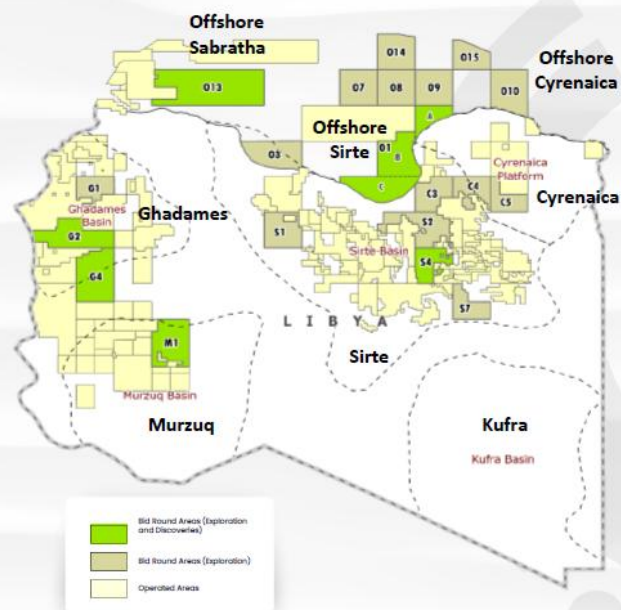


Libya

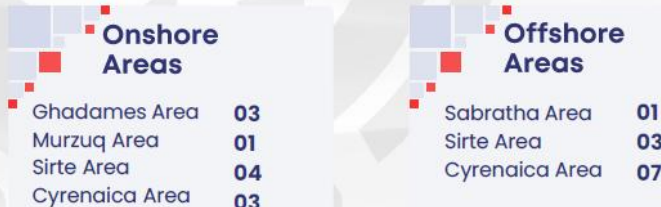
- ❖ Country, since 2011, remains politically unstable with no forecast for democratic elections
- ❖ 2025 crude **production is c. 1.5 bpd** and Eni, BP, OMV and Repsol resumed operations
- ❖ New discoveries early 2016 from Repsol (Murzuk), ENI (offshore block D), Sonatrack (Ghadames)
- ❖ A **Bid Round** opened March 2025 attracting interest from more than 40 companies amongst them TotalEnergies, OMV, Sonatrach, TPAO, ExxonMobil, Chevron. Areas have been awarded to Repsol, TPAO, ENI, Chevron.
- ❖ **NOC signed MoU with TPAO and ExxonMobil for G&G studies in specific blocks (not included in the round) and with Chevron for shale gas**

LIBYA BID ROUND

Exploration Opportunities



22 Areas are on offer for oil and gas opportunities.



Discovered Reserves

19

Discoveries
In 9 Areas

7

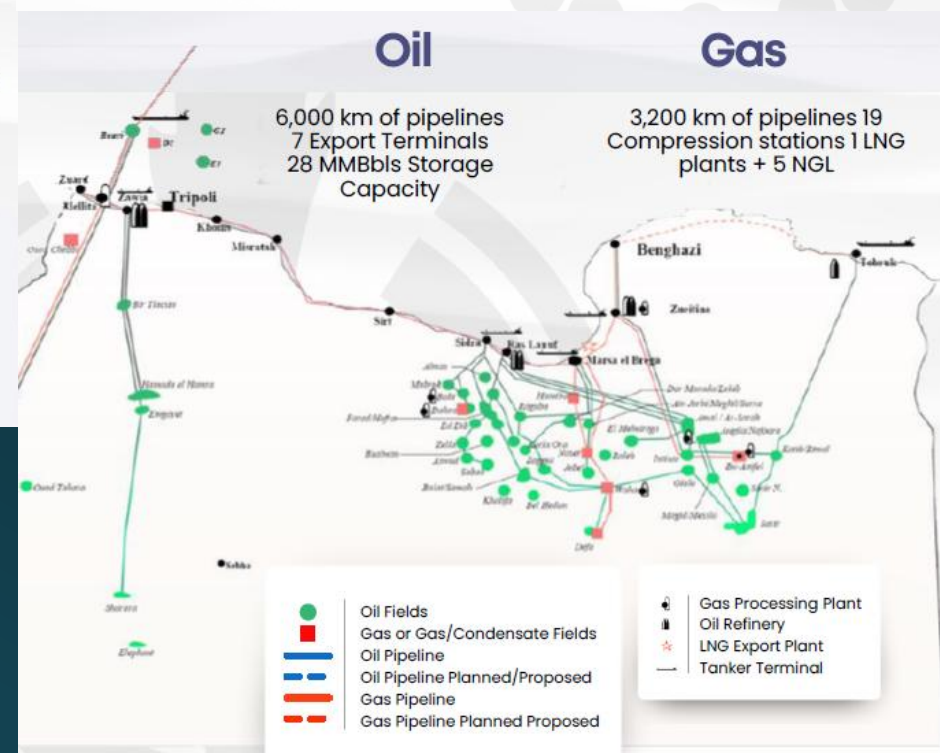
Discoveries
In 4 Offshore Areas

12

Discoveries
In 5 Onshore Areas

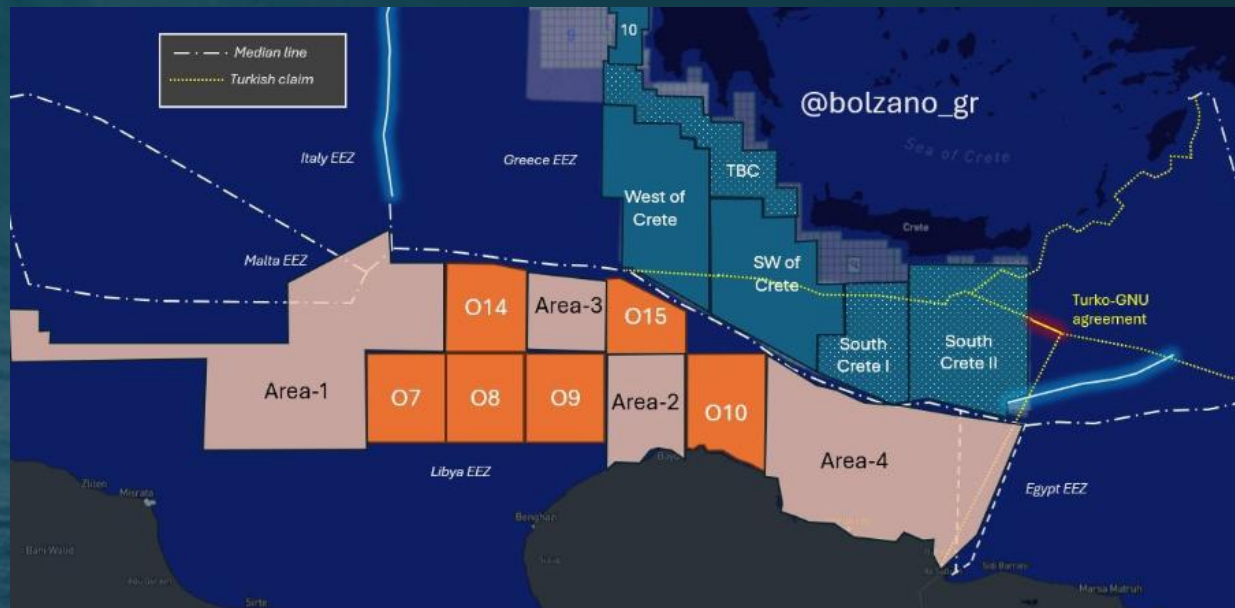
In-Place Reserves **1.63 Bboe.**

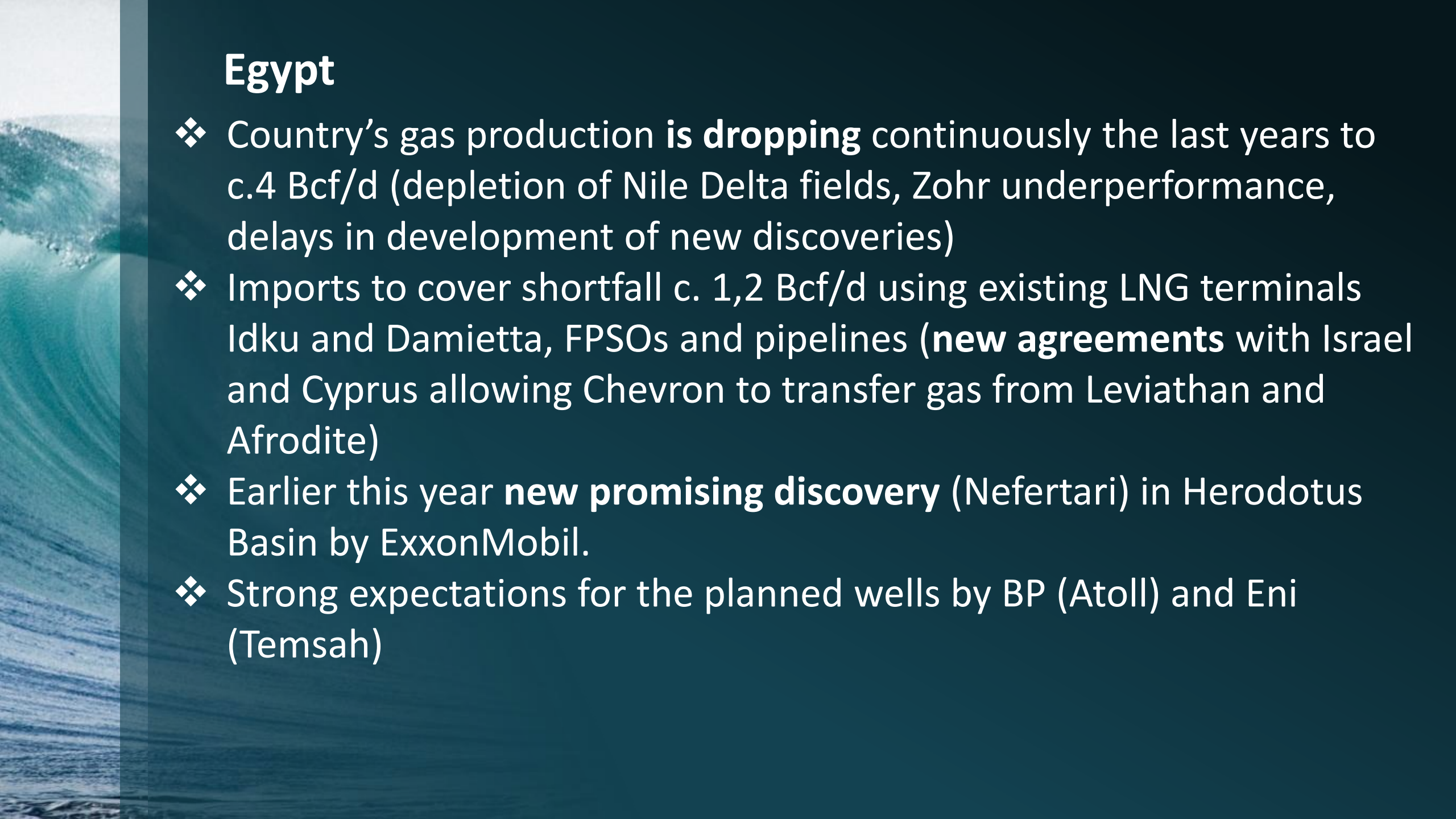
Libya's NOC provides an infrastructure that is **Well-connected for the Export of Hydrocarbons.**





- ❖ Libya and Türkiye Nov 2019 signed MoU concerning EEZ amongst the two countries. Egypt and Greece protested it.
- ❖ June 2025 NOC signed MoU with TPAO to carry G&G studies in four offshore blocks, which are respecting the medial line between Greece and Libya

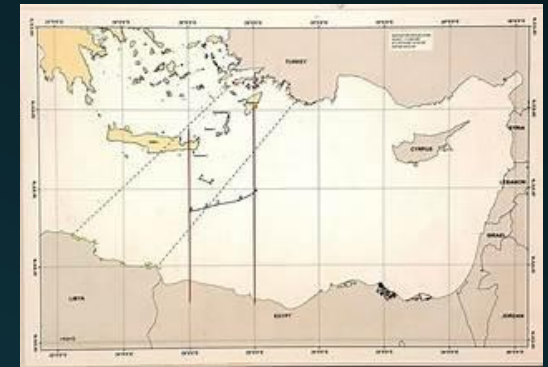
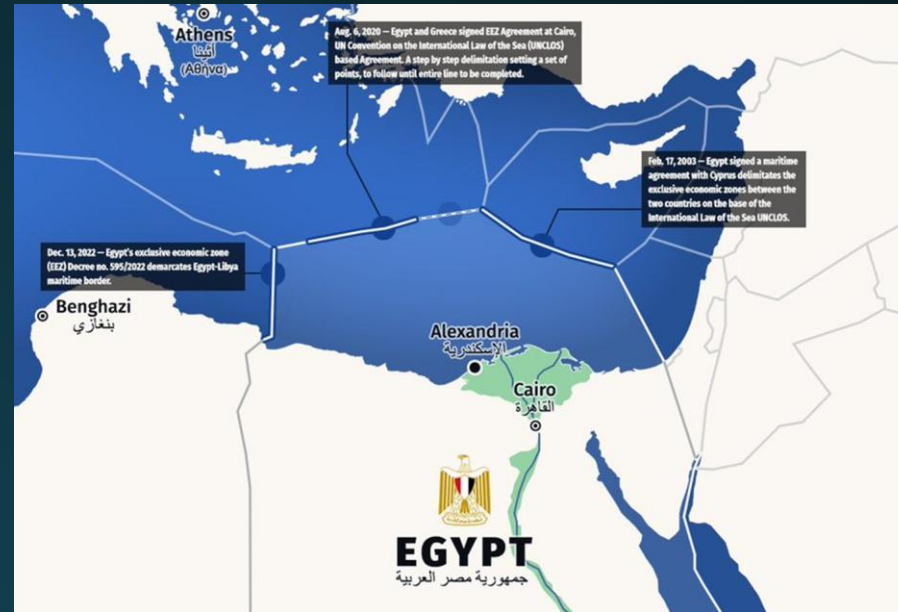




Egypt

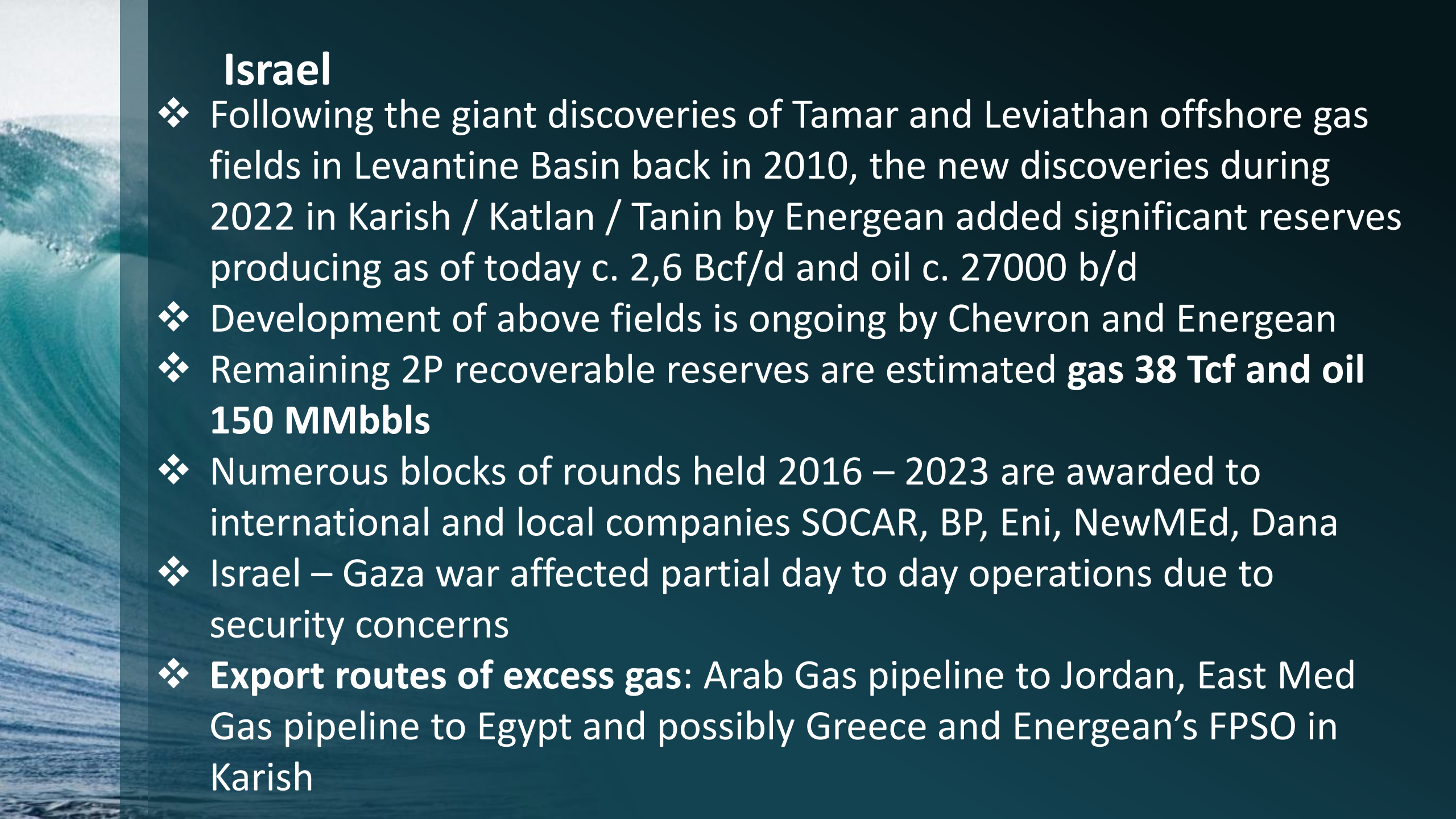
- ❖ Country's gas production is **dropping** continuously the last years to c.4 Bcf/d (depletion of Nile Delta fields, Zohr underperformance, delays in development of new discoveries)
- ❖ Imports to cover shortfall c. 1,2 Bcf/d using existing LNG terminals Idku and Damietta, FPSOs and pipelines (**new agreements** with Israel and Cyprus allowing Chevron to transfer gas from Leviathan and Afrodite)
- ❖ Earlier this year **new promising discovery** (Nefertari) in Herodotus Basin by ExxonMobil.
- ❖ Strong expectations for the planned wells by BP (Atoll) and Eni (Temsah)

Egypt on the basis of UNCLOS, the International Law of the Sea, has delimited its EEZ with Cyprus (2003), Libya (2022) and partly with Greece (2020) up to 28° Meridien (overlapping the Turkish Libyan MoU).



Türkiye condemns all the above agreements, having its own view.

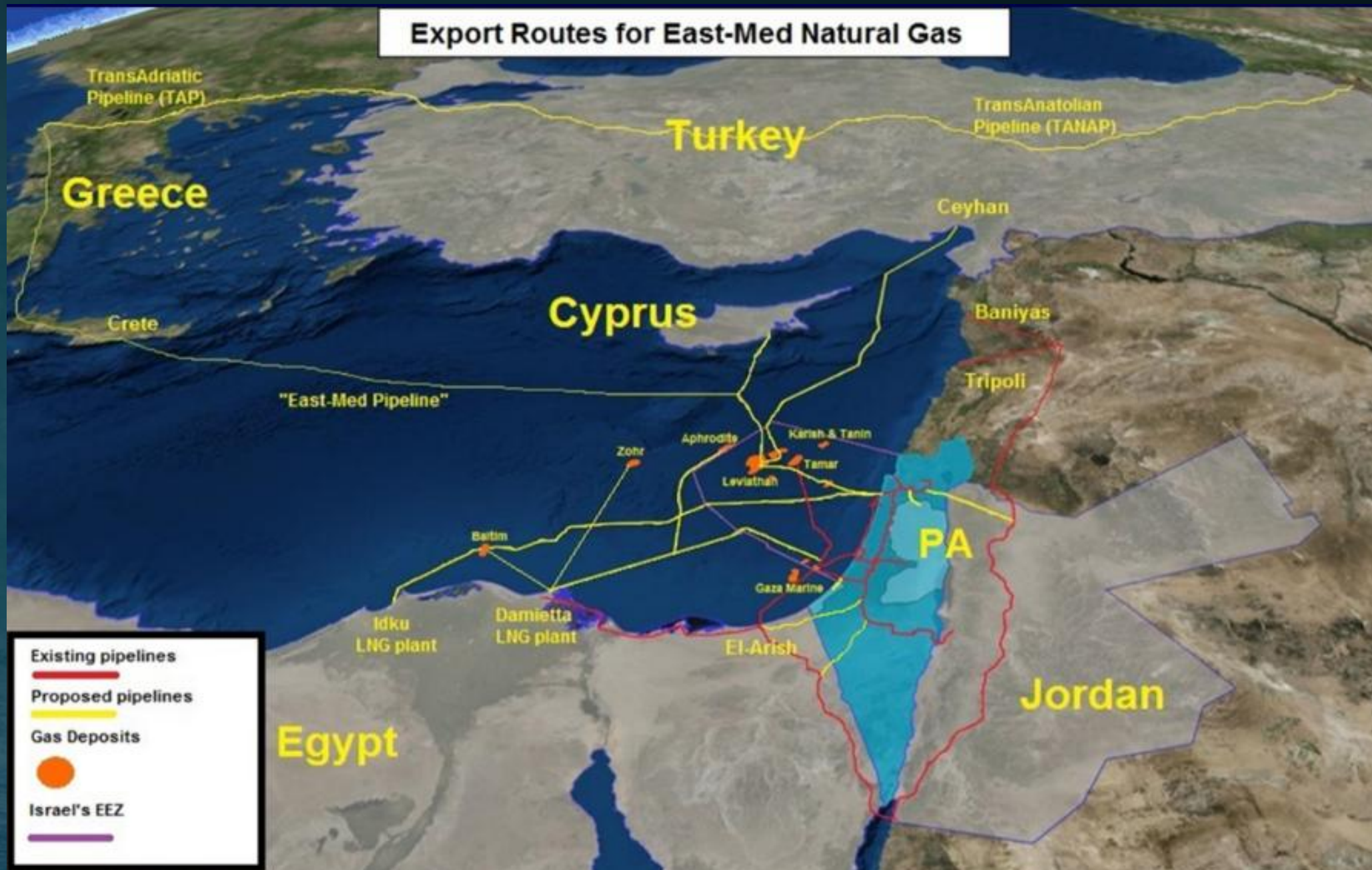


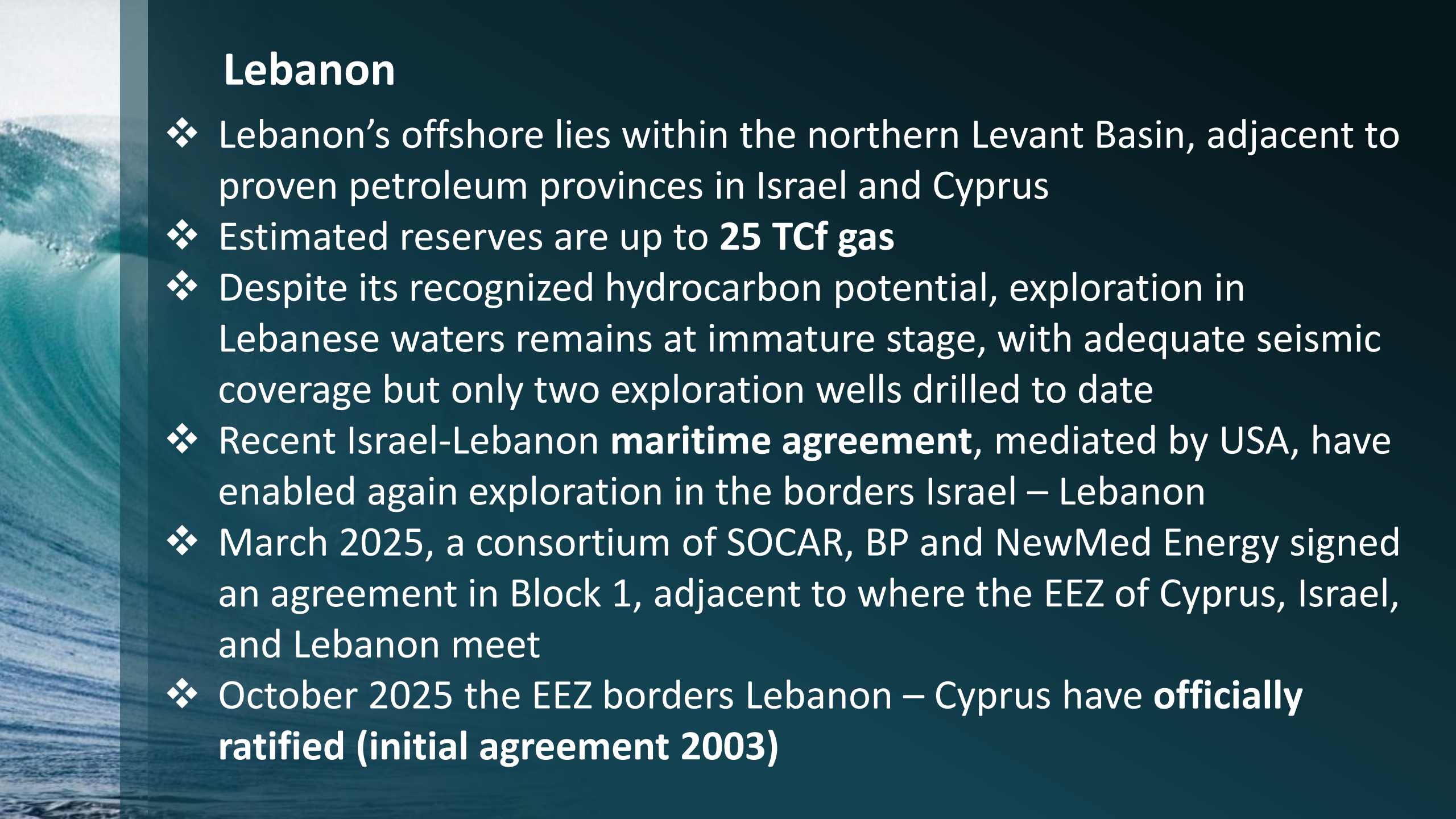


Israel

- ❖ Following the giant discoveries of Tamar and Leviathan offshore gas fields in Levantine Basin back in 2010, the new discoveries during 2022 in Karish / Katlan / Tanin by Energean added significant reserves producing as of today c. 2,6 Bcf/d and oil c. 27000 b/d
- ❖ Development of above fields is ongoing by Chevron and Energean
- ❖ Remaining 2P recoverable reserves are estimated **gas 38 Tcf and oil 150 MMbbls**
- ❖ Numerous blocks of rounds held 2016 – 2023 are awarded to international and local companies SOCAR, BP, Eni, NewMEEd, Dana
- ❖ Israel – Gaza war affected partial day to day operations due to security concerns
- ❖ **Export routes of excess gas:** Arab Gas pipeline to Jordan, East Med Gas pipeline to Egypt and possibly Greece and Energean's FPSO in Karish

Export Routes for East-Med Natural Gas



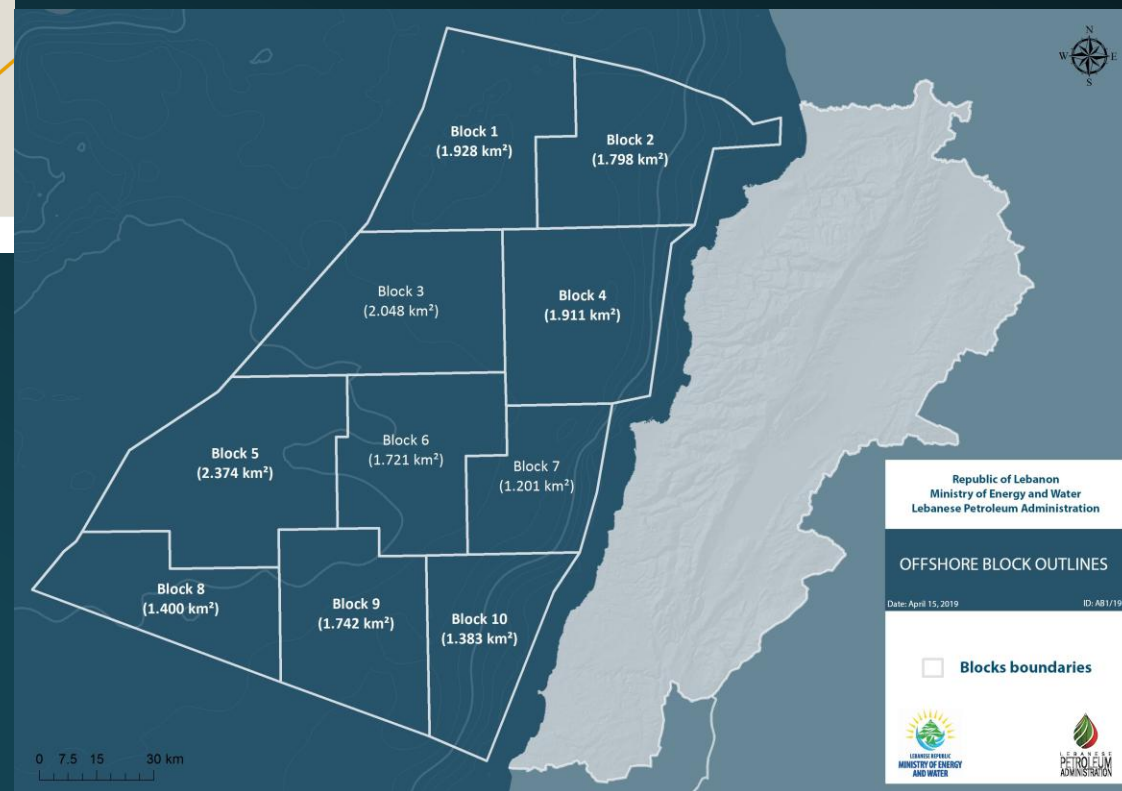
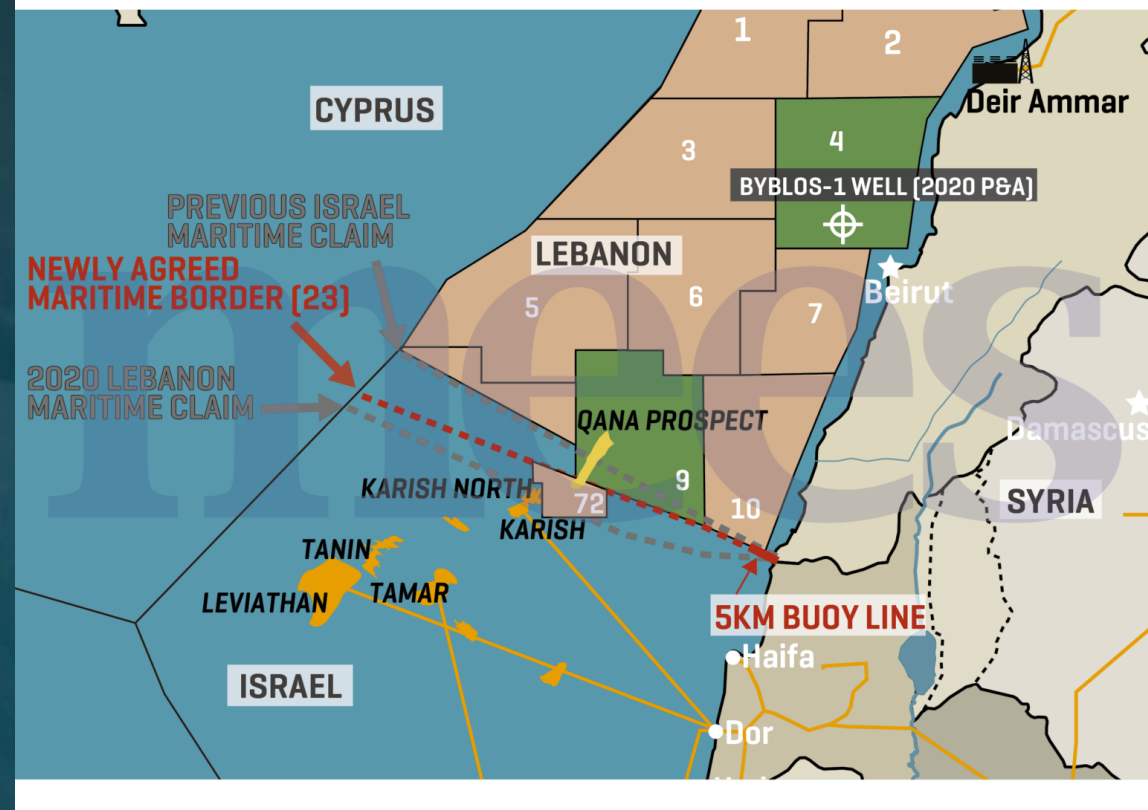


Lebanon

- ❖ Lebanon's offshore lies within the northern Levant Basin, adjacent to proven petroleum provinces in Israel and Cyprus
- ❖ Estimated reserves are up to **25 TCf gas**
- ❖ Despite its recognized hydrocarbon potential, exploration in Lebanese waters remains at immature stage, with adequate seismic coverage but only two exploration wells drilled to date
- ❖ Recent Israel-Lebanon **maritime agreement**, mediated by USA, have enabled again exploration in the borders Israel – Lebanon
- ❖ March 2025, a consortium of SOCAR, BP and NewMed Energy signed an agreement in Block 1, adjacent to where the EEZ of Cyprus, Israel, and Lebanon meet
- ❖ October 2025 the EEZ borders Lebanon – Cyprus have **officially ratified (initial agreement 2003)**

ISRAEL & LEBANON AGREE NEW MARITIME BORDER

■ GAS FIELD/PIPELINE
 ■ BLOCKS ON OFFER
 ■ TOTAL/ENI



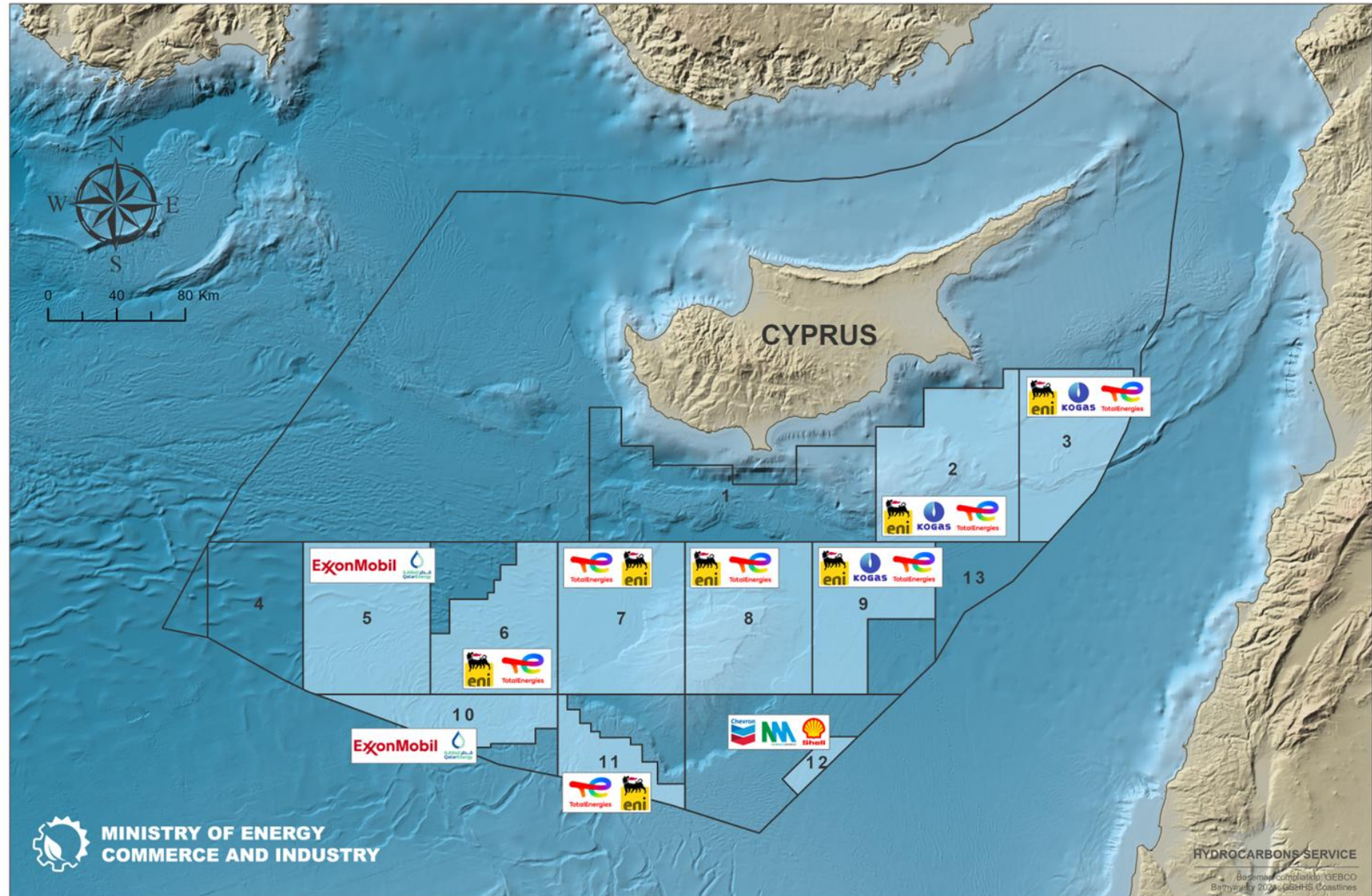


Cyprus

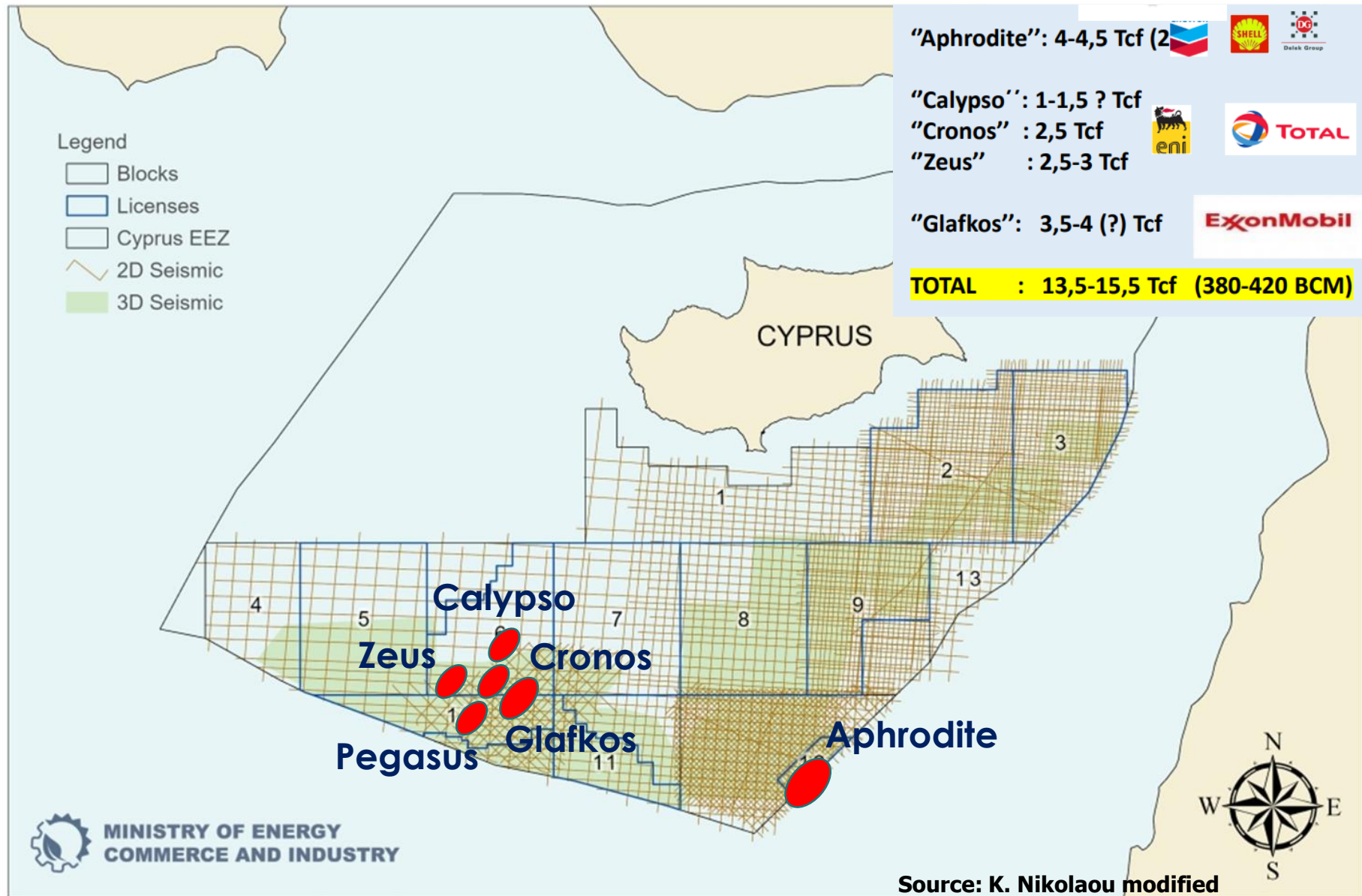
- ❖ Exploration activities since 2011 have **discovered c. 20 TCF gas**, which are still undeveloped while numerous other prospects remain undrilled so far
- ❖ Cyprus following international licensing rounds have awarded to major IOCs ExxonMobil, Chevron, Eni, TotalEnergies, QatarEnergy who are planning more exploration activities in the near future.
- ❖ Concerning the most mature field Afrodite, operated by Chevron, the field development study is approved
- ❖ **Export routes** are under **consideration** like EastMed pipeline to Greece, while it is signed an agreement for a pipeline to transfer production from Aphrodite and Chronos to Egypt

REPUBLIC OF CYPRUS

Offshore Exploration and Exploitation Licenses



Natural gas discoveries in Cyprus: c. 400 - 450 BCM

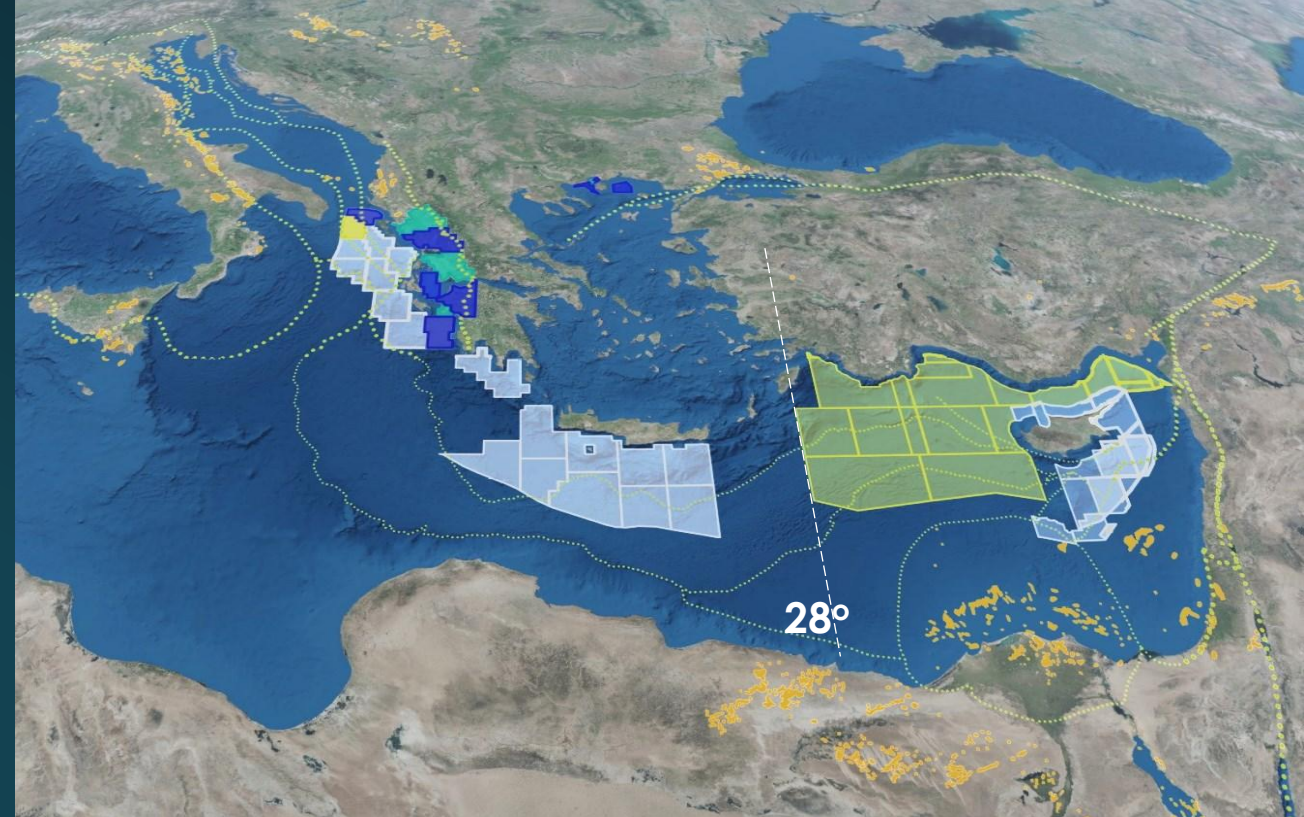




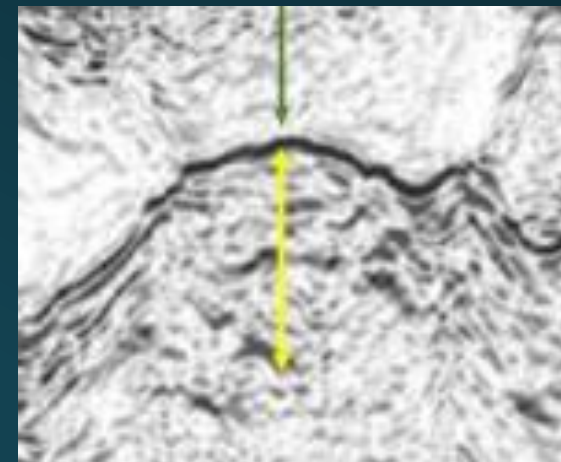
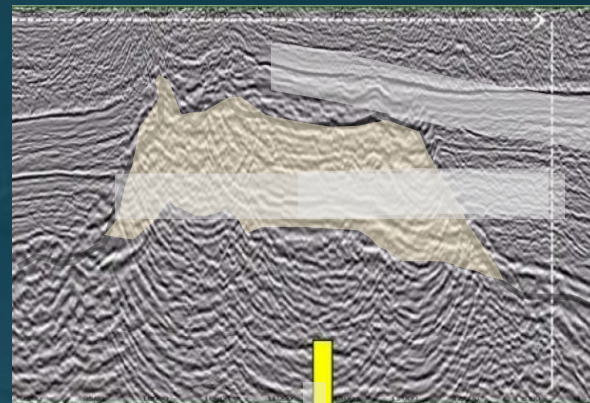
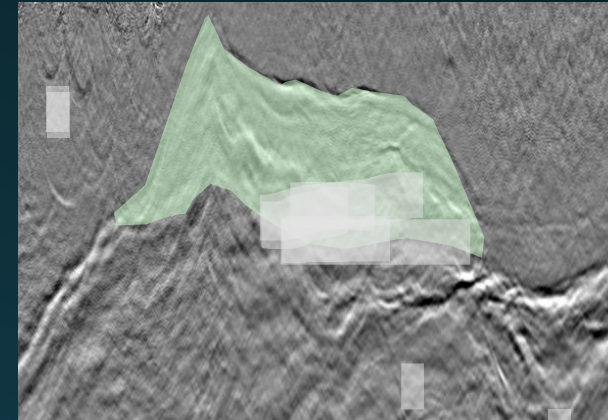
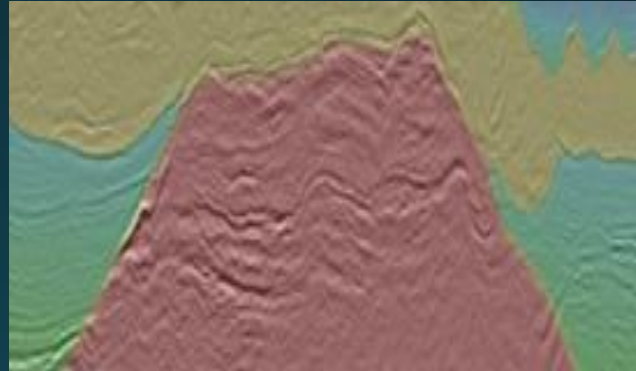
All licenced blocks in Greece and Cyprus are based on UNCLOS, European Union and United Nation official decisions

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

- Türkiye, since 2009, is granting to TPAO offshore areas in SE Med (eastern to 28o Meridian crossing Rhodes island).
- Administration of the occupied northern part of Cyprus (official name as per UN) awards blocks to TPAO
- TPAO shot several seismic surveys and drilled wells (2017 -2020) in blocks in yellow



Natural gas geological structures from SE Med region (Zohr field, two from Greece and one from Cyprus)



Published seismic sections (different processing stage - in arbitrary horizontal and vertical scale)

East and SE Med existing natural gas resources could feed the area and 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

Hydrates are the next green energy source

GREECE
Gas resources
c. 2000 -2500 BCM

LIBYA
Gas reserves
c. 2000 BCM

HYDRATES
resources
In Greek and
Cypriot EEZ
c. 98000 BCM(*)

EGYPT
Gas reserves
c. 2300 BCM

CYPRUS
Gas reserves
c. 400 BCM

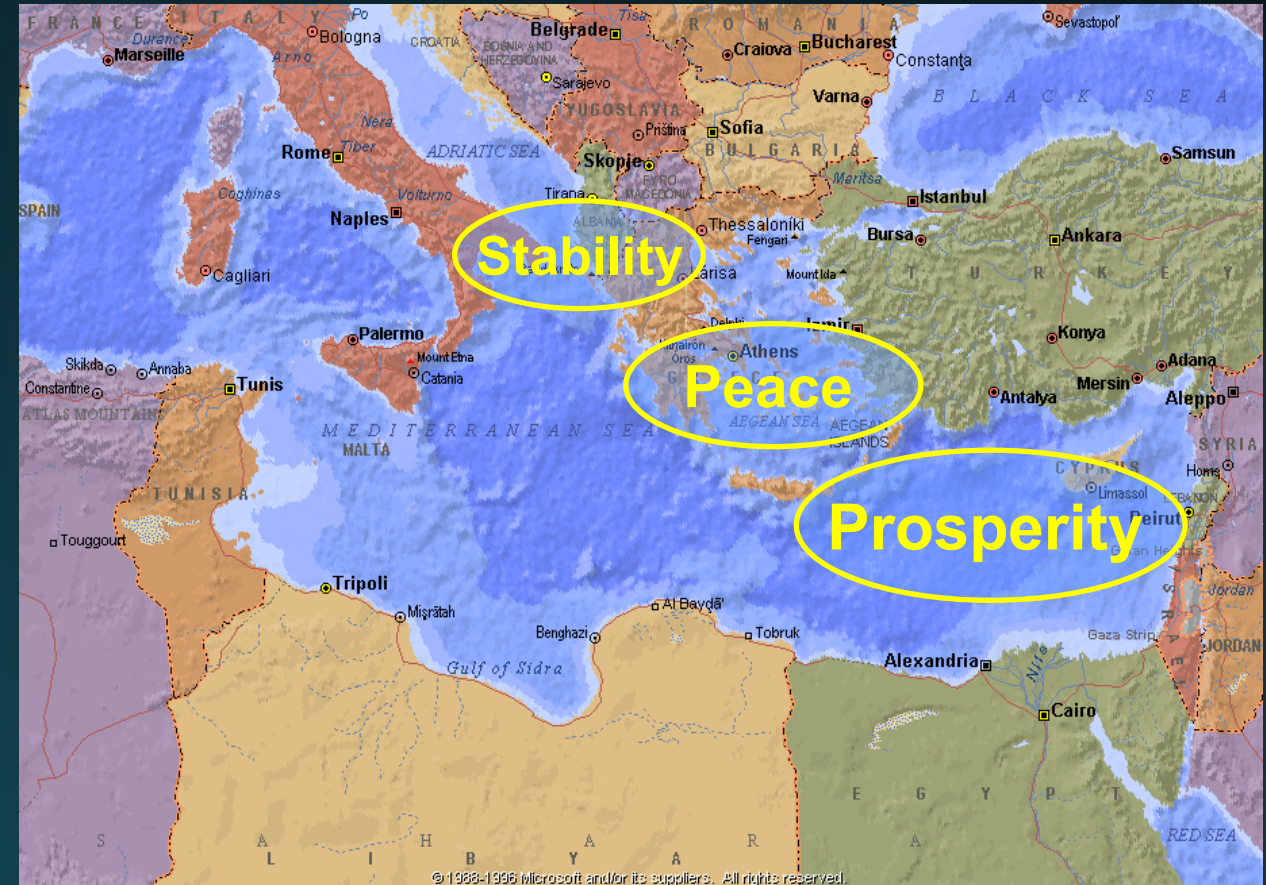
ISRAEL
Gas reserves
c. 1100 BCM

LEBANON
Gas resources
c. 600 BCM

(*) Journal of natural gas science and engineering (Vol 55, p 113 -134) C

SE MED natural gas resources for stability, peace and prosperity of the countries in Europe and SE Med

- The only viable solution requires **all neighboring and all involved countries** in the area and the **stakeholders**, without any preconditions and asterisks, to:
- **Strictly comply and respect the International Law of Sea (UNCLOS) and UN Conventions and Treaties**
 - **Recognise and accept the borders and EEZ of each country as per International Laws**
 - **Fully honor the existing decisions of the United Nations**





Ολυμπία, πριν από 2300 χρόνια:

**... ὀρῶμεν γὰρ τοὺς
κινδύνους καὶ μεγάλους καὶ πανταχόθεν
περιεστηκότας· ἐπίστασθε δὲ ὅτι
ἡ ἀρχὴ τῶν κρατούντων τῆς θαλάττης...**

Λυσίου, Ολυμπιακός λόγος, 338 π.χ.

**... διότι βλέπουμε μεν ὅτι
οι κίνδυνοι και μεγάλοι είναι και
πανταχόθεν μας περιβάλλουν,
γνωρίζετε δε ὅτι
ἡ κυριαρχία ανήκει σ' εκείνον που
εἶναι κύριος της θαλάσσης...**

Μετάφραση: Σ. Τζουμαλέας 1939



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***Σας ευχαριστώ για την
προσοχή σας***