

IENTE: 8th SOUTH EAST EUROPE ENERGY DIALOGUE

The New Energy Mix

Thessaloniki, June 11 & 12, 2014

GREECE FUTURE LICENSING ROUND (2014?)

Ionian Sea and the Sea south of Crete

**[Petroleum Systems, Key Analogues
and Expectations]**

**Will it be indigenous production of hydrocarbons in
the new Energy Mix of Greece?**

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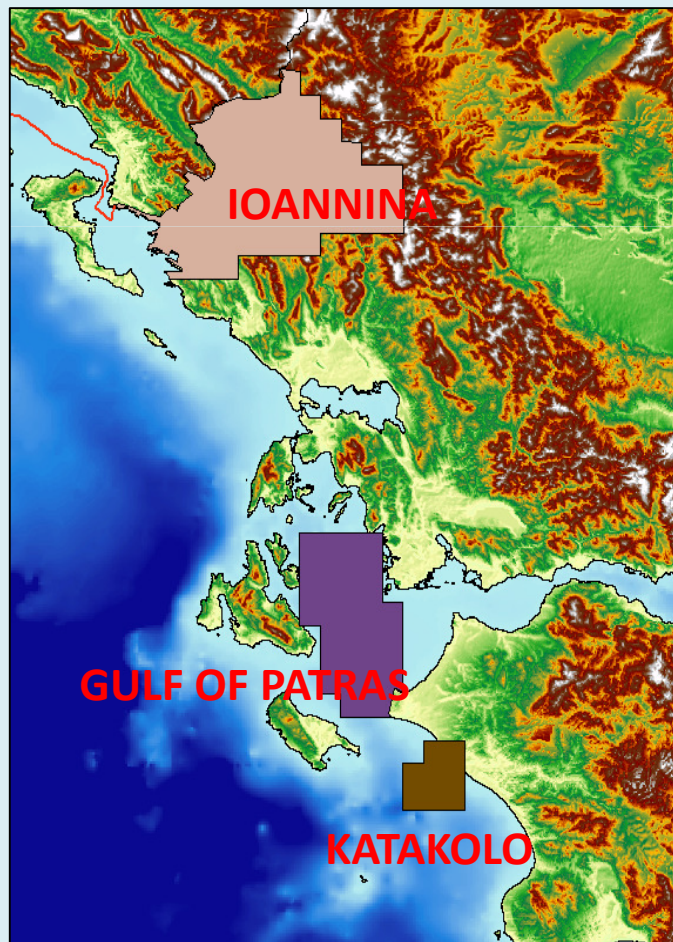
General Director KANERGY Ltd (kanergy@otenet.gr)

Ex. Technical Director of HELLENIC PETROLEUM SA

Three “open door” Blocks awarded in 2014

- (1): IOANNINA to Energean Oil&Gas
- (2) Katakolon to Energean Oil&Gas
- (3) West Patraikos Gulf to HE.LPE.

The procedures started on January 2nd 2012 (before 29 months!!!)



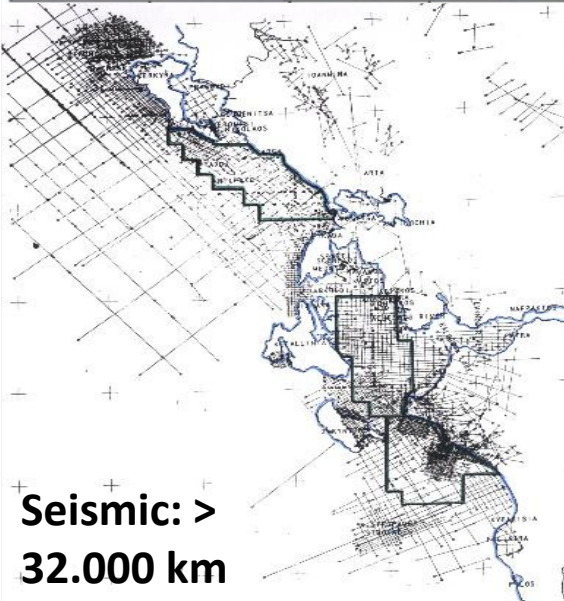
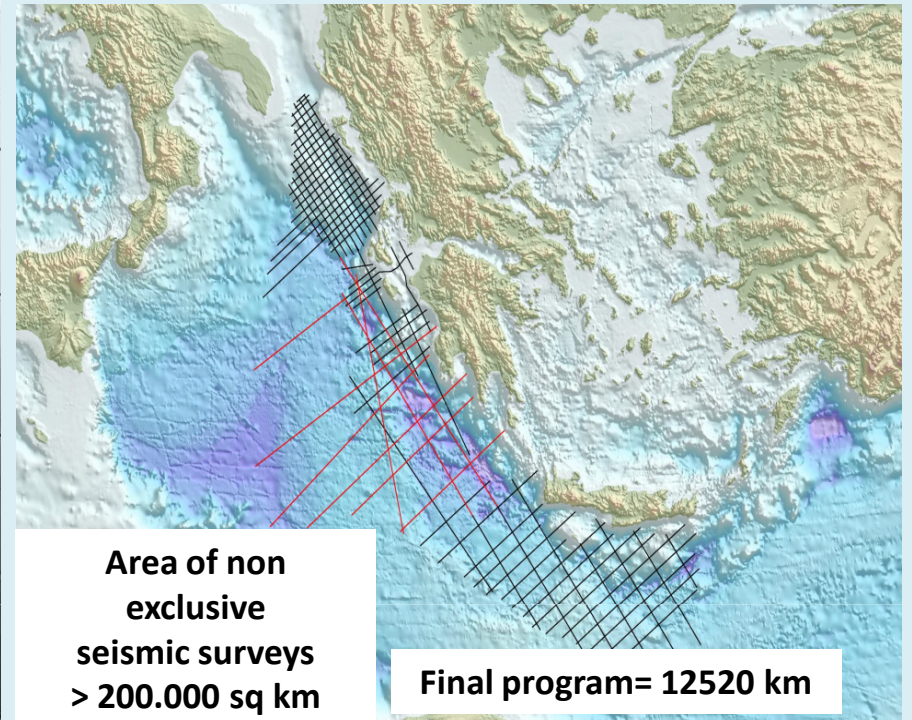
Expression of Interest by ENEL for three new areas:

- (1) PREVEZA-ARTA ,
- (2) AKARNANIA,
- (3) NW PELOPONESSE

To be part of a next on shore exploration round 2014



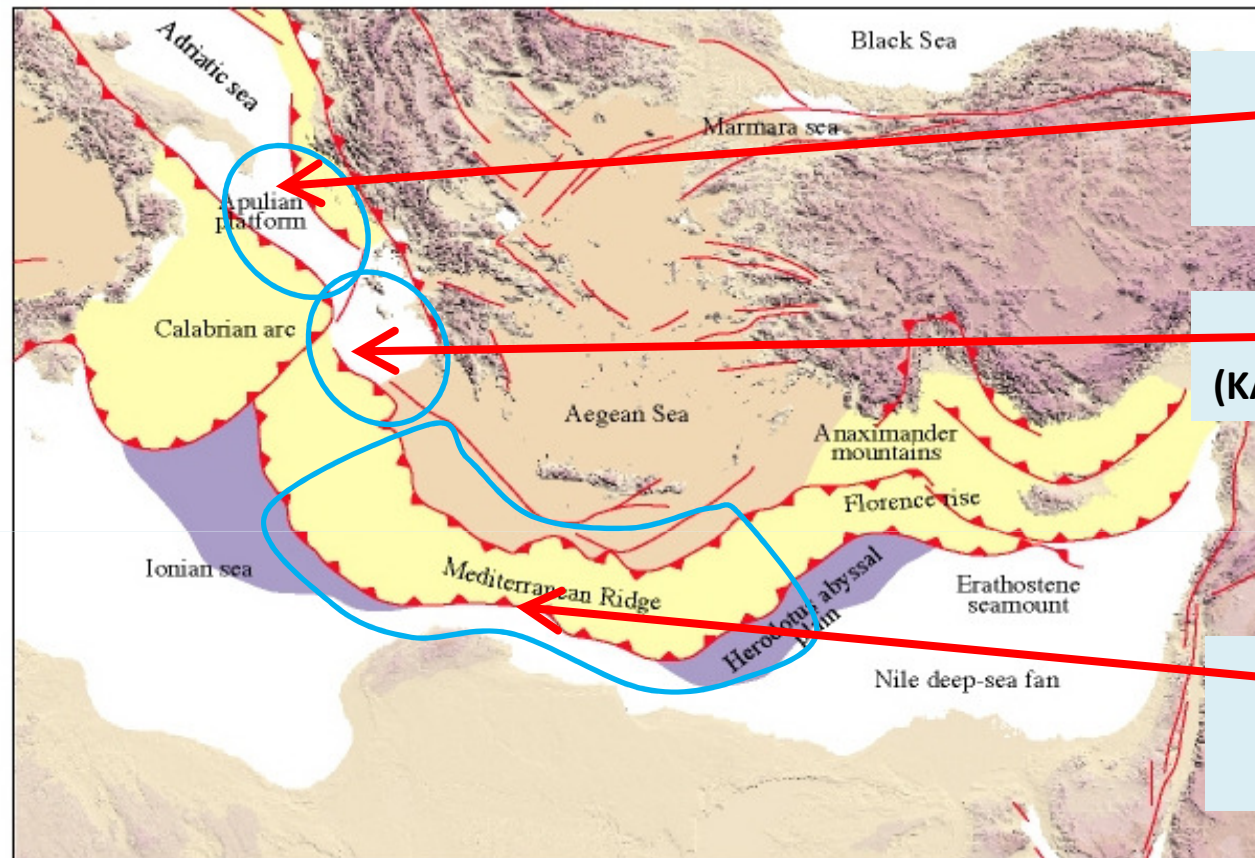
AREA of the NEXT OFFSHORE INTERNATIONAL E&P LICENSING ROUND



Past seismic surveys and wells in the Ionian Sea

A/A	ΚΩΔΙΚΟΣ	ΟΝΟΜΑΣΙΑ
1	PARG - 1	PARGA - 1
2	PT - 1	PATRA - 1
3	PARG - 2	PARGA - 2
4	YA - 1	YANNADHES - 1
5	W.KA - 1	WEST KATAKOLO - 1
6	W.KA - 1A	WEST KATAKOLO - 1A
7	S.KA - 1	SOUTH KATAKOLO - 1
8	ACH - 1	ACHAIA - 1
9	E.ER - 1	EAST ERICOUSA - 1
10	S.KA - 1A	SOUTH KATAKOLO - 1A
11	W.KA - 2	WEST KATAKOLO - 2
12	S.KY - 1	SOUTH KILLINI - 1
13	S.KE - 1	SOUTH KEFALINIA - 1

TECTONIC SKETCH OF EASTERN MEDITERRANEAN



**NORTH IONIAN SEA
(SOUTH ADRIATIC/APULIAN
PLATFORM)**

**CENTRAL IONIAN SEA
(KATAKOLON - PATRAIKOS GULF)**

**SOUTH IONIAN and
SOUTH CRETE AREA
???**



Tectonic sketch of the Eastern Mediterranean

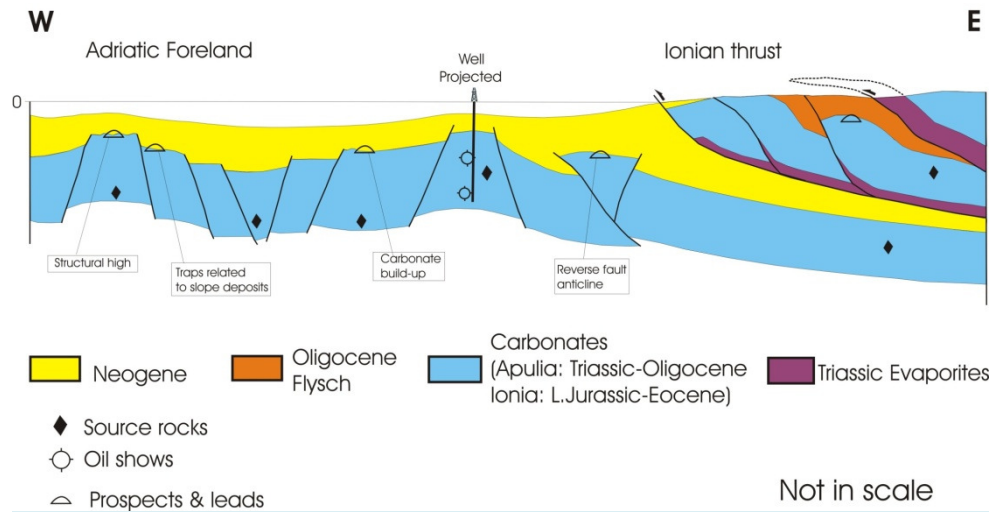
(adapted from Barrier, E., Chamot-Rooke, N. and Giordano, G., 2004,

Geodynamic Map of the Mediterranean, Commission for The Geological Map of the World, CCGM)

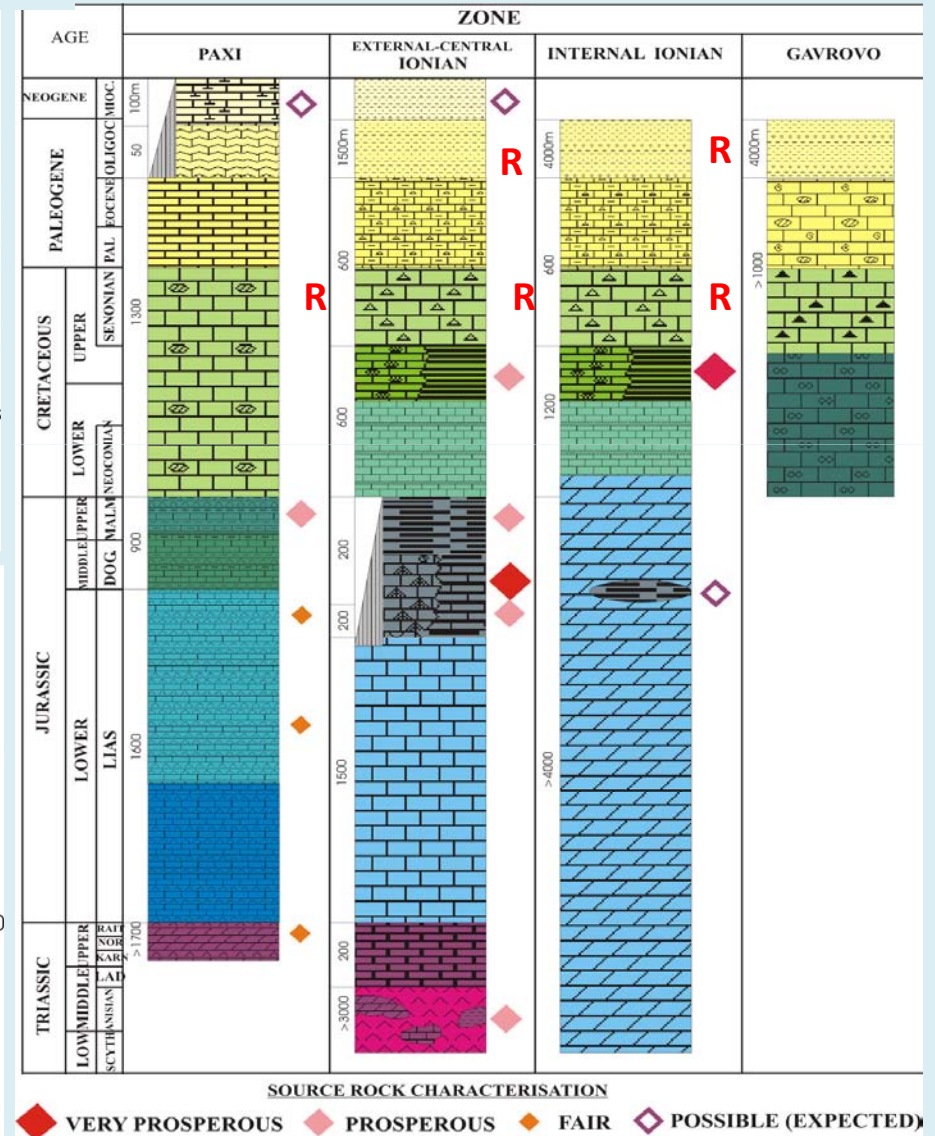
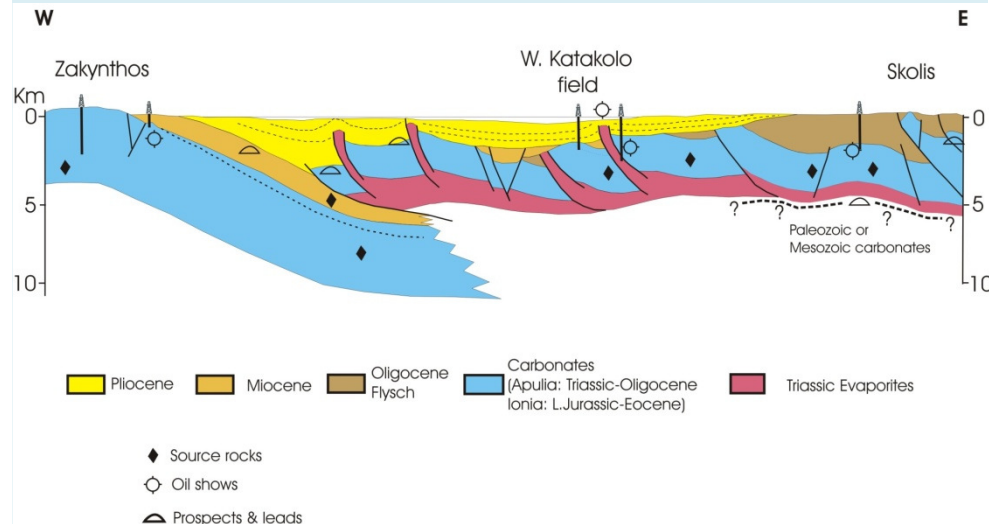
Greece: Geological Summary of the External Geotectonic Zones of W. Greece

Northern Ionian cross section and potential plays

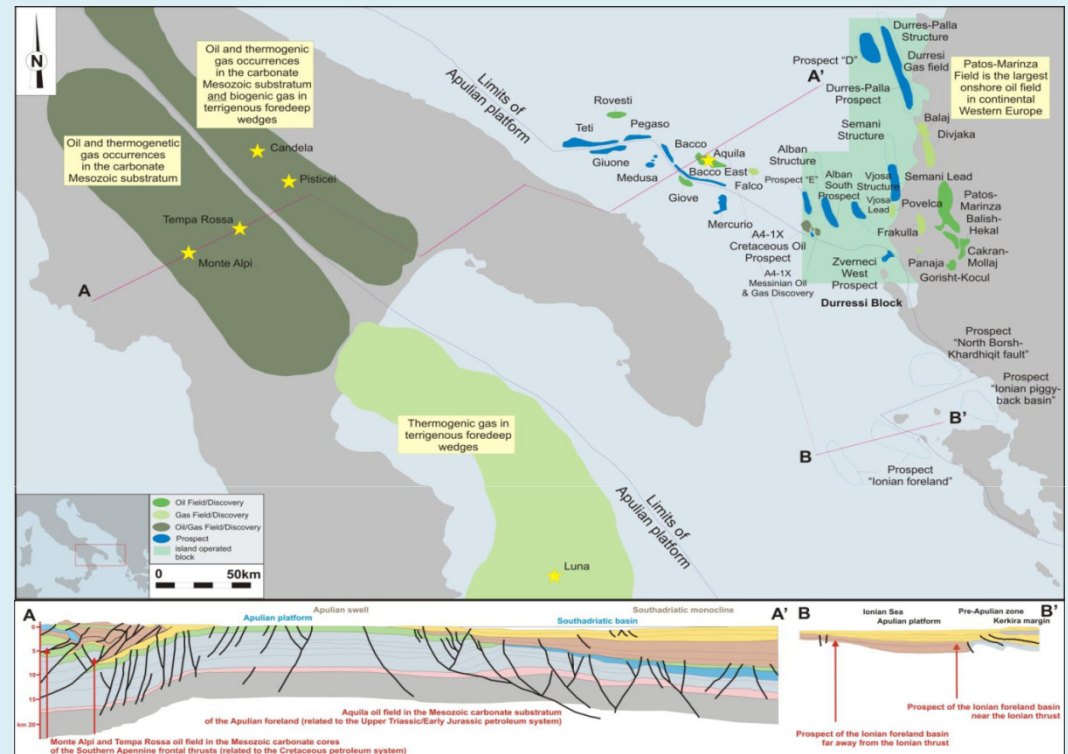
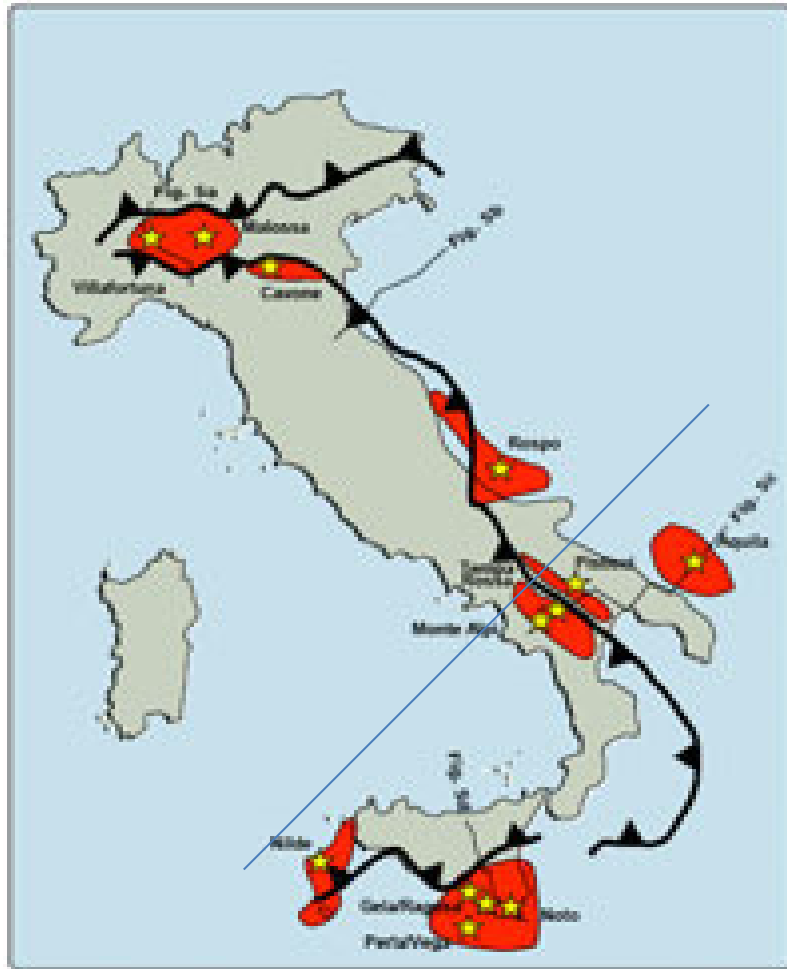
Simplified lithostratigraphic column with main reservoir & source rocks



Central Ionian cross section and potential plays



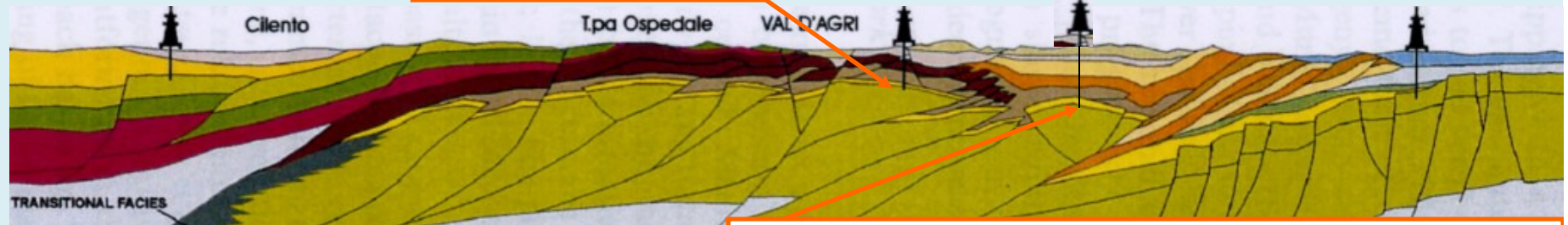
H-C fields in Italy and Albania



A

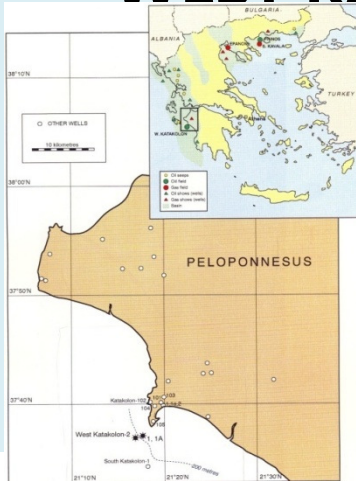
M.Alpi trend

B

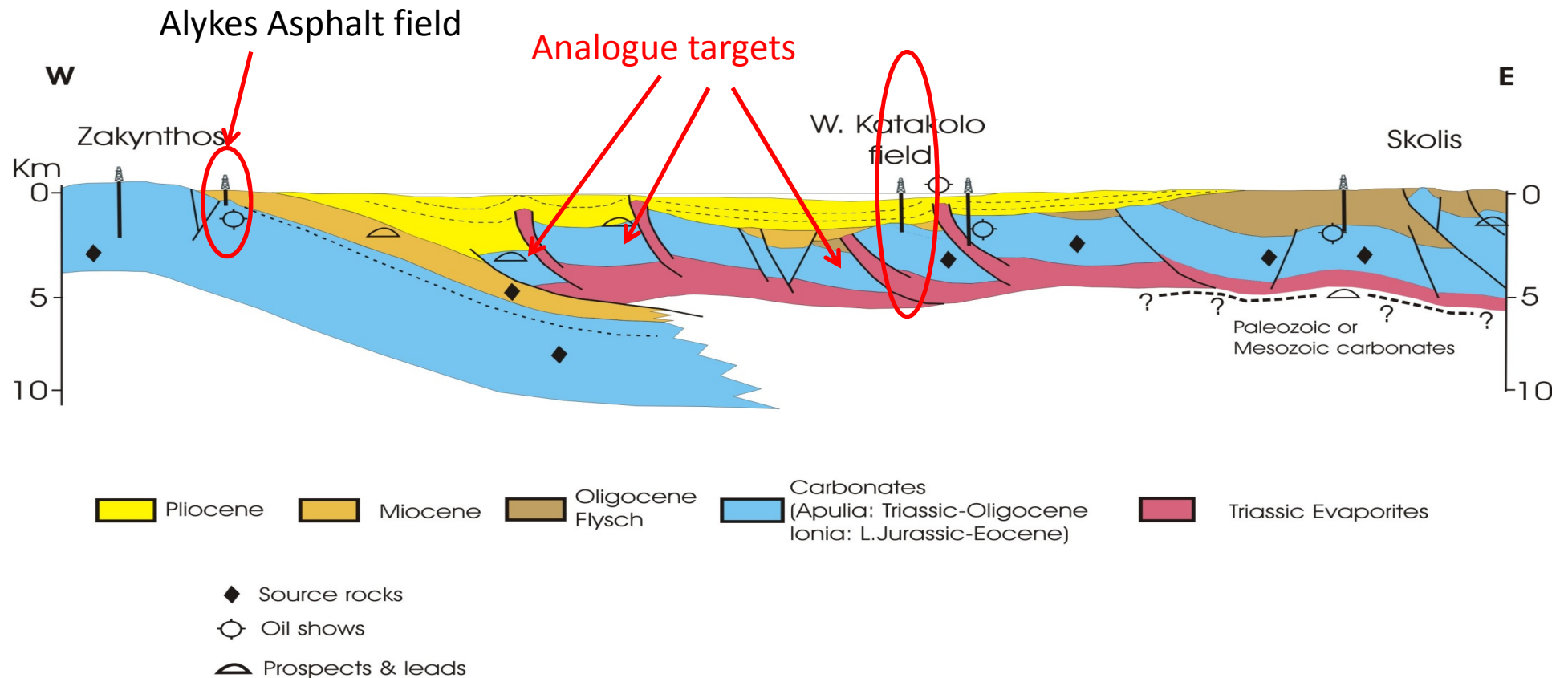


Tempa Rossa (Monte Grosso) trend

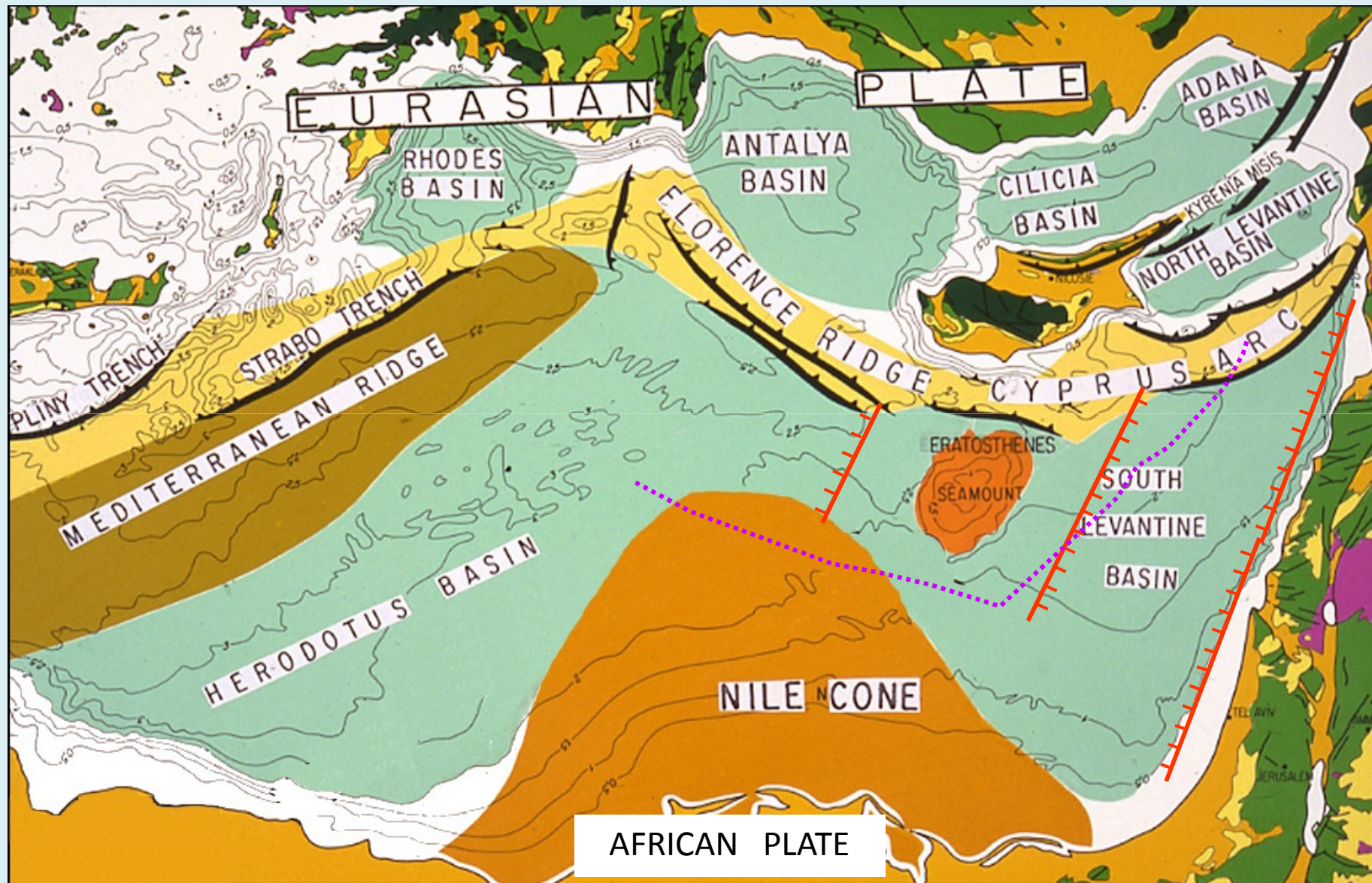
WEST KATAKOLO DISCOVERY AND ANALOGUE PLAYS



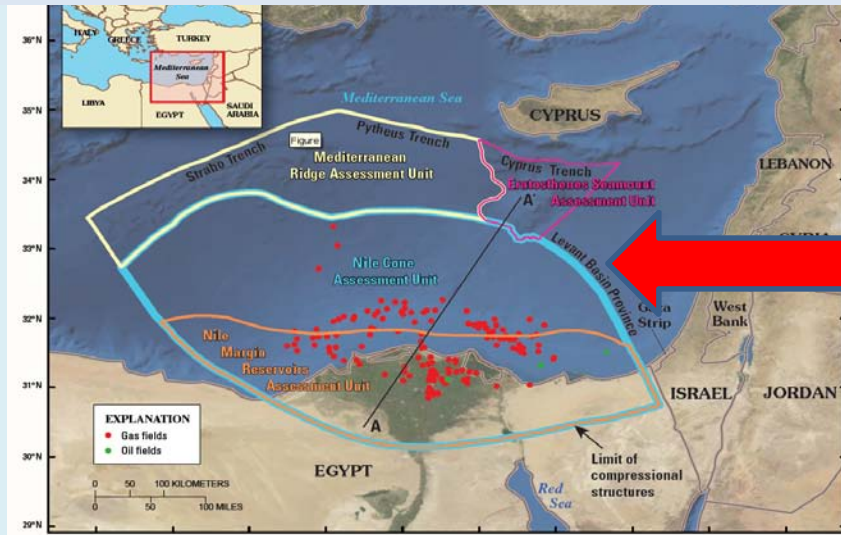
SYNTHETIC CROSS SECTION



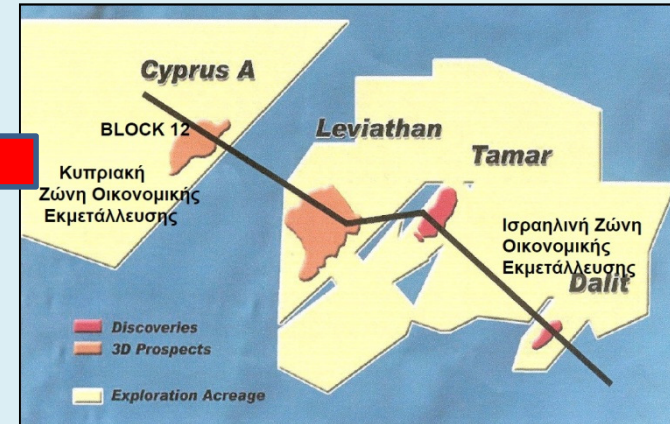
EAST MEDITERRANEAN BASINS



Egypt: Offshore discoveries in Eastern Mediterranean



ISRAEL: Offshore Discoveries in Levantine Basin

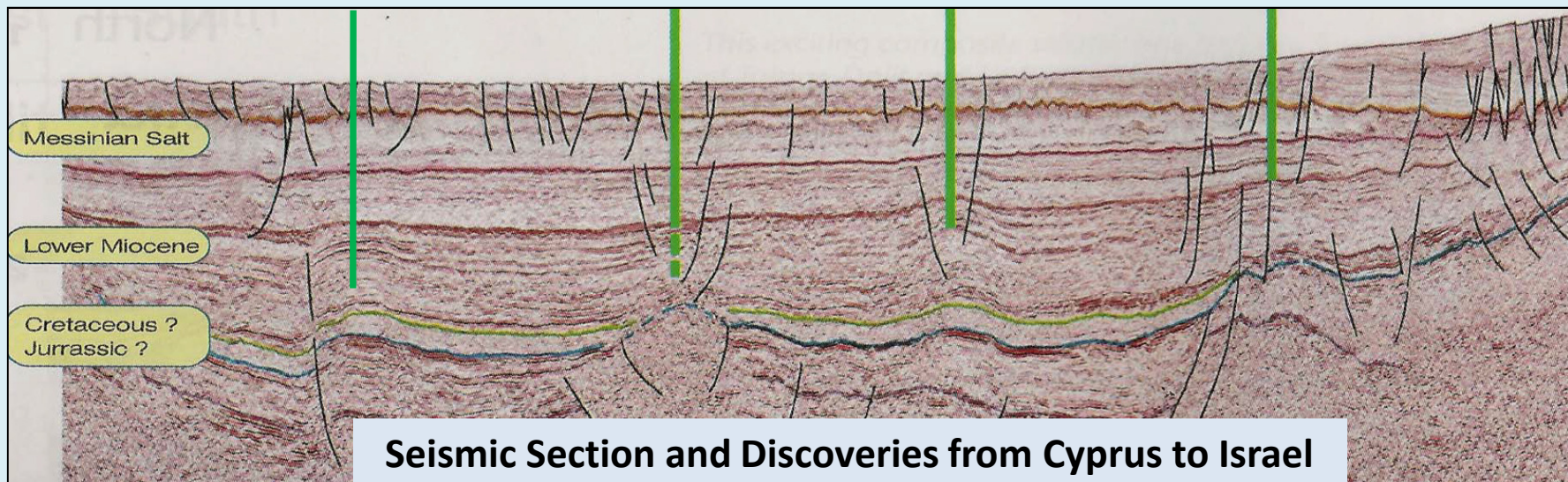


Cyprus A
7 + Tcf

Leviathan
≈ 16 + Tcf

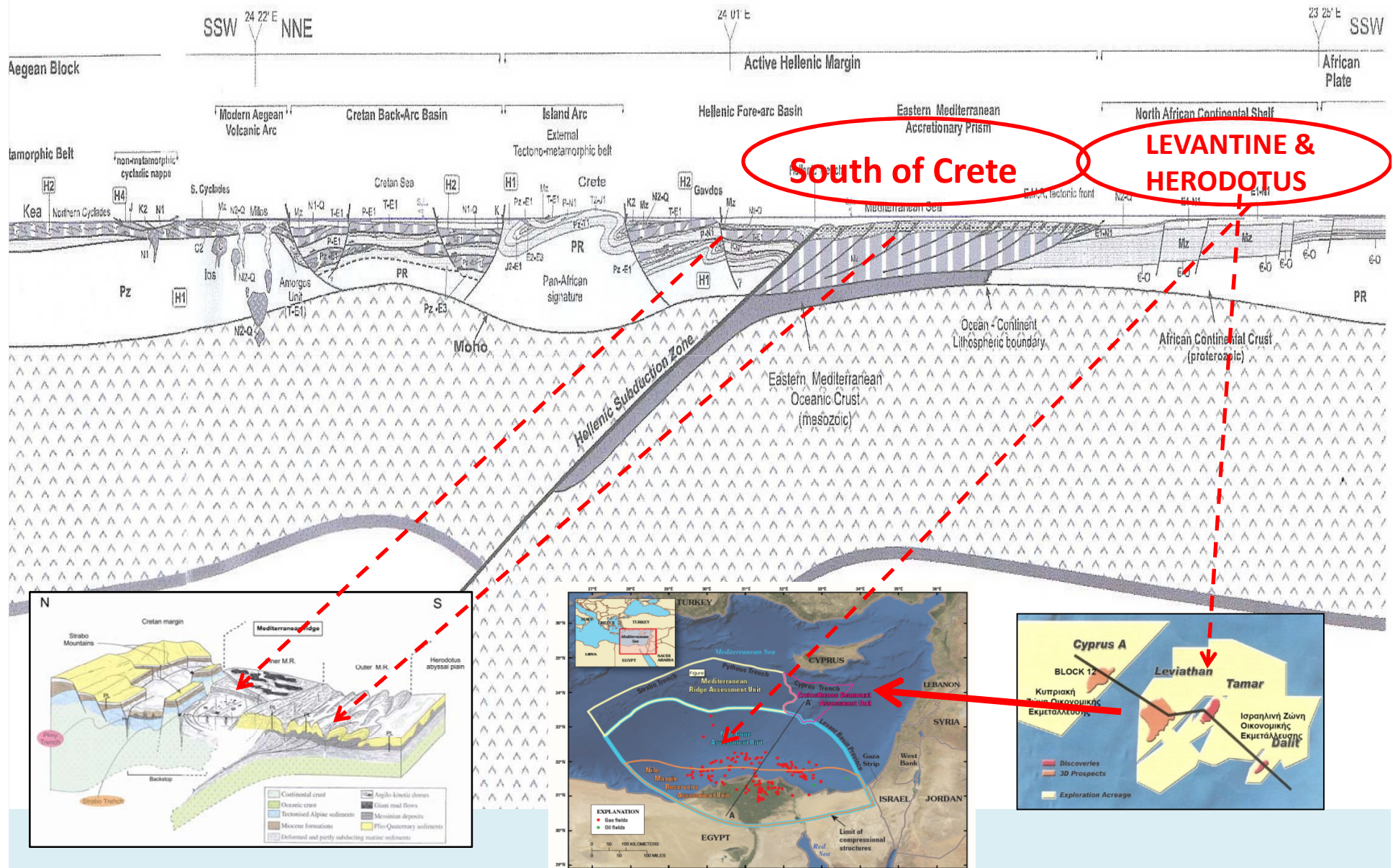
Tamar
≈ 8+ Tcf

Dalit
≈ 0.5 Tcf



Seismic Section and Discoveries from Cyprus to Israel

EAST MEDITERRANEAN & PLATE TECTONICS



EXPECTATIONS

**What do we expect from the new exploration efforts?
Possible contribution in the future energy mix**

A)Western Greece:

Taking in consideration the following elements and factors:

- Size of the area (areas of depositional centers of source rocks) .
- Thickness of source rocks
- The maturity index
- The hydrogen and productivity indexes
- The geology, the evolution and tectonic deformation

Having the numbers from the past exploration:

- we can assume that **about 40 billion barrels of oil have been generated in western Greece, both onshore and offshore,**
- 10% of which can be found in commercial accumulations.

That means that our expectation is about 4 billion barrels of oil as prospective resources.

B)Area South of Crete. We cannot make any similar assumptions
due to lack of crucial data and information