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# Beyond the search for hydrocarbons in Greece

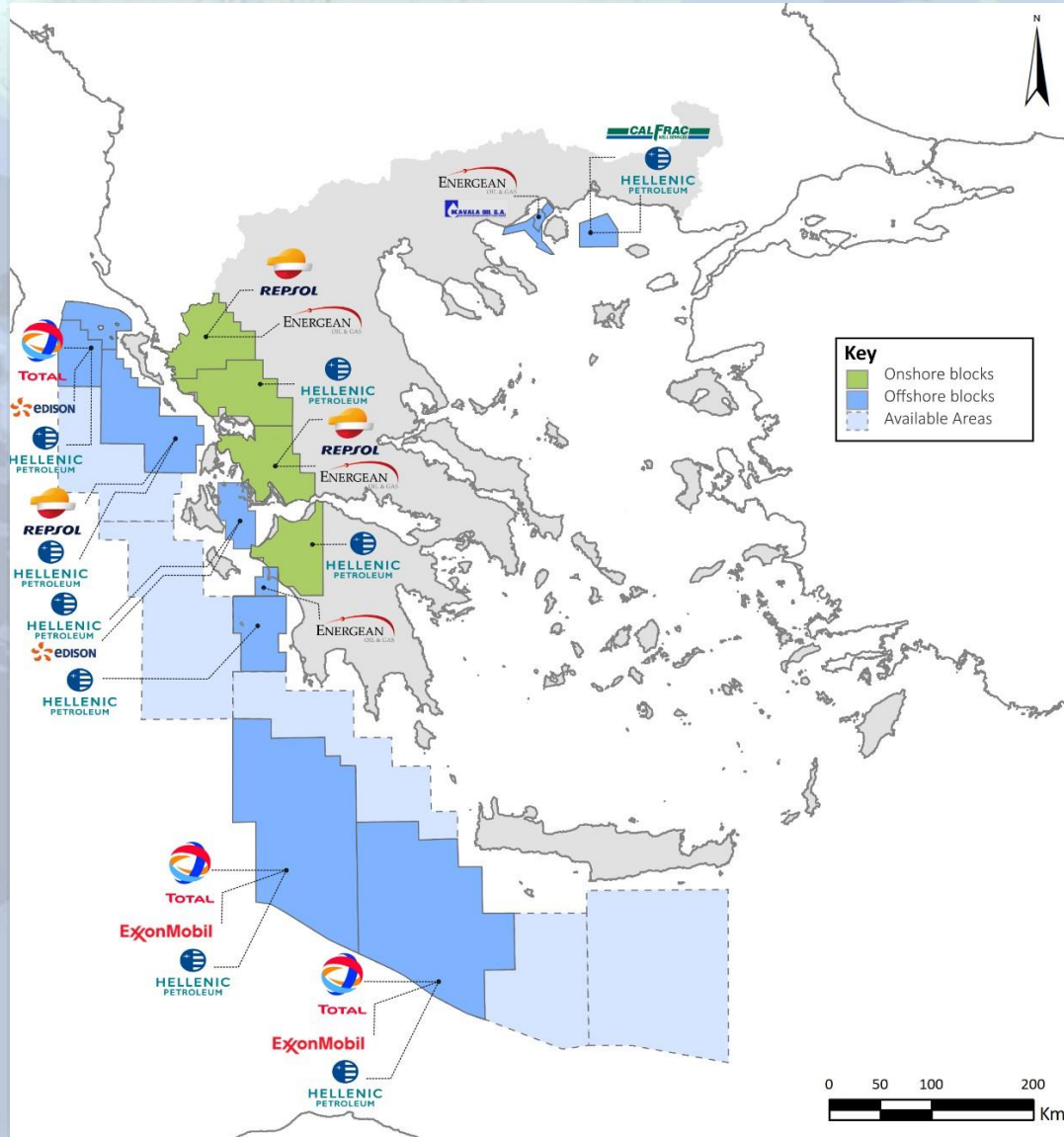
*Hellenic Hydrocarbon Resources Management SA*

*Yannis Bassias, President and CEO*

## East Mediterranean: The New Natural Gas Frontier



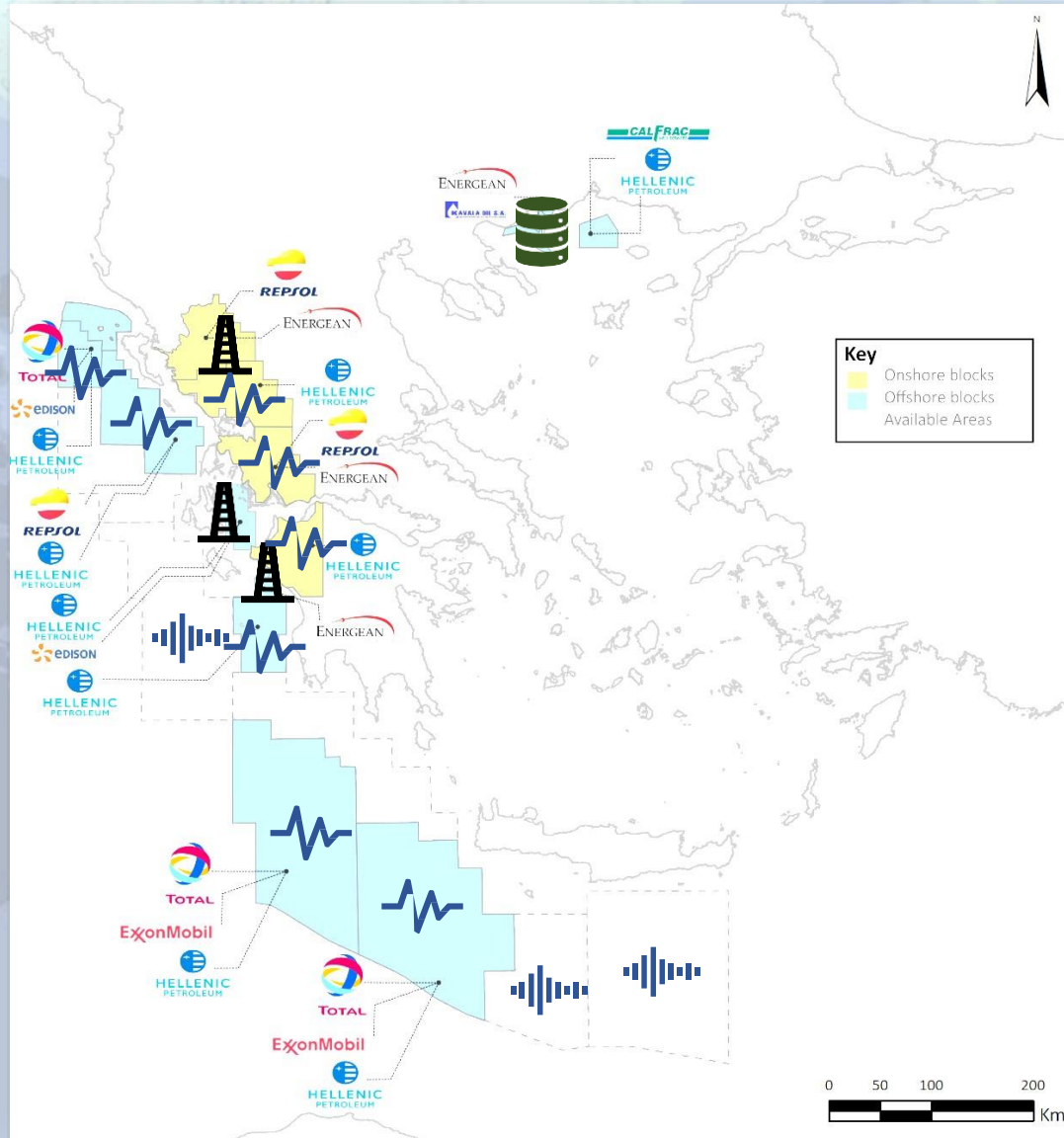
E&P update  
October 1st 2019



# Upstream in Greece

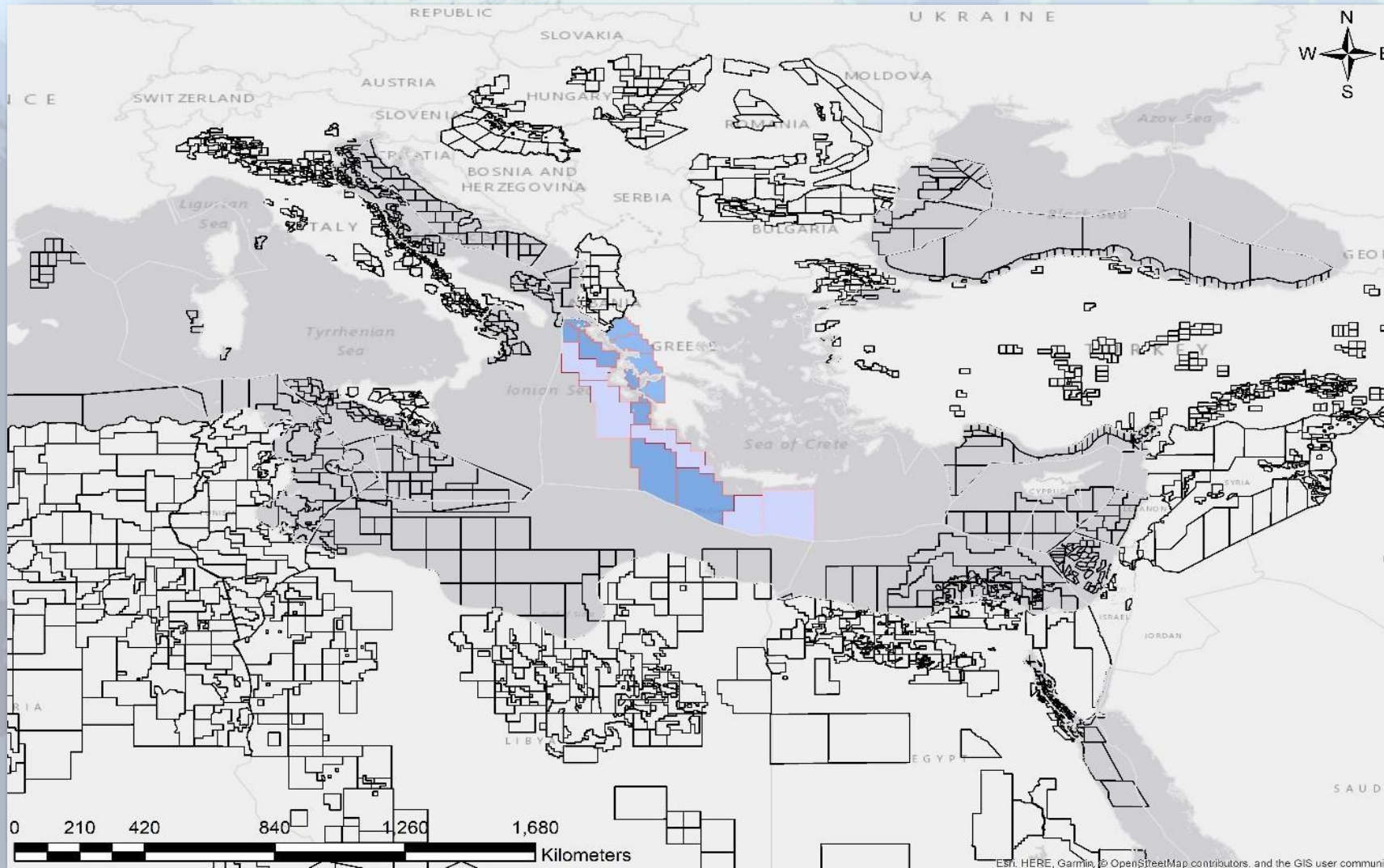
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-  2020-2022
-  2020-2023
-  Multiclient project



# Greece in the Eastern Mediterranean

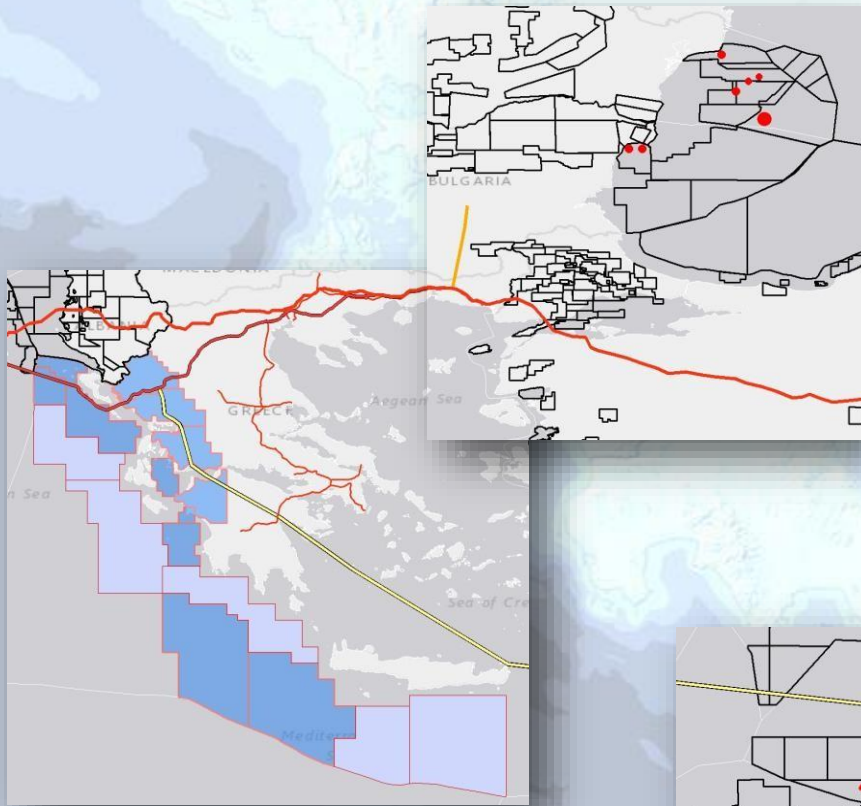
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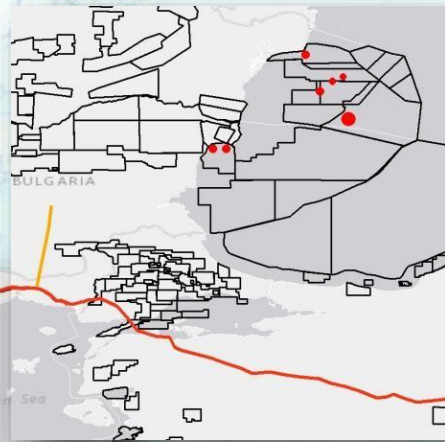
Est. HERE, Garmin, OpenStreetMap contributors, and the GIS user community

# The gas tiles of Eastern Mediterranean and Black Sea

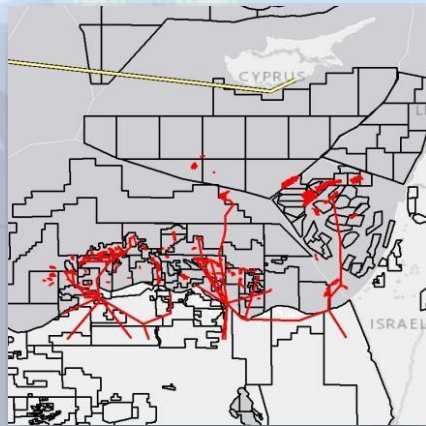
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Expected gas discoveries



Recent gas discoveries

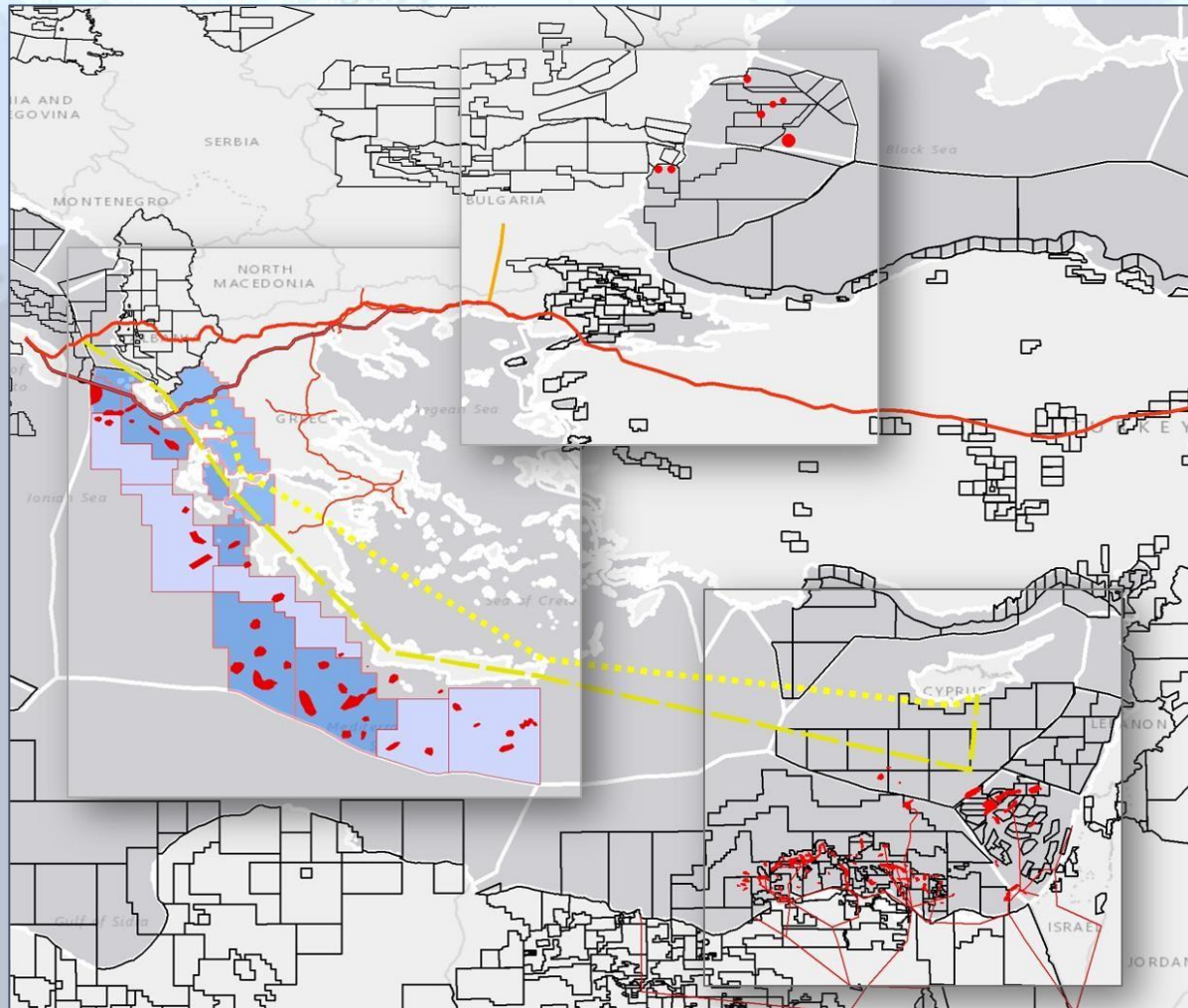


Recent gas discoveries and gas production

Nile delta

# Eastern Mediterranean and Black Sea

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Fields discovered

Fields Discovered and Producing

Prospects to be explored

## Convergence of five technical and economic reasons

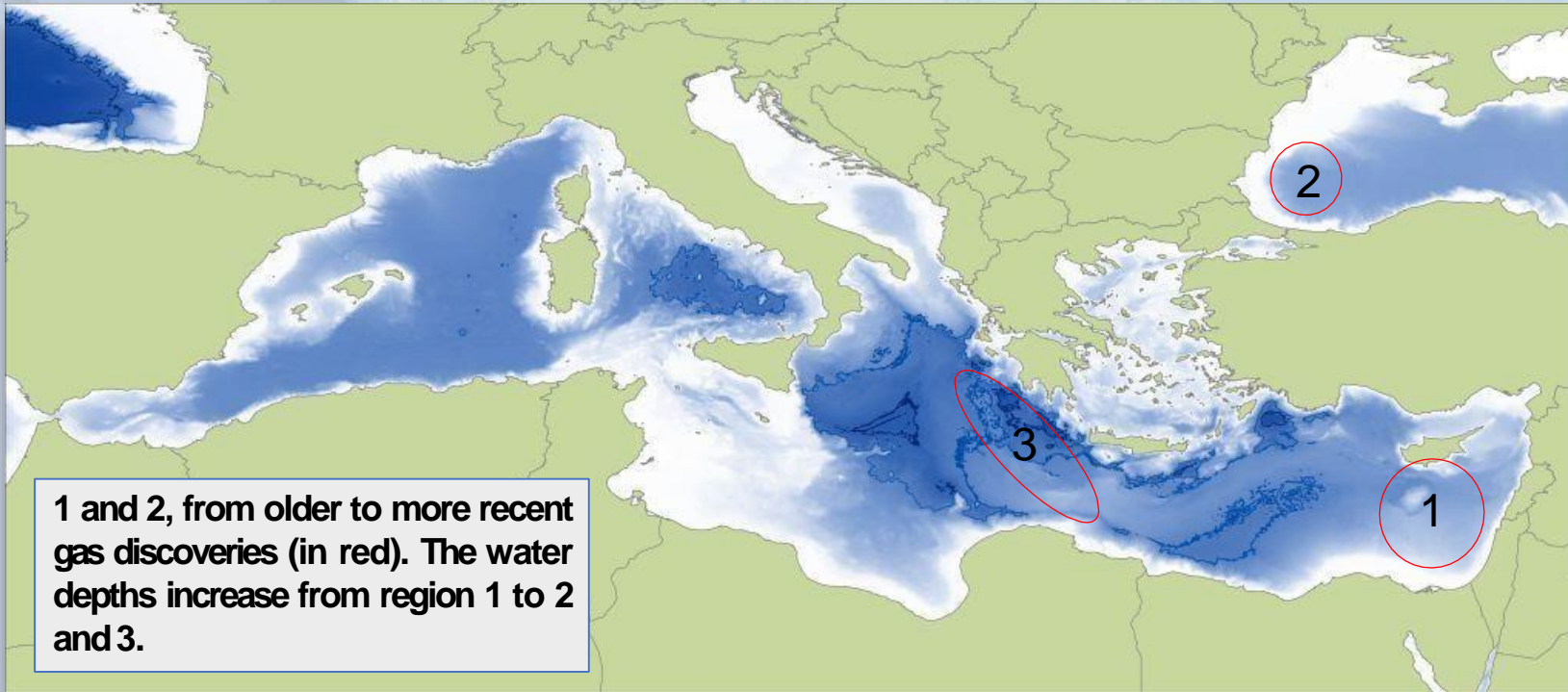
Recent large discoveries of gas in the SE Mediterranean and Black Sea

New geological concept model added since 2015 in the Mediterranean

Progressive improvement of deep and ultra-deep drilling technologies

Increasing commercial importance of natural gas

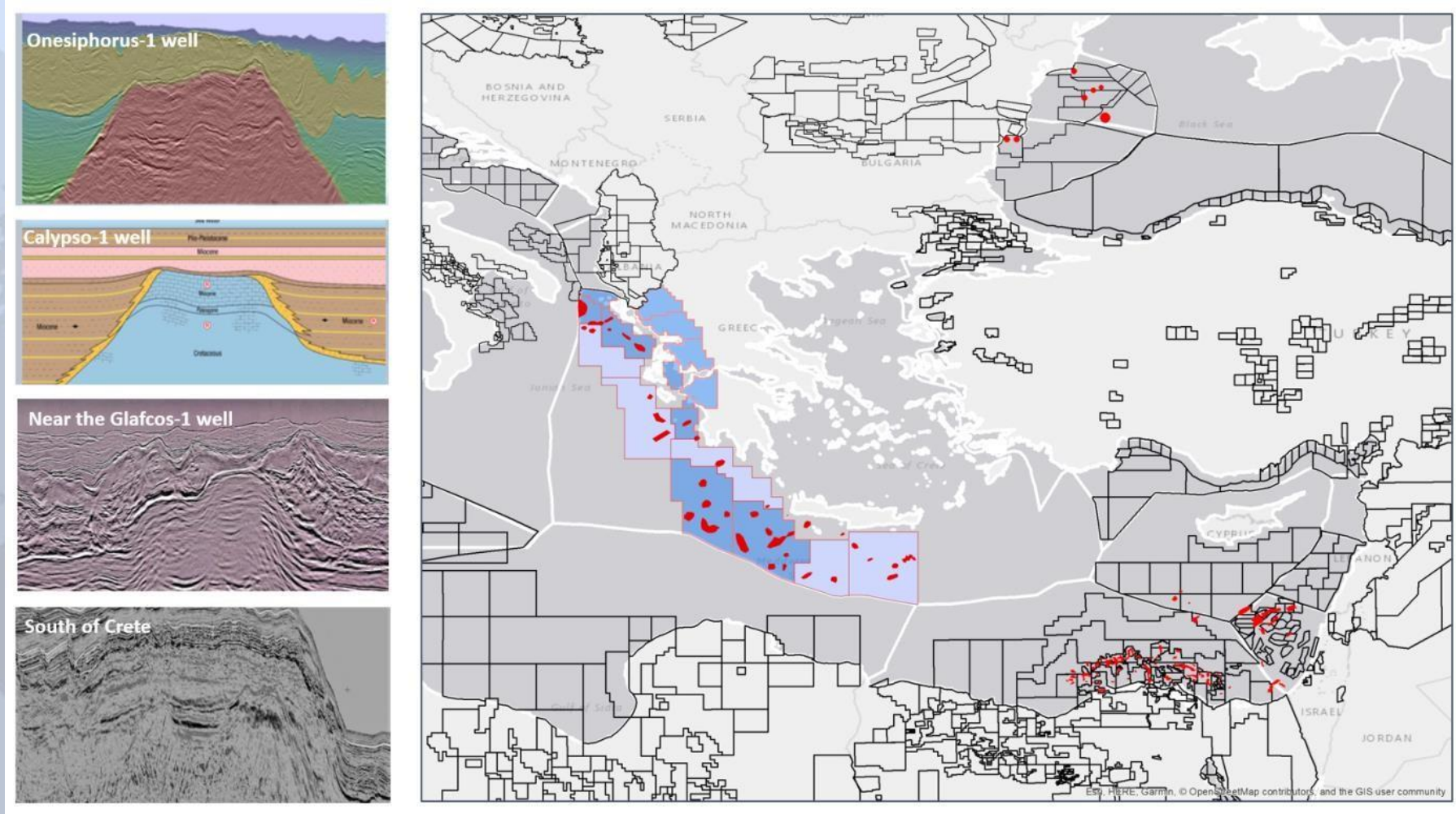
Diversification of gas supply for the European market





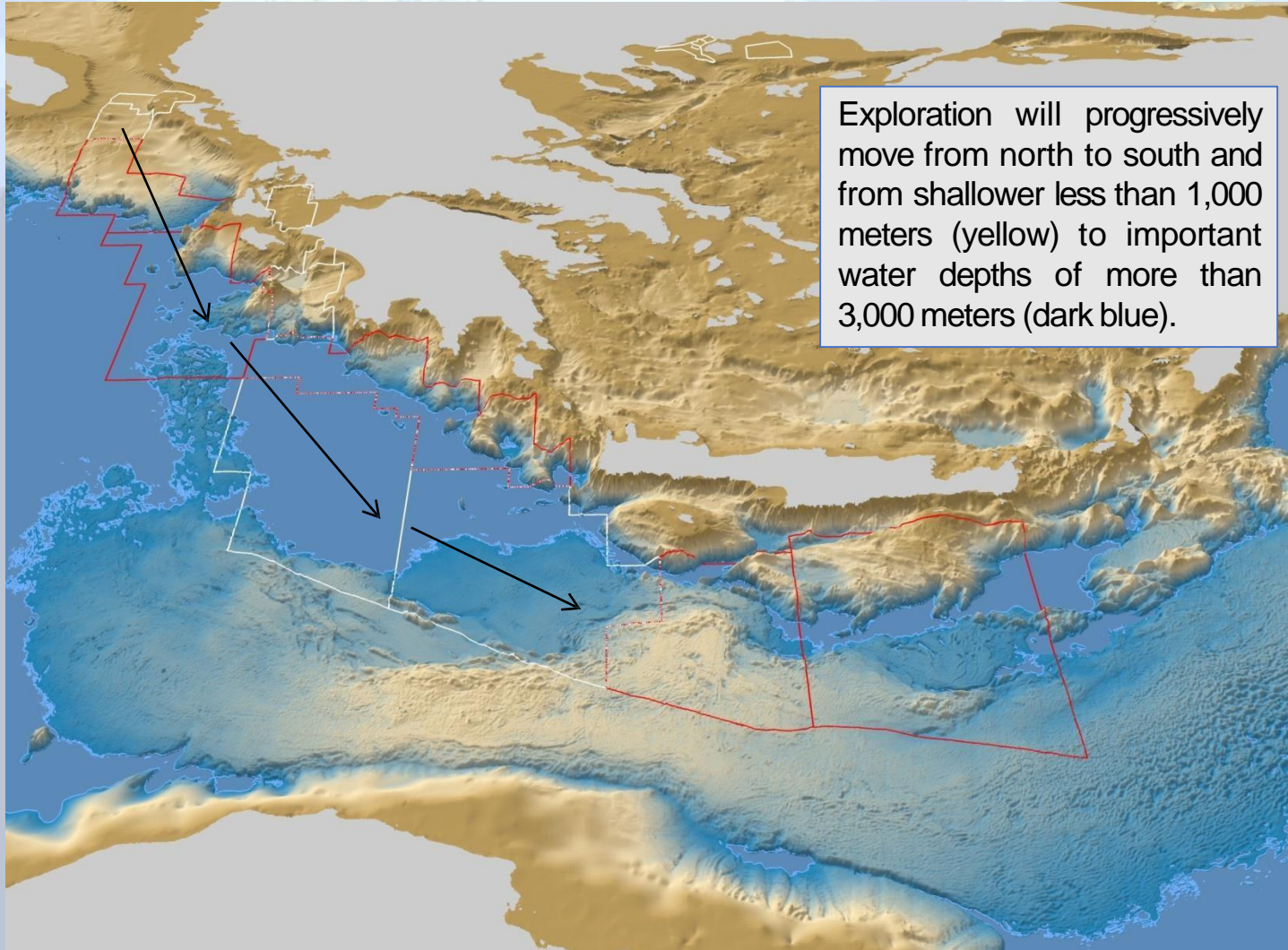
# New geological concept model added since 2015

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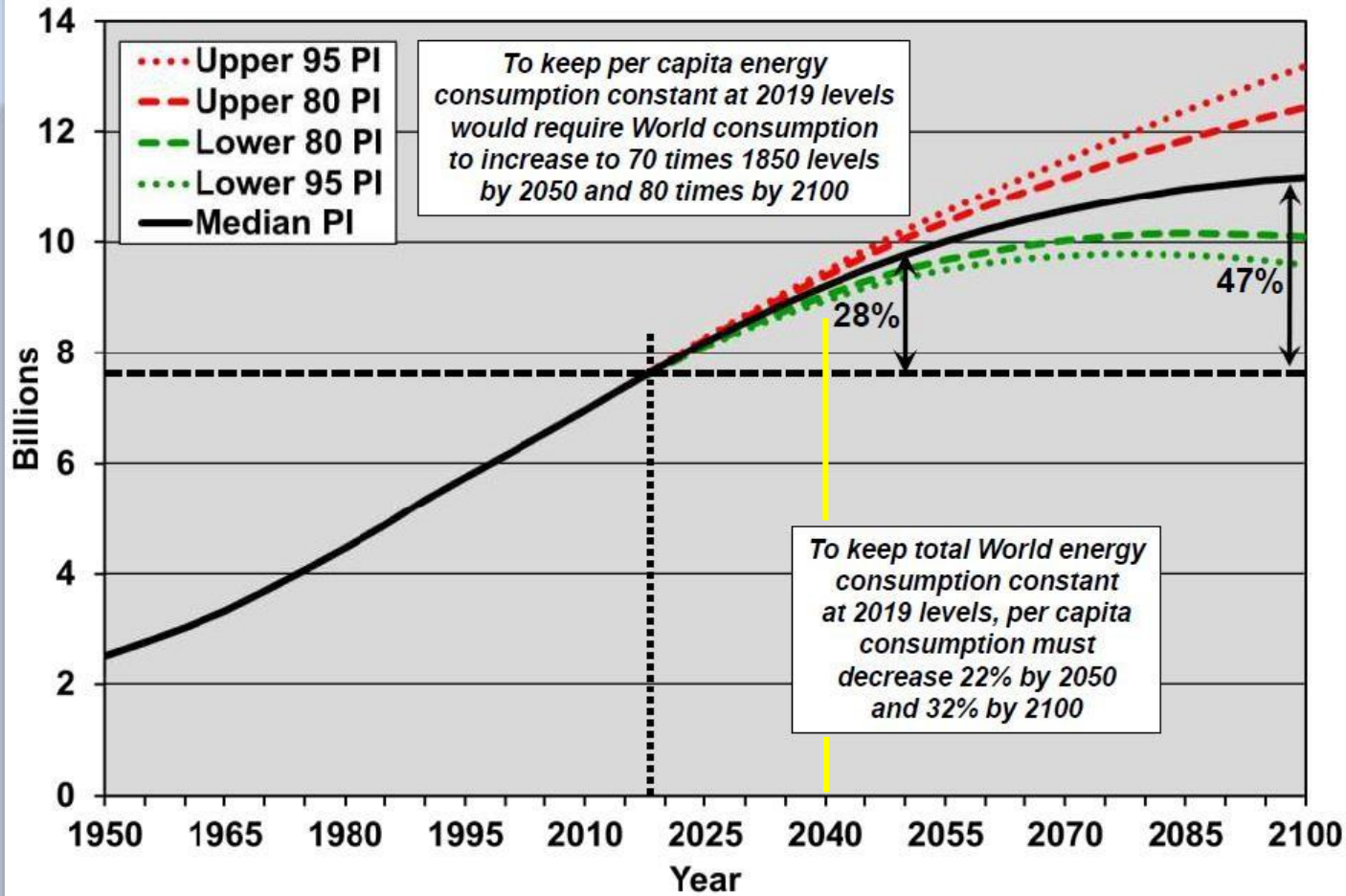


If you take out 3000 meters of water

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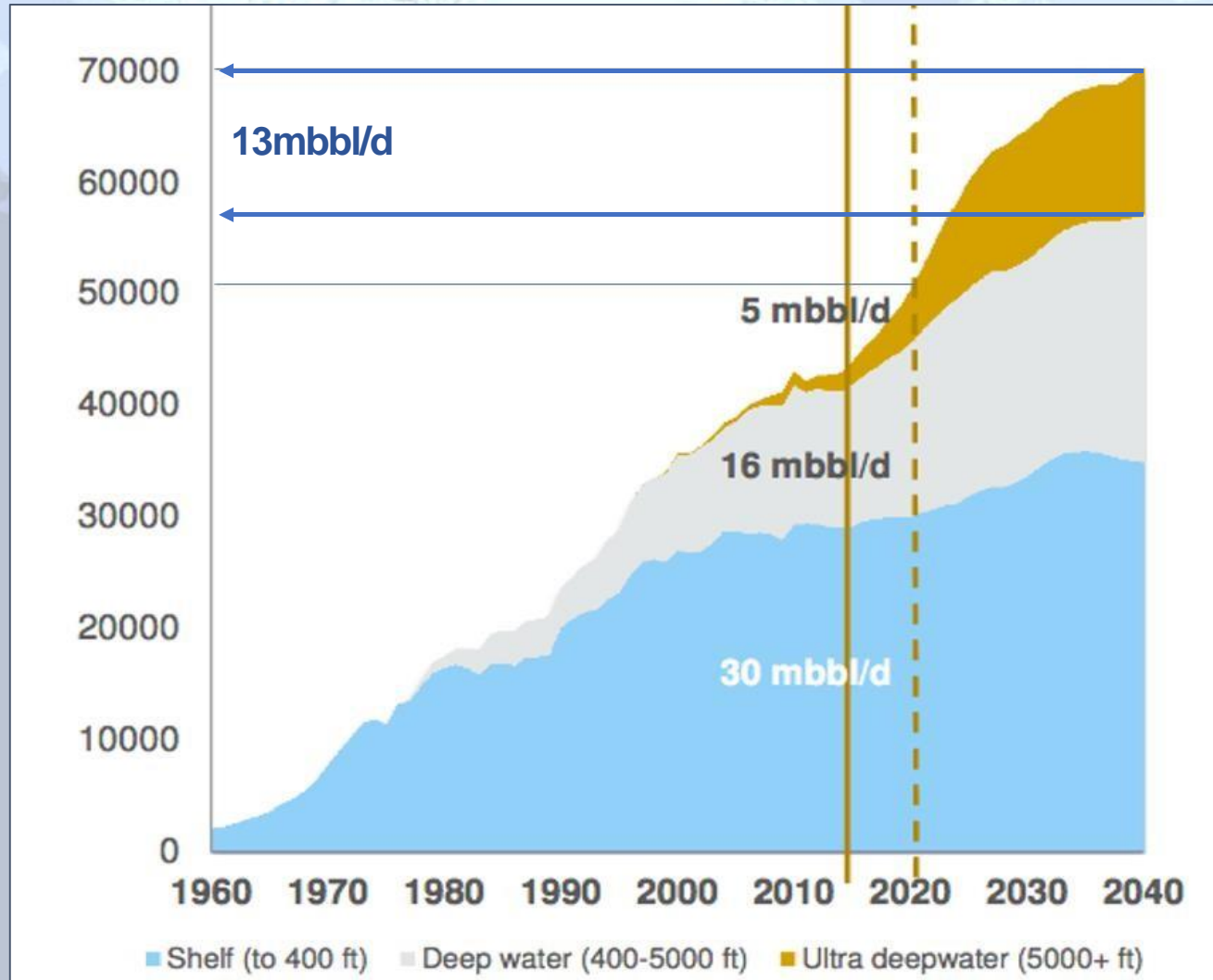
### United Nations World Population Projections through 2100



© Hughes GSR Inc, 2019

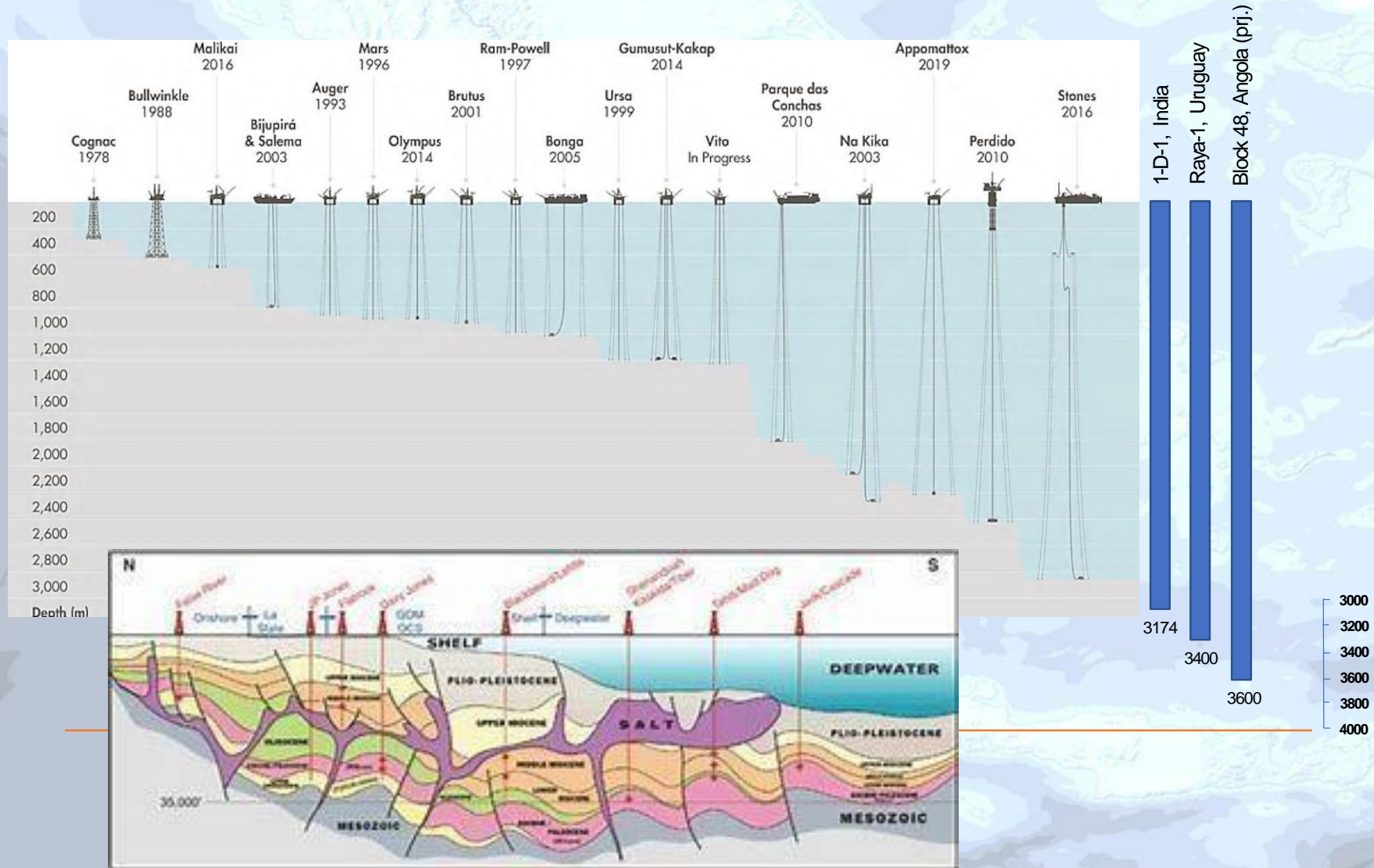
(United Nations World Population Prospects: The 2017 Edition)

# Increasing production from ultra deepwater environments



# Improvement of drilling technology with increasing water depth

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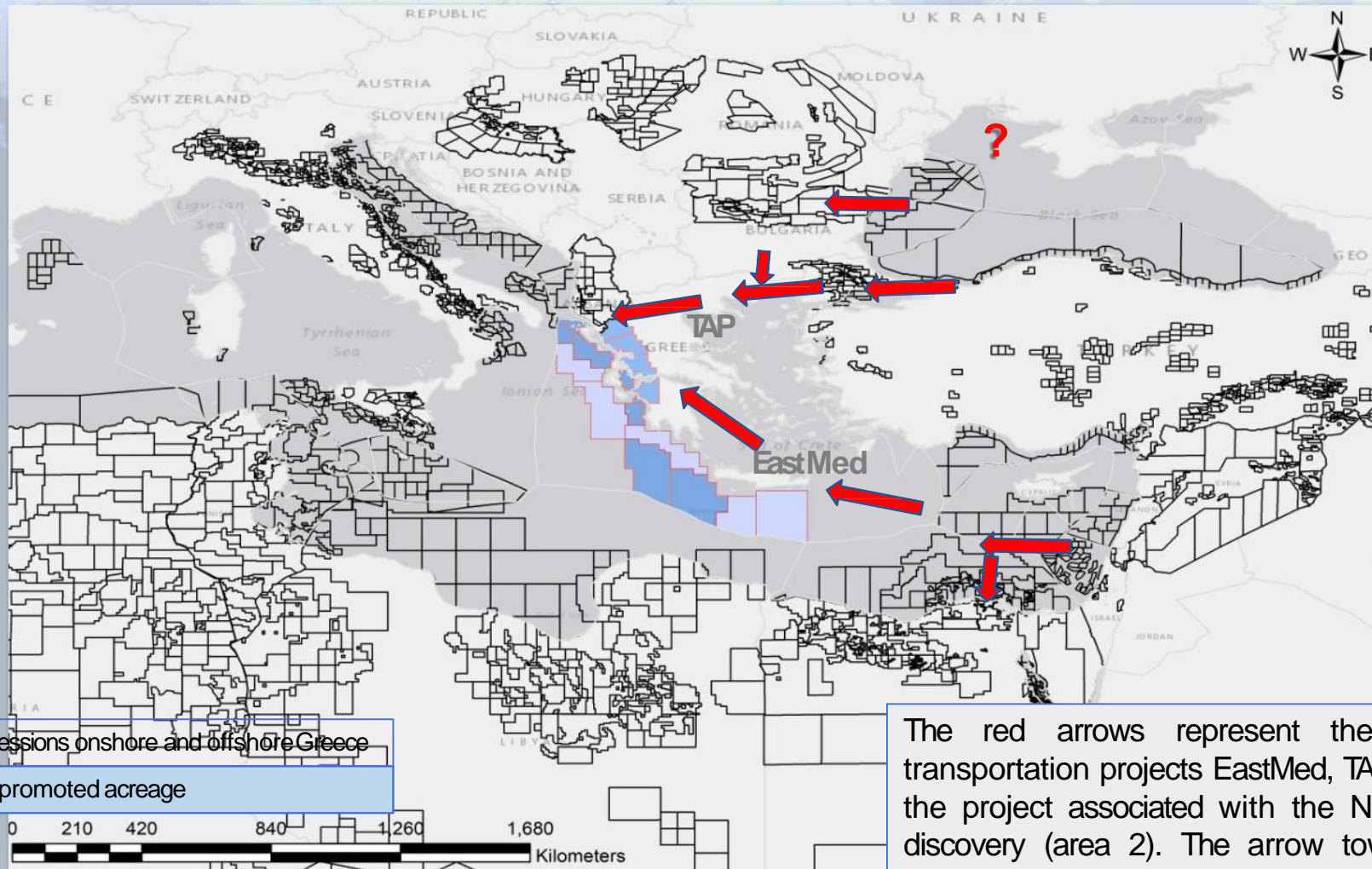
## Challenges

- Pore pressure, fracture gradient, pressure window
- Shallow well sections
- Deep well sections
- Salt Drilling
- Tar deposits
- HPHT
- Number of casings
- Well control issues
- Rig and equipment issues
- BOP issues and limitations

## Technologies

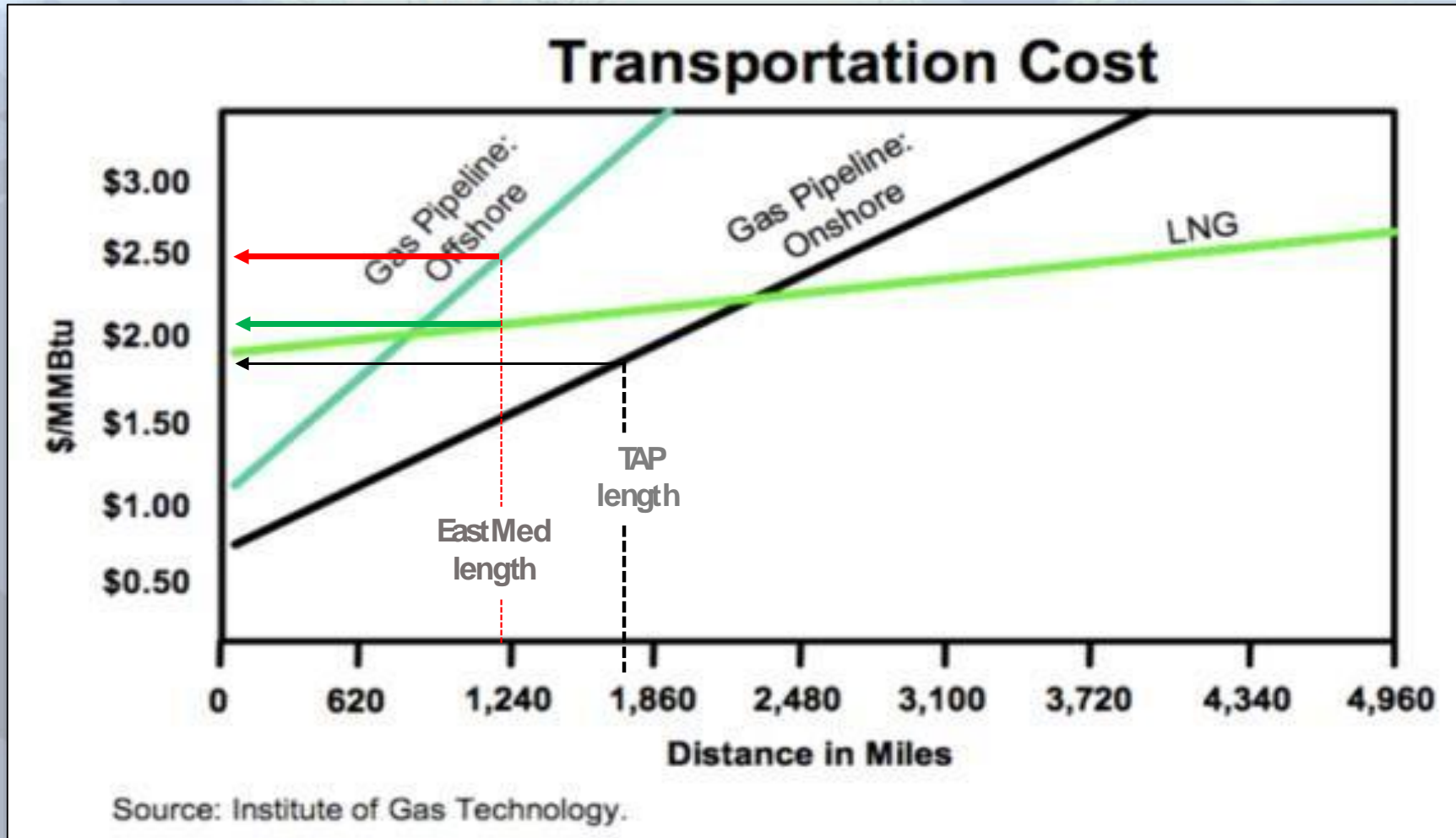
- Enhanced topsides facilities, improved hulls, stronger moorings and risers
- Advanced subsurface tools and monitoring equipment
- Improved modelling tools for safer vessel designs from explosion hazards and violent sea events
- Development of “next generation” metocean and meteorological predictive techniques

# When midstream and upstream meet

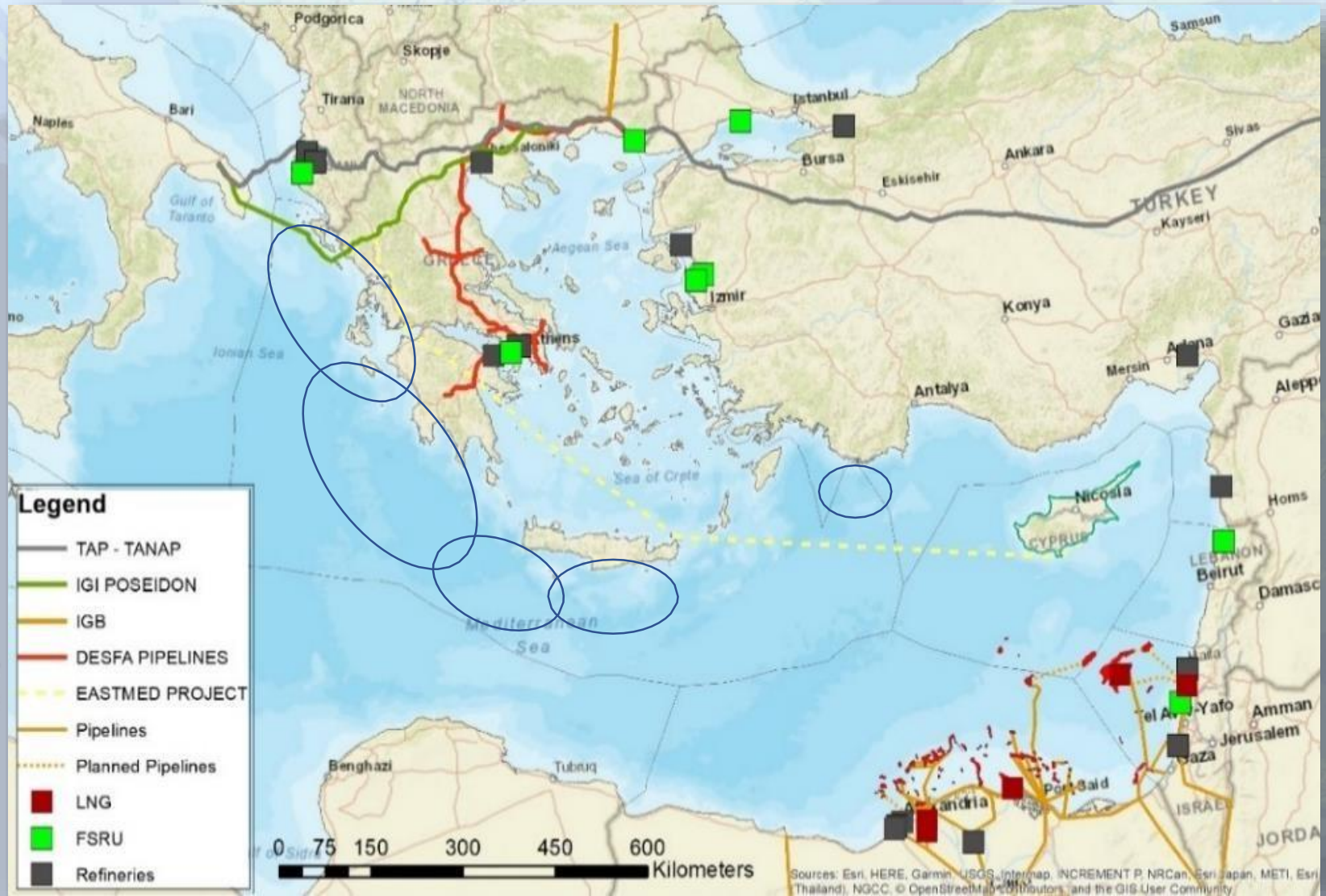


Concessions onshore and offshore Greece  
New promoted acreage

The red arrows represent the gas transportation projects EastMed, TAP and the project associated with the Neptun discovery (area 2). The arrow towards Egypt to Damietta or Iddku LNG facilities.







# Zoom on Greek acreage onshore and offshore

E&P  
update October 1st 2019

