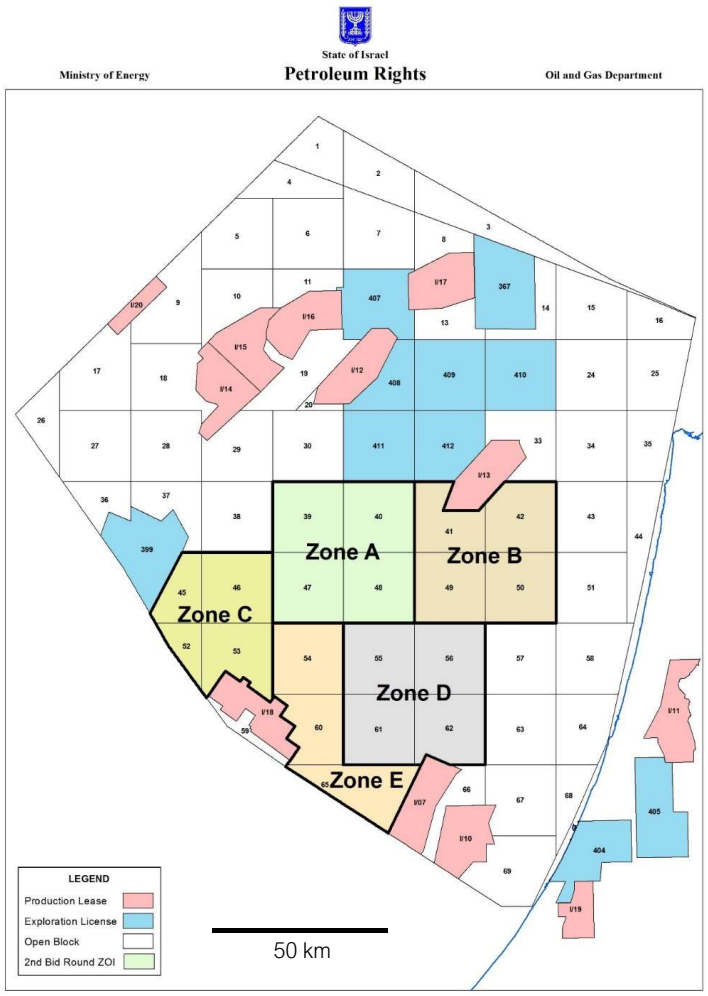
Israel's 2nd Offshore Bid Round-New Exploration Opportunities in the Levant Basin

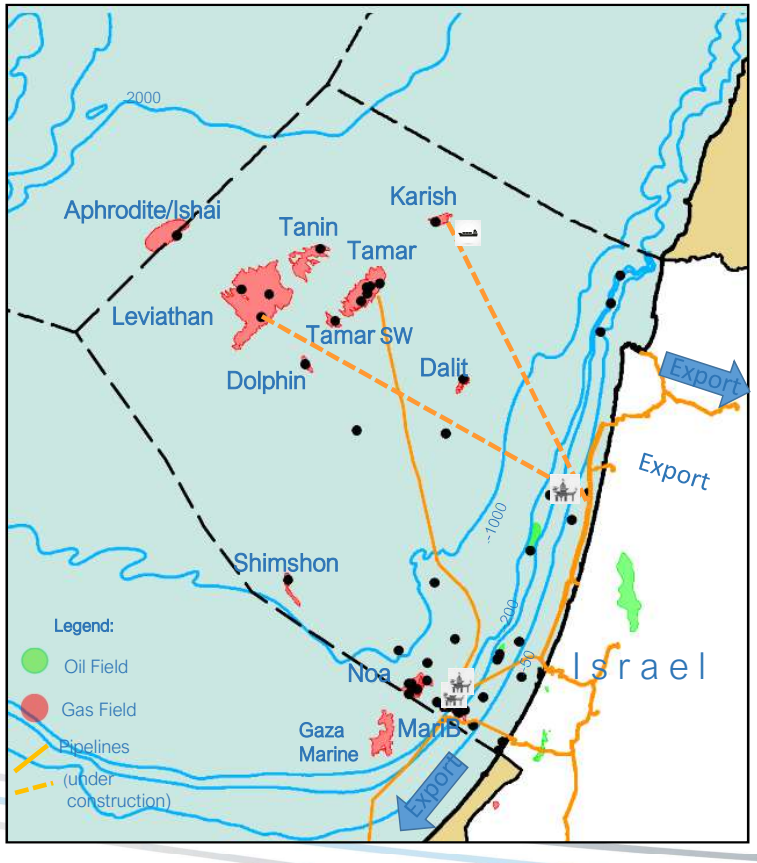
By Dr. Michael Gardosh
Israel Ministry of Energy

Bid Round Area

- In November 2018 Israel launched its 2nd offshore bid round
- 19 exploration blocks grouped into 5 Zones are being offered
- The offering includes attractive exploration targets south of major gas discoveries
- The bid round will be closed for submission on June 17, 2019

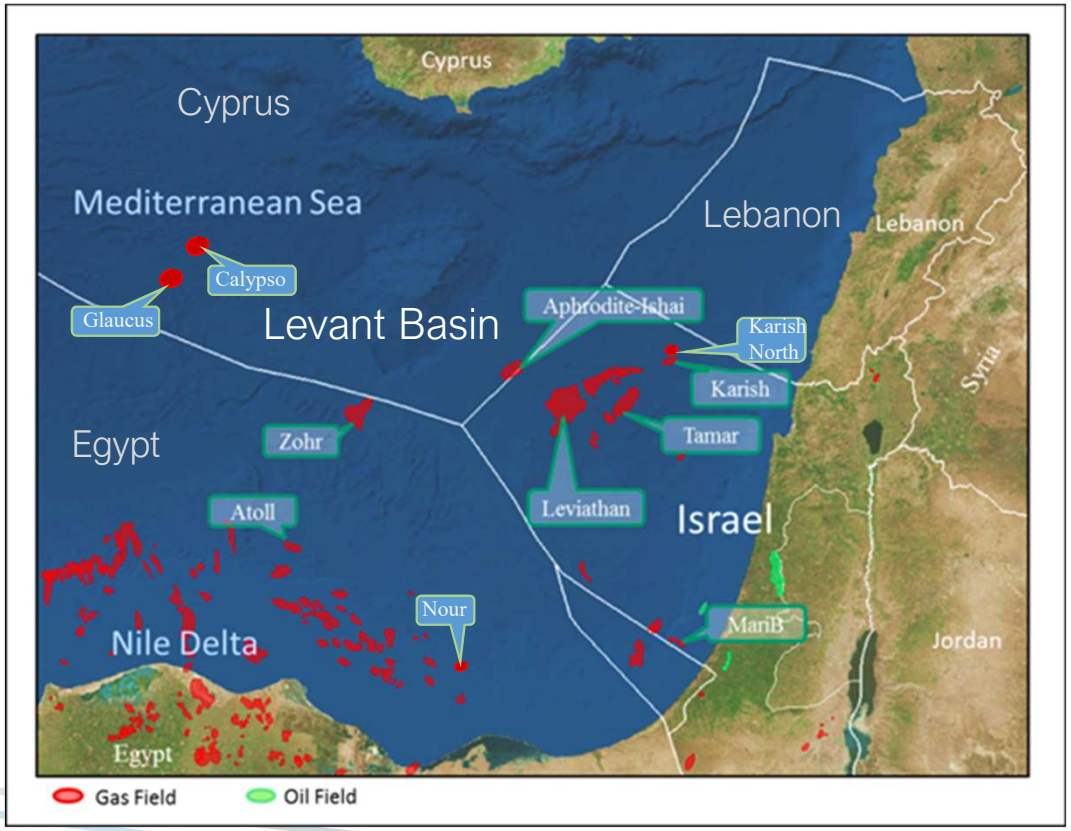


The Israeli Gas Revolution



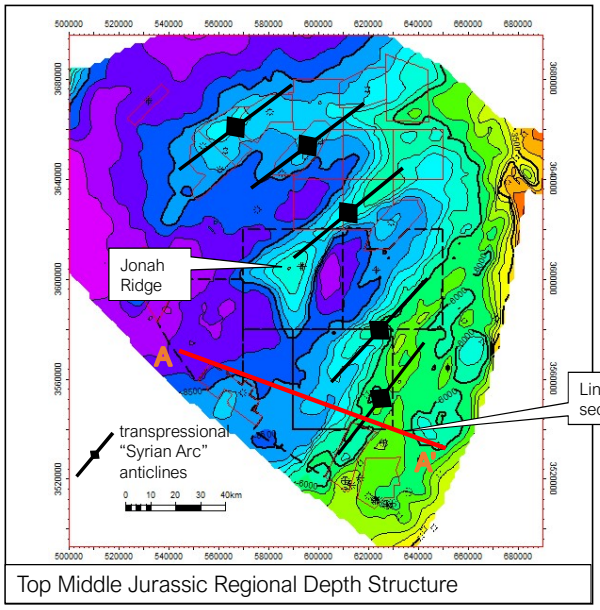
- Ten gas fields have been discovered offshore Israel since the year 2000
- Proven gas reserves are estimated at 604 BCM/21 TCF (2P) with additional 234 BCM/8 TCF (2C) available for production
- Two fields are flowing gas to the shore and two more will be connected in 2019 and 2021
- The government promotes the development of gas infrastructure throughout the country
- Israel has taken a strategic decision to maximize the use of gas throughout its economy

Activity in the Greater Levant Area

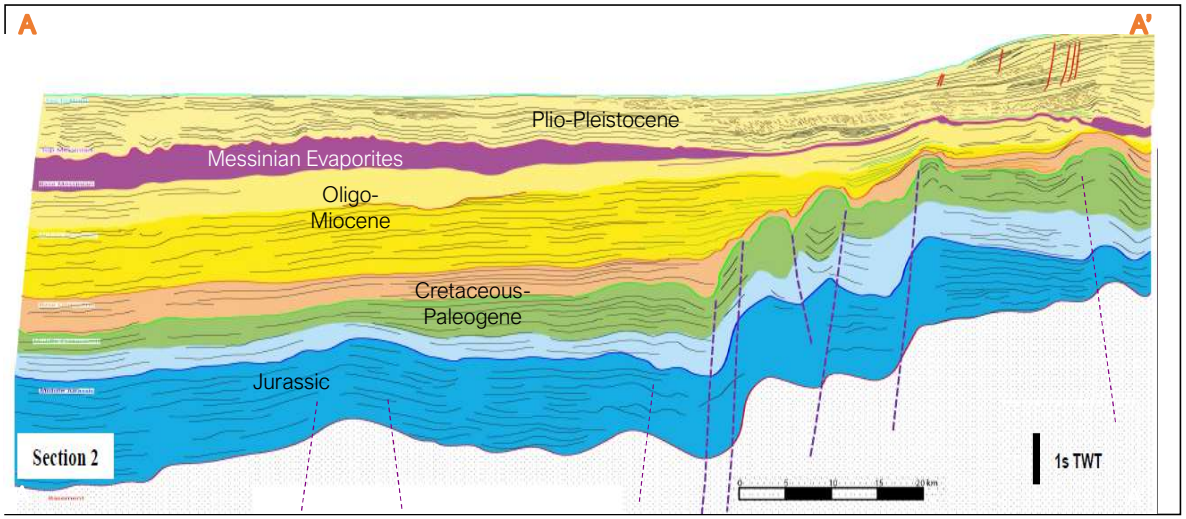


- Approx. 2400 BCM (85 TCF) of gas were discovered in the Levant Basin in the last 10 years
- Major Recent discoveries in Egypt (Zohr, Nour), Cyprus (Calypso, Glaucus) and Israel (Karish North)
- The Levant Basin is an emerging hot spot for exploration with activity currently taking place in all the surrounding countries

Regional Geology

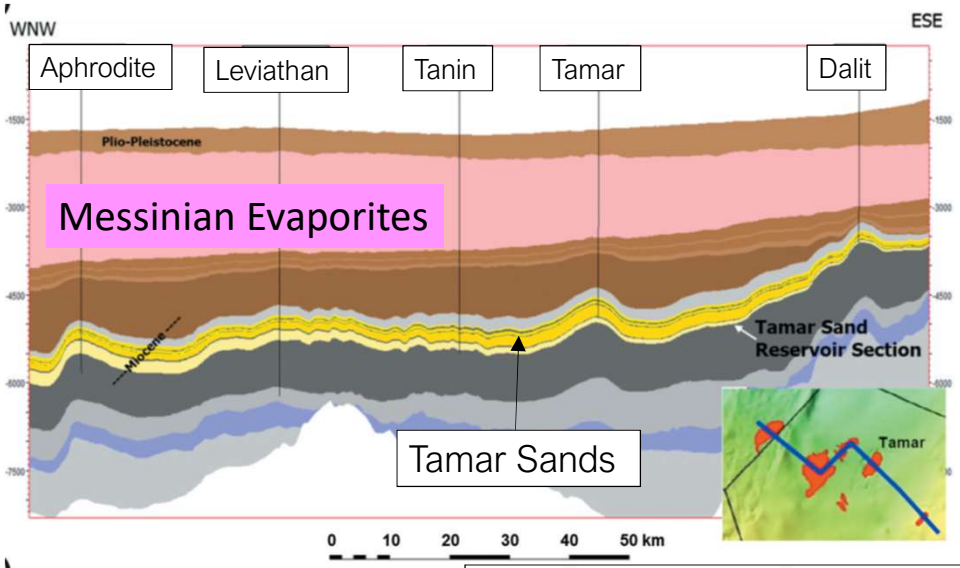


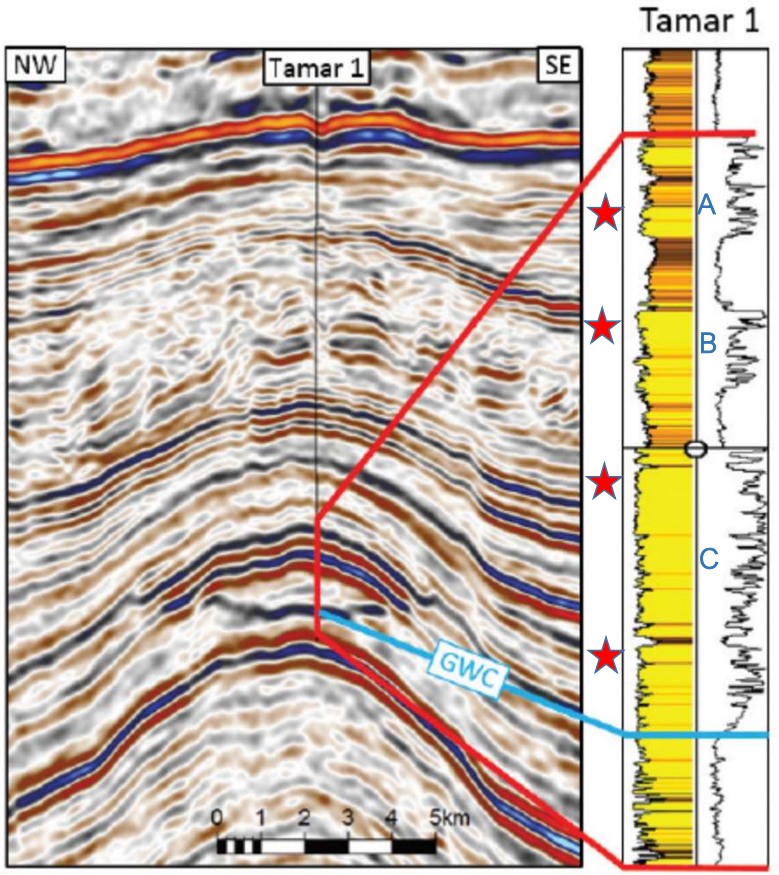
Top Middle Jurassic Regional Depth Structure



- An Early Mesozoic extensional basin with multiple phases of contraction in Late Cretaceous to Tertiary
- A Slope-to-Basin paleo-environment with extensive deepmarine turbidite sands
- Marine source rock intervals generating both biogenic and thermogenic hydrocarbons
- Large underexplored structures and stratigraphic traps remain with good potential for oil and gas

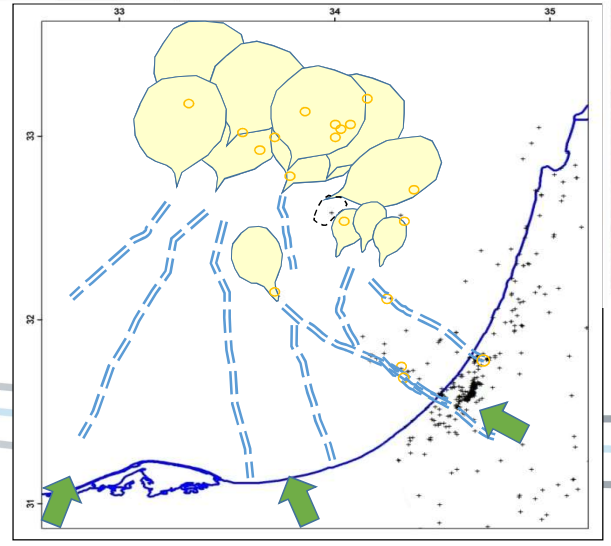
The Tamar Sands





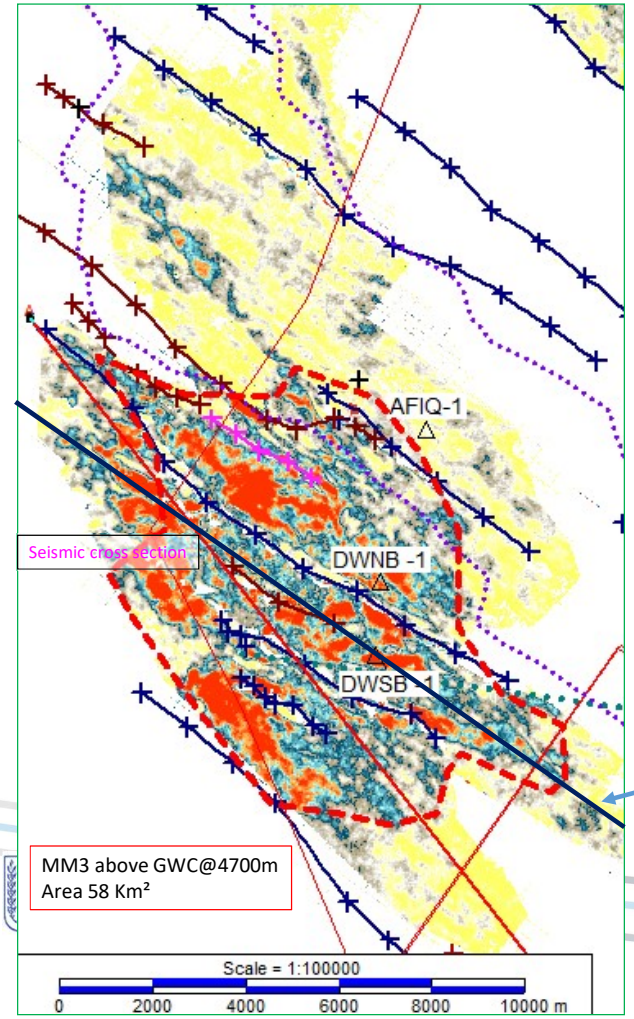
(after Needham et al., 2017)

- Upper Oligocene-Lower Miocene turbidite sands (A,B,C,D), 30-140 m net pay, (25% por. / 1D per.)
- Gas is ~98% Methane, Carbon Isotope ratio indicates biogenic origin

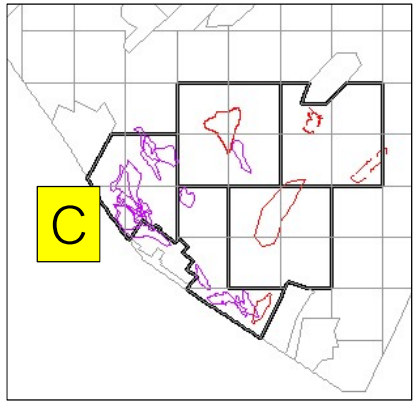


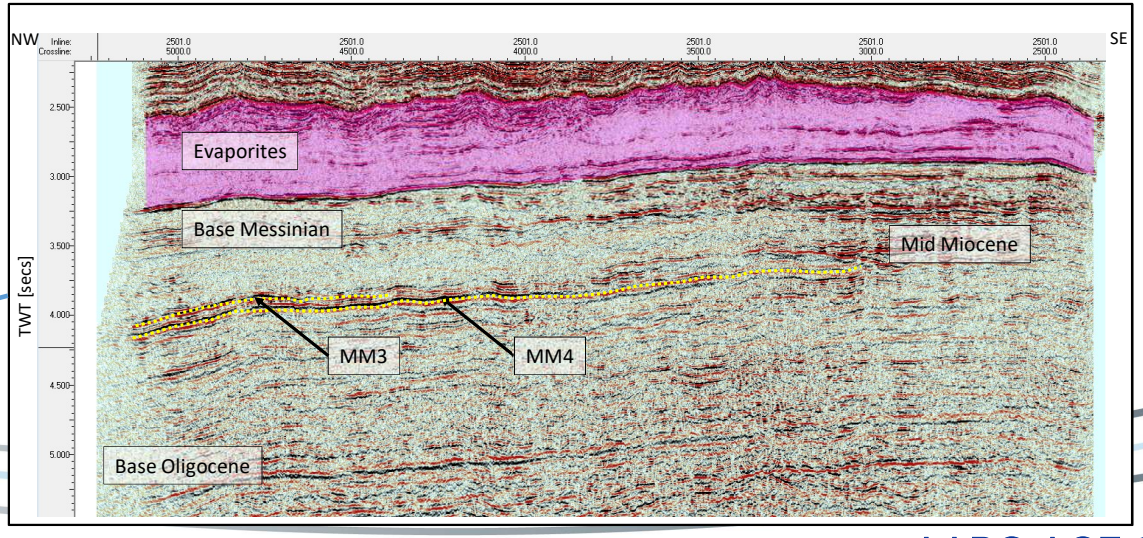
Zone C Prospectivity

Amplitude (Inst) anomalies

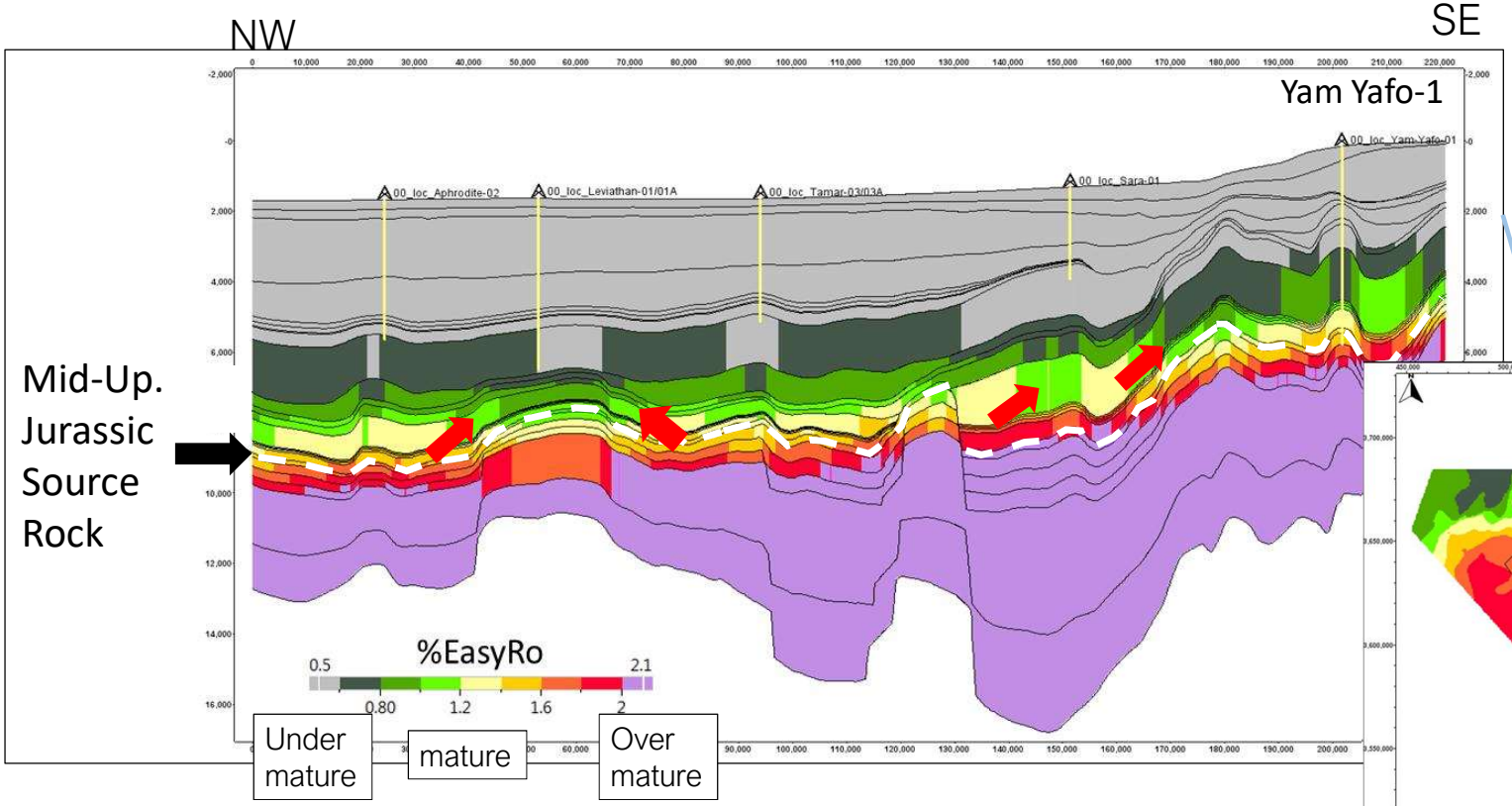


- Possible Extension of the Tamar Sands Play
- Six Miocene intervals of stacked fans and channel-fill deposits below the thick Messinian Salt cover
- Prospective resources are estimated at 138 BCM/4.9 TCF of gas and 1.7MMBBL of Condensate (Best estimate by NSAI).

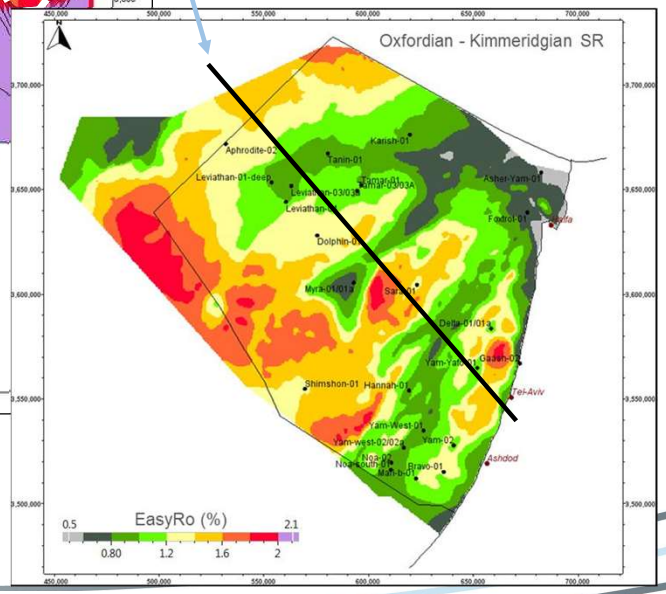




Deep Thermogenic Petroleum System

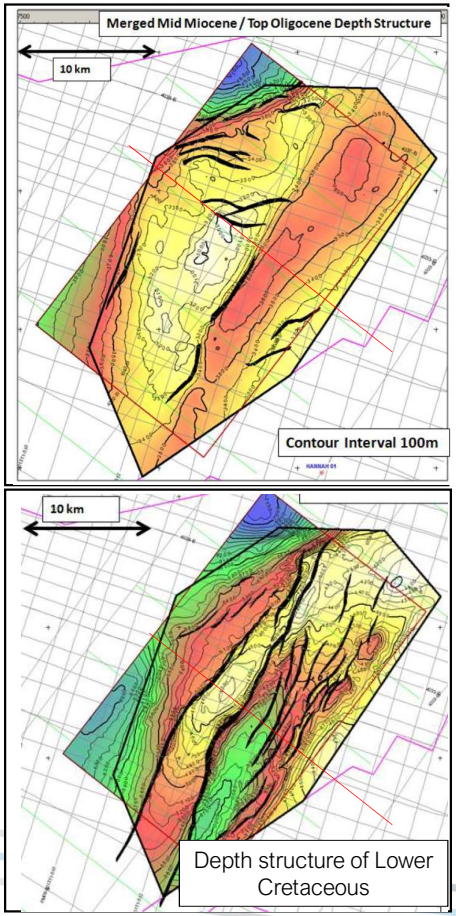


2D thermal maturation model (BeicipFranlab, 2015)

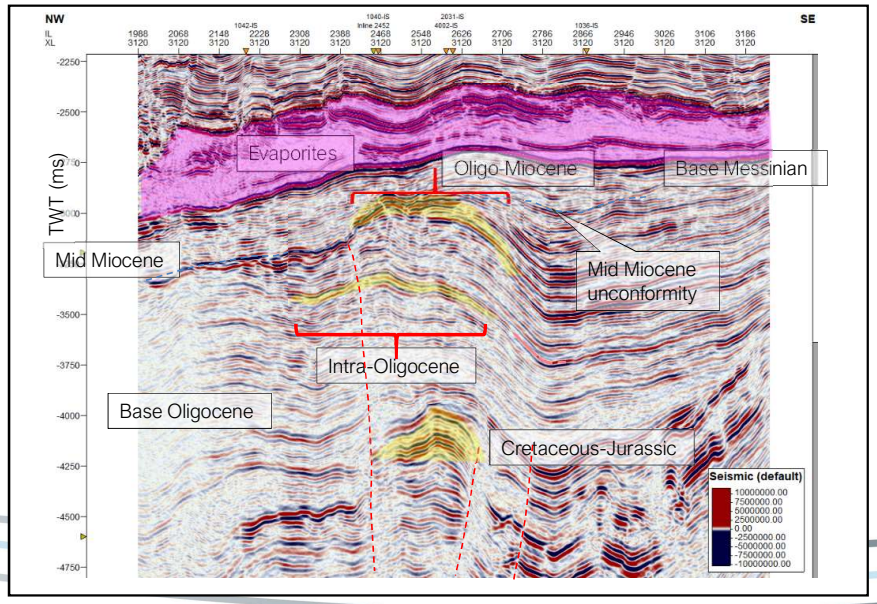


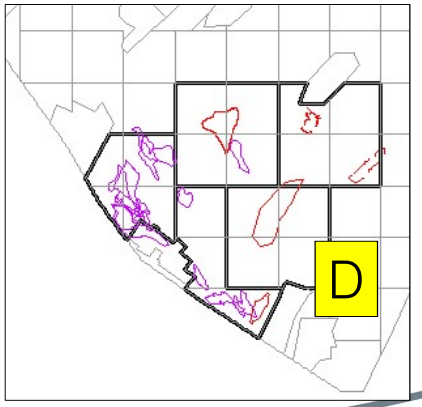
3D thermal maturation model of Mid-Upper Jurassic source (BeicipFrnlab, 2015)

Zone D Prospectivity

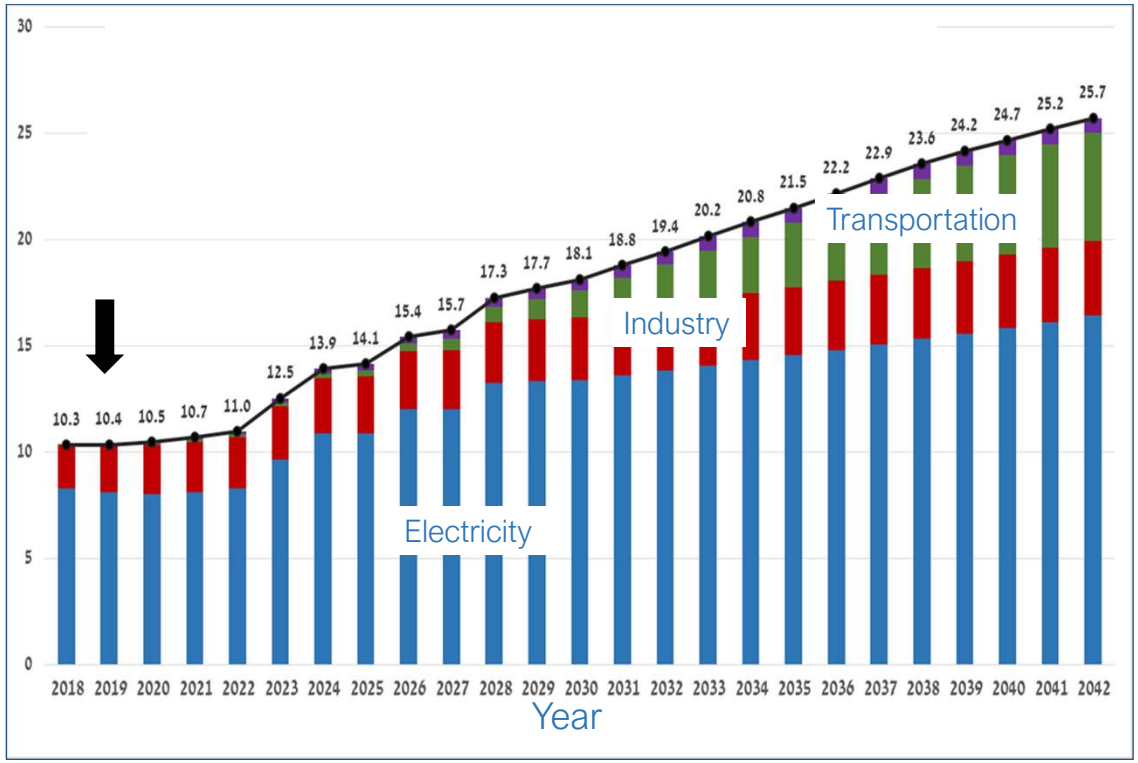


- Potential for biogenic gas in shallower levels and oil in deeper levels.
- Large, elongated “Syrian-Arc” type fold with three reservoir intervals: Oligo-Miocene, Intra-Oligocene and Jurassic-Cretaceous
- Prospective resources are estimated at 99 BCM/3.5 TCF of gas and 351 MBBL of oil (Best estimate by NSAI).





Domestic Market



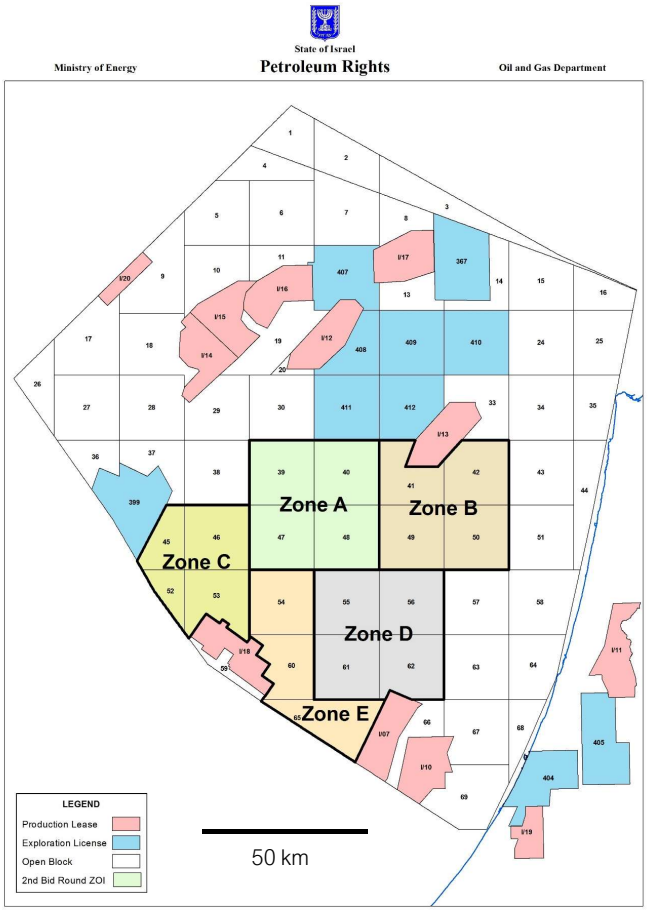
Gas Demand Forecast - Likely Scenario
(Gas Authority, 2018)

- Israel has among the highest growth rate of gas consumption in the world
- The main driving factors are population growth, closing of coal-based electric plants and wider use in heavy industry, transportation and households
- In 2022 85% of electricity will be generated from natural gas
- Economic models predict that gas demand will more then double, to about 25 BCM/Y or approx. 1 TCF/Y in the next two decades

Export Options

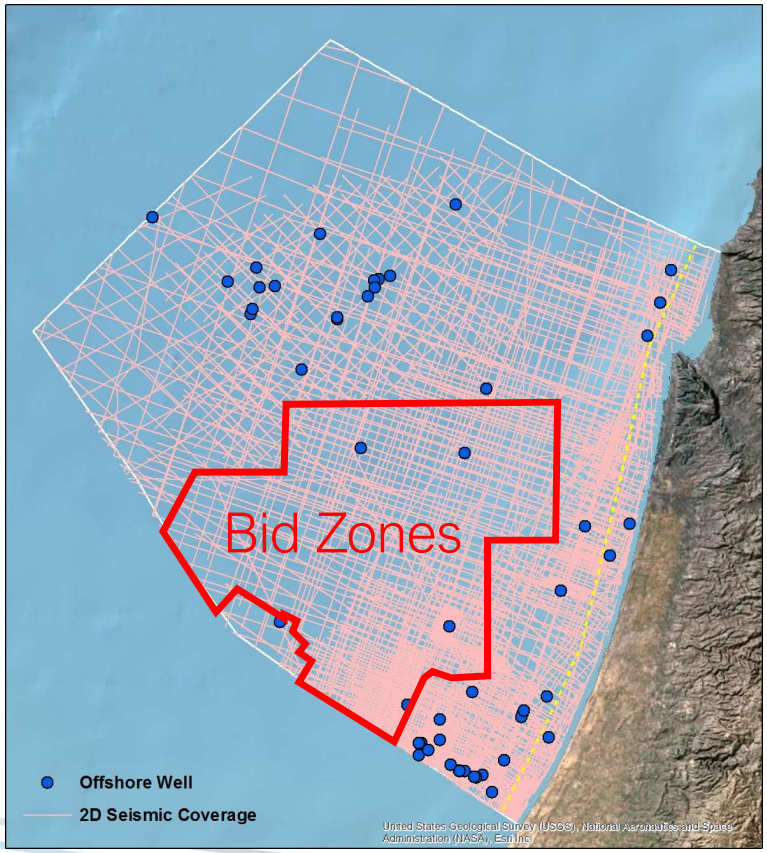
- Three export contracts have been signed with Jordanian companies valued at US$12 billion
- Two contracts have been signed with Egyptian companies valued at US$15 billion
- The Israeli government is cooperating with its neighbors to create the East Mediterranean Gas Hub
- The planning of the EastMed pipeline sponsored by the EU is well underway

Bid Terms

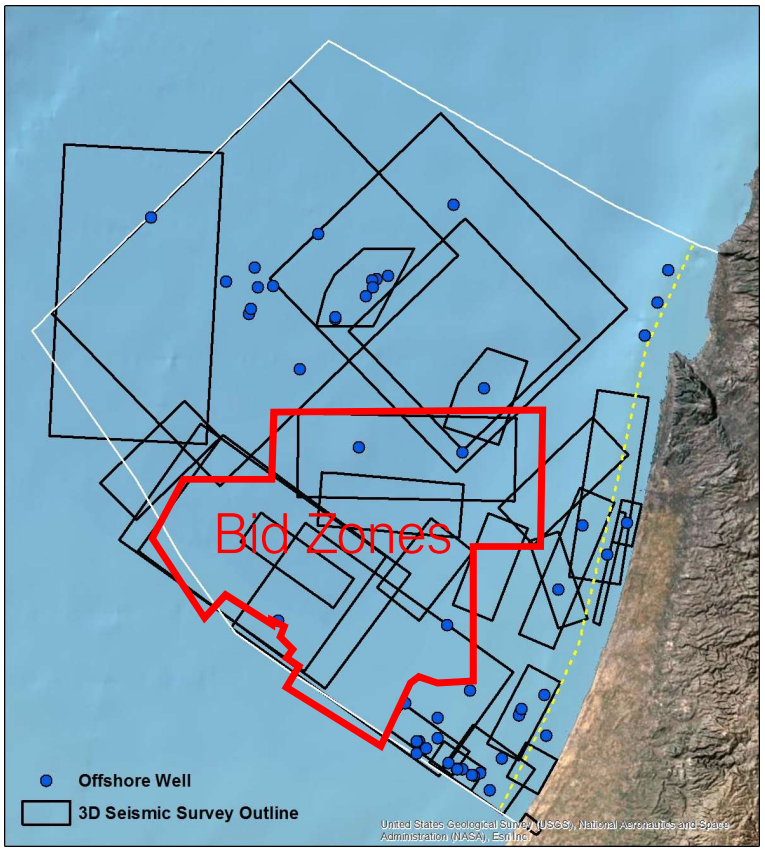


- Exploration and production blocks are managed as concessions under tax/royalty fiscal regime
- Maximum government take after production is a moderate 62-65%
- Exploration licenses will be granted for a period of up to 7 years with two drill-or-drop decision points (3+2+2)
- Bid evaluation criteria are 85% work program,10% signature bonus and 5% general impression
- A comprehensive data packages including 20 wells two regional 2D surveys and 15 3D seismic surveys is offered

Bid Terms- Seismic Data Coverage



2D Data



3D Data

Come and visit our booth in the IP

Contact details:
mikig@energy.gov.il
James.Thomson@Israeltrade.gov.il