

E&P Opportunity in the East Mediteranean evidenced by Tanin & Karish

**APPEX GLOBAL 2018** 

## Energean at a glance

#### Summary

- Independent E&P company focused on the Eastern Mediterranean
- Strategically positioned in an increasingly active region Levantine and Adriatic Seas
- The only oil & gas producer in Greece (Prinos Basin)
- Operator of the Karish and Tanin planned USD 1,6 B billion gas development in Israel
- GSPAs for more than 4BCM annually already signed.
- Exploration activities in Israel, Western Greece and Eastern Adriatic
- Strong HSE track record with 37 year offshore production history in environmentally sensitive areas in the Mediterranean





## Karish and Tanin- Key Highlights

Key	Highlights
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<ul> <li>Approximately 2.4 Tcf gas with 32.8 mmbbls hydrocarbon liquids 2C contingent resources</li> </ul>

- World Class<br/>AssetCost effective gas production to satisfy increasing Israeli<br/>demand, increase market competition and improve security of<br/>supply
  - Lease allows condensate to be exported

	<ul> <li>Sales Target by FID: 2C Resources produced at 4 bcm/yr</li> </ul>
Contracted	<ul> <li>Current situation: GSPAs with established counterparties for</li></ul>
Offtake	more than 4bcm/yr already signed

	<ul> <li>Risks mitigated by selection of a turn-key EPCIC contract with TechnipFMC</li> </ul>	
Low	<ul> <li>Project timing – middle of a prolonged down-cycle – provides access to rigs and construction resources at attractive cost</li> </ul>	
evelopment Risk	<ul> <li>Management believes sub-surface risk mitigated by development of analogous Tamar field – 25km South of Karish</li> </ul>	



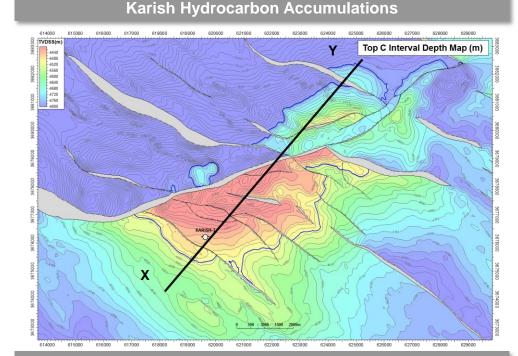


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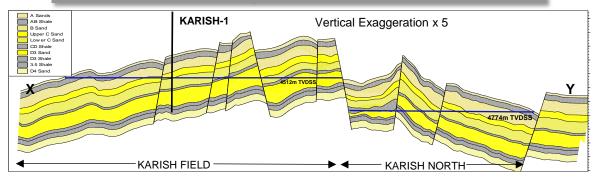
## Karish Subsurface Highlights

#### **Karish Subsurface Highlights**

- 1.63 Tcf of 2C natural gas reserves and 28.7 mmbbls of condensate
- Maximum mapped hydrocarbon column of ~ 240m
- 95% methane content with higher CGR than the Tanin discovery
- High quality reservoir sands
- The Karish-1 well was spudded on March 21, 2013 which penetrated gas saturated Tamar B and C sands
- Formation pressures were acquired, giving a high confidence Gas Water Contact ("GWC") within the C Sands, which is consistent with the formation evaluation logs
- High quality 3D seismic with depth consistent DHI indicative of a single GWC throughout Karish Main structure
- The Karish Complex includes the Karish North and Karish East prospects with additional low risk upside potential



#### **Geological Cross-Section**



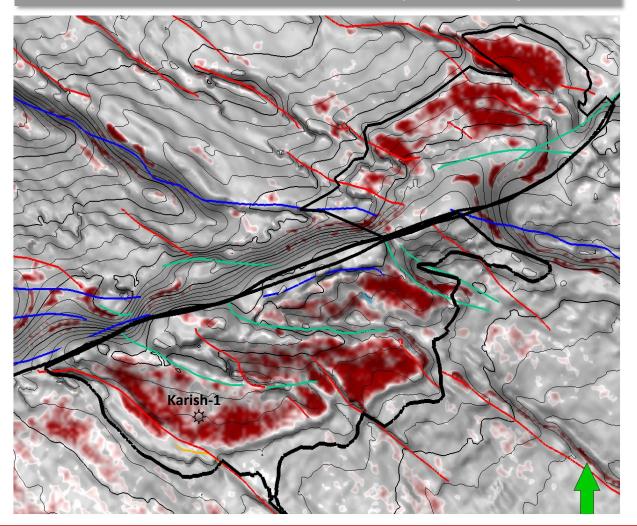


## Karish complex "bright spot" - Top C Sand surface attribute

#### Key Highlights

- Seismic amplitude anomaly associated with the main gas bearing sandstone reservoir (C sand)
- Tested by Karish-1
- Similar anomalies observed at the Karish North prospect
- Amplitude anomalies consistent with depth structure
- Further QI studies ongoing

#### Karish and Karish North – Seismic Amplitude Anomaly





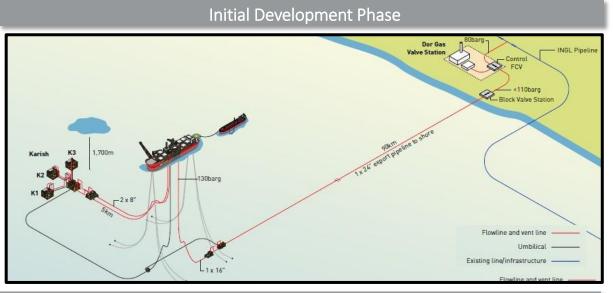
## Karish and Tanin - A Material De-Risked Development Project

#### Technical Highlights

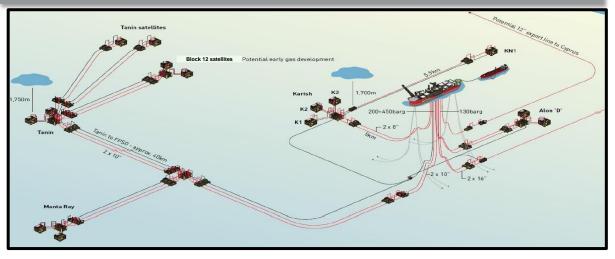
- Phased infrastructure development that minimizes onshore facilities
- Initial development of Karish Main field early access to significant liquid stream that can be exported
- Later development of Tanin discoveries to maintain plateau
- First FPSO to be deployed in East Mediterranean Sea. System capacity can be doubled (to 8 bcm/yr) by addition of a second sales gas riser
- Additional upside exploration potential in the Karish and Tanin leases
- Infrastructure designed to enable rapid, low cost tie back of potential future exploration successes
- FDP approved by Israel government August 2017

#### Commercial Highlights

- TechnipFMC turn-key contract reduces execution risk exposure
- Current competitive oilfield services environment provide leverage for contract terms and price optimization



#### Planned Extension – Ability to Tie Back Marginal Gas Fields in the Region



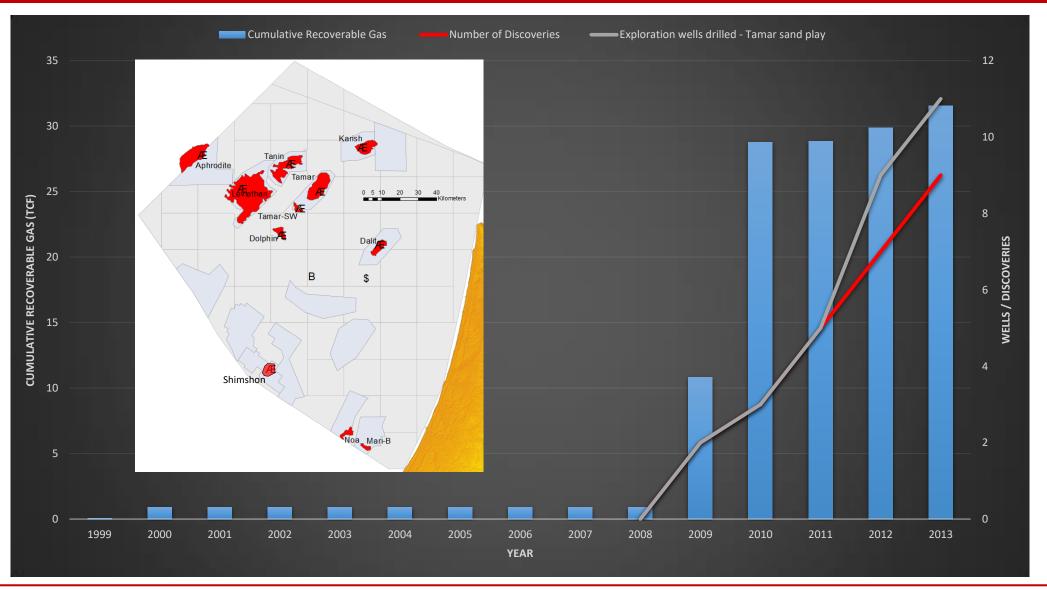


## Karish & Tanin FPSO



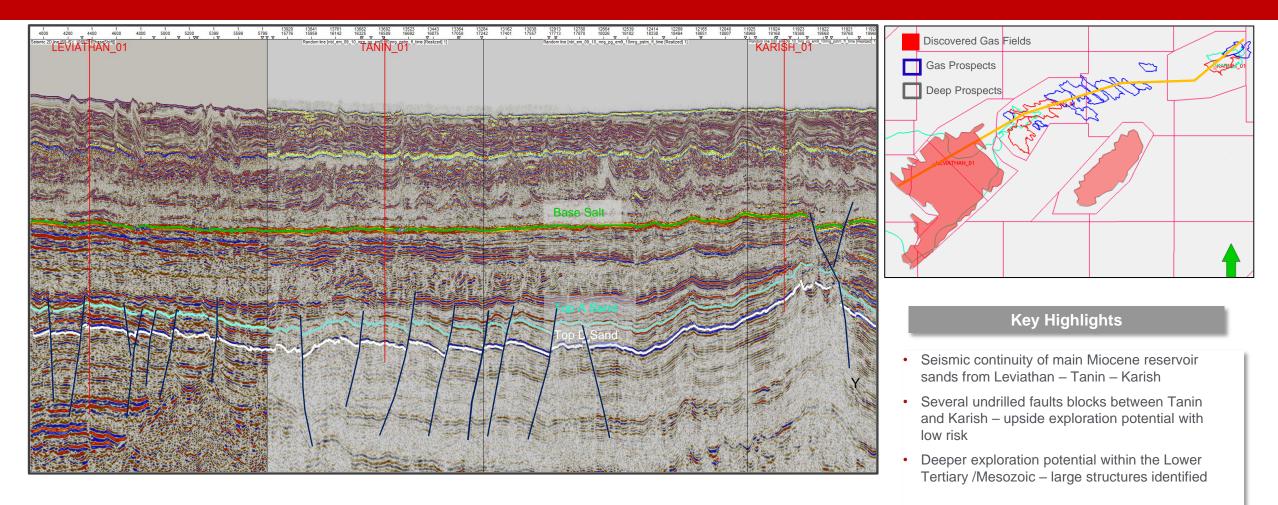


## Cumulative Recoverable Gas Volumes – Offshore Israel





## Leviathan/Tanin/Karish – Exploration potential





## Israel – Exploration Blocks 12,21,22,23 & 31

#### Key highlights

Energean Israel 100% WI	<ul> <li>In December 2017, Energean Israel was successfully awarded five offshore exploration licenses within the Israeli Exclusive Economic Zone (EEZ).</li> <li>The licenses awarded comprise blocks 12, 21, 22, 23 and 31</li> </ul>
Located close to significant discoveries	<ul> <li>All five licenses are considered to lie within the proven "Tamar" sand play fairway and are highly prospective for gas</li> <li>Numerous prospects and leads have been identified which will be further evaluated during the initial 3 year exploration period by new 3D seismic acquisition and reprocessing of existing datasets</li> </ul>
Upside potential	<ul> <li>Any future hydrocarbon discoveries will be developed via a tie-back to the FPSO that Energean will construct for the development of Karish and Tanin fields</li> </ul>

# Asset Location 22 23 31



potential

## Summary

- Energean is a leading operator in the Mediterranean with a balanced portfolio of producing, development and exploration assets
- Energean is progressing fast with the development of Karish discovery with a plan to deliver gas to the local Israeli Market by 2021
- Additional exploration potential has been identified within the Karish and Tanin Blocks and the five new license awarded to Energean in the latest bid round
- Future gas discoveries could be developed via sub-sea tieback to existing infrastructure should the Israel domestic gas market grow
- Energean and its predecessor's 37 year offshore experience ensures total respect to the environment and project execution in cooperation with the local communities



## **Prinos: Oil & Gas, Tourism And Environment Coexist**

Gulf of Kavala: Over 10 Blue Flags Every Year for the Last 10 Years

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Energean's HSE Mission

Transfer 37 years experience of working safely in environmentally sensitive locations in NE Greece to every area we operate



Safety of Offshore Oil & Gas Operations Directive Thasos: Traditional tourist destination in the Aegean









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