# Leviathan Development And Tamar Expansion Rowing Forward In Parallel Tracks





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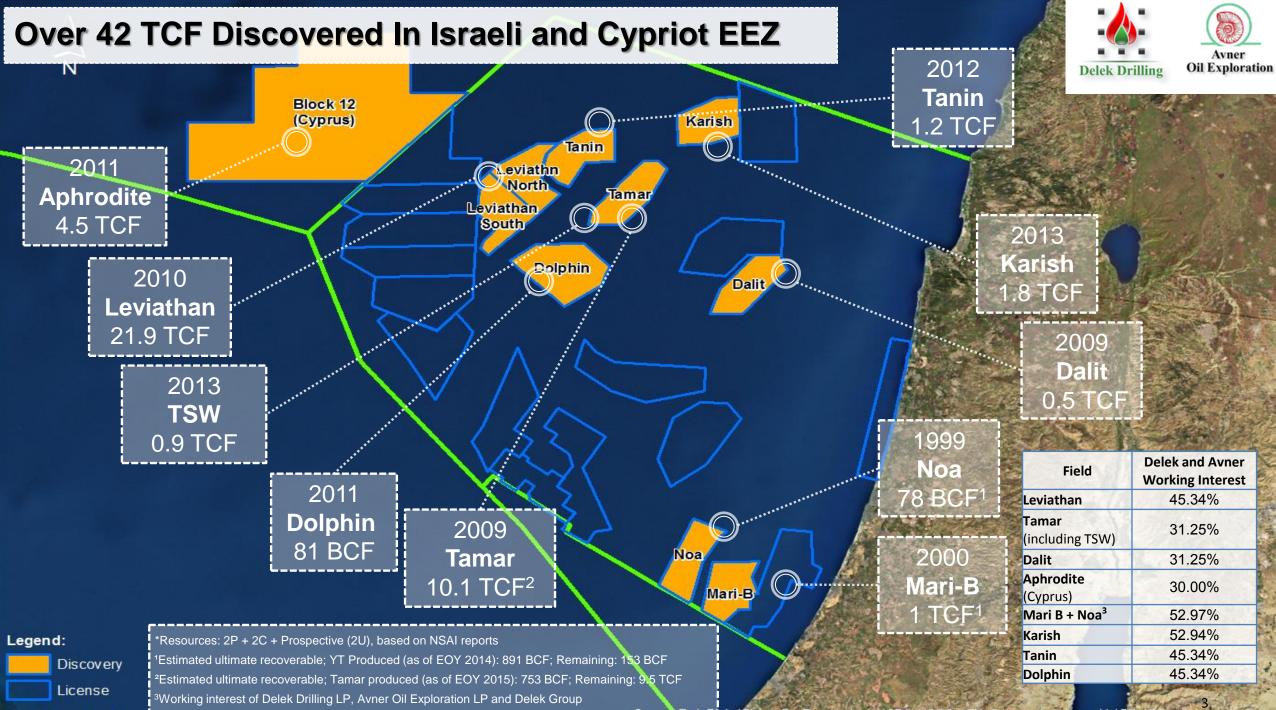
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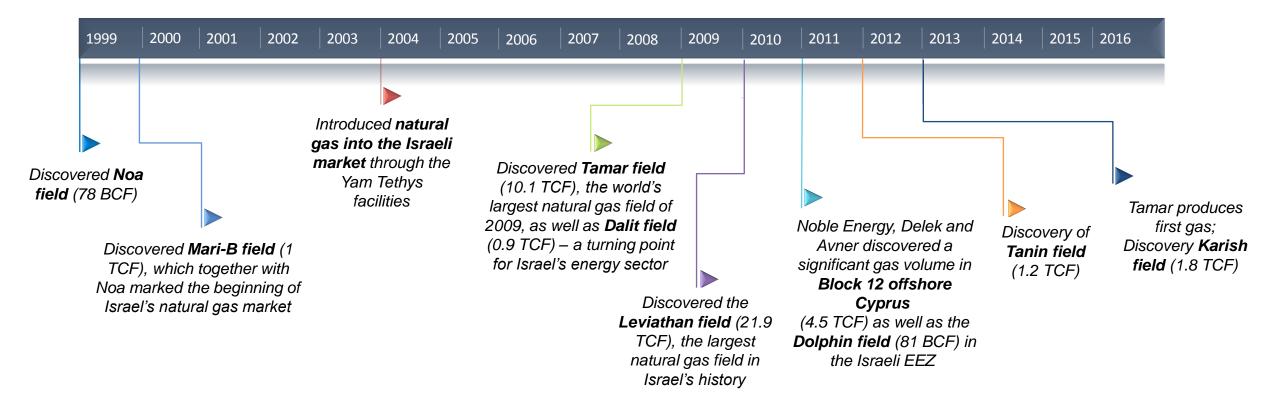
## **Excellent Track Record**



2004-2008 Sole domestic gas supplier in Israel

### 1999-2008 Established the Israeli natural gas market

2009+ Continues to transform Israel into a NG energy independent state and gas exporter



# The 'Gas Framework'



- Following the government's approval of the Framework for increasing the quantity of natural gas produced from the Tamar natural gas field and rapid development of the Leviathan, Karish and Tanin natural gas fields and others, On December 17, 2015, the Framework was validated after the Prime Minister, in his role as Minister of the Economy, exercised the authority vested in him pursuant to Section 52 of the Antitrust Law\*
- The 'Gas Framework' refers to Tamar, Leviathan, Karish and Tanin fields. Main Resolutions:
   Sale by Noble and Delek of 100% of their interests in Tanin and Karish
  - Delek of their interests in Tamar
  - Timetable and milestones for development of the Leviathan field
  - □ Certainty in natural gas pricing in sales agreements from Tamar and Leviathan
  - Limitations on gas sale agreements from Tamar and Leviathan in favor of Karish and Tanin
  - Local content by Leviathan
  - Infancy protection for small/medium fields
  - Regulatory stability for 10 years
- The Israeli Court of Justice ruled on the Framework approving all of it with the exception of the stability clause

# **Tamar Project**

- World largest deep water gas discovery in 2009
- Operator:
- Natural Gas (2P) Reserves:
- Condensate (2P) Reserves:
- First Gas :
- Development Budget:
- Overall Tamar Costs up to date:
- Max Hourly Production:
- World scale fast development: less than 4.5 years from discovery to supply

Noble Energy

**13.7 MMBBL** 

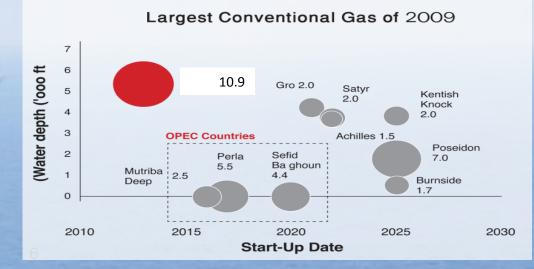
March 31<sup>st</sup> 2013

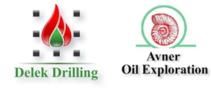
10.9 TCF (310 BCM)

Approx. 3.1 Billion USD (100%)

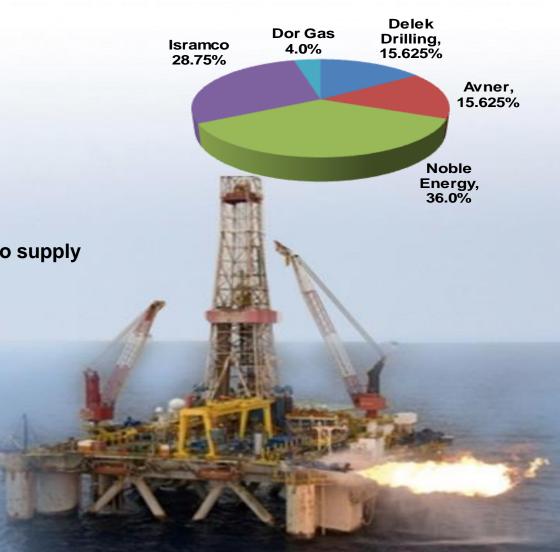
Approx. 4 Billion USD (100%)

1.2 bcf/d (~12 BCM/Y)





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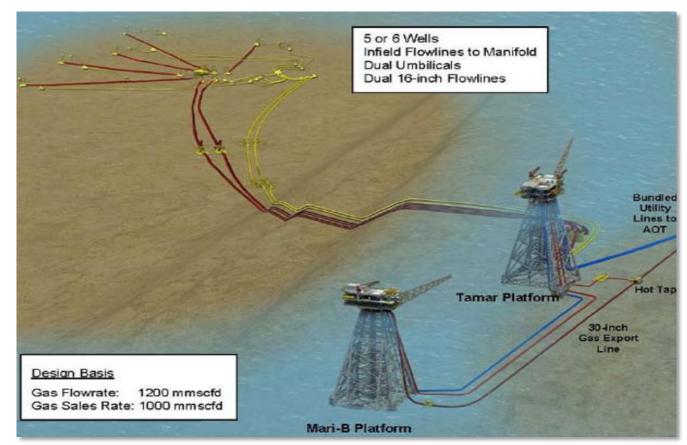
**Tamar Ownership:** 

# **Tamar Project Development Program**

<sup>1</sup> 31/3/2013 to 31/12/2015

Delek Drilling

- 5 subsea wells (up to 250 mmcfd each), WD of ~1,700m
- Gas produced is gathered at the field and delivered via Dual 16" flowlines to the new Tamar platform
- New Tamar platform is located 25 km from shore at 237m water depth adjacent to the existing Mari-B platform
- Tied into the existing 30" pipeline that delivers natural gas to the Ashdod onshore receiving terminal
- Sole supplier of natural gas to the Israeli market
- Tamar's natural gas is the source for more than 50% of the electricity generated in Israel
- Natural gas sales from Tamar since start up of 754 bcf (approx. 21 BCM)<sup>1</sup>
- Over 99.5% reliability availability and maintainability (RAM) achieved



# Tamar Natural Gas Sales in Q4/2015 Breakdown by Indexation

### **Domestic Market Gas Price – Low Exposure to Commodity Risk**

- Gas price in the Israeli market is mostly linked to the American Consumer Price Index (CPI)
- Approx. 28% of sales are under agreements linked to the electricity production tariff (PUA)
- Approx. 10% of sales are under agreements linked to the oil barrel price with a fixed floor price

2014

Q4

5.51

Q1

5.45

Natural gas sales from Tamar

Average price - natural gas

(USD per MCF)

2015

Q3

5.35

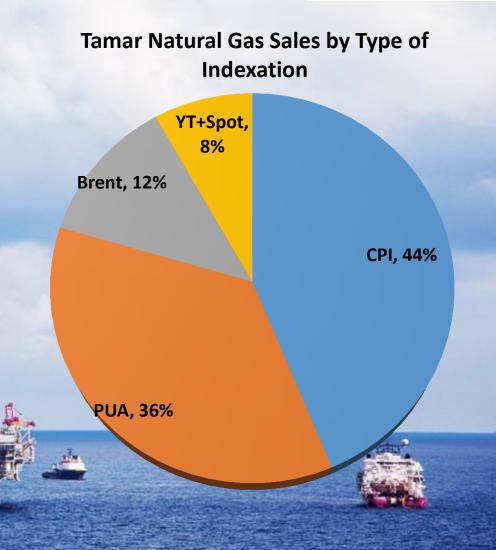
Q4

5.18

Q2

5.33





# **2016 – Turning Point and Year of Action**



## **Moving forward on three parallel**

### Commercial Agreements

- Israeli domestic market
- Shell ELNG liquefaction terminal in Egypt
- Jordanian national electricity company (NEPCO)
- Egyptian domestic market
- Israeli domestic market
- Jordanian Dead Sea factories
- UFG Damietta liquefaction terminal in Egypt
- Egyptian domestic market

## Engineering-Planning

Leviathan Optimization of the development plan

Tamar Optimization of Tamar expansion based on UFG agreement

### Financing

### Leviathan

Entering into financing agreements with a consortium of international banks

### Tamar

Expansion of Tamar Bond or additional financing based on projected UFG cash flow

## Target:

Investment decisions on Leviathan's development and Tamar's expansion in 2016

### Leviathan

Tamar

# **Tamar: UFG-Damietta Agreement**



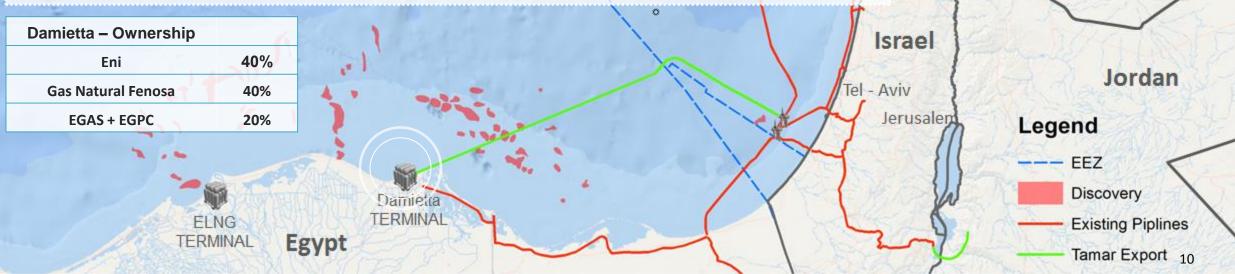
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Lebanon

Syria

- In May 2014, a letter of intent was signed between the Tamar partners and UFG for the sale of natural gas to Damietta
- This agreement (if signed) will serve as an anchor for the expansion of the supply capacity from the Tamar project to the Israeli market
- A 15-year agreement with a total contractual quantity (TCQ) of 2.5 TCF (70 BCM)
- Annual quantity (ACQ) of approx. 450 mmcfd (4.5 BCM/Y) with an option to increase to approx. 750 mmcfd (7.5 BCM/Y)
- Delivery point border of EEZ between Israel and Egypt
- Price linked to the Brent price with a fixed floor price
- Entering into an agreement in upcoming months will enable an investment decision on the expansion of Tamar in 2016

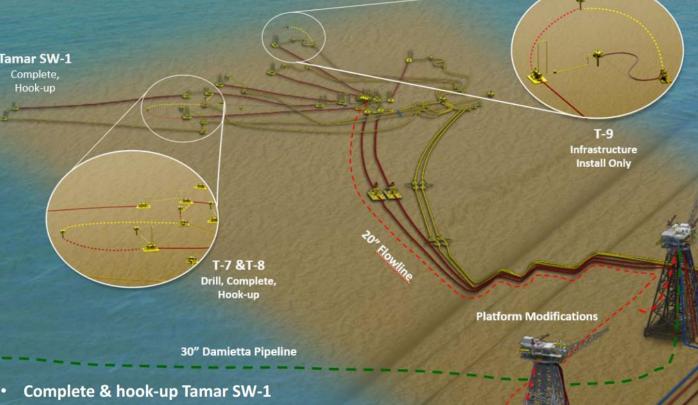


# Tamar's Expansion Following UFG-Damietta Agreement





- Expansion of maximum production capacity to 20.4 BCM/Y – in advanced planning stages
- Including:
  - A third pipeline (20") from the reservoir to Tamar and Mari-B platforms
  - Development of Tamar SW and additional wells
  - Expansion of Mari-B treatment capacity
  - Export pipeline to Damietta facility
- Cost of expansion project to Tamar Partners estimated at approx. \$1.5-2 billion (100%)
- Cost reduction examined in view of the market opportunity



- Drill, complete & hook-up 2 additional Tamar wells (T7 & T8)
- Install infrastructure for a 4<sup>th</sup> well (T9)

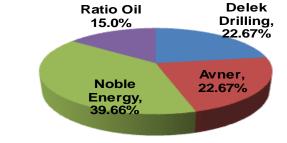
Source: Noble Energy

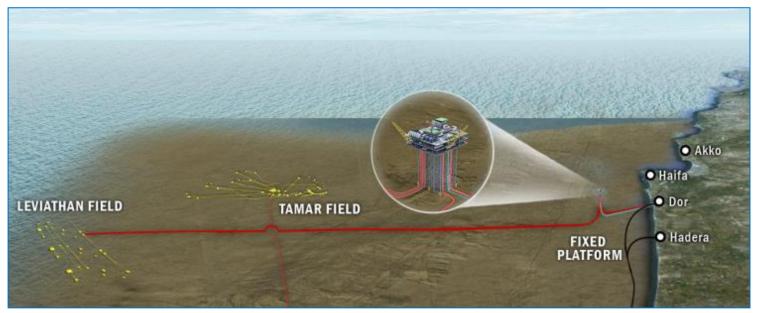
- Install 3<sup>rd</sup> flowline (20") with simultaneous flow to Tamar and Mari-B Platforms
- Install Export pipeline (30") from Tamar Platform to Damietta, Egypt
- Install gas receiving and conditioning facilities in Damietta (UFG)

# **Leviathan Field Phase 1 of Leviathan Development**

- Leviathan field resources are estimated at 21.93 TCF of natural gas and approx. 39.4 barrels of condensate (2C)
- Development plan for phase 1 includes construction of an offshore fixed platform with natural gas supply capacity of 2.1 BCF/D (approx. 21 BCM/Y)
- Possible modularity first stage of 1.2 BCF/D (approx. 12 BCM/Y), second stage of 900 MMCF/D (approx. 9 BCM/Y)
- Estimated CAPEX
  - US\$5-6 billion for the full development (2.1 BCF/D)
  - Of which first stage to the domestic market, Jordan and the P.A. (1.2 bcfd) with CAPEX of US\$ 3.5-4 billion

### Leviathan Ownership:









# Leviathan Field Phase 1 Modularity

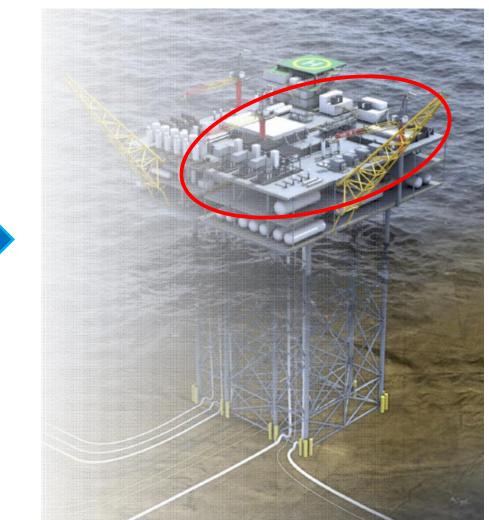
LEVIATHAN

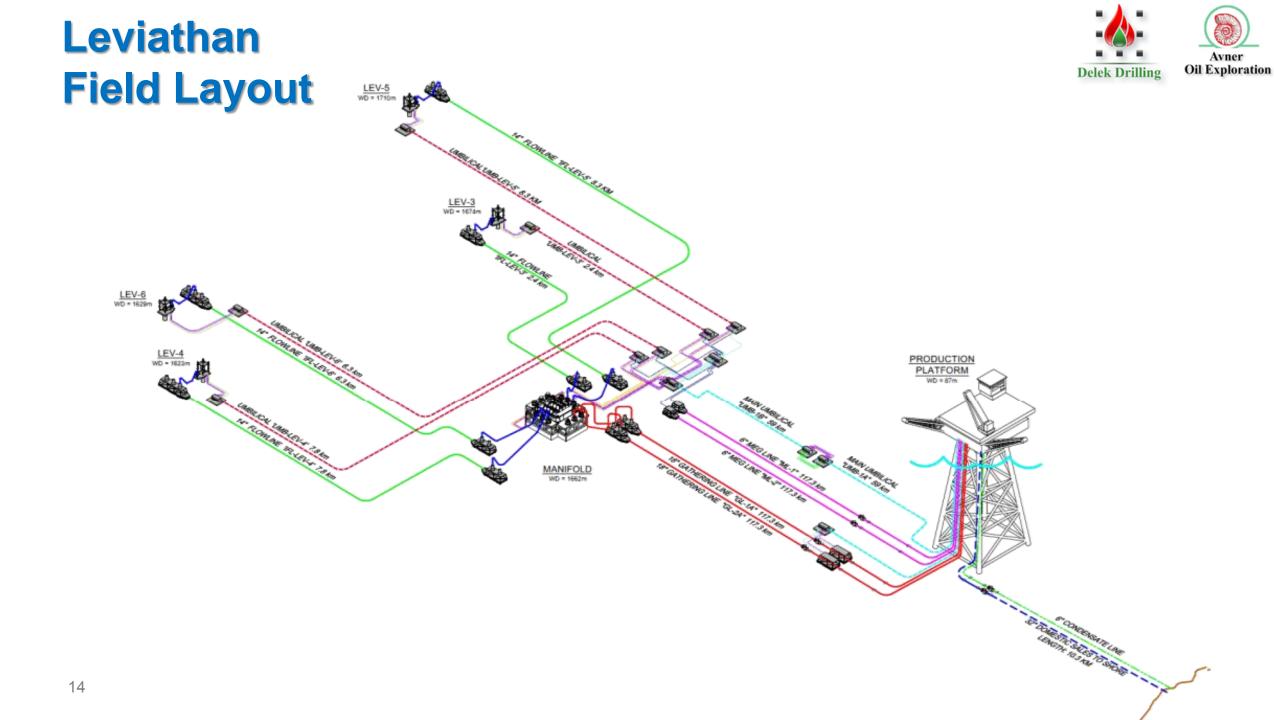


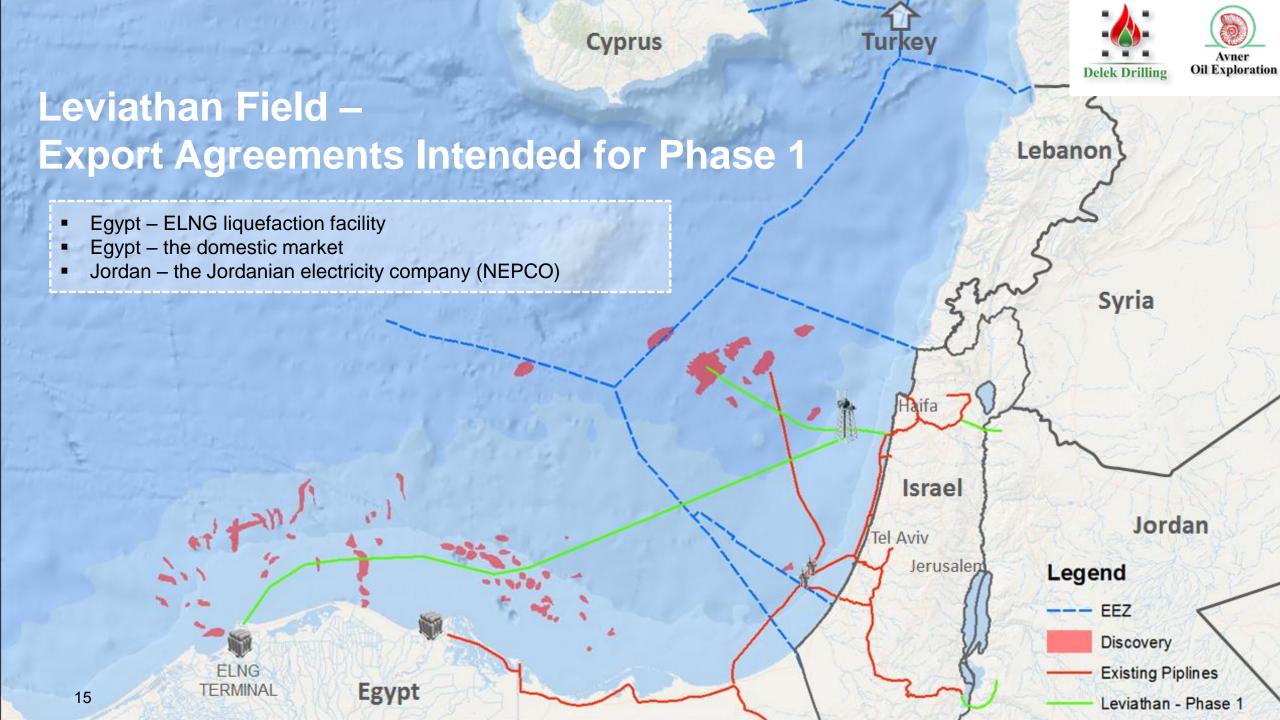
First stage to the domestic market, Jordan and the P.A. 1,200 mmcfd (approx. 12 BCM/Y)



Second stage by adding an export module of 900 mmcfd Total capacity of 2,100 mmcfd (approx. 21 BCM/Y)

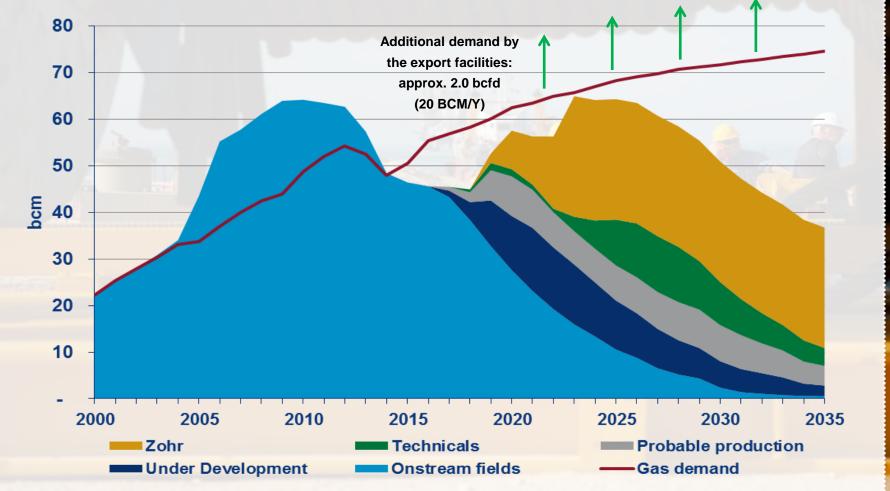












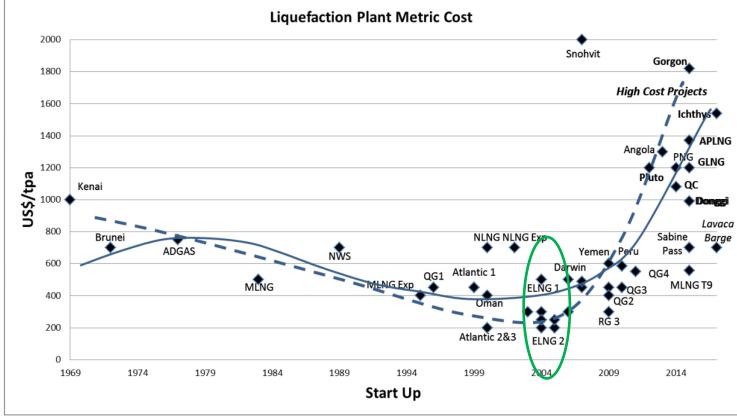
Aggregate demand compared to local production in Egypt, including production from Zohr field

Source: Wood Mackenzie. Yet to find not included. Gas demand excludes exports.

# The Competitive Advantage of the Egyptian LNG Facilities



#### Figure 16: Liquefaction Plant Metric Cost



Source: The Oxford Institute for Energy Studies

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# Leviathan: ELNG Agreement

Export of gas from Leviathan to ELNG liquefaction terminal

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- Anchor agreement for the first stage of Leviathan Reservoir's development
- ELNG terminal consumes more than 1.1 bcfd (11 BCM/Y)
- LOI agreement signed with BG for the purchase of natural gas for 15 years
- Gas piping through a new and designated underwater pipeline
- TCQ: 3.7 TCF (105 BCM); ACQ: 700 mmcfd (7 BCM/Y) or more
- Status: examining the possibility of increasing the annual quantity and the total purchased quantity as well as extending the term of the agreement
- Aiming to sign agreement in upcoming months



Ownership	ELNG 1	ELNG 2
Shell (BG)	35.5%	38%
PETRONAS	35.5%	38%
ENGIE	5%	
EGAS + EGPC	24%	24%

**Oil Exploration** 

**Delek Drillin** 

## Natural Gas Supply To Egyptian Domestic Market Based On EMG Infrastructure



- In March 2015 an agreement was signed for natural gas sale from Tamar to Dolphinus Holdings
- Natural gas supply is based on existing infrastructure (EMG pipeline)
- A 7-year agreement that includes a minimum-supply undertaking of 5 BCM during the first 3 years
- Daily amount of up to 250 mmcfd
- Gas supply in this agreement is based on the excess volume of gas from Tamar after supplying Israeli market demand (interruptible-type agreement)
- Price linked to Brent with a fixed floor price
- A license to export from the Tamar project to the Egyptian domestic market has been obtained
- The agreement is subject, *inter alia*, to a transmission agreement being signed between Dolphinus and EMG

### Status:

 According to the buyer's estimation, gas supply under this agreement is expected to commence in the upcoming months

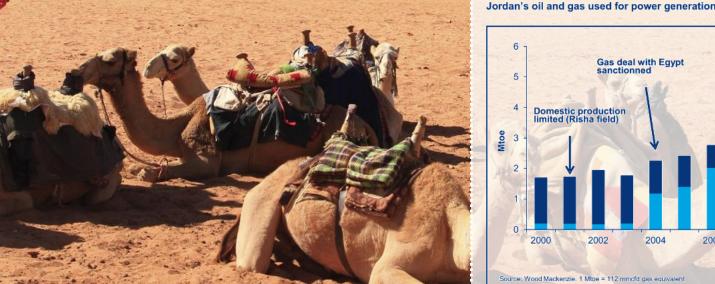


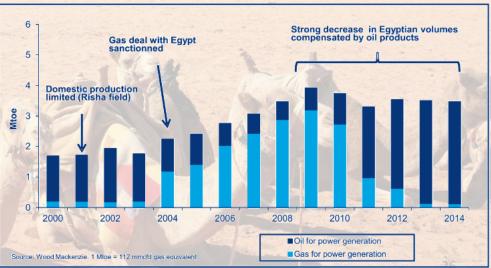


## Jordan – Natural Gas Market



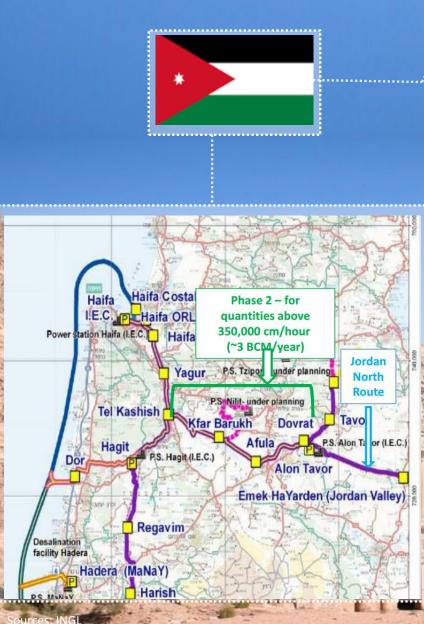
- Volume of natural gas consumption in Jordan, 2009 more than 300 mmcfd (3 BCM/Y)
- Negligible self-production approx. 20 mmcfd (0.2 BCM/Y)
- Natural gas serves as the basis for approx. 80% of the Jordanian market's electricity generation (under business-as-usual conditions)
- Natural gas from Egypt served as the only source of natural gas supply to Jordan
- 2010 saw the beginning of disruptions in Egyptian natural gas supply; in 2013, Egyptian gas supply stopped almost completely
- NEPCO the national electricity company owned by the Jordanian Government
- NEPCO signed agreements for LNG imports until 2019





## Jordan – Leviathan-NEPCO Agreement





- LOI agreement signed between Leviathan partners and NEPCO the Jordanian electricity company
- Anchor agreement for the Jordanian energy market, equivalent in importance to the IEC agreement in Israel
- Holds a twofold strategic and geopolitical importance to Israel and to Jordan
- Term of the agreement 15 years
- Total quantity (TCQ) approx. 1.6 TCF (45 BCM)
- Annual supply quantity (ACQ) 300 mmcfd (3 BCM/Y) with an option to increase annual quantities
- Delivery point border between Israel and Jordan
- Agreement expected to include backup by the Jordanian Government for NEPCO's obligations
  - National Outline Plan (TAMA) and detailed plan up to Jordanian border approved
  - Estimated schedule for completion of the transmission pipeline to the Jordanian border and connection to the Jordanian system Q1/2018

Binding agreement expected to be signed in

upcoming months





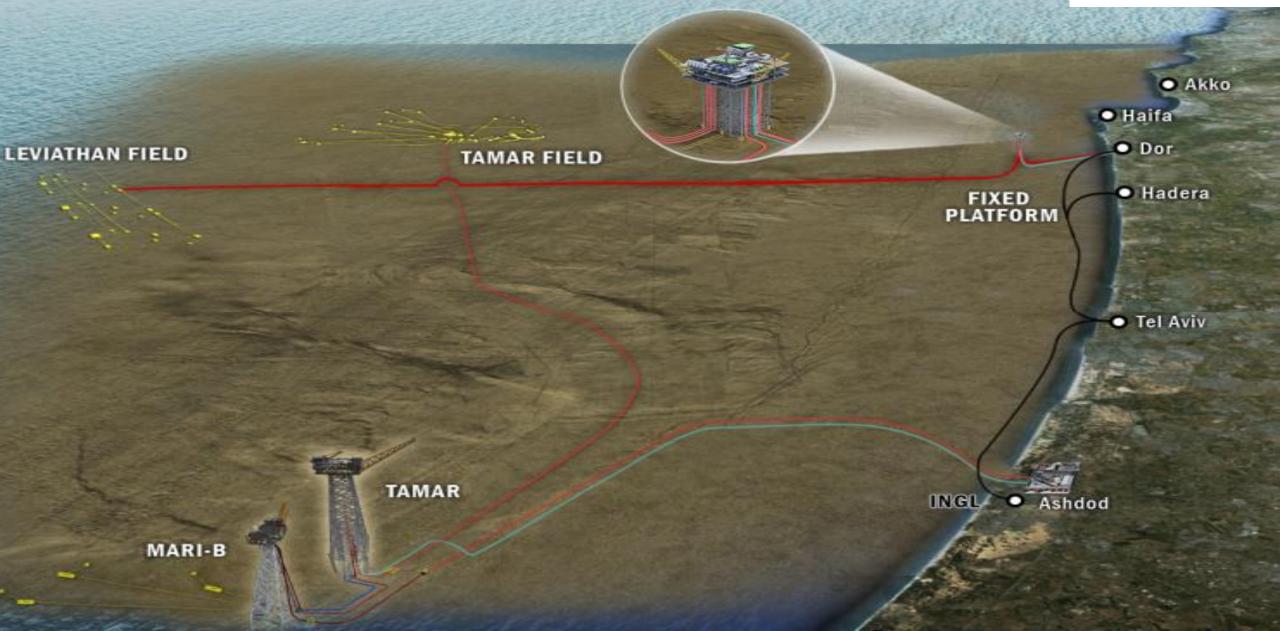
**Oil Exploration** 



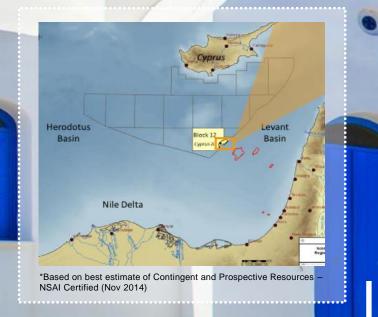
- Turkey is completely dependent on natural gas import approx. 99% of gas is imported
- Approx. 84.5% imported by pipeline, approx. 14.5% imported as LNG
- Decreasing European domestic natural gas production
- Natural gas pipe from Leviathan to Turkey:
  - Approx. 500-550 km Via. Cypriot EEZ
  - Water depth up to 2,250 m
  - First stage 800 to 1,000 mmcfd to Turkish market
  - Second stage additional 800 to 1,000 mmcfd to European markets
- Discussions have been held with leading Turkish companies
- Ongoing and continuous contact with officials in the Turkish Government

# The Vision: Leviathan Start Up by 2019





# Cyprus Block 12, Identity Card



- Significant gas discovery of approx. 4.5 TCF (129 BCM)
- First discovery in Cyprus
- Located approx. 168 km south of Limassol
- Water depth approx. 1,700 m
- Partners: Noble Energy 35%, Shell (BG) 35%\*, Delek Drilling 15%, Avner Oil Exploration 15%

\*The Transfer of rights from Noble Cyprus to BG has been completed on January 2016

# Cyprus – Block 12

### **Development Plan**

- Development plan outline submitted to Cypriot Government in June 2015 with an application for a declaration of commerciality
- Including a floating production facility with a supply capacity of 800 mmcfd
- Gas sale from exit point of production facility, with the pipes owned by a third party

### Target Markets

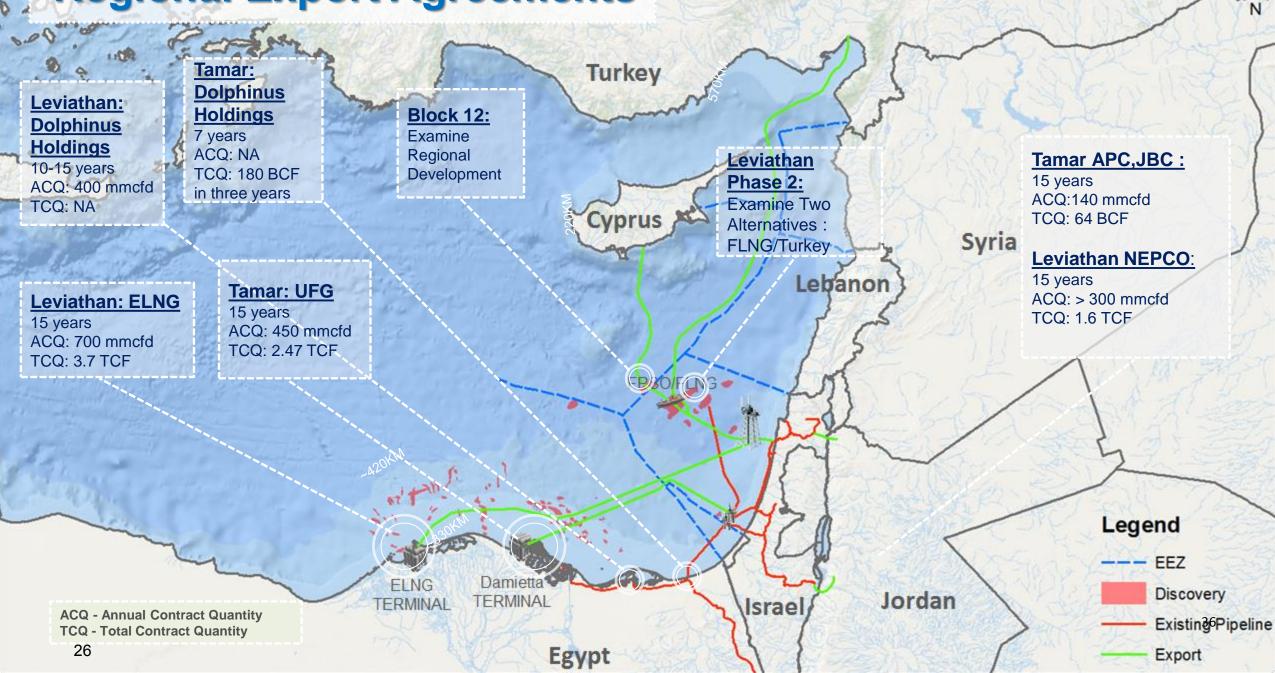
- Cyprus: Domestic market 60-100 mmcfd
- Egypt: Domestic market + supplementation of supply to liquefaction facilities: Damietta, ELNG

#### Marketing

- RFP process launched, which includes approaching Egyptian companies – local market and LNG players
- Process launched vis-à-vis DEFA for gas sale to local market



# **Regional Export Agreements**



# **Financially** Ready For The Next Challenge Strong balance sheet

- Long-term, limited recourse-type debt based on significant revenues from the Tamar reservoir only
- No debt tied to the Leviathan reservoir or to Aphrodite
- High cash reserves
- Well-established and stable cash flow
- Low interest environment

## **Financially** Ready For The Next Challenge (cont')

### Leviathan financing

- As of the date of the Commissioner's notice (December 2014), the Partnerships were in final stages of negotiations for the framework agreements for the financing of their share in the Leviathan development project, in the amount of \$2 billion
- An update to the documents will be required once the Gas Framework is finalized
- Foreign and local banks are demonstrating brisk demand to participate in the financing

### Additional financing based on UFG cash flow

- Tamar bonds are secured by a cash flow from all Tamar agreements (both current and future)
- The model used for the bond issuance is based on a scenario of up to 9.5 BCM per year
- Upon the signing of the UFG agreement, the adoption of an investment decision and commencement
  of the Tamar expansion, it will be possible to perform an additional financing round (in the context of
  the Tamar bonds or as financing based on surplus cash after Tamar bond service), in a considerable
  scope, to finance the investments in the expansion of Tamar and development of Leviathan

# Thank You

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