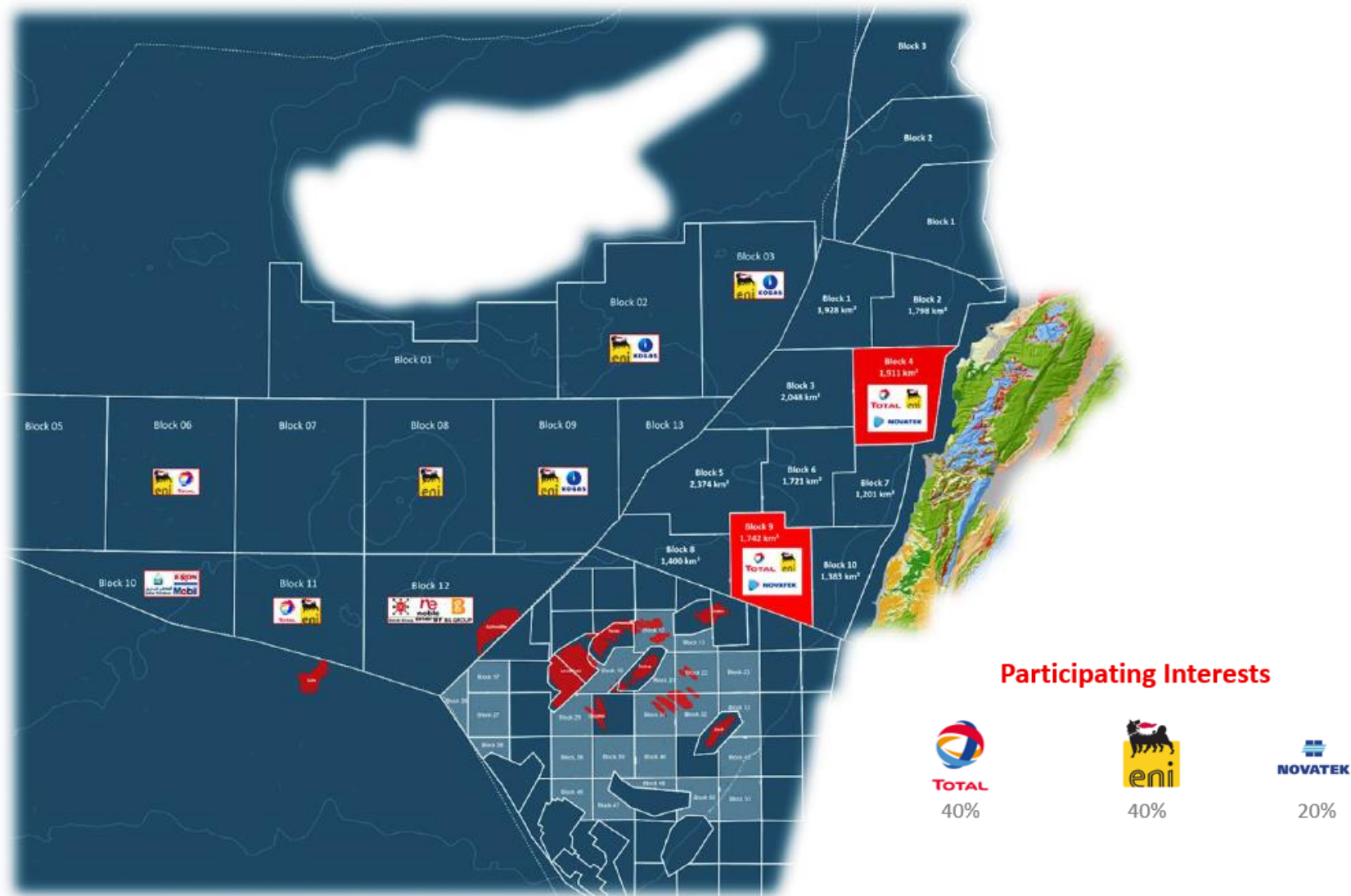


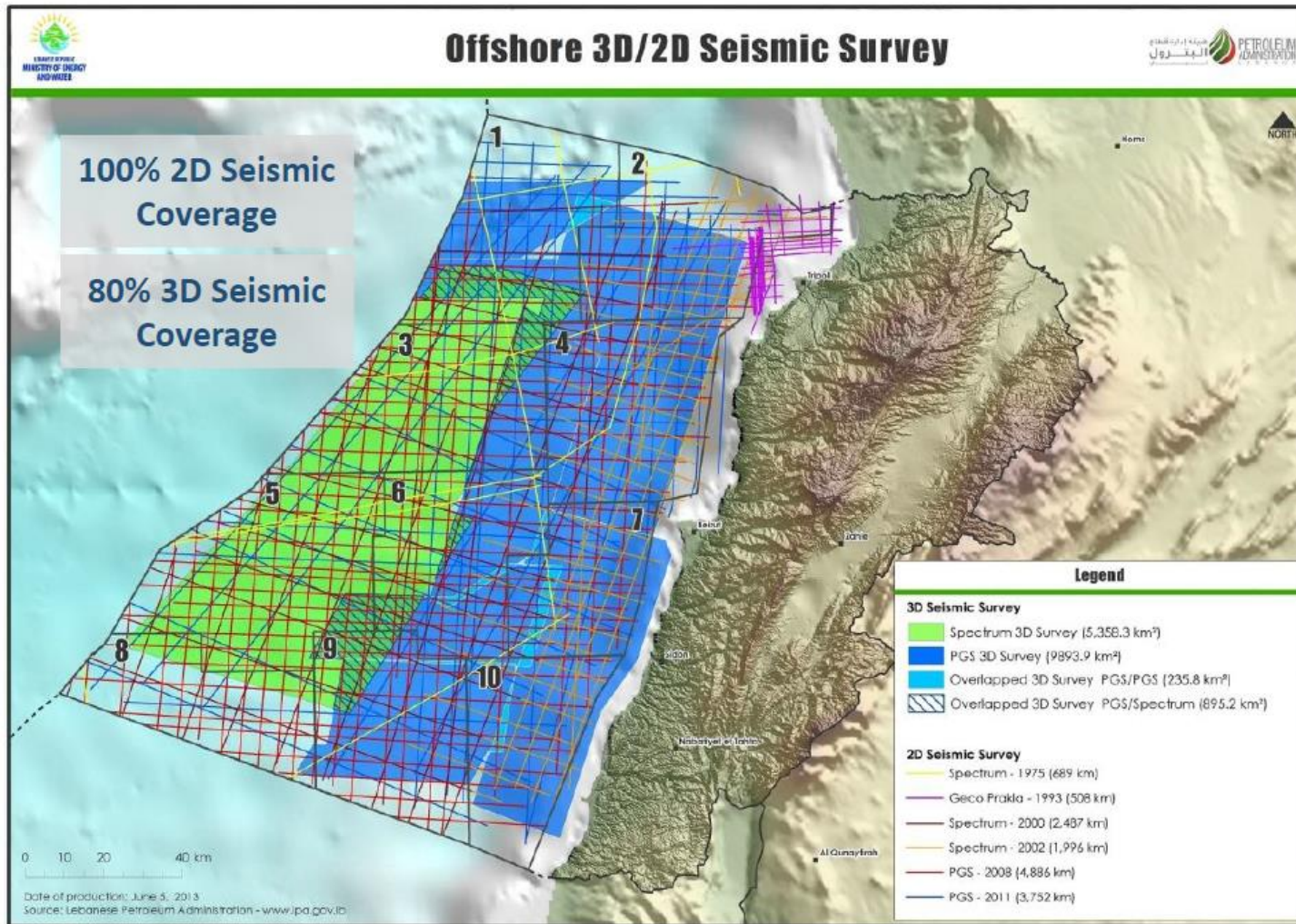
INVESTMENT OPPORTUNITIES FOR THE ENERGY SECTOR IN LEBANON



THE EAST MED REGION WITNESSED INCREASED INTEREST AND ACTIVITIES IN THE LAST DECADE



THE REGIONAL DEVELOPMENTS INCREASED THE INTEREST TO KICK-OFF THE SECTOR IN LEBANON



Seismic surveys were acquired across the Lebanese EEZ based on multi-client contracts.

ATTRACTIVENESS FACTORS

- ✦ Clarity, Predictability and Stability
- ✦ Three layers of governance
- ✦ Offshore Petroleum Resource Law
- ✦ Petroleum Activities Regulations
- ✦ Production Sharing Regime

- ✦ Published Evaluation Criteria for Prequalification, Bidding and Award
- ✦ Extractive Industries Transparency Initiative (EITI)
- ✦ Right of Access to Information Law
- ✦ Enhancing Transparency Law



- ✦ Progressive Fiscal System
- ✦ Ease upfront Liabilities and Fair Revenue Sharing
- ✦ No Signature / Production Bonus
- ✦ Modern Petroleum Tax Law

- ✦ Multi client Surveys
- ✦ Promising results from the Studies and interpretations
- ✦ Structural and stratigraphic traps
- ✦ Clastics and carbonates
- ✦ Biogenic gas and oil

- ✦ Robust domestic market
- ✦ Proximity to large markets
 - Regional
 - International

32 DOUBLE TAXATION TREATIES

Armenia
Belarus
Bulgaria
Cyprus
Czech
Republic
France
Italy
Malta
Poland
Romania
Russia
Ukraine

Europe

Bahrain
Iran
Jordan
Kuwait
Malaysia
Pakistan
Qatar
Sultanate of
Oman
Syria
Turkey
UAE
Yemen

Asia

Algeria
Egypt
Gabon
Morocco
Senegal
Sudan
Tunisia

Africa

Cuba

America

51 BILATERAL INVESTMENT TREATIES

Europe

Armenia
Austria
Belarus
Belgium/Luxembourg
Bulgaria
Cyprus
Czech Republic
Finland
France
Germany
Greece
Hungary
Iceland
Italy
Netherlands
Romania
Russia
Slovak Republic
Spain
Sweden
Switzerland
Ukraine
United Kingdom

Asia

Azerbaijan
Bahrain
China
Iran
Jordan
Korea (South)
Kuwait
Malaysia
Pakistan
Qatar
Sultanate of Oman
Syria
Turkey
Yemen
U.A.E
OPEC Fund

Africa

Benin
Chad
Egypt
Gabon
Guinea
Mauritania
Morocco
Sudan
Tunisia

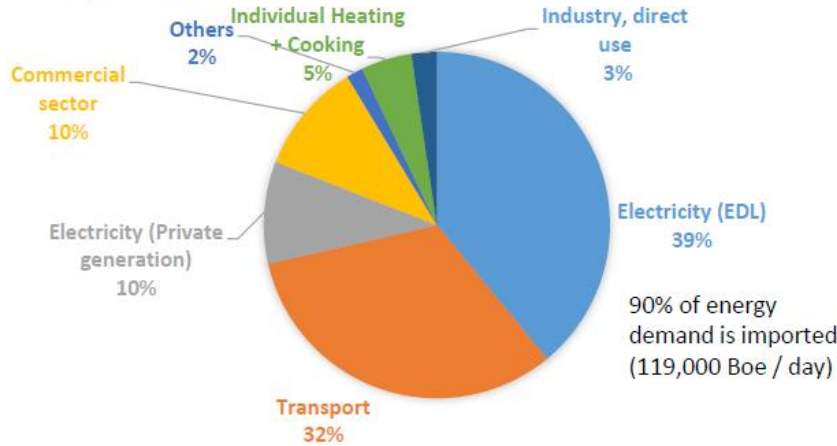
America

Canada
Chile
Cuba

LOCAL ENERGY DEMAND IN LEBANON

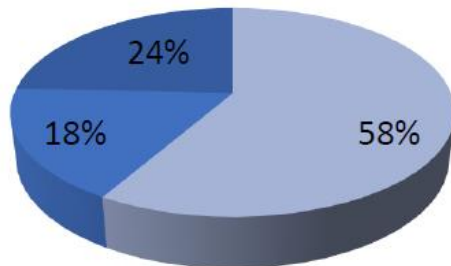
Primary Energy Consumption by Sector

Source: IPT, Lebanese customs 2012



Lebanese Industries Energy Demand

Industrials Fuel bill spending breakdown



Fuel Used

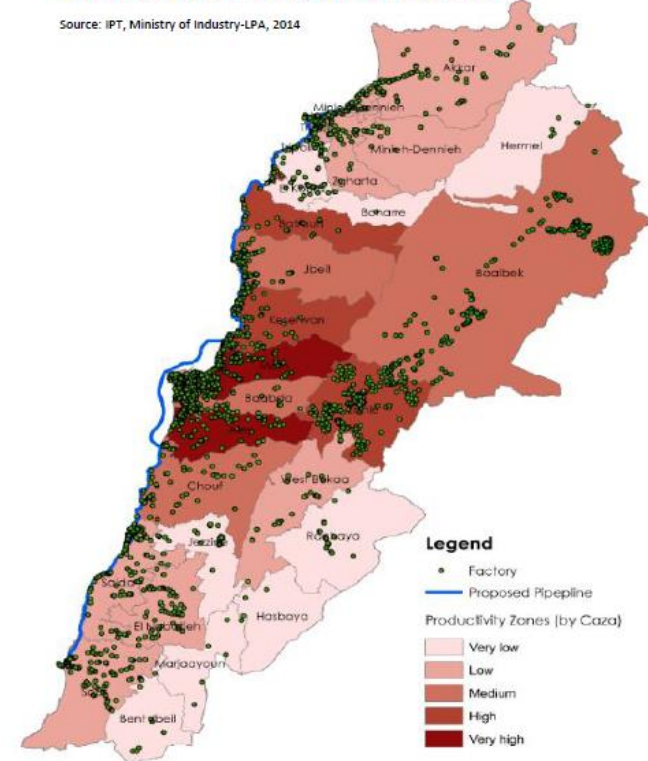
- LFO
- HFO
- Diesel
- LPG

All four types of fuel can be replaced by natural gas

Source: Ministry of industry, 2010

Lebanese Industrial Sector

Source: IPT, Ministry of Industry-LPA, 2014



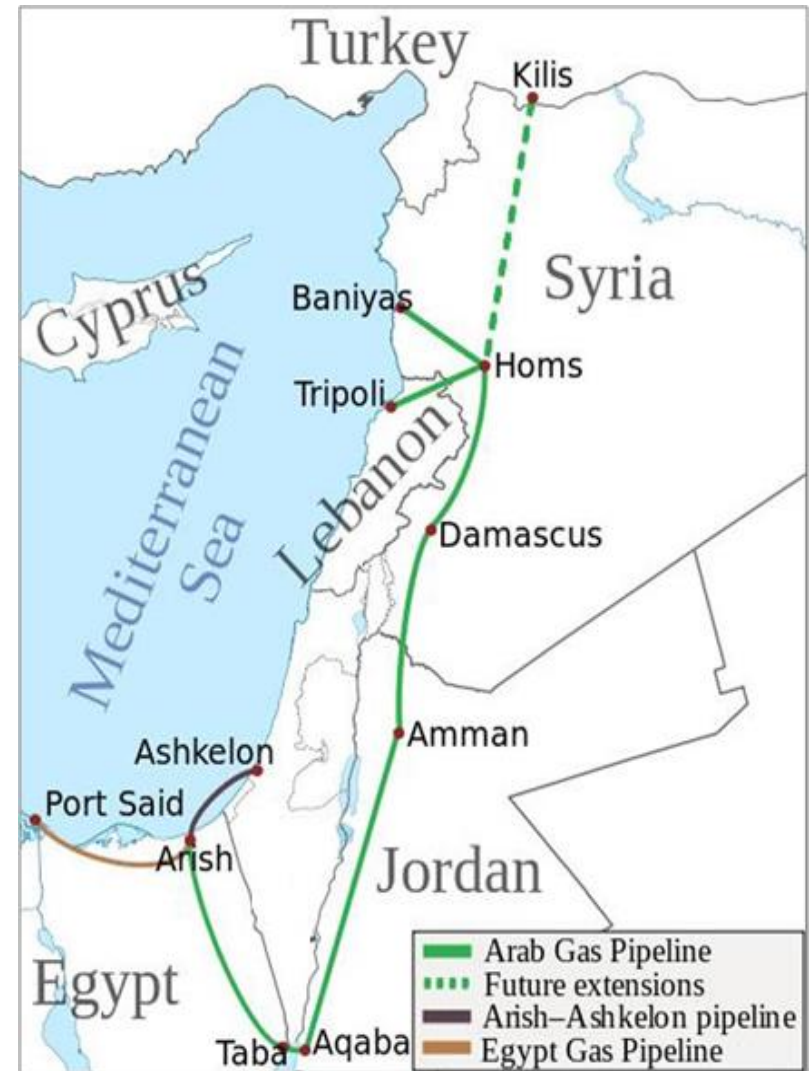
According to a survey made in 2008, there are 23 industrial categories in Lebanon, the main energy intensive industries:

- Food products and beverages
- Metal and Chemical products
- Rubber and plastic products
- Paper making, paper products
- Printing and Publishing

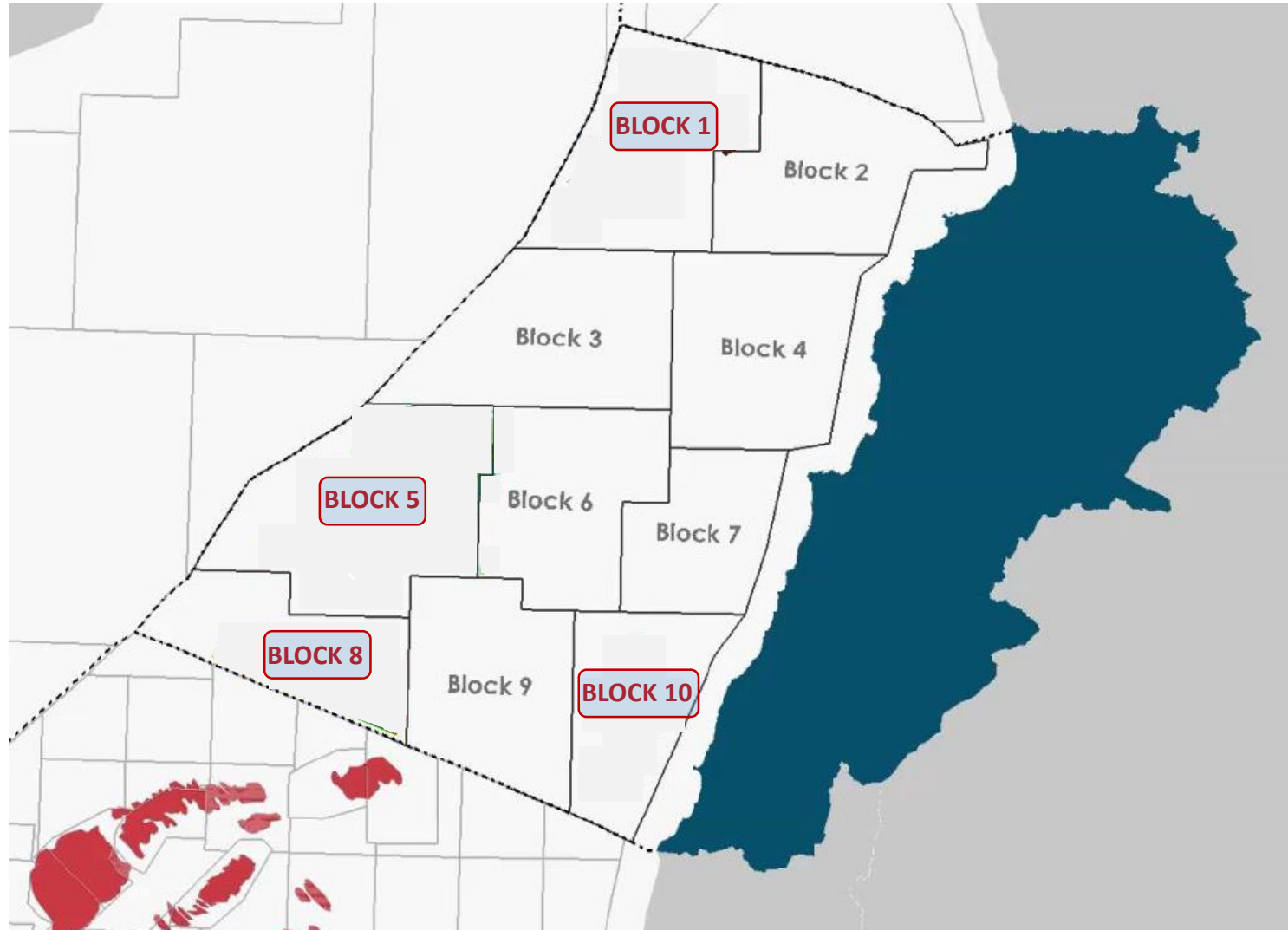
POTENTIAL EXPORT OPTIONS ONCE LOCAL DEMAND IS MET

Strategic geographical proximity and availability of infrastructure:

- Lebanese Natural Gas can easily reach Syria, Jordan and Egypt through the Arab Gas Pipeline.
- Turkey can be reached by an extension of the Arab Gas Pipeline or through a short offshore shallow water pipeline.
- The EU markets can be reached through Turkey or Cyprus.
- Lebanon can tie-in to any regional collaboration passing through Cyprus.
- Identify projects of common interest to monetize discoveries and export gas to EU.



LEBANON'S SECOND LICENSING ROUND – BLOCKS TO BE OFFERED



LEBANON'S SECOND LICENSING ROUND – TENTATIVE CALENDAR

Q1 2019

- Prequalification Process

Q2-Q3 2019

- Bidding Process

Q4 2019

- Bid Evaluation

Q4 2019

- Award

LEBANON'S SECOND LICENSING ROUND – ELIGIBILITY CRITERIA

RIGHT HOLDER - OPERATOR

Legal	Financial	Technical	QHSE
<ul style="list-style-type: none">• Joint stock company conducting Petroleum Activities	<ul style="list-style-type: none">• Total assets of USD 10 Billion	<ul style="list-style-type: none">• Continued experience in drilling in waters >300m• Continued experience in development >300m• Continued experience in offshore production	<ul style="list-style-type: none">• Established & implemented QHSEMS

A minimum of 3 companies (un-incorporated joint venture) per EPA per Block. Companies will need to prequalify individually.

LEBANON'S SECOND LICENSING ROUND – ELIGIBILITY CRITERIA

RIGHT HOLDER – NON-OPERATORS

Legal	Financial	Technical	QHSE
<ul style="list-style-type: none">• Joint stock company conducting Petroleum Activities	<ul style="list-style-type: none">• Total assets of USD 500 Million	<ul style="list-style-type: none">• Experience in upstream exploration and production	<ul style="list-style-type: none">• Established & implemented QHSEMS



LNG IMPORT TERMINAL PROJECT (FSRU) & IPP

- The principal market for natural gas in Lebanon is the **Power Sector**.
- There are currently two operating Combined Cycle Gas Turbine (“CCGT”) plants, 465 MW each of nominal capacity, at Beddawi in the North and Zahrani in the South.
- Three separate offshore LNG import regasification terminals:
 - One in **Beddawi** to serve power plants in Beddawi/Tripoli area.
 - One in **Selaata** to serve power plants in Selaata and Zouk areas.
 - One in **Zahrani**, to serve power plants south of Beirut, in Jieh, Zahrani and Tyre.
- Four onshore pipeline sections to connect:
 - Selaata with Beddawi and Zouk
 - Zahrani with Jiyeh and Tyre
- 1000MW IPP projects (Selaata & Zahrani)

Lebanon LNG Terminal Sites



- **Status: 8 pre-qualified bidders submitted their bids. Bids are currently under evaluation.**

ELECTRICITY SECTOR - GENERATION

- **Beddawi:**

- Planned 569 MW Beddawi CCGT (assumed to start operation in 2020)

- **Selaata:**

- Planned 500-600 MW Selaata I CCGT (assumed to start operation in 2022)
- Planned 500-600 MW Selaata II CCGT (assumed to start operation in 2024)

- **Zahrani:**

- Planned 500-600 MW Zahrani CCGT (assumed to start operation in 2022)
- Planned 500 – 600 MW Jieh Conversion (CCGT) (assumed to start operation in 2024)



ELECTRICITY SECTOR – RENEWABLES

Wind Power:

- Lebanon signed its first-ever power purchase agreement (PPA) for wind energy with three separate consortiums that will build and operate wind farms in Akkar, in the north of the country for a total generation capacity of 180 MW.

Solar Power:

- Lebanon's Center for Energy Conservation (LCEC) has issued an expression of interest for the tender involving the construction of 300 MW of solar PV plants combined with storage systems.

