

Overview of the Investment in the Yemen Energy Sector

Presentation
at

**ENERGY CHARTER EXPERT MEETING
REMOVING PRE-INVESTMENT BARRIERS IN
ENERGY**

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By

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Where About is Yemen?

Yemen Lies in the Sothern Tip of the Arabian Peninsula Bordering Saudi Arabia from the North, Sultanate Oman fro the East, the Red Sea from the West and the Arabian Sea from the South



Yemen General Topography

Area of Yemen About 550,000 Square Km



Yemen General Topography

Diverse Physical and Topographical Features

Mountain Chains and Inter-Mountain Wadies



Yemen General Topography

Diverse physical and topographical features

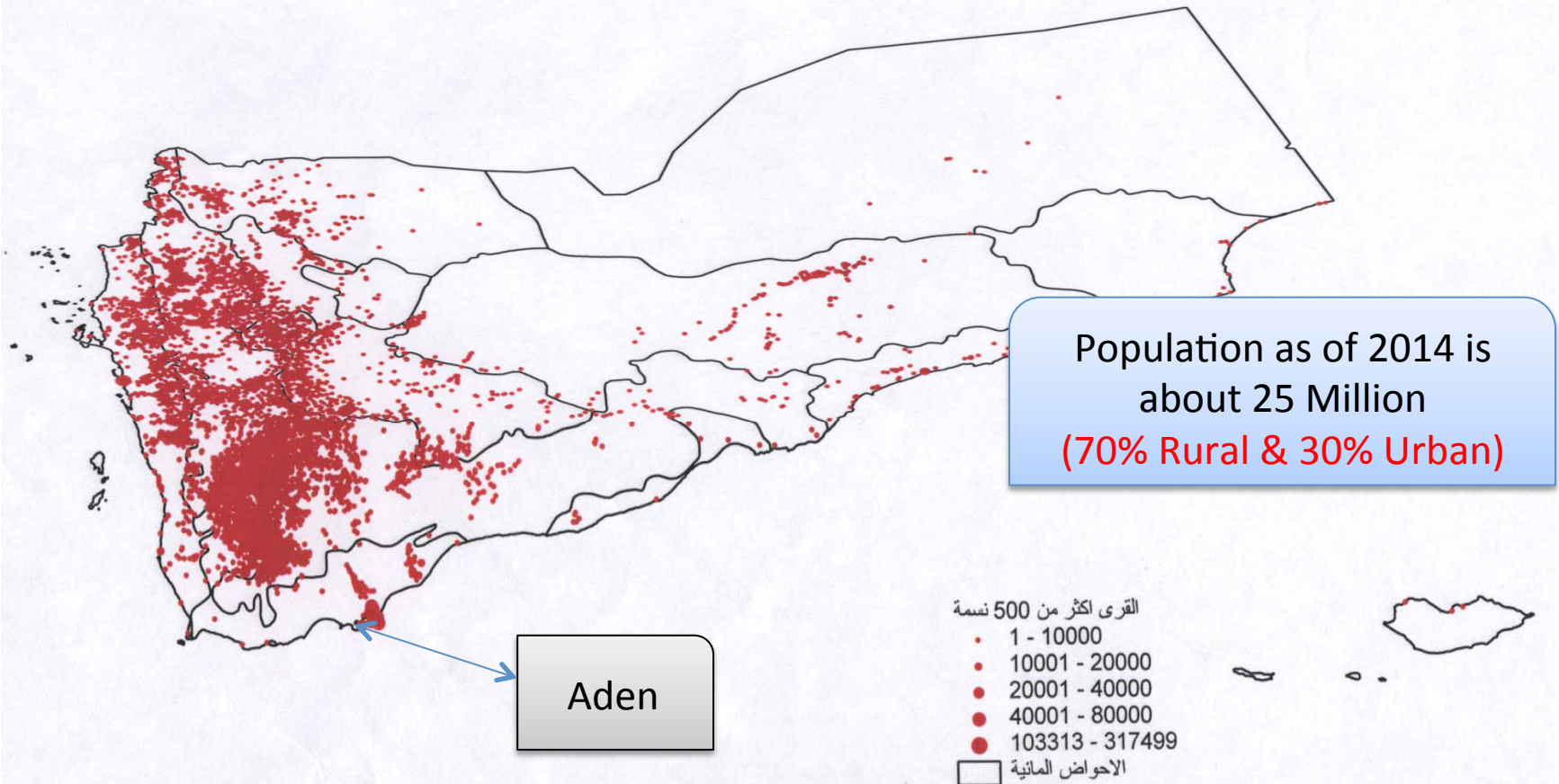
Coastal Plains

Semi-Desert Areas



Yemen Population Distribution

الاحواض المائية
والقرى أكثر من 500 نسمة



80 % of the population over 20% of the land

Sana'a Heritage City and Yemen's Capital

- Capital of Yemen
- UNESCO World Cultural Heritage
- The Cultural Capital of the Arabian World 2004
- In the 19th Century “Largest and Most Beautiful Town of Arabia”
- Altitude: 2400 - 2700m
- Inhabitants 2.5 Mill. (2012)
- Annual Population Growth 5.5% (now) Due to Internal Migration



Yemen's Macro-Economics

As of 2014 (Estimate)

- GDP (Official Exchange Rate) : **\$43.23 billion**
- GDP (Real Growth Rate): **4.8%**
- GDP (Per Capita) (estimate): **\$1,800**
- Gross National Saving: **6.3% of GDP**
- Reserves of Foreign Exchange and Gold: **\$4.688 billion**
- External Debts: **\$8.002 billion**
- Public Debts: **51% of GDP**

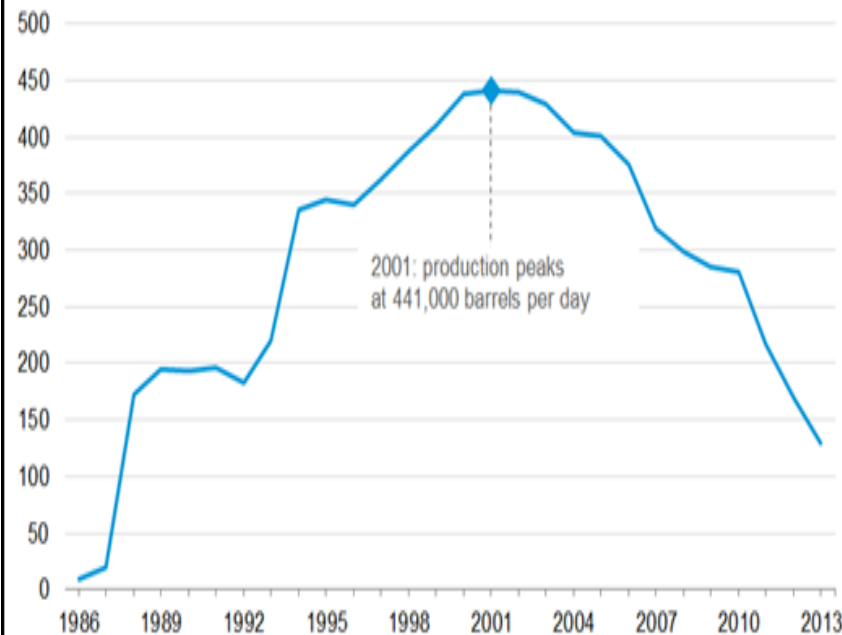
Yemen Energy Resources

(Crude Oil)

Annual Crude Oil Production

Yemen annual crude oil and lease condensate production, 1986-2013

thousand barrels per day



Source: U.S. Energy Information Administration

Daily Crude Oil Production

- Began Producing in 1986
- 1988 ➡ 174,000 (bbl/d)
- 1995 ➡ 350,000 (bbl/d)
- 2001 ➡ 440,000 (bbl/d)
- 2008 ➡ 300,000 (bbl/d)
- 2014 ➡ 100,000 (bbl/d)

Yemen Energy Resources

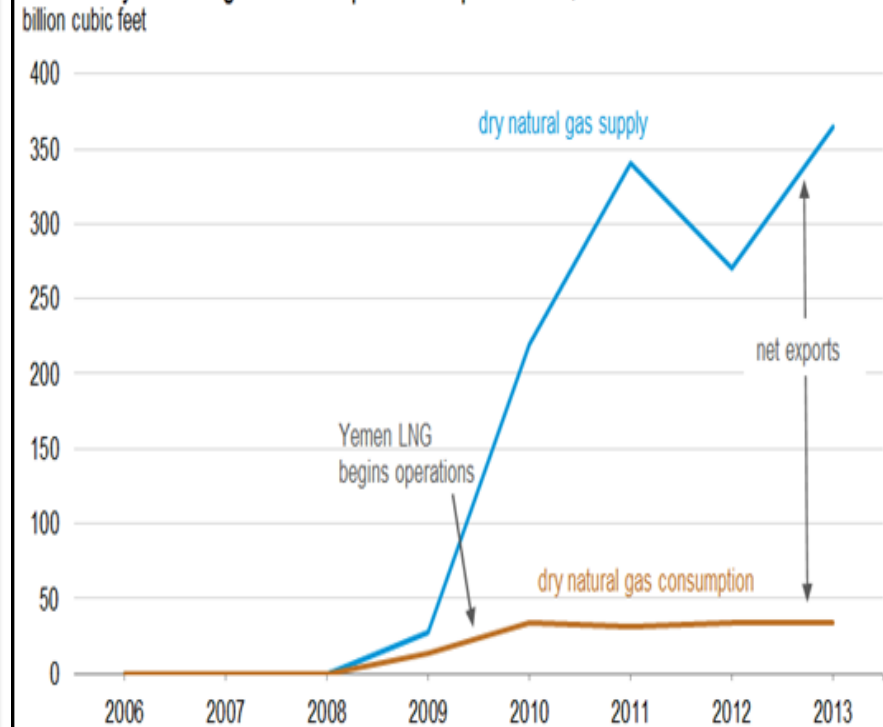
(Natural Gas)

Natural Gas Production

- 1990 Began Production
- 1993 to 2009 – LNG Facility Opened and 98% of Natural Gas Produced Reinjects
- 2009 Began Commercial Production of Dry Natural Gas
- 2009 Production - 28 Bcf/y
- 2013 Production - 365 Bcf/y
- 2013 Exported - 330 Bcf/y

Annual Natural Gas Production

Yemen dry natural gas consumption and production, 2006-13



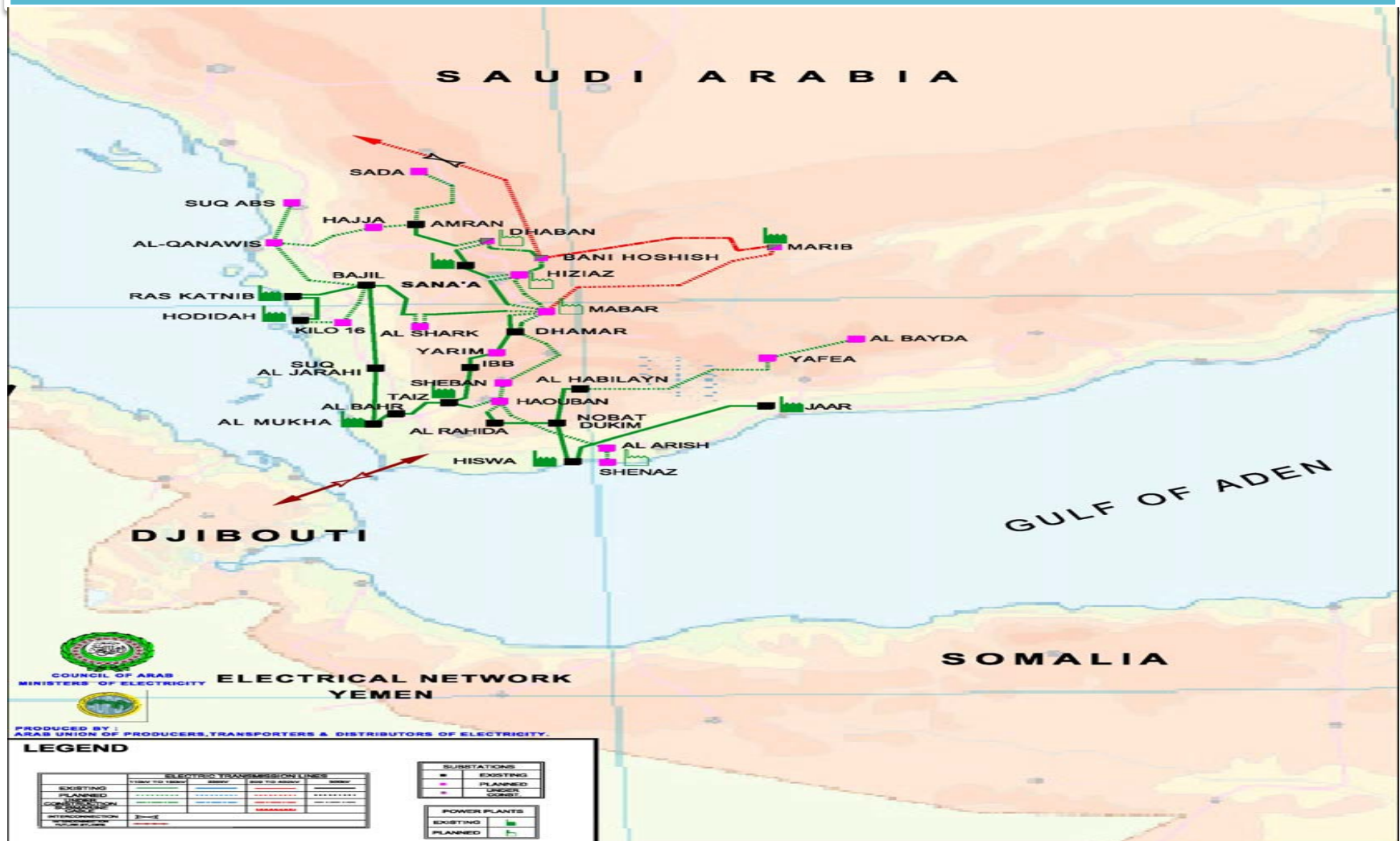
Note: 2013 data are preliminary estimates.
Source: U.S. Energy Information Administration

Future Out Look of the Energy Sector (Electricity Generation)

- Presently Only **41%** of the population are Connected to the National Grid
- Need to invest on Electrical Power Generating Plants to Alleviate Capacity from **Present 1,500MW** to **3,500MW by 2020** to Meet Basic Demands
- Industrial Demand Needs Further **1,500MW**
- Total Needs by 2020 not Less than **5,000MW** of Electrical Power Generation

Future Out Look of the Energy Sector

(Electricity: Connection With Saudi Arabia and Djibouti)

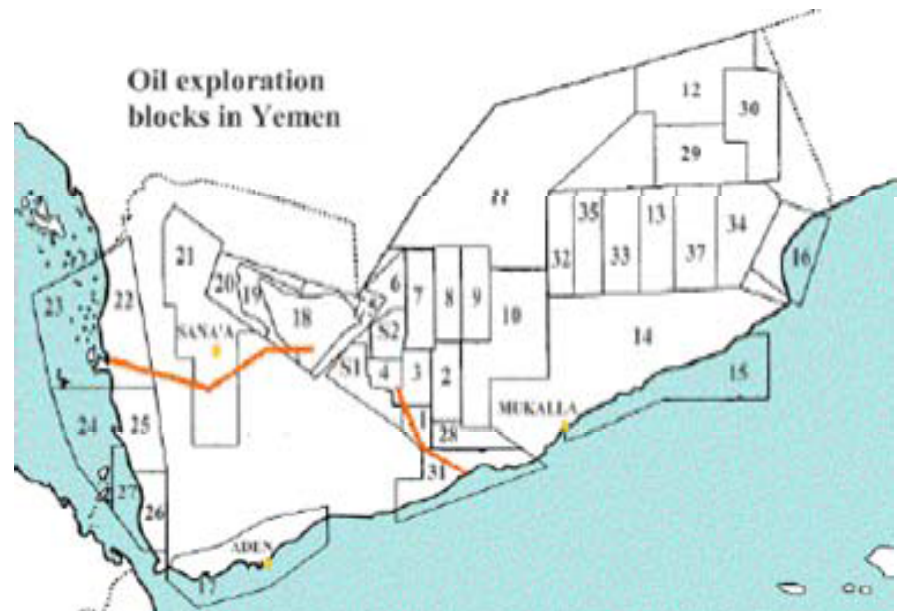


Future Out Look of Yemen Energy Sector

(Natural Gas and Crude Oil: Exploration)

- Gas Reserves are All Associated With Oil and are Primarily Located in Blocks 18, 5, S1, S2 and 20.
- 432 BCM of Proven Reserves in Blocks 5, S1, S2 and 20
- Up to 171 BCM Available for Domestic Use After the Demand for LNG Has Been Satisfied With 260 BCM (9.2 tcf) From Block 18

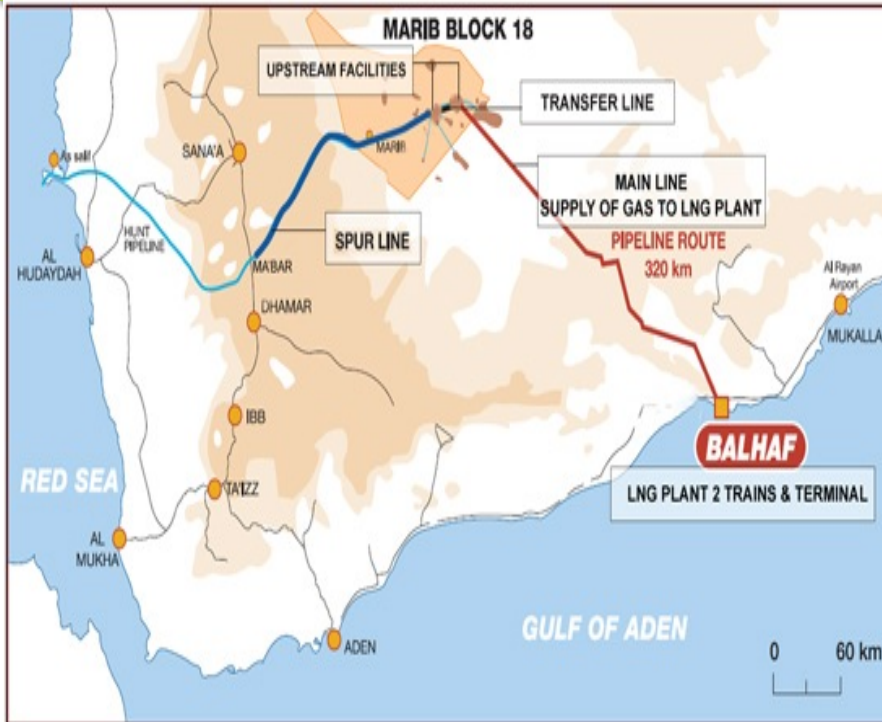
Source: Letter from Ministry of Oil and Minerals to the Ministry of Finance, January 2009



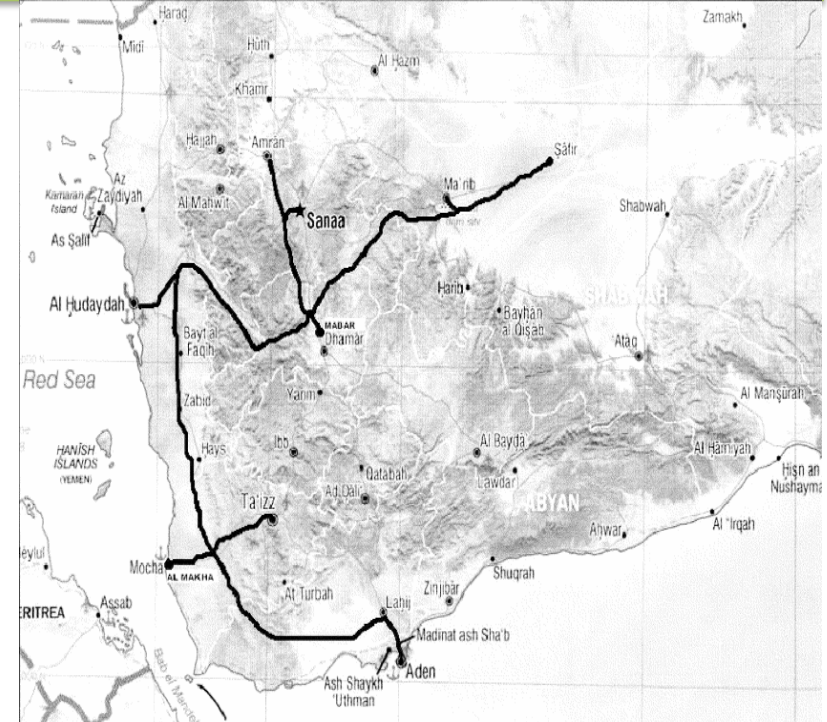
Future Out Look of Yemen Energy Sector

(Natural Gas: Future Gas Pipe line Connections)

Route of the Present Pipeline to Supply the LNG Terminal



Planned Future Pipeline Expansion Route



EU – MENA Future Energy Trade Potential

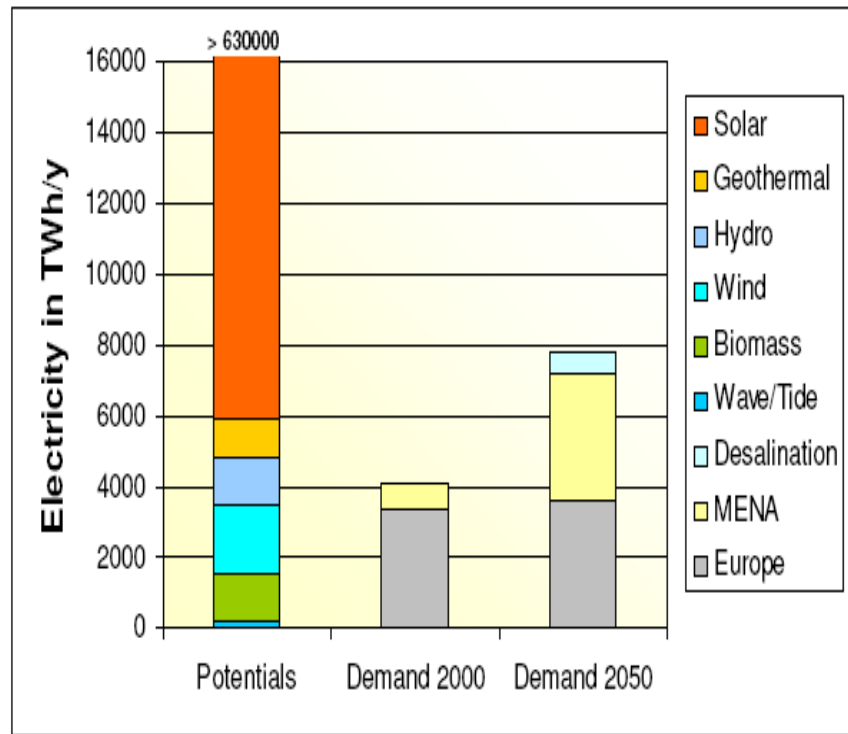
Renewable Potential in the Middle East

- Large potential for Renewable Resources in the Middle East - Untapped.
- Solar Power; its Potential in the MENA Region Alone Far Exceeds Global Electricity Demand¹.

¹ Concentrating Solar Power in the Mediterranean Region
http://www.dlr.de/tt/desktopdefault.aspx/tabid-2885/4422_read-6573/

Renewable Electricity Potential

Economic Renewable Electricity Potentials vs. Demand in EUMENA

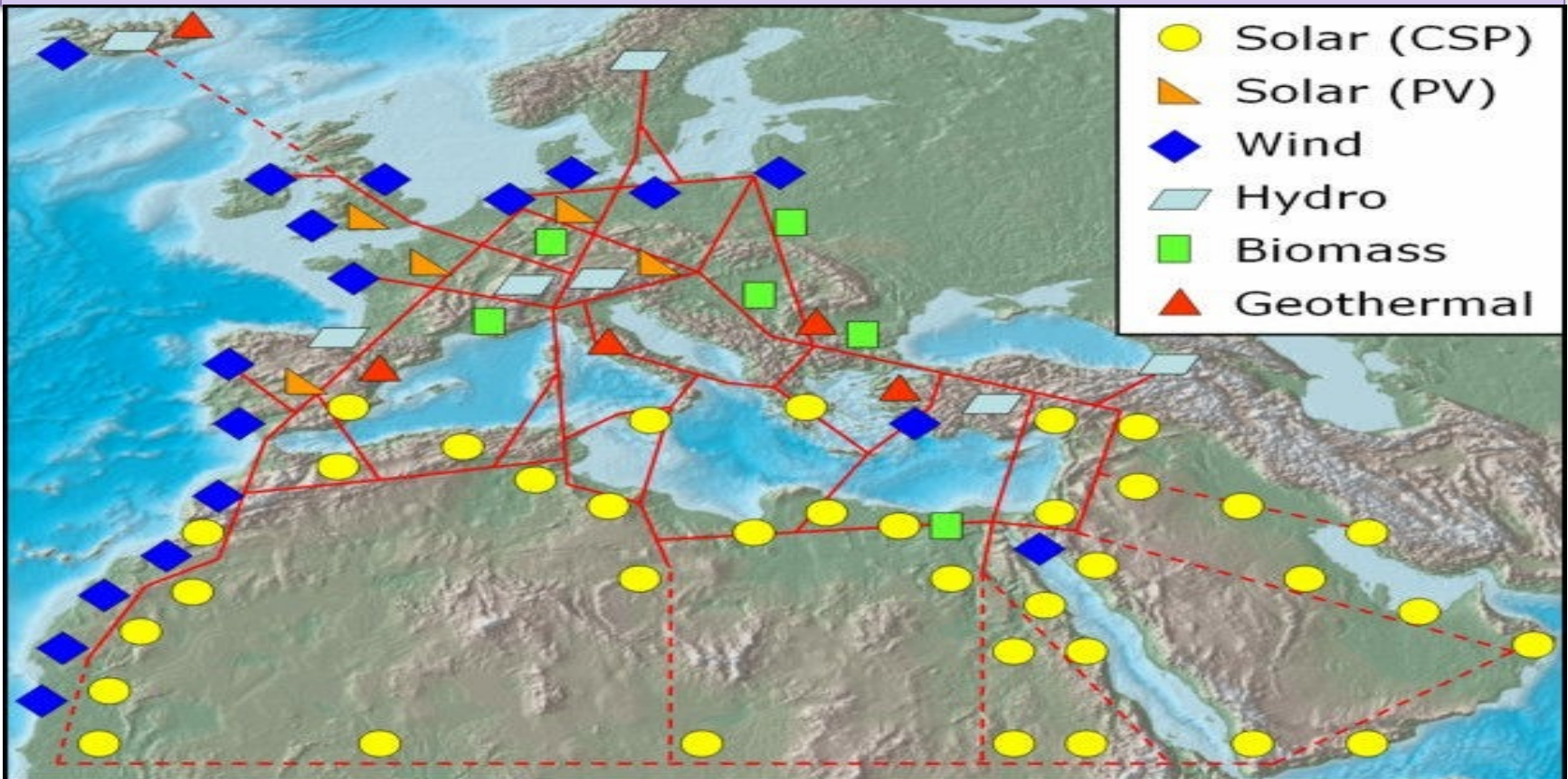


EU - Year 2050 Electricity Demand

- MENA Could Provide the EU with 700,000 GW-hours per Year of Electricity by 2050 Through an Interconnected Electric Grid
- By 2050, Twenty Power Lines with 5,000 MW Capacity Could be Developed, Each Providing about 15 % of the European Electricity Demand by Solar Imports, Motivated by Their Low Cost of Around 5 €-cent/kWh

Source: Trans-Mediterranean Interconnection for Concentrating Solar Power
http://www.dlr.de/tt/desktopdefault.aspx/tabid-2885/4422_read-6588

Proposed Transmission Grid



Concentrating Solar Thermal Power (CSP):

- Solar heat storage for day/night operation
- Hybrid operation for secured power
- Power & desalination in cogeneration

Sketch of **High-Voltage Direct Current (HVDC)** grid: Power transmission losses from the **Middle East and North Africa (MENA)** to Europe less than 15%.

Power generation with CSP and transmission via future **EU-MENA** grid: 5 - 7 EuroCent/kWh
 Various studies and further information at www.TREC-EUMENA.net

Only 10 % of the Generated Electricity Will be Lost by HVDC Transmission from MENA to Europe over 3000 km Distance

Deserts as Powerhouses and Waterworks



Investment Climate in Yemen

“Laws”

- There are 3 Main Laws that Govern the Investment Climate in Yemen:
 1. Investment Law No (15) of 2010
 2. Tax Law No. (17) of 2010
 3. Customs Law No. (12) of 2010

Investment Climate in Yemen

“Guarantees (1/3)”

- Guarantees Provided by the Investment Laws:
 - No nationalization, reservation or seizure of investment projects
 - Equal treatment for Yemeni and foreign investors
 - The investors have the freedom to invest in any of the national sectors including the Energy Sector,

Investment Climate in Yemen

“Guarantees (2/3)”

- Protection of the intellectual property rights of the investor
- Foreign investors have the right to own property
- Freedom to transfer hard currency from and to Yemen

Investment Climate in Yemen

“Guarantees (3/3)”

- In the event of any dispute between the investor and the government the dispute may be referred to arbitration in accordance with the following rules:
 - The arbitration rules and procedures of any national or regional approved arbitration center; or
 - The applicable arbitration rules and procedures of the United Nations Commission on International Trade Law (UNCITRAL).

Investment Climate in Yemen

“Facilitation (1/2)”

- Facilitation Provided by the Investment Laws:
 - One-stop-shop services through GIA to obtain all information, services and legal requirements from the relevant governmental agencies for the establishment of projects,
 - The investor may hire foreign labor for his project,
 - The investor may obtain land to establish his project through GIA,

Investment Climate in Yemen

“Facilitation (2/2)”

- GIA assists investors in obtaining funding and guarantees for their projects,
- Matchmaking between local and foreign investors,
- All competent authorities and governors shall exert sufficient efforts and cooperate with the General Investment Authority to enforce the provisions of the Investment Law (15) of 2010 within the framework of the one-stop shop system.

Investment Climate in Yemen

“Exemptions and Incentives (1/4)”

- The Corporate Income Tax across sectors is 15% under the following conditions:
 - The investment capital should not be less than the equivalent of 3 million U.S. dollars while hiring not less than 100 local labor,
 - Investment projects should submit their tax files audited by a certified accountant,
 - The project should engage in the same activities as per its registration,

Investment Climate in Yemen

“Exemptions and Incentives (2/4)”

- The project should regularly pay all taxes including those related to wages,
- Project should be in the following sectors: infrastructure (energy, water and roads), transportation, health, IT, tourism, industry, agriculture and manufacturing,
- All projects in sectors not specified above will be subject to 20% corporate income tax except telecommunication and tobacco,

Investment Climate in Yemen

“Exemptions and Incentives (3/4)”

- Customs Exemptions for projects shall apply as follows:
 - Exemptions provided for in the international conventions in force to which Yemen is a signing party, and the agreements concluded with international and regional organizations, or foreign parties that have completed the constitutional requirements,
 - Production inputs for industrial projects are exempt at a rate of 50% of duties during the lifecycle of the project

Investment Climate in Yemen

“Exemptions and Incentives (4/4)”

- Fixed and imported assets to establish investment projects including machinery, equipment, fishing and marine freight vessels and aircraft for air transportation, as per the lists prepared and submitted by the General Investment Authority,