The Middle East Power Grab: For Export Only

Rebuilding Trust: Effective Board Governance
in Time of Public Scrutiny
29 July 2015
Aspen, CO

The Global Energy Landscape is Changing

- A producer/consumer flip
- Increasing energy demand in developing economies means that all energy sources are being considered
- Will have powerful economic and political consequences.
- In the Middle East, it may mean a dash toward civilian nuclear power. Are we ready?

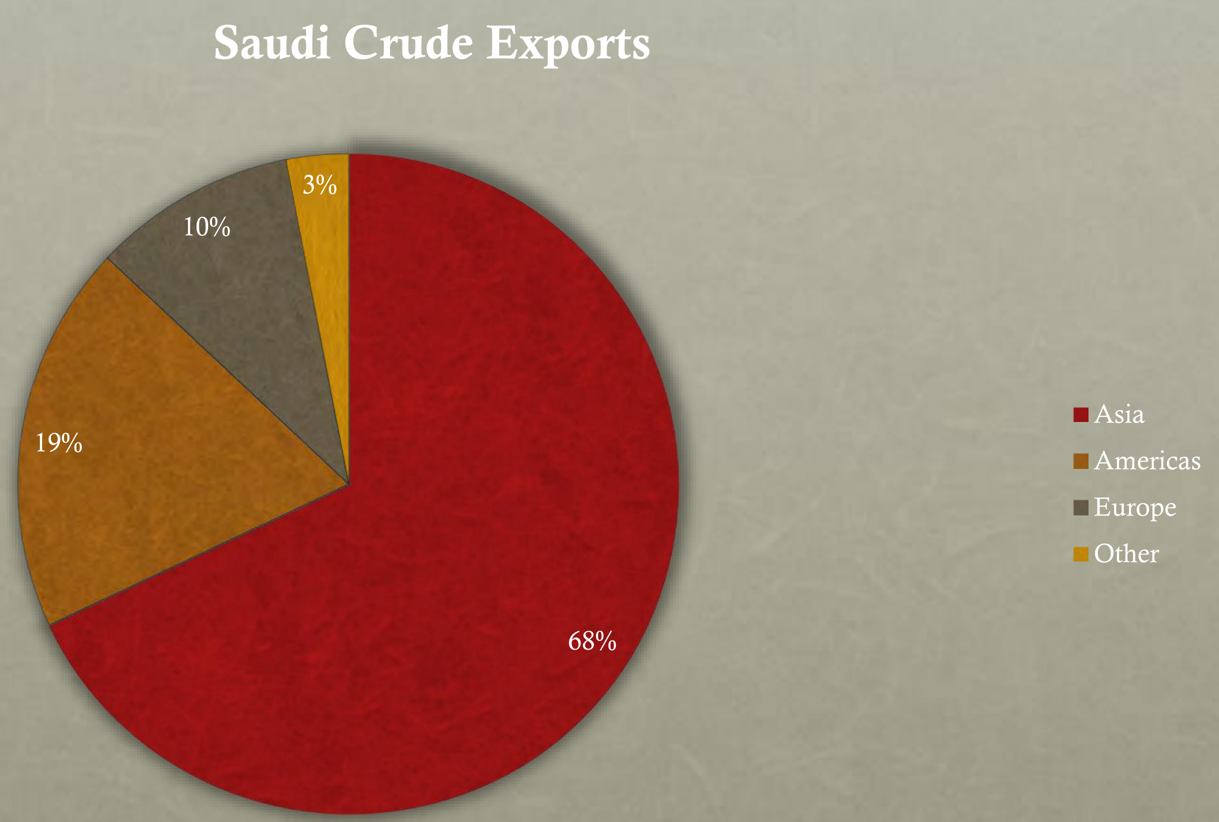
Increasing Demand/ Rise of the Rest

- Global demand for energy is expected to rise by nearly 40% by 2035.
- Most growth will come from non-OECD countries, with more than half coming from India and China.
  - BP anticipates about 96% of future demand will come from non-OECD
  - EIA anticipates more than 85% of future demand will come from non-OECD countries
- The Middle East will continue to supply much of the increased demand.

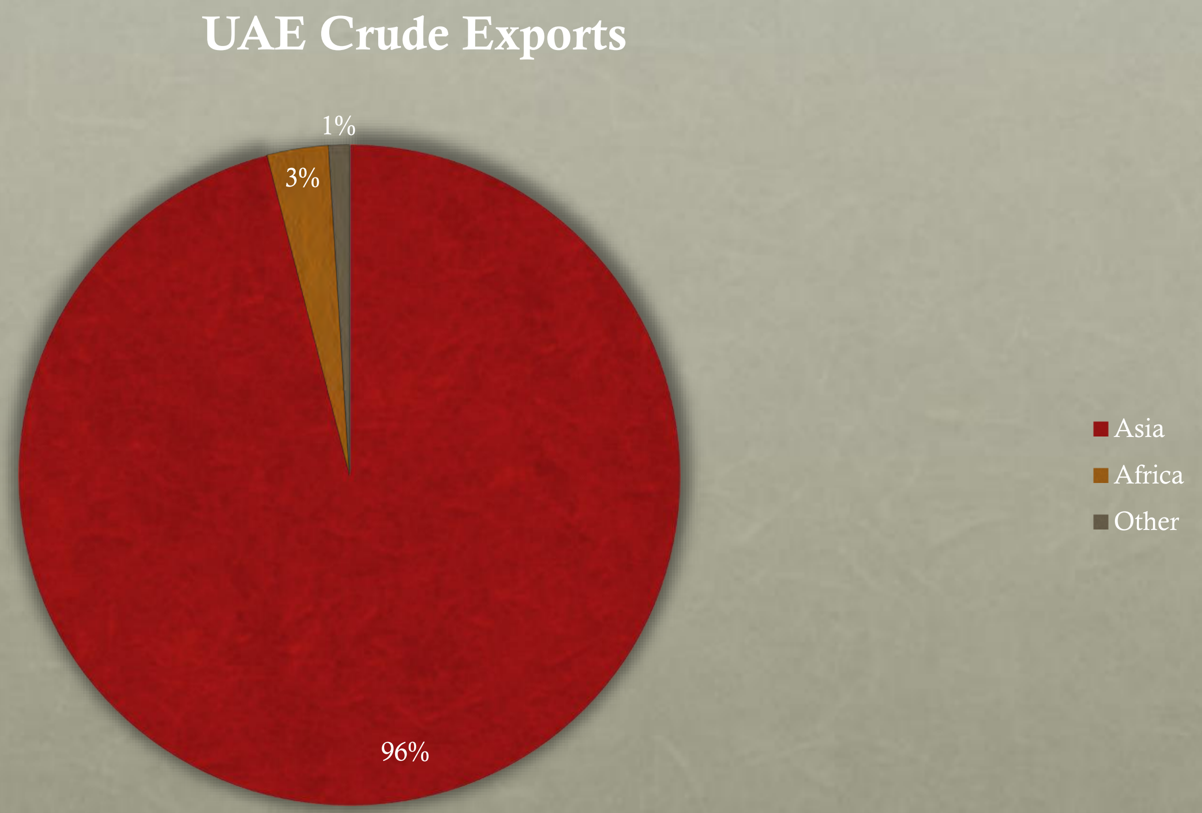
Where will all the energy come from?

- Despite all the excitement around US gas and oil, and a dramatic increase in renewables, the Middle East remains the dominant supplier of oil and gas.
- Middle East energy production expected to rise more than 30% by 2035.
- Most studies anticipate OPEC to retain the same percentage of global markets in the coming decades
- Middle Eastern energy is Asia bound

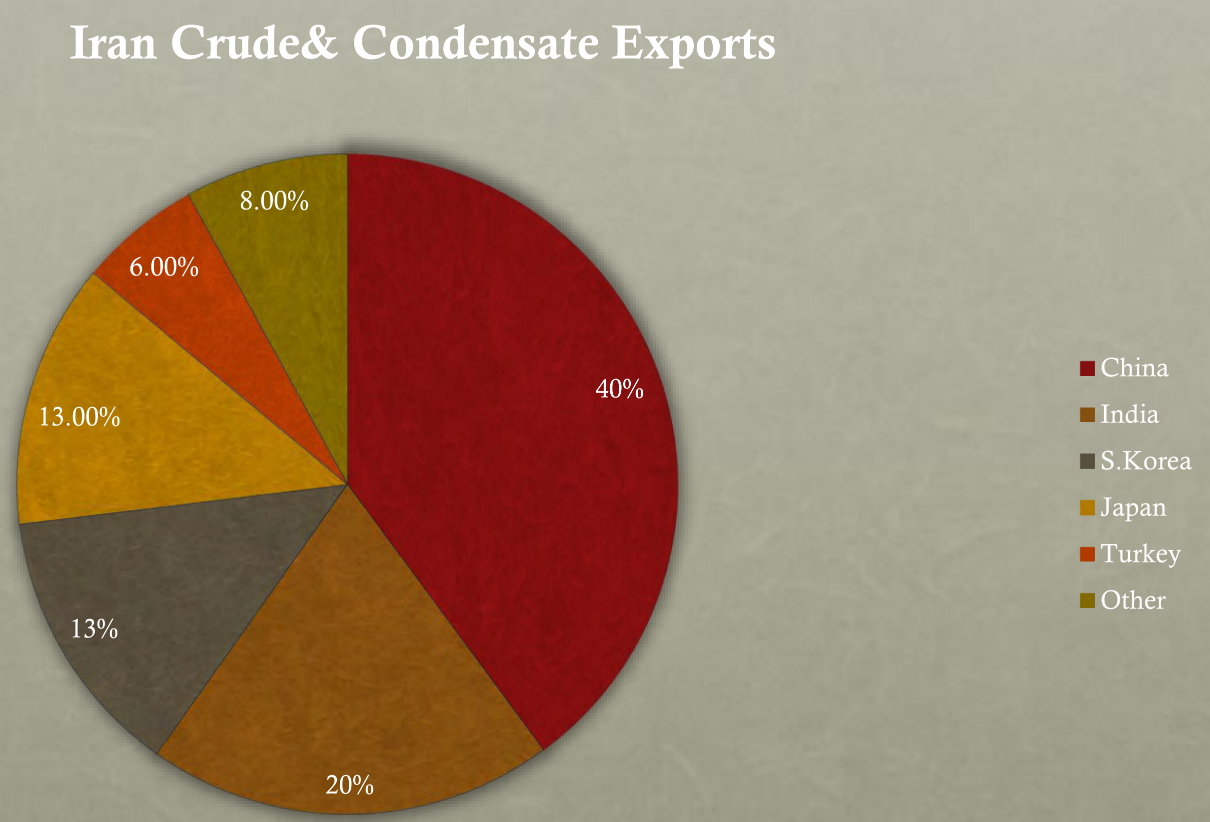
Saudi Crude Going to Asia



UAE Crude Going to Asia



Iranian Crude Going to Asia



Middle East Will Have Less to Export

- Although the Middle East remains the dominant supplier of oil, and energy production expected to rise
- Like other non-OECD regions, Middle Eastern energy consumption expected to rise nearly 70%
  - Population growth
  - Industrialization
  - Subsidies
  - Desalination and air conditioning
- The share of export production will decrease, as a result of domestic consumption.

The Middle East Needs Power

- Will need to address subsidies
- Need to become more efficient
- Requires better linking of grids
- Invest in alternatives
  - Hydro out
  - Renewables
  - Nuclear
  - Import

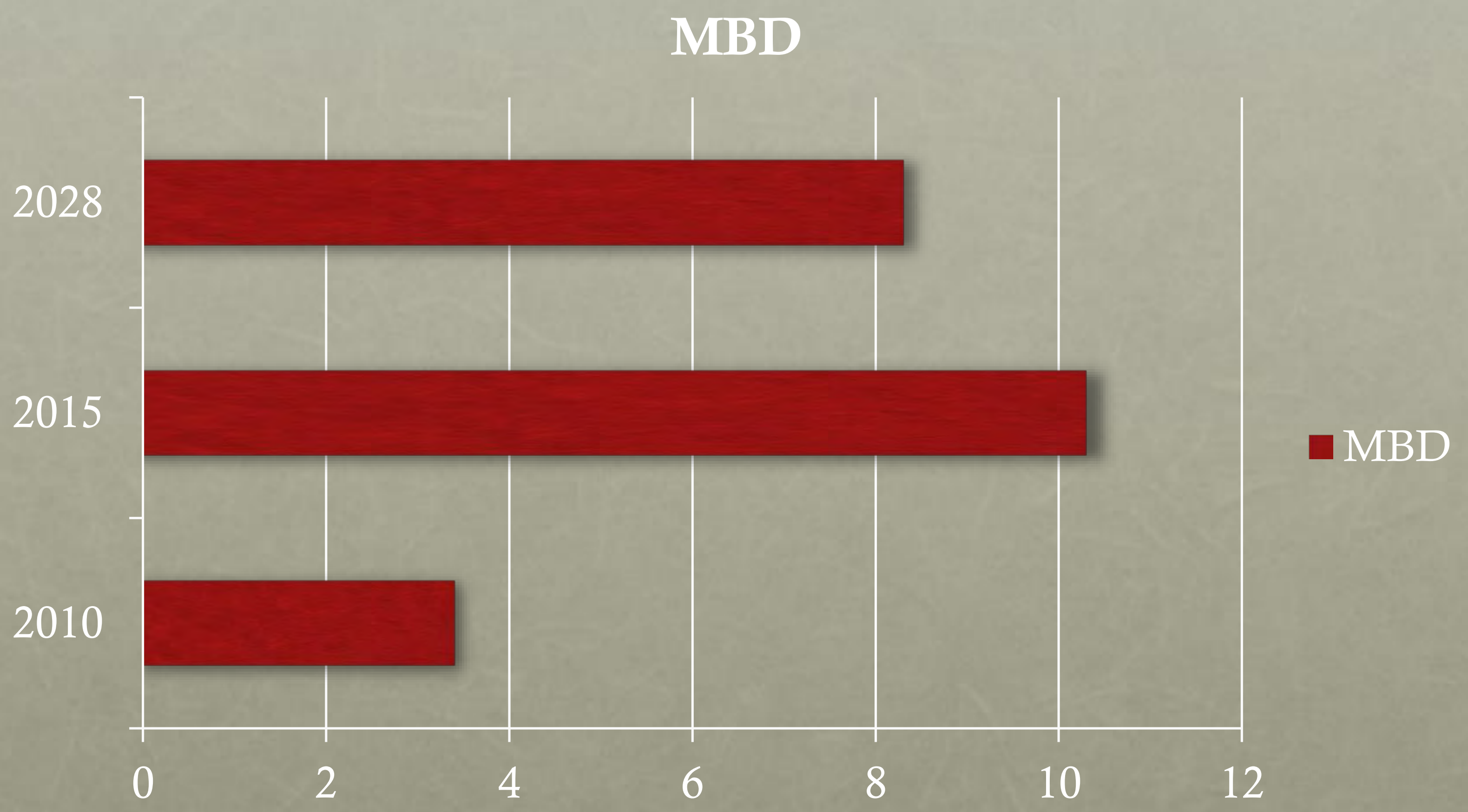
ENERGY POOR

- Turkey
  - Imports 98% of its gas, 92% of its oil.
  - In 2012 energy exports cost $60b.
  - In 2013, 20% of budget went to energy imports. Almost all of its gas, oil and ½ its coal is imported.
  - Demand increasing 8%
- Jordan
  - Imports over 95% of its energy; 20% of its GDP
  - Expects demand to double by 2030
  - Swelling population
  - Lost sweetheart deals from the Gulf and gas from Egypt

Energy Rich States Need Power Too

- UAE
  - Expected to more than double its energy consumption by 2020.
  - A 2008 study anticipates electricity demand increasing from 15 GW (2008) to 40 GW (2020).
- Saudi Arabia
  - Saudi Arabia's population has grown from 4 million in 1960 to almost 30 million in 2014.
  - 2012 Citibank report, by 2030 Saudi could be importing oil

In Saudi Arabia



What are the Options?

- Gas (Jordan, Israel, Egypt)
- Renewables (Morocco, UAE, Jordan, Israel)
- Nuclear
  - Turkey (Russian)
  - UAE (S. Korean)
  - Jordan (Russian)
  - Saudi (??)
  - Iran (Russian)

Pursuit of Nuclear Power by Energy Poor Countries

- Turkey
  - 2010 contracted w/ Russia for $20b for a BOO 4 nuclear reactors
  - 2013 4 additional reactors at $22b contract with Japan
- Jordan
  - 2015, signed $10b nuclear deal w/ Russia for two reactors

Energy Rich: UAE, the Gold Standard

- UAE
  - Program started in 2012. 1st of 4 nuclear power plants will go operational in 2017. In close coordination with IAEA
  - Has foregone uranium enrichment
  - South Korean partner (Westinghouse designs)
  - Goal on track for 12% of electricity provided by nuclear energy by 2030
- Saudi
  - Plans to construct 16 nuclear power reactors over the next 25 years at a cost of more than $80 billion, with the first reactor on line in 2022.
  - Goal is 20% of energy from nuclear plants
  - Partners still in flux. Contracts with S. Koreans, but a June 2015 agreement outlined cooperative measures with Russians

A Changing Energy Landscape

- “Whatever Iran has, we’ll have.”
- Changing trade patterns
- Changing political relationships
- Renewed focus on nuclear power being built in to local economies
- Must be prepared to understand the risks and opportunities with considerably less leverage.