MENA Energy Investment in A Global Setting
Assessment and Implications for Policy and Long-term Planning

Aissaoui, Senior Energy Policy Consultant
Arab Petroleum Investments Corporation

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Panel 1: “Meeting Future Energy Demand: Planning and Investment for the Long-term”
Outline of presentation

• Major shifts in global energy demand growth patterns
• Energy investment needed to balance supply-demand
• IEA’s MENA upstream ‘Deferred Investment Case’
• Summing up and implications for policy and planning
What makes current projections compelling and what differentiates them?

- Broad scope and strategic focus
- Varying long-term horizons
- Nuanced thematic emphases
  - Energy diversification
  - Energy efficiency
  - Energy poverty
  - Environmental impacts
- But few explicitly derive investment
Only the policy-advisory Institutions consider explicitly investment though to varying degrees

- The US-EIA (qualitatively) and OPEC (quantitatively for oil) base their investment on current policies
- In contrast, the IEA base its investment projections on a central scenario: the ‘New Policies Scenario’

Source: APICORP Research Compilation
Underlying all projections is a major shift in geographical energy demand patterns…

- Driven primarily by population and economic expansion, global energy demand increases by 39% to 2035
- This central-scenario growth is accompanied by a major shift in the geographical pattern
- Non-OECD responsible for 90% of the increment, with China and India alone accounting for half the total

Source: IEA World Energy Outlook 2011 (adapted from original)
... and significant changes in the sources of energy

- Still driven by transport, oil is to remain the primary source of energy for the world economy.
- Natural gas nearly catches up with coal as it ultimately wins in the competition for power generation.
- MENA is expected to supply the bulk of growth in oil and a substantial amount of natural gas.

Source: IEA (adapted)
The energy investment needed to balance global supply and demand grows to $38 trillion dollars

• Cumulative investment amount to $37.9 trillion (2010 dollars)
  – Oil supply: $10.0 trillion
  – Gas supply: $9.5 trillion
  – Coal supply: $1.2 trillion
  – Biofuel supply: $0.4 trillion
• The highest share is that of the power sector: $16.9 trillion

Total investment: $37.9 trillion

Source: IEA (adapted)
Cost inflation is the most important factor driving the increase in energy investment

- According to the IEA, costs have doubled during the last decade, due to increase in the cost of material, personnel, equipment and services
- Our interpretation lies in the concurrent inflation of the main cost components of EPC:
  - cost of input factors
  - contractors’ margins
  - project risk premiums
  - cost of ‘excessive largeness’

Source: IEA World Energy Outlook 2011
In the context of ongoing turmoil, the impact of a MENA ‘Deferred Investment Case’ is most relevant

- According to the IEA, MENA is potentially expected to invest $2.7 trillion upstream through to 2035
- But in the medium term such an investment may be delayed due to:
  - Deteriorating investment climate
  - Renegotiations of contracts
  - Prudent/conservative policies
  - Tougher economic sanctions
  - Damage to infrastructure (conflict)
  - Constraints on financing

Source: IEA, Ibid.
Our MENA energy capital structure highlights specific funding constraints

**Investing (empirical)**
- **Upstream**
  - Capital required: $152bn
  - Capital structure: C: 525bn L: 43:57
- **Midstream**
  - Capital required: $27bn
  - Capital structure: C: 525bn L: 43:57
- **Downstream**
  - Capital required: $220bn
  - Capital structure: C: 525bn L: 43:57
- **Power Generation**
  - Capital required: $126bn
  - Capital structure: C: 525bn L: 43:57

**Financing (conceptual)**
- **Internal financing**
  - **Aggregate capital required and capital structure**
    - C: $525bn L: 43:57
  - Internal sources
    - Retained earnings
    - State budget allocation
    - Bonds or sukufs
    - Medium and long term loans
- **External financing**

- Depends worryingly on oil and related gas prices
- Adequate as long as oil prices remain above $100/bbl
- Negligible contribution of domestic capital markets
- Collapsing loan markets in the wake of the Eurozone debt crisis

The IEA’s DIC has many impacts, mostly underpinned by soaring oil and gas prices

- Oil price increases to $150/barrel ($175 nominal), before converging towards the IEA’s central scenario
- More complex to analyze and predict, gas prices also expected to increase, though not to the same extent as oil

Source: IEA World Energy Outlook 2011
Summing up the context and investment assessment

• Amid major shifts in demand and supply patterns, MENA is to provide the bulk of oil output growth, and a large amount of gas

• This involves upstream investment of over $100bn per year through to 2035 in the IEA’s central scenario

• It is far from certain that such magnified levels will be forthcoming
  — In the medium term, the causes for delay are all likely when not already a reality
  — In the longer term, MENA’s core producers are treated as passive residual suppliers
The implications for policy and planning can be wide-ranging and far-reaching

• In the medium term:
  — Assuming no demand destruction, more spare capacity need to be available
  — But how that can be planned in face of lead-time investment uncertainty?

• In the longer term:
  — Fiscal conditions permitting, very prudent and conservative depletion policies will likely continue
  — Unless a new paradigm of cooperation addresses the challenges of economic diversification