Fifth IEA-IEF-OPEC Symposium on Energy Outlooks

Session I
OPEC’s World Oil Outlook 2014

Presented by:
Mr. Oswaldo Tapia
Head, Energy Studies Department, OPEC

IEF Headquarters
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Outline

- Key assumptions
- Reference case projections
- Oil demand to 2040
- Liquid supply to 2040
- Downstream issues
- Main takeaways
Reference Case: key assumptions

- Oil prices
  - $110/b medium-term rising to $177/b by 2040 in nominal terms
  - In 2040, real price is $102/b in today’s prices
  - Cost of marginal barrel a key factor

- Economic growth
  - Medium-term
    - Rebound from recession, but medium-term deceleration in emerging economies
    - By 2018, global growth reaches 3.8%
  - Long-term
    - Demographics and productivity trends
    - Long-term growth of 3.5% p.a. (2014–2040)

- Energy policies also shape the Reference Case
Energy use will continue to rise, oil will remain the leading fuel for some time, gas use rises strongest

- Energy use rises by 60% to 2040
- Fossil fuels remain key
- Oil initially retains largest share
- After 2030s, fossil fuel shares tend to converge, while coal share initially rises, gas will be the dominant fuel post-2040

Shale gas increasingly important as a source of energy...

...but many potential barriers to rise in supply
World oil demand outlook in the Reference Case

- Medium-term oil demand rises 1 mb/d p.a.
- By 2019, oil demand is 96 mb/d
- Aggregate OECD demand peaked in 2005
- Developing countries key to growth
- Demand in developing countries already greater than in the OECD by 2019

### Medium-term oil demand outlook in the Reference Case  \( \text{mb/d} \)

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- Long-term oil demand reaches 111 mb/d by 2040
- Upward revisions to oil use in petrochemicals, aviation
- But limits to growth include marine bunkers (IMO regulations), hybrid technologies, efficiency improvements
- Developing countries key: 71% of increase in their demand is in developing Asia
- Transportation sector is focus of demand growth

### Long-term oil demand in the Reference Case  \( \text{mb/d} \)

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World oil supply outlook in the Reference Case

- Primary recent driver: tight crude and unconventional NGLs…

- …but they peak and decline in time (costs are rising, environmental concerns, decline rates, well productivity, sweet spots)

- Non-OPEC rises to 62–63 mb/d: Brazil, Caspian, biofuels, oil sands

- OPEC crude share at 36% in 2040
Outlook highlights the need for continued refining capacity rationalization

- At least 5 mb/d of closures are needed by 2020 to maintain a minimum refinery utilization of 80% in any sub-region
- Longer-term, the need for closures could potentially be in the order of 10 mb/d, and primarily in the industrialized regions
- However, it remains to be seen how much of the assumed closures actually takes place

Global oil demand, refining capacity and crude runs, 1980–2019


* Effective ‘spare’ capacity estimated based on assumed 85% utilization rate; accounted for already closed capacity.
Middle distillates represent around 60% of overall demand growth for all liquid products

- Long-term demand driven by middle distillates – primarily diesel oil, but also jet kerosene – in the transport sector
- Demand for crude-based gasoline remains virtually flat over the last 10 years of the forecast period
- Demand growth also for other light products, but decline for residual fuel oil

Global product demand
2013 and 2040

Global gasoline demand and ethanol supply
2010–2040

* Includes refinery fuel oil.
** Includes bitumen, lubricants, petroleum coke, waxes, still gas, sulphur, direct use of crude oil, etc.
Out of 22.5 mb/d of total distillation capacity needed by 2040, more than 50% is for the Asia-Pacific

- Asia-Pacific comprises the largest share of total additional crude distillation capacity required by 2040
- Beyond current projects, the remaining additions after 2020 will be fairly equally distributed among Latin America, the Middle East and Africa
- Complexity of the global refining system set to increase
  - 14 mb/d of conversion units
  - 29 mb/d of desulphurization capacity
  - almost 6 mb/d of octane units
Summing up the Outlook

- Oil remains a key energy source, helping to satisfy the world’s energy, material and transport needs
- Large resource base, with a very diverse source of supply
- There remain massive uncertainties with regard to the amount of oil needed
- Security of demand and supply are two sides of the same coin
- Challenges exist in the downstream: closures versus expansion
- Oil trade will increasingly shift eastward
Thank you