



The 2nd Kuwait Oil & Gas Show and Conference

Kuwait, 11th October 2015

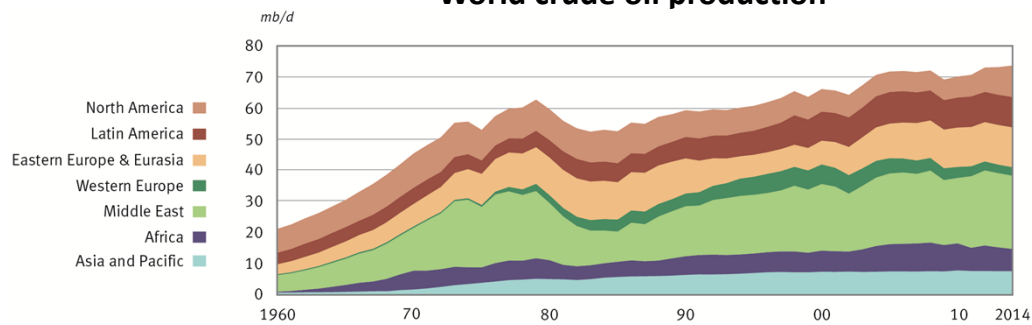


Executive Plenary Session Future Hydrocarbon Resources: Innovation, Technology and Opportunities

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OPEC Secretary General

Industry growth driven by innovation, human ingenuity, technology

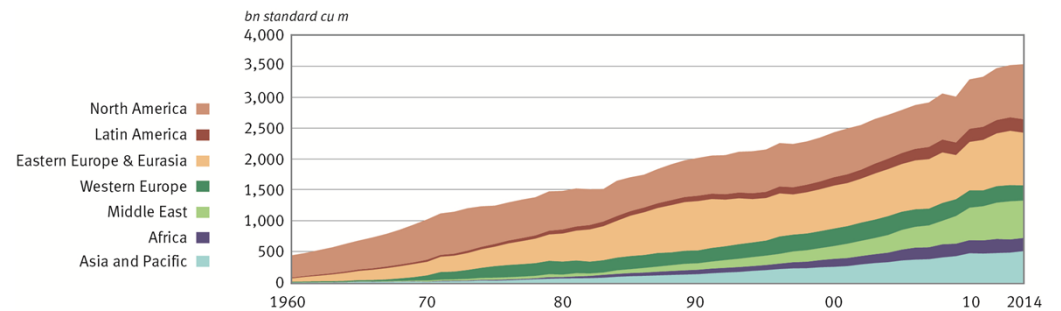
World crude oil production



- Global crude oil production was 21 mb/d in 1960, while today it is around 75 mb/d
- This is an increase of over 250%

- Global natural gas production was around 445 Bcm in 1960, while today it is around 3.6 Tcm
- This is an increase of over 700%

World marketed production of natural gas

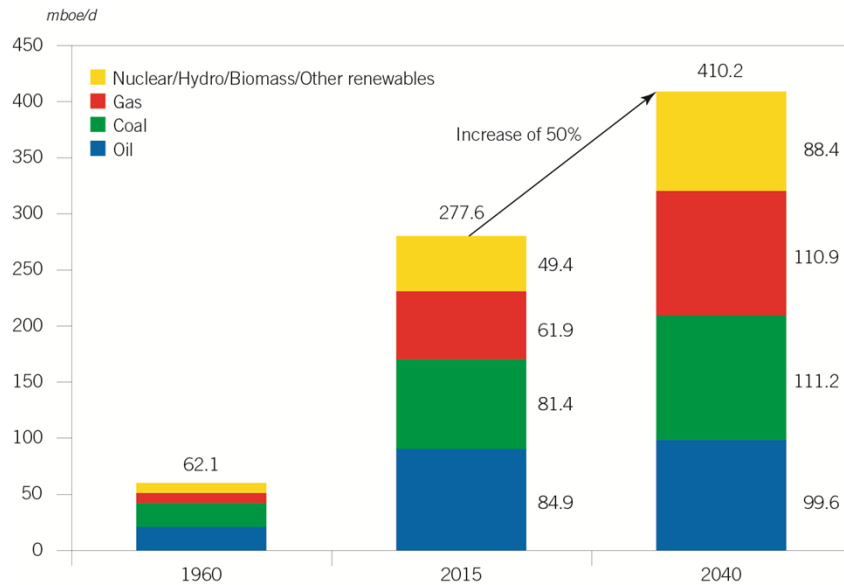


Past industry advancements

- E&P opportunities moved from onshore to offshore, to deep water and frontier regions, and unconventional
- Technological developments have enhanced the likelihood of finding oil and gas
- The industry has evolved from basic geological sciences to state-of-the-art IT
- Recovery rates have increased hugely
- Industry advancements have also improved safety, as well as the environmental credentials of oil, in both production and use

The world needs more energy and resources are available

Total energy supply, 1960, 2015 and 2040



- Global energy demand is expected to increase by 50% by 2040
- All forms of energy will be needed
- Fossil fuels will continue to satisfy the major share of the world's energy needs
- Oil demand is projected to grow to 110 mb/d by 2040, from around 93 mb/d today
- The remaining ultimately recoverable oil resources are currently around 2.8 trillion barrels
- The remaining ultimately recoverable natural gas resources are currently around 420 Tcm

Looking to future challenges and opportunities

- Innovation and new technologies are central to unlocking the abundant sources of oil and energy
- This will include carbon capture and storage, advancements in enhanced oil recovery, and the development of new oil-based material for various industry sectors
- The industry will require more R&D, more investment, and more people
- In terms of people, even before the recent cuts in manpower, the industry was experiencing critical shortages:
 - Significant percentage of the workforce approaching retirement
 - Fierce competition for talent from other industry sectors
 - Not enough enrollment of students on energy-related programmes

The importance of market stability

- **Development of future hydrocarbon resources is intrinsically linked to the short-, medium- and long-terms**
- **Need to not only keep our eyes on the long-term, but also the immediate challenges given current market conditions:**
 - Prices fell almost 60% between June 2014 and January 2015, and have been in the range of \$40-\$60/b this year
 - Volatility has been driven by both fundamentals and speculation
 - The market has been oversupplied, although non-OPEC supply has contracted recently and demand has witnessed an uptick
 - Stock levels have been above their five-year average
 - Developments have led to significant project deferrals and cancellations, and cost-cutting
- **How might recent developments impact the industry's future?**
 - Cost cutting and efficiency measures will no doubt make the industry a little more nimble and agile
 - But falling investments, fewer project developments and reduced manpower will certainly impact the short- and medium-term – and potentially the long-term
- **It is important investments continue – for the industry; for consumers; and for the those who currently have no access to modern energy services**

We should be confident about our industry's future

- **I am confident our industry's best days are yet to come:**
 - Abundance of resources
 - Demand continues to grow
- **The industry needs strength, resilience and vision to turn challenges into promising opportunities**
- **We all need to work towards bringing more stability to the market**
- **We are hopeful that we will see a more balanced oil market in 2016**
- **Need people to continually push innovation, to develop the new technologies that can help discover, extract, produce and supply more hydrocarbons in an ever more cost effective and sustainable manner**



Thank you



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