Energy Transition: Impact on MENA
Lower for longer E&P capex while cost curves and decline rates steepening

![Historical & Expected Upstream Capex](chart.png)

Historical & Expected Upstream Capex
Capex ($billion)

Source: IEF, *IEF BCG Oil and Gas Investment in the New Risk Environment (Dec 2020)*
At time of unprecedented uncertainty on demand risks and policy trajectories

Next 5-years will be critical
Access to capital, materiality, profitability, cash flow & production uplift key for future

**Lifting Costs (2018) and Returns**
Lifting cost (@6:1) $ per boe | ROACE %

- **Global Integrated**
- **Large US Independents**
- **NOCs**

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<thead>
<tr>
<th>Lifting Cost (@6:1) $ per boe</th>
<th>ROACE %</th>
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<td>Source: IHS Markit, IEF</td>
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- Eni
- Equinor
- Chevron
- BP
- Shell
- Repsol
- Total
- ExxonMobil
- Apache
- Occidental
- ConocoPhillips
- Saudi Aramco
- CNOOC
- Ecopetrol
- CNPC
- Sinopec
- Petrobras
- Rosneft

Source: IHS Markit, IEF
Gas investments under higher pressure while upscaling RE require more than just funding

Levelized cost for load-following power plants financed in 2030

$MWh (2020 real)

Source: BloombergNEF. Note: SMR is small modular nuclear reactor; CCS is carbon capture and storage, H2 is green hydrogen-fired turbine, FOAK if first-of-a-kind project. Assumes a 55% capacity factor, typical of a load-following plant. Includes a carbon price in Europe and China. CCS does not include CO2 transportation and sequestration costs. In this analysis, we use the term ‘load-following plants’ to describe power plants operating flexibly with a annual capacity factor of 55%.
Role for international Cooperation: Methane reduction, tradable carbon intensity

Global Methane Emissions by Source

- **Wetlands**: 194 million metric tons
- **Agriculture**: 145 million metric tons
- **Energy**
  - NatGas: 45 million metric tons
  - Coal: 39 million metric tons
  - Oil: 39 million metric tons
  - Bioenergy: 11 million metric tons
- **Waste**: 68 million metric tons
- **Other**: 39 million metric tons
- **Biomass Burning**: 16 million metric tons

Source: IEF, Energy Futures Initiative, IEA
Thank You