



THE OXFORD  
INSTITUTE  
FOR ENERGY  
STUDIES

# Gulf Oil Exporters' Energy Transition Policies

Bassam Fattouh  
Oxford Institute for Energy Studies

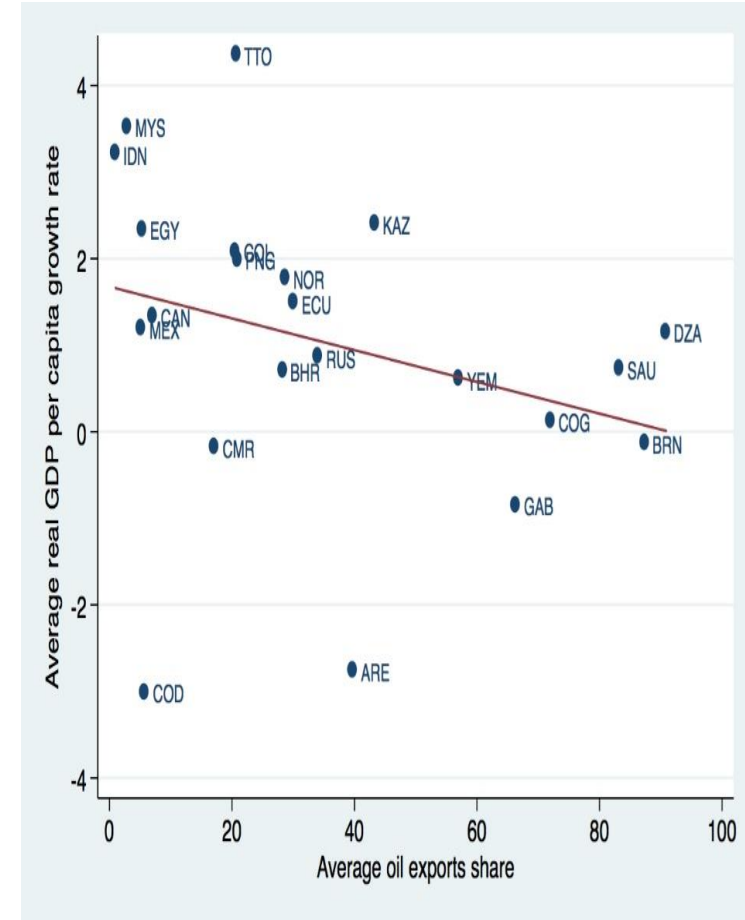
Oman, August 2022



# Heavy Dependency on Oil Revenues

- Oil rents have brought massive economic benefits to oil exporters as reflected in most socio-economic development and human capital indicators (though at varying degrees)
- But heavy reliance on oil revenues also created its own economic and institutional drawbacks
  - Instability and volatility of oil revenues contributed to macroeconomic instability and volatile growth
  - Distribution of oil rents contributed to weak institutional environment and many economic distortions (weak private sector, rigid labour markets, inefficiencies, subsidies which distort production and consumption decisions)
  - Reflected in relatively weak economic growth and declining GDP per capita over time

## Average growth rates of real GDP per capita and average oil exports share in total exports



Note: Authors' calculations based on the IMF and World Bank data.  
Source: The averages are computed over 1991 to 2012 period.

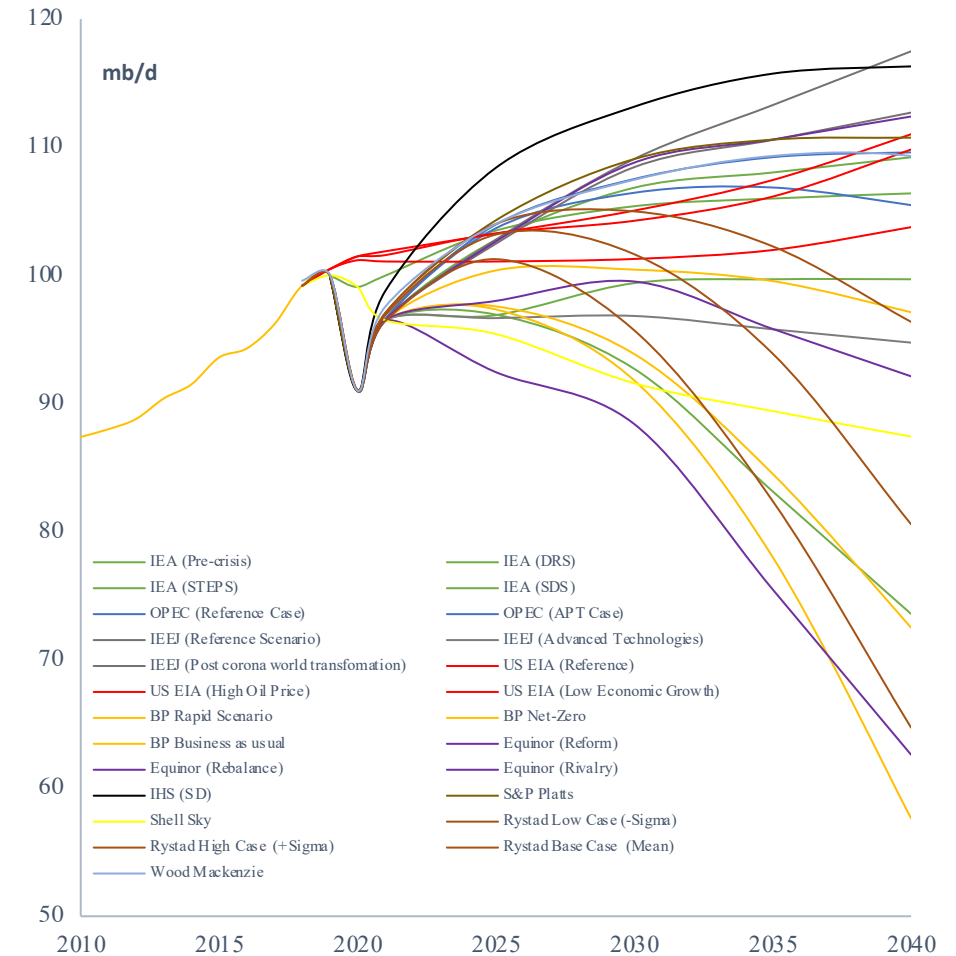
Source: Kakanov et al (2018)



# Peak Oil Demand and the Energy Transition

- Challenges more pronounced as prospects for oil demand becoming more uncertain due to energy transition and decarbonization policies
- Oil demand projections sensitive to underlying assumptions of model (economic growth, population growth; transformations in transport, global carbon tax); by changing these assumptions one can push the peak forward or backward by decades
- Purpose of the exercise: Forecasting or backcasting (what it takes to achieve a certain outcome)
- Most scenarios predict a unique global peak after which oil demand declines sharply
- No consensus on many of the underlying assumptions but also on the transition pathways and their speed

Global Oil Demand Scenarios, mb/d





# Energy Transition Adds New Layers of Uncertainty

---

- There is no single transition path at a global level: Countries are starting from fundamentally different positions and will follow different transition paths depending on their endowments
- The energy transition will not proceed with the same speed across regions
- Speed of the energy transition remains highly uncertain (policy, technology, finance)
- The transition will not proceed linearly; it could be subject to setbacks (Russia-Ukraine war; developed-developing countries tensions on climate finance; deglobalization) or trigger an acceleration of transition
- The transition may result in demand-supply gaps that could impact availability and cost of energy at times
- Energy transition is disruptive and will result in massive reallocation of wealth within and across countries and thus the concept of just energy transition is key
- Regardless of its speed, energy transition is also already impacting players' behaviors (governments, private sector, consumers)

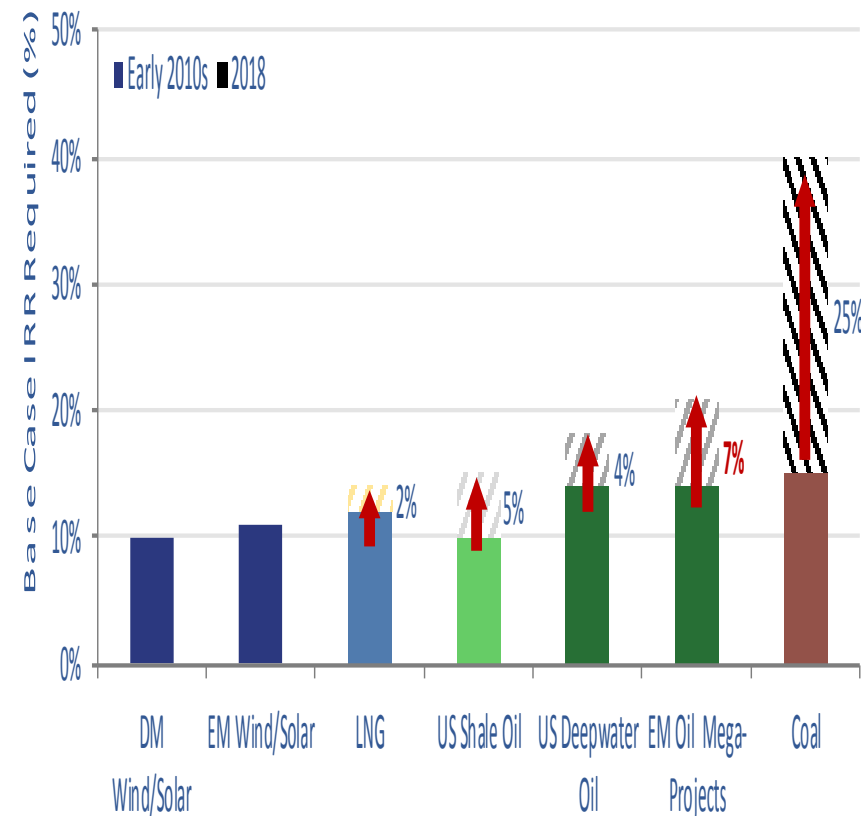




# Shifts in Perceptions and Behaviors

- Perceptions and players' behaviours shifting much faster than actual changes in energy mix and already shaping the energy industry and some key decisions
- Finance: Affecting investors' risk preference (financing costs and availability of finance for hydrocarbon projects) and investments flowing into the sector
- Players: IECs are adapting their strategies
  - Incorporating climate related objective into their strategies (e.g. internal carbon price in investment decisions)
  - Impacting capital allocation decisions
  - Reducing the share of oil assets in their portfolios
  - Increasing the share of gas & renewable
  - Announcing ambitious targets to reach net zero emissions by 2050

## Fears over the energy transition are escalating capital costs for oil and coal

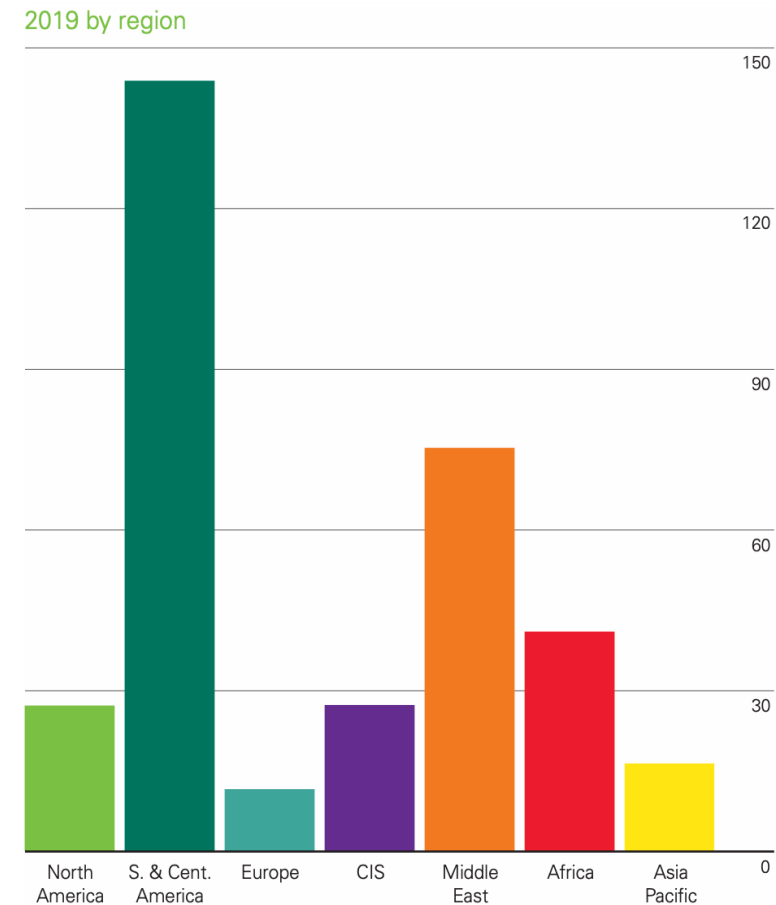




# Oil Exporters' Challenge

- Oil exporters face a graver challenge than IECs
  - Proved reserves-to-production ratios extend for multiple decades so they face challenge of monetizing a much larger reserve base
  - Risk of losses in export revenues could disrupt their socio-economic wellbeing given the high reliance of their economies on oil revenues
- Key question: What strategies should oil exporters pursue given:
  - Domestic economic and political constraints
  - An energy transition which is changing the prospects of oil demand but whose speed is uncertain and whose impact is not uniform
  - Perceptions, behaviours, and policies changing fast

## Reserves-to-Production Ratios, years



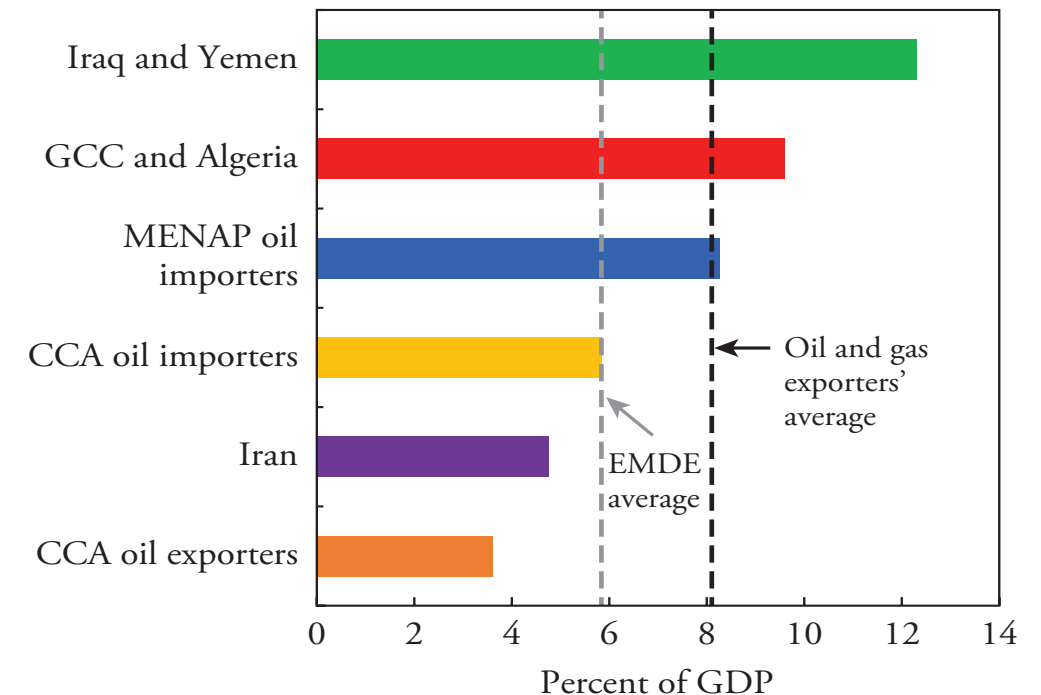


# The Challenges of Fiscal Diversification

- Economic diversification away from hydrocarbons key strategy
- But real challenges to realise meaningful diversification (particularly fiscal diversification)
- Diversification into different areas away from their core competitive advantage runs risk of failure of establishing viable non-resource export sectors
- Achieving diversification requires building human capital and improving education system & extensive reforms to improve business environment, transparency and governance; removing barriers to private sector participation
- There is uncertainty about how quickly or even whether such extensive economic and institutional reforms can be implemented in most oil and gas exporting countries

## General government wage bills, 2005-16

(Percent of GDP, period average)



Note: CCA = Caucasus and Central Asia; EMDE = emerging market and developing economies; GCC = Gulf Cooperation Council; MENAP = Middle East and North Africa, Afghanistan and Pakistan.

Source: Tamirisa N.T. and Duenwald, C. (2018), Public Wage Bills in the Middle East and Central Asia, IMF Departmental Paper No. 18/01



# Risks of Exiting too Early for Oil Exporters

---

- Oil and gas sectors remain very profitable and still enjoy higher margins than any new industries or sectors that governments in oil and gas exporting countries aim to establish
- Reduced investment flows into the oil and gas sector can cause supply to fall faster than demand resulting in high margins at least for short periods of time
- Governments can leverage on oil and gas revenues to ease the pain of structural reforms by developing compensation mechanisms to offset the adverse impacts on households and firms
- Exiting too early from such an established strategic sector deprives the country of an important source of income and key source of competitive advantage
- Suggesting that oil and gas exporters move away from this strategic sector is not realistic nor optimal





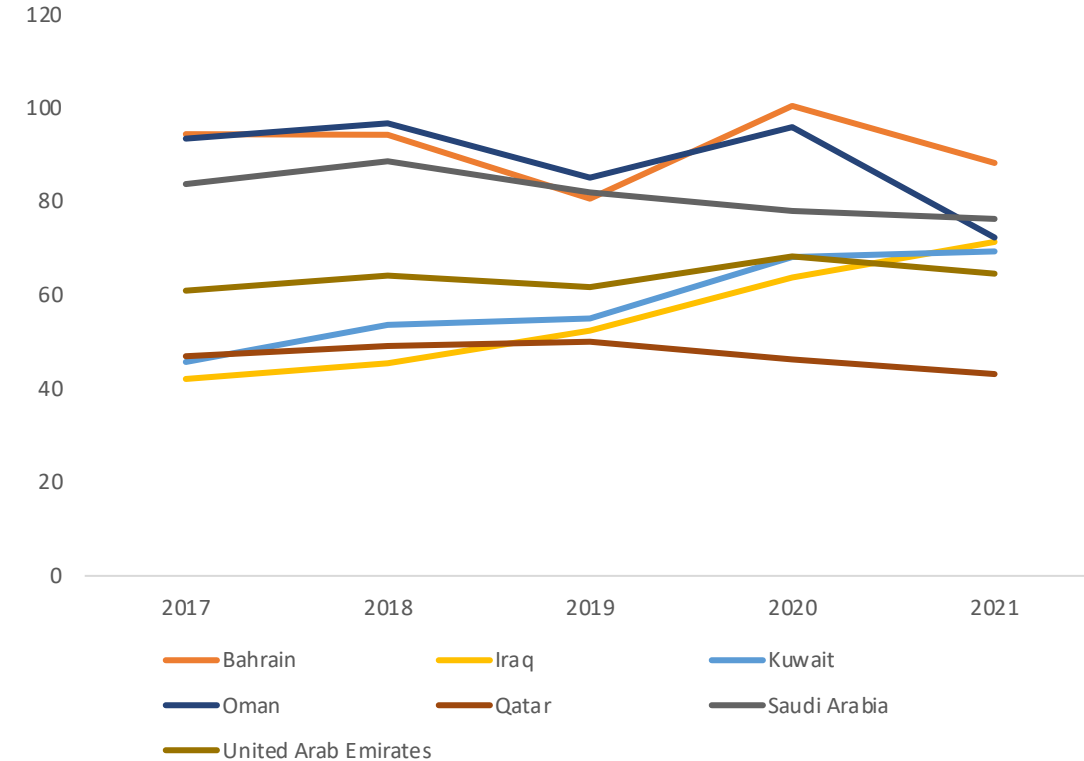
If diversifying from the oil and gas sector is sub-optimal and it may not be able to be achieved at a rapid pace, how to enhance the competitiveness and increase the resilience of the hydrocarbon sector in a world that is transitioning towards net zero emissions?



# Cost Competition and Monetization Strategies

- Oil exporters can compete on cost & take measures to improve efficiency of production and lower production costs
- Adopt faster reserve monetization strategy (Green Paradox)
- But lack of fiscal diversification and high ‘social cost of production’ act as a constraint on this strategy
  - Increase in supply in face of slowing demand would result in lower revenues at least in short term; in longer term some higher/lower cost producers could exit the market and some producers can gain market share (uncertain; may require multiple years of low prices)
- Importing countries may decide to implement high carbon taxes creating a wedge between revenues generated by oil/gas exporters and revenues generated by consuming countries with latter capturing big part of the rent

Gulf breakeven oil prices



Source: IMF



# Diversification within the Energy Sector

- Diversification efforts into products and exports closely related to hydrocarbons and energy intensive industries (petrochemicals, steel, cement, and fertilizers)
- The wider range of higher-value-added products provide a hedge against price volatility; development of sectors which have technological spillovers
- But heavy industrialization into energy intensive industries increases domestic emissions of greenhouse gases making it more difficult for countries to meet climate targets
- Importers develop policies to account for carbon content of final goods and apply carbon border adjustment measures (CBAM) again capturing part of the rent

GCC export shares by product category, 2013 and 2017



Source: World Bank, Gulf Economic Update, Economic Diversification for a Sustainable and Resilient GCC, Issue 5



# Investment in Renewables

- Invest in renewables and create new sectors with comparative advantage (both solar and wind)
- Integrate renewables with existing hydrocarbon infrastructure to reduce emissions in extraction production
- Increase oil and gas export potential without increasing productive capacity
- But margins in renewables can't fully substitute for rents generated by hydrocarbon sector
- Concept that a hydrocarbon exporter can switch to renewables exporter faces serious challenges
  - So far share of renewable so small in most gulf exporters
  - Significant scaling up is needed

Table 1. GCC renewable energy total installed capacity, targets, and share in the energy mix.

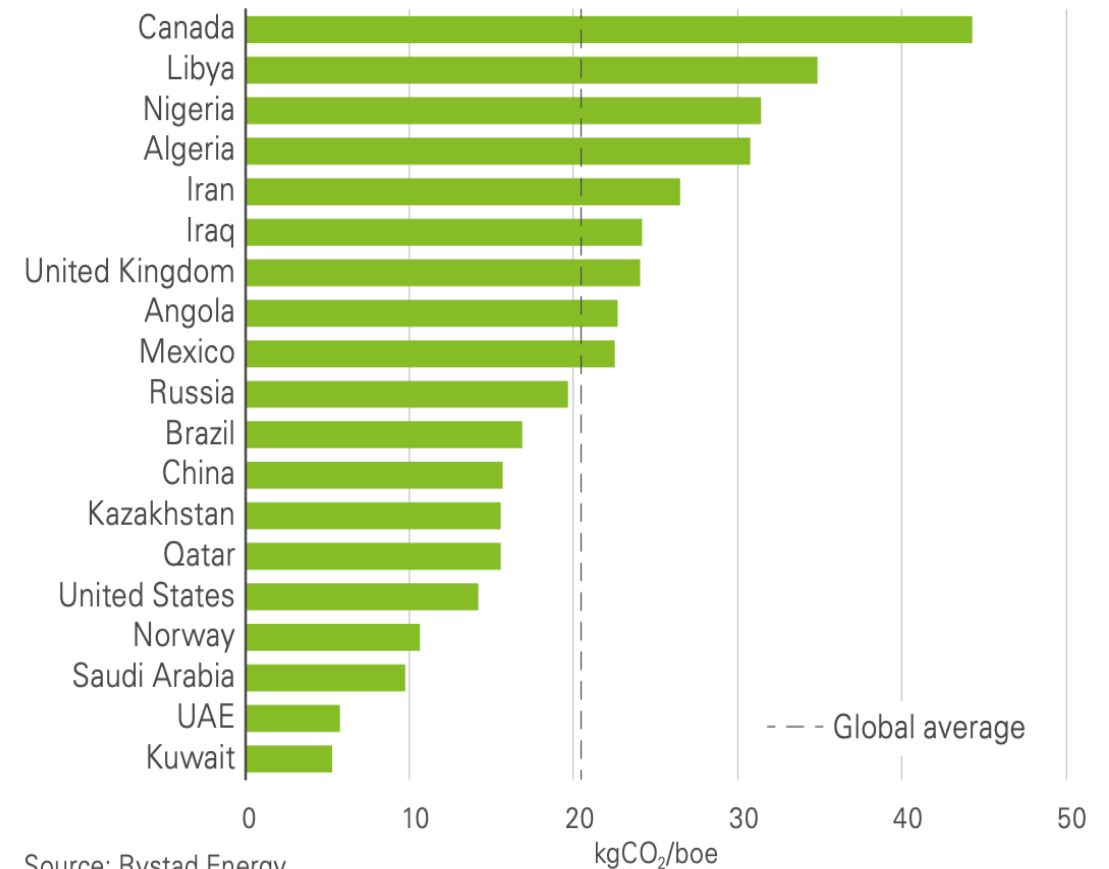
Country	Current Total Installed Capacity (MW) (as of 2020)	Share of Renewables in the Energy Mix (as of 2020) [9]	Renewable Energy Target
Bahrain	10	0.1%	5% of energy mix by 2025; 0.7 GW by 2030; 10% by 2035
Kuwait	106	0.5%	15% of energy mix by 2030
Oman	159	1.3%	10% of energy mix by 2025; 30% of power demand by 2030
Qatar	43	0.3%	20% of energy mix by 2030
Saudi Arabia	413	0.5%	50% of electricity generation 2030
UAE	2540	7.2%	2050: 50% clean energy (44% renewables and 6% nuclear)



# Compete on Dimensions other than Cost: Lowering Carbon footprint

- Exporters decarbonize their core activities and core exports to compete in a carbon constrained world
- Ensure that their production processes and core hydrocarbon products can compete on carbon intensity
- Involves reducing GHG emissions in extraction and production process
- Some oil and gas exporters in a relatively better position compared to other producers due to the low carbon content of their crude and their heavy investment in infrastructure to reduce gas flaring and methane emissions
- Real challenge lies in reducing emissions from consumption of their final products

Average carbon intensity of oil production by country, 2019



Source: Rystad Energy  
Includes countries with oil production above 1 Mb/d in 2019





# Measuring, Reporting, and Verification (MRV)

---

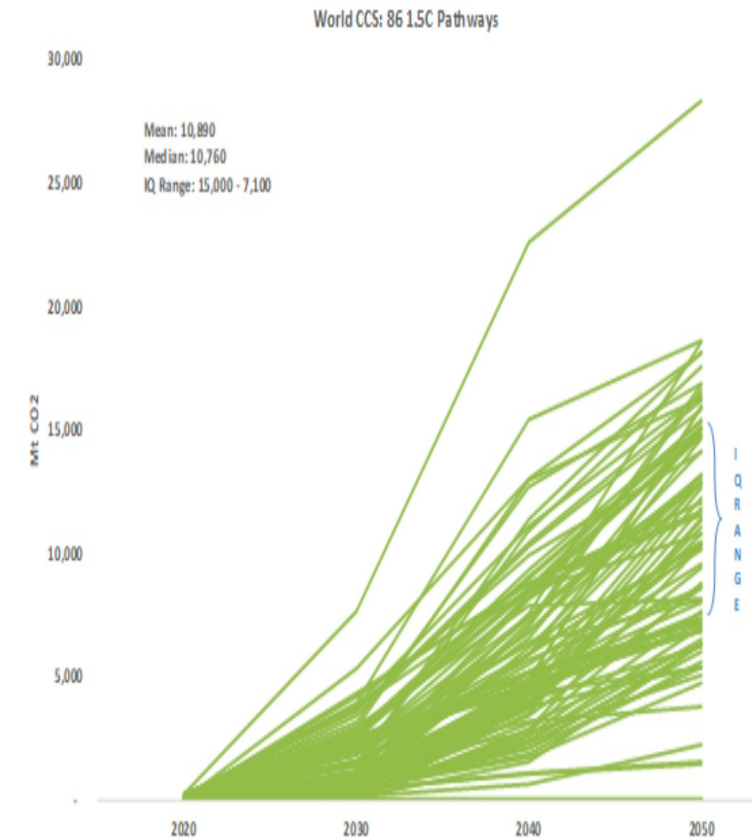
- Accurate measurement and reporting of emissions will be needed
- Full transparency is likely to be a requirement perhaps necessitating third party verification
- Understanding how policy and regulation of emissions from oil and gas is likely to develop in major importing countries and harmonization of policies
- Competitive advantage can be found not only in accurate MRV of emissions but also in addressing the most important opportunities for reductions:
  - Reducing flaring and venting
  - Elimination of major leaks in pipelines, processing and LNG facilities
  - Optimizing efficiency of transportation



# CCUS: Global Climate Action Perspective

- Deployment of CCUS needed to help achieve goal of net zero emissions given that oil and gas projected to remain part of energy mix
- For some energy intensive hard-to abate sectors such as steel and cement technical options to reduce emissions without CCS are currently very limited
- Most scenarios in IPCC report assume significant CCS, otherwise would not be possible to limit the temperature rise to one and a half degrees (CCS could also reduce the cost of meeting climate targets)
- CCS is a key enabler of hydrogen

Figure 1: 1.5°C Pathways with CCS



Source: OIES based on IPCC (2018)



## CCUS: A Producers' Dimension











---

- CCS is a climate mitigation action through which some oil and gas exporters could establish a competitive advantage given their natural resources (geological storage capacities, their access to depleted hydrocarbon reservoirs and their existing infrastructure) and technical resources (expertise in subsurface technology)
- Deployment of CCS provides an opportunity to contribute to climate change action
- But also to continue to monetise their reserves in a more sustainable way and retain the competitiveness of their oil and gas sector and energy intensive industries in a carbon constrained world
- Despite strategic interest for oil and gas exporters to lead on carbon-sink mitigation strategies most of CCS projects located in OECD countries
- From an oil exporter, investment in CCS lowers returns compared to existing strategy of exporting unabated oil but this additional cost could be vital to improve resilience of energy sector: Not leading on the CCUS front could risk undermining their competitive position



# Burden Sharing Mechanisms

- Importance of putting in place regulatory frameworks and incentive structure to accelerate investment in CCUS
- But for oil and gas exporters to assume all cost not viable especially if costs of decarbonizing are too high
- Producing countries most affected by the transition + competition for limited funds
- Burden sharing mechanisms should be developed to enable a more inclusive path (Wellhead carbon tax; CCS Clubs among the Gulf producers); create business models that allow producers to capture revenues from carbon storage
- This requires harmonization of policies; strong cooperation either through multilateral or bilateral agreements or creation of clubs of like-minded countries

Leading CCUS countries in 2020	Capture Capacity (Mtpa)	Number of operational projects	Type of storage	
			■ EOR	■ Geological storage ■ Utilisation
 United States	27,2	24	95%	4%
 Australia	4,3	5	93%	7%
 Canada	4,3	8	72%	28%
 Brazil	3,0	1	100%	
 China	2,3	12	85%	15%
 Norway	1,7	3	100%	
 Saudi Arabia	1,3	2	100%	
 United Arab Emirates	0,8	1	100%	
 Croatia	0,6	2	100%	
 Sweden	0,5	1	100%	
Rest of the world	Not available	9	100%	



## Enabling Different Transition Paths

---

- Various transition paths depending on starting points, core competencies and existing assets and Gulf exporters will pursue their path
- Insisting on a single path could delay the transition (not enable the use of technical and financial resources of producers, perpetuate non-cooperative behaviour on negotiations, increase cost of transition)
- Providing frameworks that don't discriminate against certain technologies or fuels and allow technologies to compete on full-cycle basis
- Developing burden sharing mechanisms between importers and exporters and integrate them into multilateral and bilateral frameworks
- Key oil and gas exporters playing active role in climate change negotiations
- Oil and gas exporting countries must show leadership in mitigation technologies and decarbonization (technological leadership, investment frameworks, business models) and push for frameworks that promote burden-sharing mechanisms to offset part of the cost and shield their economies





# Final Observation on the Geopolitical of ET and the Middle East

---

- Many of view that the Middle East oil and gas exporters will emerge as definite losers from the ET
- Based on premise oil demand will decline sharply and this will erode oil rents, the importance of oil as a strategic commodity and with it the geopolitical position of the MENA oil exporters
- Oil exporters will engage in a fierce competition for market share in a declining market
- Result in lower margins and revenues
- Given the undiversified economic structure of oil exporters and the rigidity of their government spending, this will result in economic disruption and instability destroying the social fabric of these countries
- Simplistic analysis!



# Concept of Losers/Winners Not Useful!

---

- Energy will remain a key element in economic competitiveness
- Oil and gas will remain part of the energy mix in many regions (issue is how to decarbonize oil and gas)
- MENA oil exporters are not a homogenous group and their resilience and core sources of comparative advantage vary tremendously
- Accelerated ET can cause dislocations in energy markets which can see massive transfer of wealth to ME exporters
- Some key oil and gas exporters are not standing still and they are evolving and responding to the challenges that the energy transition may bring
- Concept of losers and winners in the ET not useful in MENA context
- ET will pose real challenges to all MENA oil and gas exporters
- Focus should be on whether MENA exporters prepared to deal with these challenges, whether they are increasing their resilience to potential disruptions and the strategies they could adopt to make themselves more resilient
- Some MENA oil exporters (Gulf ones) much better prepared than others and may be in position to benefit from transformations associated with the energy transition and can play an important role in the process