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Economic diversification in the context of the energy transition

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Your Excellencies, Ladies and Gentlemen,

It gives me great pleasure to be participating in the Eleventh Arab Energy Conference. I would like to thank OAPEC and particularly Mr Abbas Naqi for the kind invitation and for the opportunity to address this distinguished audience.

Economic diversification has been a key developmental goal for the Arab oil exporting countries for decades as evidenced in their various national development plans. Achieving this objective is seen as essential for economic security and sustainability. Some Arab oil exporters have made progress over the last few decades in diversifying their economic base and their sources of income, but despite these efforts, most indicators of economic complexity, diversity, and export quality continue to be lower in oil-exporting Arab economies than in many emerging market economies, including commodity exporters in other regions **(Slide 2)**.

Although the oil sector remains very profitable and enjoys higher margins than any new industries that governments are aiming to diversify into, from a developmental perspective, heavy reliance on oil revenues gives rise to multiple challenges

- First, it does not generate a stable source of income as oil prices fluctuate widely; in some countries the oil rents are not big enough to provide sufficient income for growing populations and extensive welfare systems **(Slide 3)**.
- Second, the oil industry is capital intensive in nature and does not generate enough jobs for the hundreds of thousands of young people entering the labour market each year.
- Third, there has been a paradigm shift about the future prospects of global oil demand. Technological improvements, acceleration in efficiency measures, changing social preferences, and government policies to address climate change and air pollution are expected to result in a slow down in oil demand growth. The concept of peak oil demand is now more widely accepted, with many scholars, company executives, and policymakers predicting a peak so imminent as to be within the next decade.

The reality is no one knows when or whether oil demand will peak and the projections are highly sensitive to underlying assumptions. However, regardless of when oil demand may peak, the debate places the topic of diversification into a new context. Let me make three observations on the shifts in market perceptions **(Slide 4)**:

- First, the peak demand debate signifies a shift of perception from oil scarcity to oil abundance. A few years ago, many were concerned about peak oil supply and whether there would be enough oil to meet projected increases in demand. This has now changed. Rather than running out of oil, in a carbon-constrained world, there are growing concerns that in

countries with high reserves to production ratios, significant amounts of recoverable oil will never be extracted.

- Second, the concept of scarcity premiums, the effectiveness of rationing oil supplies in an inter-temporal framework, and the idea that oil kept underground today will command a higher price in the future need to be critically assessed, especially in light of the Arab world's massive oil reserves.
- Third, global oil markets will become increasingly competitive and margins in the oil industry will decline, and, therefore Arab oil exporters can no longer rely on oil revenues as their engine for growth and economic prosperity.

These shifts in perception are already changing the behaviour of market players. For instance, oil companies are adjusting their strategies, increasing the share of gas and renewables in their portfolios and increasingly shifting towards the short-term investment cycle. In oil exporting countries, the urgency of reform and diversification has intensified with most countries introducing ambitious programmes to reform and diversify their economies and their energy mix.

These issues throw up three important questions, which I will try to address in the rest of my talk **(Slide 5)**:

- How soon can we expect 'peak oil demand' to occur, or to be more precise, how fast is the current 'energy transition'?
- What kind of economic future should Arab oil exporters be planning for? What role the oil sector will play in the transition process?
- How does the emergence of renewable energy, as a competitive energy source, impact economic diversification strategies in these countries?

Peak Demand and the Speed of the Energy Transition

Most of the focus of the debate on peak demand has been on the time horizon by which global oil demand is expected to 'peak'. Consequently, most analyses contain a wide range of projections of the point that global oil demand is likely to peak, some suggesting that it could peak around the mid-2020s and others expecting it to go beyond 2040. The figure depicts these variations based on projections published by organisations such as the IEA, EIA, and OPEC **(Slide 7)**.

It is possible to make the following three observations:

- **First: The range of uncertainty is high.** Peak demand forecasts are highly dependent upon their underlying assumptions. Slight changes in these assumptions can push peak demand backward or forward by a number of years.
- **Second, there could be multiple peaks.** An important consideration while assessing peak demand scenarios is the "rebound effect" – i.e. the premise that a peak in oil demand could cause oil prices to fall, triggering higher demand from consumers. This effect could lead to multiple peaks.
- **Third, oil will continue to be an important part of the energy mix for the foreseeable future.** The incumbent advantages of oil as an energy source, including its high energy density and an existing infrastructure ecosystem geared around it, imply that even if oil demand peaks, it is unlikely to 'fall off a cliff'. None of the peak demand forecasts in the Figure display any sharp discontinuity, and even the IEA Sustainable Development Scenario predicts that oil demand will only be around 15 mb/d lower in 2040 than current demand.

Regarding the point of no sharp discontinuity in oil demand, it is important to make the following observation **(Slide 8)**. It is based on historical data and evidence, which indicate that past energy transitions have been very slow: Fast transitions rarely happen and, when they do, they are anomalies that are related to small countries or specific contexts with little scope for replicability elsewhere. The scale and complexity of energy transitions tend to create path dependency, and rely

heavily on the availability of an entire infrastructure ecosystem which represents massive sunk investments – this is visible for instance in efforts to substitute Internal Combustion Engine Vehicles (ICEVs) with electric vehicles.

Having said that, the possibility of a fast transition cannot be entirely discounted, as the current transition bears characteristics that represent a clear break with the nature of past transitions. Historical transitions were more about developing technologies in an age of scarcity based on markets and innovation, whereas low-carbon transitions are more about adjusting the selection environment in an age of abundance, via policies, regulations and incentives. Therefore, while past transitions were opportunity-driven, the current transition is largely problem-driven. At the same time, since the current transition is heavily driven by national-level policies, its speed could differ across regions as well as sectors, making it difficult to draw firm conclusions on a global scale.

The key question then becomes: how should Arab oil exporters adapt to the energy transition, which is already underway and whose speed is highly uncertain? This is a very difficult and complex question, but whatever strategies they adopt, they should take into account the consolidation of three key global trends **(Slide 10)**.

- **First, oil demand is unlikely to increase strongly over the next two decades:** Government oil substitution policies driven by climate change, air pollution concerns, energy security and improved efficiency suggest that oil demand is unlikely to increase strongly over the next two decades. These policies are prevalent in OECD and non-OECD countries alike. Some countries in OECD Europe have for instance announced bans on ICEVs by 2040 as part of their carbon reduction targets. While in non-OECD Asia, China and India have both announced ambitions to scale up electric vehicles (EVs) in their vehicle fleets – with China attempting to integrate the EV sector into its overall industrial strategy.

- **Second, large investments will still be needed in the oil sector to fill the gap in supply**. Even in the event of peak demand and in the absence of investment in the oil sector, the decline in supply will be faster than the decline in oil demand. The figure includes a series, which depicts the path of oil production to 2040 assuming no new investments and a 3 per cent decline rate, resulting in a large and widening gap between demand and supply. Arab oil producers will, most likely, be required to fill that gap; but any expansion in productive capacity will require massive investments running into billions of dollars. These investments in productive capacity will need to be funded by sufficiently large revenues, mostly from oil exports. At the same time, Arab oil producers face competing demands on their revenues given the social welfare measures funded by these revenues, which underpin their societies. Countries also require relatively stable political environments in order to make these investments. In the absence of such stability, it is not necessarily true that countries with cheap reserves will be able to develop their reserves first.

- **Third, renewables are at an inflection point:** While there are many uncertainties surrounding the energy transition, there is virtual consensus among forecasts that the share of renewables in the energy mix will rise. Renewable energy's recent cost deflation has been nothing short of revolutionary for the global energy industry. Five years ago, US wind costs were 11 cents per kilowatt hour (kWh) and solar costs were 17 cents /kWh, on a fully loaded basis, including the capital costs of construction. Neither was commercial without subsidies. The International Renewable Energy Agency (IRENA) estimates that the global average cost for onshore wind and solar has now declined to 5 cents/kWh and 6 cents/kWh respectively. A new record was set in 2016 for solar, with a 2.4 cents/kWh bid in the UAE. It was broken in October 2017 with a 1.8 cents/kWh bid by Masdar and EDF for Saudi Arabia's 300 MW Sakaka plant. Wind power costs have also declined, and further deflation to 4 cents/kWh by 2020 is within striking distance. As a result, on a plant-level basis and excluding the cost of dealing with intermittency, wind and solar have emerged as very competitive sources of energy globally.

The Strategic Role of the Energy Sector in the Transition

So how should Arab oil exporters feed the above trends into their strategic thinking and economic diversification agendas? In the context of the energy sector, it is worth making the following three observations **(Slide 12)**:

First, The oil sector will continue to dominate the economy but it needs to play a more active role in the diversification process:

As low cost producers with some of the largest reserve bases, Arab oil producers are expected to fill the supply-demand gap by heavily investing in their oil sector. Therefore, even in a world where oil demand growth is expected to slow down, the oil sector will continue to be dominant in these economies for the foreseeable future. However, as leaders develop new visions to transform their countries, the energy sector will be under increasing pressure to show that it can contribute to the diversification efforts, not only by generating the rents that could be used to create new industries, but also by extending the value chain and creating new industries within the energy sector through fostering backward and forward linkages.

This involves for instance extending the value chain beyond simply producing crude oil and exporting it to international markets. By extending the value chain, Arab oil producers can create new industries with different types of jobs whose products' prices are not highly correlated with oil prices. In the past, the focus has been on exporting basic petrochemicals for instance converting ethane to ethylene, which did not generate much benefit for two reasons. First, the prices of basic petrochemical products are highly correlated with oil prices. Second, refining and petrochemicals are also highly capital-intensive industries and don't generate many jobs. Therefore, the recent emphasis of Arab oil exporters has been on extending the value chain to more complex petrochemical products and even finished products, manufactured in industrial parks that attract the private sector and foreign direct investment.

Adding more stages to the oil value chain in this way not only generates more jobs, but also a greater variety of jobs, including in the service sector such as trading, marketing and sales, procurement and logistics, as well as supporting services such as accounting, finance and human resource management.

Also given the challenge that Arab oil exporters face in providing low carbon solutions demanded by their customers, this challenge could be tackled through enhancing the importance of the knowledge economy.

So, rather than treating the oil industry as a sunset industry in world of heightened uncertainty, Arab oil exporters will need to be much more strategic in terms of how the oil sector can enrich economic diversification.

Second, regardless of the speed of the energy transition, governments should pursue measures to optimise the use of their resource bases. These include the implementation of energy efficiency measures, rationalizing domestic energy consumption, reforming energy prices, reforming the power sector, and diversifying the energy mix to increase the role of gas and renewables. Such measures are complementary to overall economic diversification strategies.

Finally, Arab countries should not miss out on the renewable 'revolution'. They have great potential for renewable energies, owing to high levels of irradiation throughout these countries, and wind potential in some. Many countries in the region also have fewer limitations on the use of land for construction of wind and solar farms. Furthermore, their locations are often close to the regions' main energy markets. Collectively, these conditions create a unique opportunity for many Arab countries to exploit their renewable resources to their full potential to serve rising domestic demand, whilst also

harmonizing with the changing global energy landscape in which renewables are fast becoming mainstream.

However, given the uncertainty in the speed of transition, Arab oil exporters need to adopt strategies that are likely to be successful under a wide set of future market conditions.

Renewables may replace hydrocarbon resources in the domestic energy mix, but not in government budgets, because investment in renewables does not generate the high returns that the oil and gas industries do. Also, while renewable energy industries are part of the diversification strategy, they alone cannot deliver the real needs of these economies, such as job creation and welfare improvements. Therefore, Arab oil exporters need to gradually 'extend' their energy model rather than completely 'shift' from hydrocarbons to renewables and instead integrate renewables into their hydrocarbon assets: oil exporting countries cannot simply 'transform' into renewable exporting countries.

Indeed, these countries have unique characteristics that make the rationale of investment in renewables quite compelling. They have rising energy demand and are at a stage of development where economic growth is tied up with energy consumption and, the rise in energy demand is expected to strain their export capability.

In short, for oil exporters, investment in renewables addresses, to some extent, governments' short-run revenue maximization objectives by freeing exports of hydrocarbons, but, it does not guarantee their long-term sustainability. In the long-term, diversification of their economies, which requires deep structural reforms, remains the main adaptation strategy that these countries need to pursue.

Oil Policy Will Continue to Matter

Let me now turn to the final aspect of my talk: the role of oil policy. While diversification should remain the ultimate objective of Arab oil exporters, the process is complex and fraught with challenges and potential setbacks. Many oil producers will take a long time to develop alternative industries and activities that are as profitable as extracting low-cost oil. During the transition, the oil sector will continue to be the dominant source of income and therefore in addition to diversification, oil exporting countries should aim to maximize this income from their hydrocarbon assets. This implies that oil policy and oil monetization strategies will remain key in shaping these countries' economic strategies for the foreseeable future **(Slide 14)**.

Faced with the possibility that significant amounts of recoverable oil may never be extracted, some have suggested that Arab oil exporters have no option and indeed it is even rational that they monetise their reserves as quickly as possible and squeeze out high-cost producers and gain market share – just as with any other competitive market.

However, this argument ignores the significant challenges that a shift to a competitive market poses for major oil producing countries. If most low cost producers adopt a similar strategy and increase supplies in the face of expected slowing demand growth, this will result in a massive fall in oil prices and oil revenues, putting the political, social and economic stability of these countries at risk and derailing the entire economic diversification agenda. There is also the question of whether low-cost producers can increase their production capacity, especially in an environment of low oil prices. This would be a major undertaking requiring huge investment, and difficult to implement, especially in countries with unstable political and economic environment. In other words, the heavy reliance on oil revenues places a constraint on how fast oil exporters can shift to a more competitive world.

Thus, even as we shift to more competitive markets, oil policy and managing producer-producer relations will continue to matter. Rather than simply pursue a policy of non-corporation and competition with low and high cost producers, producers are most likely to continue to cooperate and restrain their output in an attempt to increase revenues.

But the cooperation between producers has to take a different shape to that which has existed in the past. For instance, producers should not only be concerned with low oil prices, but also be proactive when prices are too high, as high oil prices induce strong supply and demand responses.

It is true that maintaining cooperation in a more competitive world is very challenging. It is also true that this cooperative strategy will be less effective over time in a carbon-constrained world. However, this does not imply that cooperation is not possible, nor that it cannot be sustained for a prolonged period: as long as these economies are not diversified, the alternative of non-cooperation is also not tenable. In a world where the prospects of oil demand and the speed of energy transition are highly uncertain, the immediate benefits of pursuing cooperation are more visible and certain than those from pursuing the alternative strategy of non-cooperation.

Conclusion

To conclude, the diversification of Arab oil exporting countries has been a constant and central theme in previous Arab Energy conferences. But in the current context of fundamental changes in the global energy scene, the issue has an added dimension. The energy transition will not only shape the political and economic outcomes of Arab oil-exporters, but the transition in the major Arab oil exporters to more diversified and resilient economies will also shape the global energy transition.

In other words, this is a two-way street. If the transition in Arab countries does not go smoothly and countries fail in their diversification efforts, this could result in lower investment in the oil sector, output disruptions and more volatile oil prices. Also, in the absence of diversification, oil exporters will continue to push for higher oil prices; speeding up the global energy transition.

In contrast, if these countries succeed in their diversification objectives they will not only increase the resilience of their economies, enabling the pursuit of more flexible and proactive oil policy and the adoption of long-term strategies, they could also influence the speed of global energy transition and secure the long-term demand for oil.

Thank you for your attention.