



## FUTURE OF ENERGY SECURITY: TRANSITION, TECHNOLOGY, TRADE AND INVESTMENT

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Playing out over several decades, a massive transformation of the energy sector is underway. The way we produce energy is changing, from the shale revolution to a shift toward low-carbon fuels. And the way we consume energy is also evolving, with rising electrification and an increased appreciation of the multiple benefits derived from energy efficiency. While there is a long road ahead, we are already witnessing the start of a dramatic and significant change in direction towards a more sustainable, lower carbon future.

Yet while the IEA strongly welcomes the steady march forward of renewable energy and clean energy technologies – in particular energy efficiency, a topic that is now a core aspect of the IEA's work programme – there still remains a need for robust investment in upstream oil and gas. As we noted in our recent *Oil 2018 Report*, the world needs to replace 3 million barrels per day of depleted production capacity every year. This is three times as much oil as the decline in demand that ambitious climate policies would deliver over the long term.

Regardless of climate policy, timely investment into oil and gas supply remains a cornerstone of energy security. Ensuring that our energy security goals can be met while at the same time recognizing that the evolution of the energy sector requires constructive dialogue and cooperation between a range of international organisations, industry and policy makers.

All of these sectors will be represented at this year's International Energy Forum Ministerial in New Delhi and I am looking forward to presenting the views of the International Energy Agency alongside all of our partners, including the Organization of the Petroleum Exporting Countries (OPEC), the International Renewable Energy Agency (IRENA) and of course one of the IEA's Association Countries, India.

The importance of India to the future of the global energy system cannot be overstated. For example, it is already leading the world on access to energy. Since 2000, India has provided access to electricity to half a billion people, reaching 82 per cent of the population, compared with 43 per cent in 2000. If this pace is maintained, India will reach universal access to electricity in the early 2020s – truly one of the greatest success stories in the history of electrification.

The IEA is proud to be working closely with India – indeed closer partnership with emerging economies is one of the cornerstones of our efforts to modernise the IEA. Over the last three years, we have made great strides in transforming the IEA into a truly global organisation, opening our doors to include dynamic emerging economies like China and India, which are seeing rapid energy demand growth.

Working with these countries benefits everyone, as together we can enhance energy security, produce more comprehensive energy data and improve energy governance. In addition to China and India, five countries have joined the IEA Association initiative since 2015 – Brazil, Indonesia, Morocco, Singapore and Thailand. Along with our newest full member, Mexico, the “IEA Family” of countries now accounts for more than 70 per cent of global energy consumption, up from under 40 per cent in 2015.

This broader perspective and reach allows us to take a truly global view of the changes underway in how we produce, consume and trade energy. We will need all forms of energy to meet the expected 30 per cent growth in energy demand seen through 2040, according to the central scenario in the IEA's latest *World Energy Outlook*. That is the equivalent to adding another China and India to today's global demand.

Recognising these challenges, last year we developed a Sustainable Development Scenario, which sets out pathways to achieving the key energy components of the UN Sustainable Development Agenda: universal access to modern energy by 2030, urgent action to tackle climate change and measures to improve air quality.

Meeting these parallel goals will require broadening our understanding of the new energies that are shaping this transformation as governments adopt policies that will help in the transition to less carbon-intensive economies. With such dramatic changes, ensuring market transparency on the basis of accurate data is more important than ever.

The IEA is well-placed to play a key role in these efforts. It is the only organisation with a truly comprehensive view of the entire energy system, with its analysis spanning all forms of energy, and all technologies. As such, we believe it is essential that stakeholders understand the dynamics and challenges involved, and we know that requires cooperation and coordination at all levels, from data and analysis to policy recommendations.

The IEA, OPEC and the IEF already work closely together through the Joint Organizations Data Initiative to improve the quality and frequency of data, the building block for any analysis and modelling exercise. Access to accurate data is critical and we take great pride in our participation in JODI, which now includes a gas database, a reflection of the growing role of natural gas in the years ahead. Yet, there is much more to be done to meet the large-scale shifts in the global energy system and to meet the demand of current and future generations.

I believe that by strengthening cooperation between the IEF, OPEC and other stakeholders, we can make a significant contribution to this process. ■