

World Energy Trilemma | 2016

WORLD
ENERGY
COUNCIL

EXECUTIVE SUMMARY

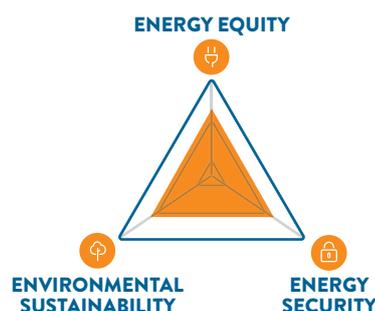
IN PARTNERSHIP WITH OLIVER WYMAN

DEFINING MEASURES TO ACCELERATE THE ENERGY TRANSITION

The energy sector is at a transition point and faces a range of growing challenges. Countries have committed to reducing greenhouse gas emissions (GHG) under the 2015 climate change agreement (COP 21), putting a renewed focus on the decarbonisation of the energy sector. In addition, energy services must expand to meet rising global energy demand in many emerging economies and provide more than 1 billion people with needed access to modern energy services. At the same time as transforming market designs and expanding energy infrastructure, energy security and reliability must be maintained and strengthened in a context of increasing risks and resilience challenges.

The energy industry and energy leaders have been implementing changes and making strides to meet these challenges. To meet the goals of 2020 and beyond, governments must enact and continue to push the evolution of energy policies and financing solutions that support rapid transitions and expansion of energy infrastructure. Through interviews with policymakers and private sector energy leaders, an analysis of five years of the Energy Trilemma Index, and associated wide assessment of countries' energy strategies, this 2016 World Energy Trilemma report has identified five focus areas to drive progress on the energy trilemma and offers guidance in the complex task of translating the trilemma goals of security, equity and sustainability into tangible actions.

1. Transforming energy supply
2. Advancing energy access
3. Enabling consumer affordability and industry competitiveness
4. Improving energy efficiency and managing demand
5. Decarbonising the energy sector



FIVE FOCUS AREAS TO ACCELERATE THE ENERGY TRANSITION

1 TRANSFORMING ENERGY SUPPLY. Policymakers and decision-takers must set clear and straightforward energy targets and build a broad consensus for the transition in energy supply and demand. This process must include new entrants to the energy sector and early engagement with affected communities. Taking an adaptive approach by launching pilot projects and regularly analysing policy effectiveness is crucial for the successful delivery and implementation of policies.

2 ADVANCING ENERGY ACCESS. Many emerging and developing economies continue to struggle to expand energy infrastructures to support advanced energy security, reliability, and access. To increase private sector investments in infrastructure expansion and modernisation, countries are reforming regulatory frameworks to decrease the cost of doing business, and to increase competitiveness in the electricity market. In tandem, distributed generation through solar and wind renewables is bringing energy access to rural and remote communities that cannot currently be cost-effectively connected to the grid.

Solely expanding energy access infrastructure is not enough. Countries must look to a range of innovative mechanisms that enable affordable access for people to utilise the benefits of modern energy for income-generating activities. Innovative mechanisms include pay as you go business models and mobile banking solutions to promote the take-up of renewable-powered energy services.

3 ADDRESSING AFFORDABILITY. Many countries with lower gross domestic products (GDPs) and low rankings on the energy equity dimension are struggling to ensure energy affordability while financing or creating the investment conditions to support energy infrastructure expansion. Over the short term, subsidies can be vital for lower-income consumers and supporting social and economic programmes. Energy subsidies can be costly to deploy, are contentious to remove, and tend to decrease overall performance on the energy trilemma over the long term. The case studies in this report demonstrate how long-term subsidies can erode the profitability of utilities, stall improvements in energy infrastructure and stimulate inefficient energy use.

4 IMPROVING ENERGY EFFICIENCY AND MANAGING DEMAND. Energy efficiency and managing energy demand continue to be globally perceived as top action priorities with huge potential for improvement. As highlighted through the case studies, cost savings alone are often insufficient to stimulate the adoption of energy efficiencies or behaviours. Policymakers must align the interests of asset owners with users and regulators, and continue to implement a combination of energy efficiency standards, performance ratings, labelling programmes, and incentives. They must also increase awareness across all industrial sectors, and encourage consumers to continue to focus on greater energy efficiency.

5 DECARBONISING THE ENERGY SECTOR. The groundbreaking conclusion of COP 21 added increasing momentum to the global transition to low-carbon energy. Dynamic and flexible renewable energy investment policies are the key to responding to evolving market dynamics and technological developments. Meeting COP 21 climate goals will require a clear path to a meaningful carbon price signal and changes beyond the energy sector and across the economy. Governments have a role in building the necessary consensus for change.

RECOMMENDATIONS

There are lessons emerging from innovative and tried-and-tested policies to overcome barriers and make progress on the energy trilemma:

Policy matters: Policy choices and a regime to support a robust energy sector are critical to lasting energy trilemma performance regardless of a country's resources or geographic location.

Time matters: Policies and investments intended to change energy supply and demand at a national level will take time and will likely be disruptive. Countries must act now to progress on the trilemma with secure, equitable and environmentally sustainable energy to support a thriving energy sector, a competitive economy and a healthy society.

OTHER RECOMMENDATIONS INCLUDE:

- Improved coordination and looking beyond the energy sector to meet climate change goals is critical.
- Policymakers should provide clarity to the market with succinct and aligned signals when devising policy strategies in order for investors to assess their commitments against long-term trends.
- Governments need to be strongly supportive of private sector investment in research, innovation, and development.
- A change-management approach in communicating policies and setting expectations should be adopted to take into account technology changes and any setbacks that may occur in the future to avoid stakeholder backlash.
- Desired transitions in the energy sector must be accompanied and stimulated by transitions in regulatory frameworks. 'Energy 2.0' must be enabled by 'regulations 2.0'.

ABOUT THIS REPORT

The World Energy Council's definition of energy sustainability is based on three core dimensions – energy security, energy equity, and environmental sustainability. Balancing these three goals constitutes a 'trilemma' and is the basis for prosperity and competitiveness of individual countries.

The World Energy Trilemma Report 2016, prepared in partnership with global consultancy Oliver Wyman, along with the Global Risk Centre of its parent Marsh & McLennan Companies identifies five focus areas to drive progress on the energy trilemma. Developed through interviews with policymakers and private sector energy leaders, analyses of five years of the energy trilemma findings, and associated wide assessment of energy strategies, the report offers guidance in the complex task of translating the trilemma goals of security, equity and sustainability into tangible actions.

WORLD ENERGY COUNCIL

The World Energy Council is the principal impartial network of energy leaders and practitioners promoting an affordable, stable and environmentally sensitive energy system for the greatest benefit of all.

Formed in 1923, the Council is the UN-accredited global energy body, representing the entire energy spectrum, with over 3,000 member organisations in over 90 countries, drawn from governments, private and state corporations, academia, NGOs and energy stakeholders.

We inform global, regional and national energy strategies by hosting high-level events including the World Energy Congress and publishing authoritative studies, and work through our extensive member network to facilitate the world's energy policy dialogue.

Further details at www.worldenergy.org and [@WECouncil](https://twitter.com/WECouncil)

The full report can be found at www.worldenergy.org/publications

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