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POWERING THE US-INDIA ENERGY RELATIONSHIP

Nisha Biswal

US-India energy cooperation is positioned to be one of the fastest growing areas of the strategic and commercial relationship over the next twenty years. While the US is still listed as the fastest oil consuming nation in the world and India works fiercely to build out its capacity to meet its still growing domestic demands, both countries are pursuing all-of-the-above energy strategies that are focused on increasing energy access and energy security both domestically and abroad. This includes pursuing diversification of energy resources, supporting advancement of energy technology in relation to both renewable and non-renewable sources, and increasing the focus on the Indo-Pacific region as a hub for trade.

Energy cooperation has long played an important role in the bilateral relationship, touching nearly all aspects of the broader strategic partnership. Since 2005, the US and India have engaged in a productive bilateral energy dialogue and over the past decade that dialogue has expanded to include multiple government agencies, national labs, universities and other stakeholders. Year after year, the portfolio of partnerships and programmes to increase

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our energy cooperation grew to include research and development programmes in building efficiency, joint partnerships between the US and India-based companies in the oil and gas industry, applications and development of retrofitting technology for the power sector, new technology and storage solutions for renewable energy, resource management technology to bolster sustainable growth, clean coal investment, civil nuclear cooperation and programmes in multilateral fora such as Mission Innovation and the Clean Energy Ministerial.

The importance of energy cooperation and the desire to increase collaboration has been a priority sustained through several US and Indian administrations. The strategic and commercial role of energy between our two countries was reaffirmed and elevated during President Trump and Prime Minister Modi's 2017 meeting in Washington, when the two leaders announced the US–India strategic energy partnership. In order for both countries to achieve deeper and more meaningful cooperation, the US–India strategic energy partnership holds the stated goal of facilitating increased industry and stakeholder engagement, for which the US–India Business Council (USIBC) is a proud partner. As USIBC board member and Senior Vice President of Marketing for Tellurian Inc., Amos Hochstein comments, 'Within the global energy context, India is the most exciting market in the world. Prime Minister Modi's commitment to leading a transformation to a cleaner energy future and cleaner air throughout India, by substantially increasing the share of renewables and natural gas in India's energy mix, is a catalyst for investment and innovation. The impressive levels of investment by the government and the private sector are creating the opportunity for strengthening US–India ties.'

India's economic and strategic influence in the Indo-Pacific region continues to grow. During the launch of the Indo-Pacific

Business Forum at the US Chamber of Commerce in Washington, DC in July 2018, energy and energy infrastructure were highlighted as priorities by Secretary of State Pompeo and Secretary of Energy Rick Perry. Unveiled during the event, the US Government showed its own commitment to the region through the roll-out of the Asia EDGE (Enhancing Development and Growth through Energy) programme which will invest approximately \$50 million to strengthen energy security and promote energy access across the region. As Asia EDGE and other Indo-Pacific initiatives are further developed by the US Government, private sector players of both countries will be essential to closing the investment gap and providing input to policymakers in order to continue growth for priority initiatives. The USIBC, a key partner in the Indo-Pacific Business Forum, is committed to providing industry input to help determine priority initiatives and facilitate US and Indian private sector opportunities for growth in our respective countries and throughout the Indo-Pacific region.

SECTOR OPPORTUNITIES

India has emerged as the fastest growing major economy in the world and is expected to account for about a quarter of the growth in global energy demand through 2040—offering enormous opportunities for US businesses to play a critical role in developing the energy sources and infrastructure India will need to achieve its goals.

While India and the US share all-of-the-above energy strategies and a focus on energy security, for India this is largely focused on 24x7 access to reliable energy. To meet these targets, India has focused on building out cleaner fuel sources including natural gas, renewable energy and civil nuclear energy. While some of the renewable

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buildout is ambitious, the vision for India is supported by abundant domestic solar and wind resources, a strong national government commitment to deployment of cleaner energy and technologies, an expanding building sector and a growing workforce. The widespread public concern with sustaining economic growth while improving quality of life metrics like air quality and a stable energy grid support the further development of these alternative fuel sources.

India's rapidly growing renewables market is also primed for US exports, with the US commerce department ranking India as the third most attractive market for US renewable energy exports. Despite the challenges posed by local content requirements and competition from companies with foreign government backing, hundreds of millions of dollars will be invested in the Indian renewable energy sector in the coming years. US companies are well placed to lead in this sector and play a key role in developing best practices and standards.

Energy efficiency is another area of opportunity for increased bilateral trade and cooperation. With roughly 80 per cent of India's commercial buildings yet to be built, robust implementation of energy efficiency policies that are in sync with US and global standards can help curb energy use and improve reliability, while still creating markets for innovative building technology services. Industrial energy efficiency, particularly in manufacturing, is an area ripe for more cooperation. Space cooling and efficient appliances will benefit from increased commercial ties and research and development (R&D). The USIBC supports mechanisms to promote out-of-the-box thinking for new development and deployment of cutting-edge technologies in the air conditioner industry—a market that will continue to grow in India with the burgeoning middle class and corporate campus development. Cooperation in energy efficiency has already supported the

development and implementation of India's energy efficient building codes.

Fossil fuels will remain a significant source of energy for India and the region in the coming years. While the costs associated with the long shipping distance to India limit the competitiveness of US coal exports relative to suppliers in other countries, there is significant potential for increased US coal exports, as well as selling big-ticket mining equipment and continuing consultancy on mine safety and environmental issues. Increased cooperation in this area would create the potential for US technology and service providers not only to contribute to the efforts, which increase efficiency and reliability of existing coal power generation and implement clean coal technology, but also to have a real impact on India's emissions and air quality concerns.

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The recent increase in oil and gas sales between the US and India is another trend likely to continue over the next several years. India's growing import volume of US crude comes as it seeks to diversify sources with strong potential for cooperation on strategic petroleum reserves between the two countries.

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Gas will be a particularly interesting area to watch. India's stated goal of increasing the share of gas to 15 per cent in the near term, and the focus on infrastructure and policy reforms in the gas sector, provide ample opportunities for growth—which the USIBC supports through its Executive Committee for Energy and Environment. Gas will also play an essential role in achieving India's renewable energy targets by providing increased flexibility for grid integration. The US is well positioned to become a key partner in this area whether it is through new exports to India, technology exchange or collaboration through the exchange of regulatory best practices.

Innovation is a particularly important component of both countries' energy strategies with technical collaboration in areas like smart grids, energy storage, energy efficiency, fossil fuel technologies and electric vehicles (EVs) poised to expand over the coming decades. The bilateral relationship provides opportunities for growth through both private enterprise and joint R&D programmes like the partnership to advance clean energy's new energy storage and smart grid track, which could be expanded to include clean coal and civil nuclear cooperation.

India's ambitious agenda for EVs is another area ripe for increased commercial ties and cooperation. As one of India's largest programmes, EV promotion enjoys government-wide support including, battery manufacturing industries and charging infrastructure. In September 2018, Prime Minister Modi outlined his vision for India's mobility development, focused on the 'Seven Cs' of mobility—common, connected, convenient, congestion-free, charged, clean and cutting-edge. Successful development of a competitive EV market in India will require engaging other countries and adopting global best practices suited for the Indian context.

These technological transformations would also have the benefit of reducing demand for energy imports and increasing India's energy security through resource diversification. Developing a cleaner and smarter grid alongside a growing number of EVs will be a challenge for India, requiring significant transformation of existing industries like automobile and battery manufacturing, as well as making changes to electricity generation and transmission regulations. In all these areas, India and the US can partner on regulatory and technology development while promoting continued business collaboration and advancing new investments.

BUILDING THE FUTURE

Energy is at the root of economic growth and has the potential to be the bright spot of the strategic and commercial relationship between the US and India. By promoting best practices and market-based solutions for the full spectrum of opportunities in the energy sector, the USIBC is displaying its excitement at being part of this growing partnership and to serve as the direct link between businesses, states and government in the US–India energy corridor. Continuing to lay the groundwork for future energy collaboration will enrich and support all pillars of the strategic relationship. This includes the goals of job growth—to serve India's young population, entering the market—and the continued growth of the industrial manufacturing sector by providing an energy grid known for stability.

Let's not forget that the benefits of increased energy cooperation goes both ways. Indian investment in the US energy infrastructure is growing and further linking our countries as partners in energy trade and innovation. India has made significant investments in the gas and renewable energy sectors in the US—and is looking to increase these investments massively.

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One of India's largest and most ambitious programmes, EV promotion enjoys government-wide support for the country's EV and battery manufacturing industries, charging infrastructure and energy sector development.



As investment in the US and Indian energy industries grows, a significant and powerful role exists for subnational collaboration and partnerships in innovation. The potential of state-to-state engagements will not only help increase commercial ties and provide a platform for transparency but will also facilitate an increased exchange of best practices and standards. With our two nations sharing all-of-the-above energy strategies to achieve energy access and security in our shared Indo-Pacific region, it is important we continue to pursue strong collaboration at both a subnational and national level for the continued health of both countries.