

10AM Wednesday 24 June 2020

Ms. Jessica Shaw MLA
Chair, Economics and Industry Standing Committee
laeisc@parliament.wa.gov.au

Dear MS Shaw

INQUIRY INTO WESTERN AUSTRALIA'S ECONOMIC RELATIONSHIP WITH THE REPUBLIC OF INDIA

My name is Terry Mohn, CEO Sentient Energy's National Energy Simulators, past GM Horizon Power, founder and past Chair International Microgrid Association, Board Chairman General Microgrids and advisor to various US Government agencies.

Thank you for inviting my comments on this subject. At the onset, please let me introduce my colleague from India: Reena Suri, on the phone. I will make my remarks and then she will address you.

I have had the fortune of working in India on behalf of both the US State department and US DOE over a course of years. My role was to open up opportunities for US companies in India. My specialty includes renewable energy, rural electrification, microgrid business models, energy policy and associated technologies.

Many of my remarks result from approximately five years in and out of India in almost every state, working with both the central and each of the state governments in order to:

1. modernize their electric grids,
2. include more renewable generation,
3. identify ways to provide sustainable energy to rural areas, and
4. encourage investment from US companies into India.

Within your invitation letter to this inquiry, I was asked to comment in specific areas of interest including:

- Renewable Agenda
- WA Market Opportunities
- COVID Impact

I have prepared some remarks and have come here to offer reports by me, and others, that I believe will be useful to this committee. If you wish, I have prepared and can supply a summary of each of the reports offered to be placed into my testimony. These are contained within a USB storage device.

Following my comments, I will turn over the testimony to Reena Suri.

Opening remarks

PM's Scott Morrison and Narendra Modi held a Virtual Summit on 4 June 2020 at which they affirmed their commitment to strengthening India-Australia ties for the long term, they committed to elevate the bilateral Strategic Partnership concluded in 2009 to a Comprehensive Strategic Partnership (CSP).

Key points from the joint statement on the CSP

- India and Australia resolve to boost collaboration on science, technology and research to support their national COVID-19 responses. We have committed to a new phase of the Australia-India Strategic Research Fund to promote innovative solutions for responding to and treating COVID-19, as well as other jointly determined priorities, to be preceded by a one-off Special COVID-19 Collaboration Round in 2020. Universities in WA have the opportunity to develop relevant research projects in partnership with Indian Universities and big industry.
- The MoU on Cooperation in the field of Mining and Processing of Critical and Strategic Minerals identifies specific areas where both sides will work together to meet the technological demands of the future economy. Both countries jointly decided to cooperate on new technologies for exploration and extraction of other minerals. Opportunities for investment from India into the mining of strategic minerals in WA; India as a market for strategic minerals; Mining Technology transfer opportunities from Australia to India.
- It was jointly decided to continue building on our mutually beneficial agriculture relationship including through exploring the development of a partnership on grains management and logistics to reduce post-harvest losses, rationalize costs and ensure farmer income is not affected by supply chain disruptions (particularly in light of the COVID-19 pandemic). CBH Group and other similar organizations have the opportunity for technology and knowhow transfer from Australia to India; India has also reduced tariffs on pulses and chickpeas last week, opening up the market for WA farmers.
- Water security is a critical challenge for both countries and it was jointly decided to deepen policy and technical cooperation on mutually agreed activities to improve water management and sustainable economic development through the Memorandum of Understanding on cooperation in the field of Water Resources Management. There is an opportunity for WA's Water Corporation to share knowledge and provide consulting services to India; potential research projects for universities.
- Memorandum of Understanding on Cooperation in Vocational Education and Training to forge new bonds of cooperation in policy development, program delivery and information exchange. An opportunity exists for a Technical and Further Education (TAFE) WA and private providers to design and deliver tailor-made vocational and skill training courses in India.
- India and Australia reiterated their commitment to enhance cooperation under the annual Australia-India 'Energy Dialogue.' This will further cooperation in areas such as pumped hydro storage, cost-effective battery technologies, hydrogen and coal

gasification, adoption of clean energy technology, fly ash management technologies, and solar forecasting and scheduling. Both countries committed to continue to collaborate on climate change, energy security and other issues of importance to the region and wider world, especially through the International Solar Alliance (ISA) and Coalition for Disaster Resilient Infrastructure (CDRI). Australia is proud to be a founding member of both organizations.

Personally, I have found individuals within India very friendly and enterprising and look forward to working them in the future. Once you have established a rapport with key individuals, you will find navigating to the appropriate areas quite simple. The country is both geographically large and also has a large, dense population. This will need to be taken into consideration as you conduct your work there.

In addition to the Sister State Relationship between the State Government of Western Australia and the State Government of Andhra Pradesh, one idea you may wish to explore is establishing a Perth-Mumbai sister-city relationship. I think both cities are natural partners because of their equal focus on education, commerce and technology.

The best contact resources I have found in India are:

- India Smart Grid Forum (ISGF) is a public private partnership initiative of the Ministry of Power, Govt. of India with the mandate of accelerating smart grid deployments across the country. With 200+ members comprising of ministries, utilities, technology providers, academia and research, ISGF has evolved as a Think-Tank of global repute on Smart Grids and Smart Cities.
- The Energy and Resources Institute (TERI) is an independent, multi-dimensional organization, with capabilities in research, policy, consultancy and implementation. They are innovators and agents of change in the energy, environment, climate change and sustainability space, having pioneered conversations and action in these areas for over four decades. They believe that resource efficiency and waste management are the keys to smart, sustainable and inclusive development. Their work across sectors is focused on
 - Promoting efficient use of resources
 - Increasing access and uptake of sustainable inputs and practices
 - Reducing the impact on environment and climate

Their research, and research-based solutions have had a transformative impact on industry as well as communities. They have fostered international collaboration on sustainability action by creating a number of platforms and forums. They do this by translating our research into technology products, technical services, as well as policy advisory and outreach.

This concludes my prepared remarks. Next, if you wish, I can summarize each of the reports that I am supplying via USB storage device.

Attached reports:

India Rural Microgrids Business Case By Researchers from Princeton University’s Woodrow College, Opportunities in Financing and Community Engagement for Renewable Energy Microgrid Projects

This report introduces the “then current” status of rural electrification in India and the government’s efforts to improve electrification. The report then describes technologies useful in addressing energy poverty and how to finance these projects. WA has considerable experience in solving rural electrification and should consider this report as an identification of an opportunity.

India's Economic Report by Terry Mohn

This report contains an excerpt of a report produced for the US government about investment potential between the two countries. Most of the report is based on a compilation of public information and in-person interviews. The contents remain very relevant to WA in understanding the political, economic and social issues and opportunities between WA and India.

National Energy Map for India 2030 – TERI

This report was prepared India’s “The Energy and Resources Institute”. The report discusses the data, assumptions, and methodological framework used to estimate useful energy requirements of the country based on demographic and economic drivers. Technological assessments of resources and energy conversion processes have been described in the report. Economic and technological scenarios have been developed within the integrated modelling framework to assess the best energy mix during the modelling time frame. Based on the scenario assessment, the report provides directions to various stakeholders associated with the Indian energy sector including policymakers, technologists, and investors. WA should consider this report to understand India’s economic objectives and ensure any offers align as such.

Newsletter (ISGF Bulletin - May 2020) final

This monthly report may be explained more fully by Reena Suri. It represents up-to-date information produced by her agency for the energy industry. It covers subjects such as

markets, policy, technology, educational programs, office holders, and other useful India energy information. WA should consider subscribing to this to remain current on energy issues within India.

Policy for Rural Electrification in India (Consultation Version) - ERE Practicum SPEED Team

This report was produced out of a three-year initiative funded by the Rockefeller Foundation that promotes Smart Power for Environmentally sound Economic Development (SPEED). As part of the SPEED project the team studied the risks inherent in the business environment of energy services development on a macro- and micro-scale. Some of these risks are the direct result of implementation of specific policies, while others are unintended consequences of policy implementation. It reports on policy, technology, financing and capacity building within India. WA should consider this report as it entertains product and service offerings between WA and India.

Report-on-Indias-RE-Roadmap-2030-full-report-web 2015

This report was produced by the Indian government to outline its objectives for renewable energy through the year 2030. It reports on scarcity of energy supply, transitional fuels to renewables, water and land availability, manufacturing resources and research currently underway. WA should consider this report as it considers how to address mutual business opportunities for renewable energy.

Report-on-Smart-Cities-Mission-in-India_July_2018_Final

This report was produced by Seconded European Standardization Expert in India for the purpose of enabling European and India Cooperation on Standards. It focuses on the need for smart cities within India and how to develop them. Many of the sites chosen by India to build smart cities are documented on their region, objectives and accomplishments. WA should use this report to understand the interest in India to build infrastructure for economic growth.

Yours Sincerely,



Terry Mohn,

CEO National Energy Simulators, LTD

Addendum - Inquiry Terms of Reference

The Economics and Industry Standing Committee will inquire into and report on matters relating to Western Australia's economic relationship with the Republic of India. In particular, the Committee will evaluate:

1. Economic developments in India over the last decade and their implications for the bilateral trading relationship;
2. Current status of India's trading relationship with Western Australia;
3. Existing barriers or impediments to trade; and
4. Opportunities to strengthen the trading relationship, including:
 - a) the Sister State Relationship between the State Government of Western Australia and the State Government of Andhra Pradesh;
 - b) the role of the Indian diaspora business and entrepreneur community;
 - c) strategies to attract inbound investment to Western Australia; and
 - d) developing existing and new export markets in India in target sectors, including:
 - i) international education;
 - ii) tourism;
 - iii) minerals and energy;
 - iv) advanced manufacturing; and
 - v) agribusiness.