

Parliamentary Delegation to India

3 to 7 November 2019

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ISBN 978 1 76092 124 8 (Printed version)

ISBN 978 1 96092 125 5 (HTML version)

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Members of the Delegation

Delegation Leader

Mr Ted O'Brien MP (Committee Chair)
Member for Fairfax, Queensland
Liberal National Party

Delegates

Hon Dr David Gillespie MP
Member for Lyne, New South Wales
The Nationals

Ms Zali Steggall MP
Member for Warringah, New South Wales
Independent

Mr Josh Wilson MP (Deputy Committee Chair)
Member for Fremantle, Western Australia
Australian Labor Party

Official

Mr Nathan Fewkes
Delegation Secretary

About the delegation

The delegation comprised four members of the House of Representatives Standing Committee on the Environment and Energy (the Committee). The Presiding Officers selected the Committee's bid to travel to India as part of a regular program of annual committee visits to Asia.

The delegation undertook meetings, visits and site inspections in India from Sunday 3 November to Thursday 7 November 2019. The delegation visited three Indian cities: Agra, New Delhi and Mumbai.

Delegation aims and objectives

India is the world's second-most populous country and the world's largest democracy. During 2018-19, India was Australia's eighth-largest trading partner and fifth-largest export market, with Australia's exports mostly comprising coal and international education.¹

The delegation's visit to India had three main focus areas:

1. Gathering background information for the Committee's inquiry into the prerequisites for nuclear energy in Australia. In particular, the delegation had an interest in India's energy profile, including the changing mix of hydrocarbons (coal, gas), renewable energy, and civilian nuclear energy operations, and the latest developments in the peaceful non-energy applications for nuclear technology.
2. Understanding how India plans to fulfil its energy requirements in future, while expanding access to electricity, especially in rural areas, and meeting internationally-agreed emissions reduction targets.
3. Knowing more about waste management and recycling as it occurs in India.

The delegation also used the opportunity to gain a further understanding of current social, cultural and economic developments in India.

Inquiry into the prerequisites for nuclear energy in Australia

The delegation to India coincided with the Committee's inquiry into the prerequisites for nuclear energy in Australia. The inquiry commenced in August 2019 and concluded in December 2019.

The inquiry terms of reference asked the Committee to examine 'the circumstances and prerequisites necessary for any future government's consideration of nuclear energy generation including small modular reactor technologies in Australia'.²

¹ DFAT, 'India Country Brief', at <https://www.dfat.gov.au/geo/india/Pages/india-country-brief>.

The delegation gathered background information for the inquiry as part of its program meetings, visits and site inspections. During many meetings and discussions, the delegation outlined the Committee's role and focus on the environment and energy, the inquiry and the key issues under consideration. While highly informative for the delegation, discussions on Indian nuclear energy were for information only, rather than being any formal part of the inquiry evidence.

Matters arising during meetings and discussions with relevance to the inquiry included:

- India's energy sources, market operations, future direction and current developments in Australia.
- Adaptation and transition from old to new technologies, in relation to nuclear energy, fossil fuels (such as coal power) and renewable energy.
- Understanding the economic feasibility of nuclear energy and relative costs compared to other energy options, in relation to capital costs, operating costs and environmental outcomes.
- The technical and financial distinctions between small modular nuclear reactors (SMRs) and large nuclear reactors, including nuclear reactors that utilise thorium.
- The costs of energy for retail customers.
- Energy storage, grid design and stability, transmission and dispatching electricity to retail customers.
- Research and development in new technology, intellectual property and supply chains.
- Waste management issues and waste storage.
- Public acceptance, public education, engagement and social licence.

Interested readers may find the inquiry report, evidence received and the complete terms of reference on the Committee's website: www.aph.gov.au/nuclearpower .

² The full terms of reference are available on the Committee's website: <https://www.aph.gov.au/nuclearpower>.

Delegation program, meetings and site inspections

Arrival: weekend of 2 and 3 November (Agra and New Delhi)

- **Introductions with the Australian High Commissioner, HE Ms Harinder Sidhu**

Before commencing the official program, some members of the delegation met with the Australian High Commissioner to India and received introductory briefings. The High Commissioner provided the delegation with background on matters including:

- Relations between India and Australia, the significance of the relationship and the outcomes of high-level visits.
- Strategic issues in the region and shared interests between India and Australia.
- Indian economic policy, projected economic growth and increased trade.
- The India Economic Strategy,³ commissioned by the Australian Government in 2018, identified potential opportunities in relation to energy, education and tourism.
- Australia being home to an increasingly large Indian diaspora population.

- **Visit to Café Heroes Hangout**

While in Agra, some members of the delegation dined at a café owned and operated by women who have been the unfortunate victims of acid attacks. The delegation met with the staff and gained an appreciation of their personal experiences.

- **Taj Mahal tour**

Some members of the delegation visited the iconic Taj Mahal and received a guided tour. The Taj Mahal is an important cultural and world heritage site located at Agra outside of New Delhi on the Yamuna River. It was constructed from around 1632 to 1648 with a white marble exterior and includes rich decorations, such as calligraphy text on the central tomb. During the tour, the delegation also learnt about the many architectural features, engineering feats and skill required to complete this impressive monument.

³ For further information on the strategy, see <https://www.dfat.gov.au/geo/india/ies/index.html>.

Monday 4 November (New Delhi)

- **The Energy and Resources Institute (TERI)**

The delegation visited TERI's offices and received a presentation on the history of Indian energy production, current sources of energy and related recent developments (pictured below).

In relation to sources of energy, the discussions pertained to technology challenges, cost analysis, waste management and how government policy settings can influence outcomes.



- **Visit to the Indian national Parliament**

The delegation received a tour of the Indian national Parliament. Australia and India have broadly similar democratic parliamentary institutions derived from the Westminster system.

- **Meeting with Mr R K Singh, the Hon Minister of Power and New and Renewable Energy**

The meeting with the Minister focused on India's pace of development and options to meet a growing need for more energy capacity. India has set ambitious targets for increasing its capacity in a short period of time, especially with respect to renewable energy.

Renewable energy options are being encouraged in the interests of looking after the environment. Keeping power prices low for household retail customers is also a key consideration. Nuclear power will continue to be part of the energy mix for India.

- **Meeting with Mr Prakesh Javadekar, the Hon Minister of Environment, Forest and Climate Change**

The discussions continued on themes similar to the meeting with the Minister of Power and New and Renewable Energy: India's growing energy consumption, the need for more energy capacity and India's ambitious energy targets.

Other environmental issues were also discussed including forestation, air quality, electric vehicles, waste management and recycling, single-use plastics, reducing effluent in rivers and environmental regulation. The Minister noted that India is now restricting the importation of waste.

- **Reception at the Australian High Commission**

The Australian High Commission hosted a reception for the delegation. Representatives from a range of private sector, international organisations, research institutions and other non-government organisations with an interest in environment and energy were in attendance.

Tuesday 5 November (New Delhi)

- **Council on Energy, Environment and Water (CEEW)**

Representatives of CEEW (a not-for-profit research institute) discussed with the delegation the latest nuclear technology developments in India, renewable energy options and environmental issues such as air quality.

- **Meeting with Mr Jitendra Singh, the Hon Minister of State for Nuclear Energy**

The discussions covered India's experience developing nuclear energy, including plant upgrades, private sector involvement, scientific programs, potential uses of thorium and issues related to industry insurance and liability.

The discussions with the Minister also included nuclear waste management, where nuclear waste is stored, how this is regulated and techniques employed to minimise waste.

The delegation is pictured below meeting with the Minister (seated in the centre), also with the Australian High Commissioner in attendance.



Wednesday 6 November (Mumbai)

- **Meeting with the Indian Department of Atomic Energy (DAE) and the Nuclear Power Corporation of India Ltd (NPCIL).**

The delegation received a series of presentations from a panel of senior staff from the DAE and NPCIL on India's nuclear power plant operations, control and planning, civil uses of nuclear energy and potential new technology (pictured below).



- **Site inspection at the Bhabha Atomic Research Centre (BARC)**

The delegation received an extensive tour of the BARC facility, including the Dhruva Nuclear Reactor and related research facilities. Briefings and presentations were provided on the history of the reactor, future nuclear energy requirements, new technology, nuclear waste management and the applications of nuclear technology in food production.

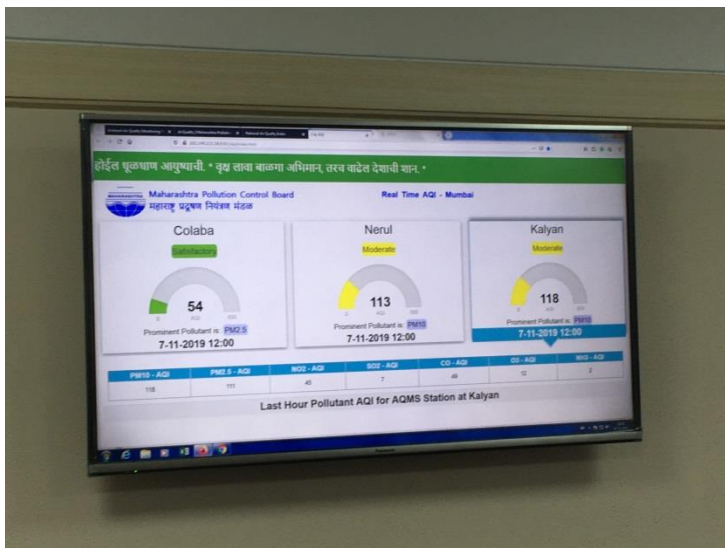
Thursday 7 November (Mumbai)

- **Meeting with the Smart Cities Council – India**

The delegation received a briefing on the application of the smart cities model in India.

- **Meeting and site inspection at the Maharashtra Pollution Control Board**

Senior staff gave a presentation on the legislative and policy context, pollution monitoring techniques (such as in relation to air quality) and projects intended to reduce pollution. The delegation then proceeded with a short tour that included demonstrations of how pollution levels are monitored (pictured below).



- **Visit to Dharavi**

The delegation visited Dharavi – an area of structures built without formal permission on government-owned land that provides housing to approximately 1 million extremely poor residents – an area with a population density of around 500,000 people per square kilometre.

Recycling is one of a number of ‘cottage’ industries that provide some income to this impoverished community.

Discarded plastic products are taken to Dharavi, sorted by colour, ground down into small granules. The granules are then provided to outside industries that re-process them into new items, such as chairs, which can be sold.

- **Meeting with TATA Power**

The delegation received a briefing on the private energy company’s role in Indian energy, India’s energy requirements, the suitability of current or emerging technology and issues relating to electricity system design.

Acknowledgements

The delegation wishes to thank everyone who met with us in India or assisted with meetings, site visits and tours and for the hospitality provided to us.

The delegation also wishes to express its appreciation to the High Commissioner, staff at the Australian High Commission in New Delhi, the Consul-General and staff at the Australian Consulate in Mumbai.

We are also grateful to the staff from the Parliament’s International and Parliamentary Relations Office for their assistance arranging the visit to India.

Mr Ted O’Brien MP

Delegation Leader