## THE LOW CARBON PATH

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

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On June 19, India's Ministry of Earth Sciences (MoES) released a report, "Assessment of Climate Change over the Indian Region". This report represents a significant milestone in our understanding of climate change in this part of the world. It presents a detailed analysis of data from 1901-2018 and the results show clear cause for concern.

Average temperatures have increased, precipitation during the monsoon has decreased, extreme heat and rainfall events have become more frequent, resulting in both more flooding and more droughts. Sea levels are rising and extreme storms, such as the recent Cyclone <u>Amphan</u>, have become more frequent in parts.

The increasing severity and unpredictability of these weather events will have an impact on all of us but clearly some more than others. The current <u>pandemic</u> is showing that there is clear need to build greater resilience in our social infrastructure, to improve public health care and welfare support for vulnerable communities.

We also need to focus on building more resilient physical infrastructure to be able to withstand the changing climate. India has already made clear commitments to this, co-leading the Coalition for Disaster Resilient Infrastructure (CDRI). Steps are now needed to convert this intent into practice, ensuring that construction projects starting today are putting in place resilient infrastructure.

Whilst adapting to this new normal is important for a country like India, we must not let the current pandemic interrupt our momentum in reducing carbon emissions. Whilst the science about the impacts of climate change has never been clearer, the good news is that so are the solutions. Low carbon technologies are becoming cheaper and better than the high carbon alternatives at an ever-faster rate.

In February, the Solar Energy Corporation of India procured electricity from a solar plus storage project at prices that were competitive with coal powered electricity generation. This 1.2 GW project represents a real tipping point in the expansion electricity generation in India, proving that "round-the-clock" power can be provided from low carbon sources at competitive prices. While there will be challenges to integrating variable renewables, we can say with greater confidence that no new coal-fired power plant will be required beyond the current pipeline of projects.

In transport, the cost of batteries has also plummeted as global manufacturers have scaled up output in the face of massive demand. Even in spite of the <u>COVID-19</u> pandemic, demand for battery electric vehicles has remained strong in many parts of the world, providing growth in an otherwise struggling auto market. India has several established auto manufacturers, alongside a growing number of electric vehicle start-ups (Ola Electric Mobility, Aether ENergy, SmartE, Yulu Bikes), which are well-suited to service both domestic and international markets.

As these technologies of electricity generation and storage become more established, it will also be important for India to identify and develop the next "clean energy prize". Whilst excellent progress is being made in the power sector, the decarbonisation of heavy industry and heavy-duty transport will require different solutions to displace coal, oil, and gas.

Low carbon hydrogen is such an example; an energy carrier which can be used throughout the economy to displace fossil fuels. Hydrogen is already used in several industries, such as fertilisers and petrochemicals, although is often produced using natural gas and so results in significant carbon emissions. In future, hydrogen should be produced using renewable electricity and electrolysis, reducing emissions and allowing India to make better use of its huge renewables potential. The global hydrogen economy is expected to grow rapidly, with countries like Germany recently announcing a package in excess of \$10 billion to support this technology. As a result, we can expect hydrogen to become competitive with fossil fuel energy sources in the medium term.

While the impacts of climate change often appear overwhelming, particularly as we start to see the effects on our economy and society today, many of the technological solutions required to overcome this challenge are already available to us. What we require is the political will to scaleup the use of these technologies, putting us on a path towards a sustainable economy.

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