



**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**

Opportunities for danish companies in the indian renewable market

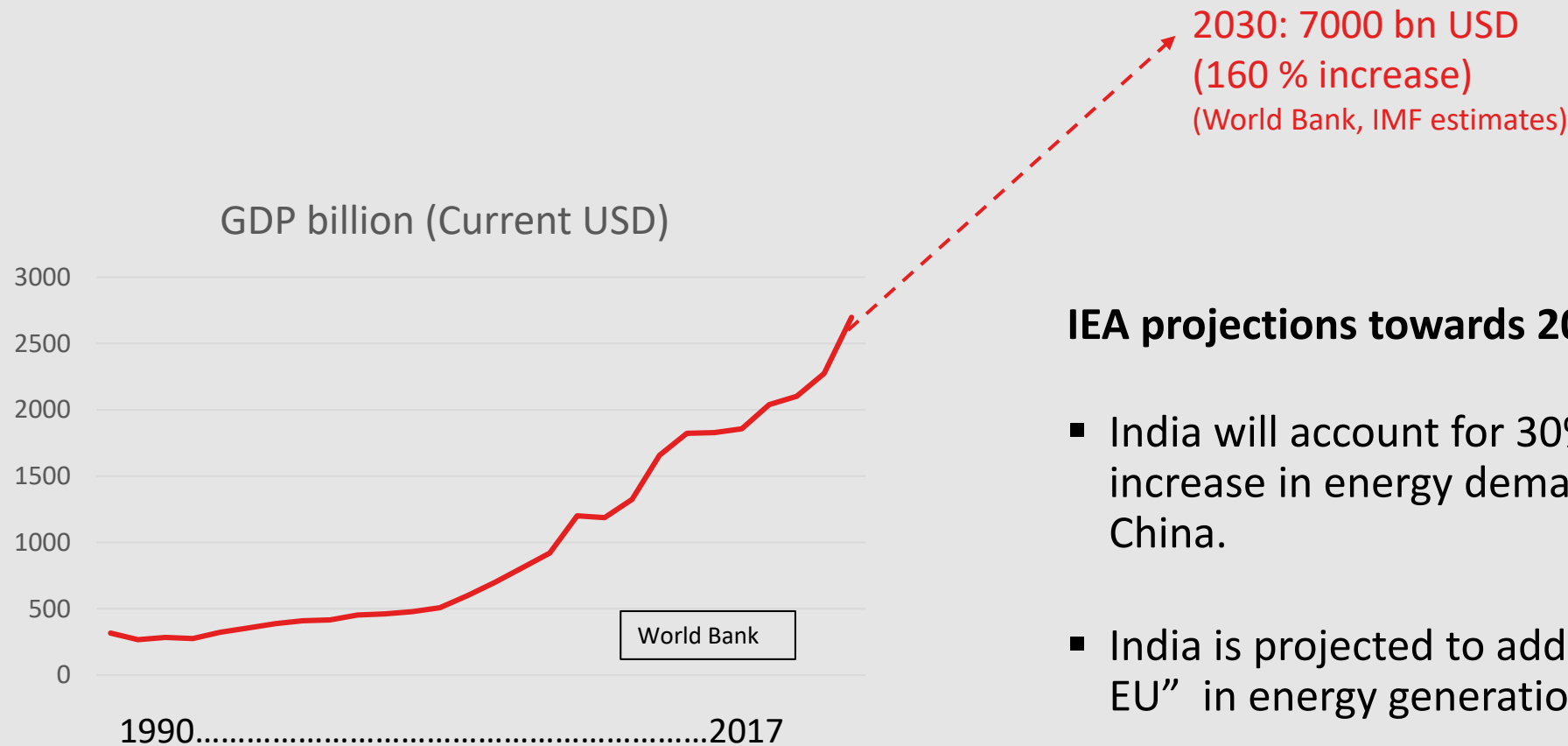
#newindianewenergy

Ambassador Peter Taksøe-Jensen, 19 November 2018

Key messages

- “New India New Energy” – a reality since 2015
- SDG 7 - for the world to be successful, India needs to be successful
- Danish government is investing long-term in India
- India will be one of the largest global markets for renewable energy in the coming decades and one of the largest markets for Danish companies

india's growth poses a global challenge but india is turning it into an opportunity



IEA projections towards 2040:

- India will account for 30% of the world's increase in energy demand – higher share than China.
- India is projected to add the equivalent of "an EU" in energy generation capacity.

Paris agreement 2015

India's ambitious targets:

- To achieve about **40 percent cumulative electric power installed capacity from non-fossil fuel** by 2030

 2018: 20%

- To **reduce the emissions intensity of its GDP by 33 to 35 percent by 2030** from 2005 level.



Renewable energy in india

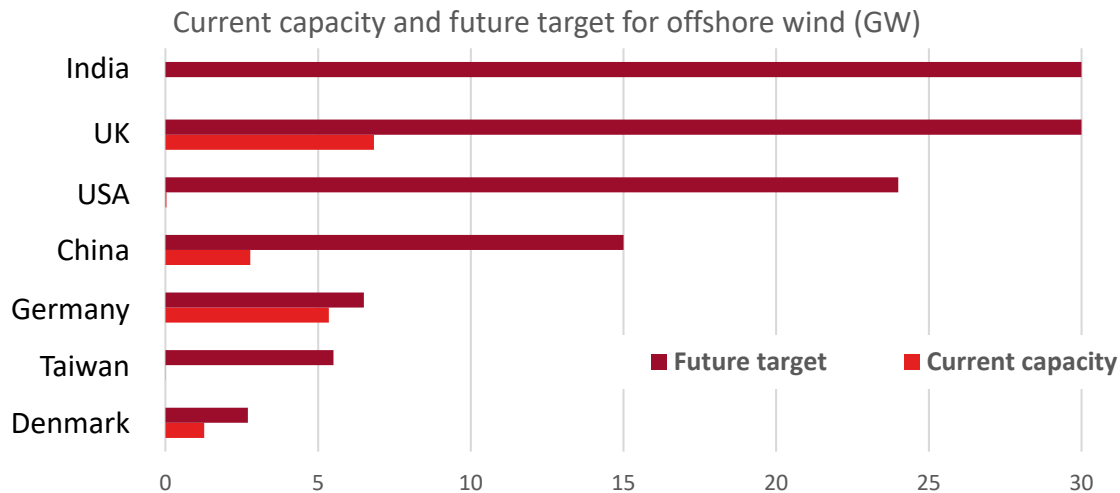
(GW)	Commissioned Oct, 2018	Official Target 2022	"New Target" 2022
Solar	23 GW	100 GW	114 GW
Onshore Wind	34 GW	60 GW	66 GW
Biomass	10 GW	10 GW	10 GW
Small-Scale Hydro	5 GW	5 GW	6 GW
Hybrid, Offshore Wind, Floating Solar	0 GW	-	31 GW
Total RE	72 GW	175 GW	227 GW

Source: Ministry of New and Renewable Energy

sectoral market opportunities

Offshore Wind

- 5 GW by 2022 and 30 GW by 2030
- India's 2030 target is double of the current installed capacity in the European Union (mainly North Sea).
- Danish Energy Agency to provide 3-year technical assistance to the Indian government



Waste-to-Energy

- 31 larger cities in India generate 36.000 Tons Per Day
- 5100 cities have 1-2 landfills causing uncontrolled methane emissions, pollution and land-use issues
- Three Indian Ministries have visited WTE facilities in Denmark during 2018



Sectoral market opportunities

Biomass / Biofuel

- Huge resource due to the agricultural sector
- Stubble burning creates huge air pollution for urban areas
- Punjab government request: help utilize 30 million tonnes of paddy straw per year



Energy Efficiency

- India's energy efficiency market is estimated at \$23 billion with a vast potential to grow
- High demand for Danish technologies; water pumps, boilers, insulation, district cooling, smart metering and many more
- In 3 years, 313 million LEDs have been distributed and the price dropped from Rs. 310 to Rs. 30



Danish Government Initiatives in India

- Strategic Sector Cooperation on Smart Cities focused on water (Aarhus municipality)
- Strategic Sector Cooperation focused on offshore wind (Danish Energy Agency)
- 1-2 more Growth Advisers in the pipeline

Acting proactively to support renewable energy

India's emergence as a global green energy leader demonstrates its commitment to tackling global climate change

By Stephan Skare Enevoldsen

Over the last four years the Government of India has emerged as a global champion for renewable energy and green growth.

India is on track to become the world's most populous country ahead of China in 2024 and the world's second largest economy by 2050. In terms of mitigating global climate change, India has recognised its global responsibility and is acting proactively in terms of supporting the global transition from fossil fuels to renewable energy.

India's participation in the Paris agreement from 2015 signalled that the government under the leadership of Prime Minister Narendra Modi is supportive of the global fight against climate change.

The country's Intended National Determined Contributions (INDCs) related to energy were very ambitious by committing to a) achieving a 40 percent share of non-fossil sources of electrical power consumption by 2030, and b) reducing emissions intensity of GDP by 33-35 percent by 2030 from 2005-level.

An ambitious program

Simultaneously, the Indian government has embarked on one of the most ambitious renewable energy implementation plans in the world. In 2015, the target for renewable energy capacity for 2022 was set at 175 GW, which entailed a five-fold increase of primarily solar and wind energy.

However, in June 2018, the 2022 target was increased to 227 GW and now includes offshore wind, solar-wind-storage hybrid, and floating solar. The current renewable energy capacity in India is at 70 GW, which will make India one of the world's largest wind and solar markets in the coming years and a potentially huge market for Danish companies.

The recent reduction in the price of renewable power, which means that wind and solar power is now cheaper than fossil fuel based power generation, is a major driver for India's increased targets

Indo-Danish partnership for renewable energy

The Danish and Indian Governments are in the process of initiating a 3-year Strategic Sector Cooperation where the Danish Energy Agency will be working with the Indian ministries and other stakeholders to support the development of offshore wind deployment in India.

The program is financed by the Danish Ministry of Foreign Affairs. The Indian Government has set ambitious targets of 5 GW by 2022 and 30 GW by 2030. In comparison, Denmark has 1.3 GW of offshore wind and the total installed capacity worldwide in 2017 was 19 GW.

Universal access to electricity in India

In his Independence Day speech in 2015, Prime Minister Modi proclaimed that all villages in India would be electrified with-

in 1,000 days. On April 28, 986 days later, Modi announced that this goal had been achieved. Since 2000 around half a billion people have gained access to electricity in India, but the push over the last four years has accelerated the progress significantly and the International Energy Agency has declared it one of the greatest achievements in the history of energy.

Making sure that the future Indian demand for electricity will come from renewable energy sources is of great importance due to the expected economic growth. The current ambitious targets from the Indian Government is a huge step towards this and means that India is on the way to doing its part for achieving the United Nations seventh sustainable development goal. India's ambitions will also create huge opportunities for Denmark and Danish businesses within renewable energy, energy efficiency and resource-efficiency.

Stephan Skare Enevoldsen is the Growth Adviser/Counselor working on Energy at the Embassy of Denmark, New Delhi



Secretary, Ministry of New & Renewable Energy, Mr Anand Kumar called on Danish Minister for Energy, Utilities and Climate, Mr. Lars Christian Lilleholt on 28 Feb 2018 to discuss co-operation in renewable energy

Centre of Excellence

- Climate Envelope project
- Three objectives
 1. Adopt to climate change
 2. Transition to low carbon economy
 3. Assist in implementing NDCs under the Paris Agreement.
- Scoping underway until spring 2019



Summing up

- India is already a global hotspot for renewable energy
- The Danish government sees India as a future strategic partner for the implementation of the Sustainable Development Goals.
- Investing in public sector knowledge-transfer through Strategic Sector Cooperation and Climate Envelope projects will improve framework conditions and ultimately result in future market opportunities for private industry.
- India will be a key market to achieve the Danish governments goal of doubling energy technology export by 2030

Thank you



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