

FROM THE DESK OF THE FOUNDING PARTNER

I am pleased to share a brief overview and analysis of the renewable energy sector in India. I trust you will find this of value. Please feel free to contact me in case you require any further information.



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Introduction:

- India is running the world's largest and most ambitious renewable capacity expansion program.
 - India ranks second amongst the emerging economies in the transition to clean energy.
 - The 2022 power targets include achieving 227 GW (earlier the target was 175 GW) of energy from renewable sources.
 - Wind power capacity was 36,625 MW as of 31 March 2019, making India the fourth-largest wind power producer in the world.
 - India is also the seventh largest producer of hydroelectric power in the world.
 - Globally, India is the third largest solar market. The Government's target of installing 20 GW of solar power by 2022 was achieved four years ahead of schedule in January 2018. India has set a new target of achieving 100 GW of solar power by 2022.
 - India is home to the world's first and only 100% solar powered airport, located at Cochin, Kerala.
 - Four of the top seven largest solar parks worldwide are in India including the second largest solar park in the world at Kurnool, Andhra Pradesh, with a capacity of 1000 MW.
 - The world's largest solar power plant, Bhadla Solar Park is being constructed in Rajasthan with a capacity of 2255 MW.
 - India was the first country in the world to set up a ministry of non-conventional energy resources.
 - As of February 2019, total renewable power installed capacity (excluding large hydro) in the country stood at 75.06 GW.
 - India accounts for approximately 4 per cent of the total global electricity generation and contributes 4.43 per cent to the global renewable generation capacity.
 - More than USD 42 billion has been invested in India's renewable energy sector since 2014. New investments in clean energy in the country reached USD 11.1 billion in 2018.
- ❖ HSA Advocates has worked on assignments involving an aggregate capacity of approx. 40,000 MW in Renewable Energy and 20,000 MW in Thermal Energy.
 - ❖ Mr. Hemant Sahai, founding partner of HSA Advocates has been an advisor on-board for several extra ministerial policy advisory working groups including the Prime Minister's Office, Ministry of Power, Ministry of New and Renewable Energy and other Government bodies.
 - ❖ Recently, Mr. Hemant Sahai has been added as a distinguished member of the Regional Committee on Energy for the year 2019–20 by the Confederation of Indian Industry (CII)
 - ❖ Led by a collegium of 15 partners in this sector, HSA Advocates are the market leaders in the Renewable Energy space.

Some of the Major Developments in the Indian Renewable Energy Sector are as follows:

- In the first half of 2018, India installed 1 MW of solar capacity every hour. Solar capacity has increased by eight times between FY14-18.
- With 28 deals, clean energy made up 27 per cent of USD 4.4 billion merger and acquisition (M&A) deals which took place in India's power sector in 2017. HSA Advocates was involved in majority of these deals.
- Power generation from renewable energy sources (excluding large hydro) in India reached a record of 101.84 billion units in FY18 and reached 107.22 billion units between April 2018-January 2019.
- In March 2018, ReNew Power finalized a deal estimated at USD 1.55 billion to acquire Ostro Energy making it the largest renewable energy company in India. HSA Advocates acted for Ostro Energy in this transaction.
- As of March 2019, EverSource Capital, a Joint venture of Everstone and Lightsource plans to invest USD 1 billion in renewable energy in India through its Green Growth Equity Fund.

Major FDI Investments in the Renewable Energy Sector are as below:

Foreign Collaborator	Country	Indian Company	FDI Equity Inflow
Asian Development Bank	India	Avaada Energy Pvt Ltd	USD 50M
Asian Development Bank	Philippines	Renew Power Ventures Pvt. Ltd	USD 44.69M
AIRRO Singapore Pte Ltd	Singapore	Diligent Power Pvt. Ltd.	USD 41.07M
ORIX Corporation	Japan	Lalpur Wind Energy Pvt. Ltd.	USD 37.75M
ENEL Green Power Development B.V.	Netherlands	BLP Energy Pvt. Ltd.	USD 32.61M
ENERK International Holdings Ltd	Seychelles	RKM POWERGEN Pvt Ltd	USD 32.50M
OSTRO Renewable Power Limited	Mauritius	OSTRO Energy Pvt Ltd	USD 32.21M
AREVA Solar Inc	USA	AREVA Solar India Pvt Ltd	USD 31.53M

According to data released by the Department for Promotion of Industry and Internal Trade (DPIIT), FDI inflows in the Indian non-conventional energy sector between April 2000 and December 2018 stood at USD 7.48 billion.

Government Initiatives/Policies:

- Government of India has announced plans to implement a USD 238 million National Mission on advanced ultra-supercritical technologies for cleaner coal utilization.
- The Ministry of New and Renewable Energy (MNRE) has decided to provide custom and excise duty benefits to the solar rooftop sector, which in turn will lower the cost of setting up as well as generate power, thus boosting growth.
- The Indian Railways is taking increased efforts through sustained energy efficient measures and maximum use of clean fuel to cut down emission level by 33 per cent by 2030.
- 60 solar cities will be developed in India as part of MNRE's Solar Cities program.
- Government of India allocated USD 416.48 million in the interim budget 2019-20 for development of solar power projects including both grid-interactive and off-grid and decentralized categories.
- Government of India aims to set up 25 Solar Parks and Ultra Mega Solar Power Projects targeting 20,000 MW of solar power installed capacity by 2019-20.
- Scheme for setting up 1000 MW Inter State Transmission Systems (ISTS) connecting wind power projects is underway.
- As of December 2018, Government of India has already installed 35 GW of wind power capacity against the target of 60 GW by 2022.
- Around 1,739.14 MW of wind power capacity was added in 2017-18. Wind power capacity addition is expected to reach 3 GW in FY19.
- India received a USD 1.15 billion soft loan from German development bank for implementation of green corridors project. 40 per cent of Intra state and 70 per cent of interstate transmission schemes will be funded through the soft loan.
- Solar and wind energy sectors in India are expected to generate over 300,000 jobs by 2022.
- To meet the rising demand of trained manpower, a target of achieving 50,000 "Surya Mitra's" of skilled manpower in solar energy sector by 2019-20 has been set.

Government Tenders:

- Solar Energy Corporation of India (SECI) received bid submissions totaling 1,100 MWA against the tendered capacity of 750 MW for projects in the state of Rajasthan, India. Another of SECI's tender for 1.2GW was oversubscribed.
 - 13 GW of Solar Projects Tendered in June as Procurement Activity Surges Post Elections.
 - In June 2019, SECI issued a tender for 6 GW of the interstate transmission system (ISTS)-connected solar photovoltaic (PV) projects linked with 2 GW of solar manufacturing component. SECI also issued two requests for proposals to set up ISTS-connected solar projects totaling 2.4 GW on Build-Own-Operate (BOO) basis.
 - National Thermal Power Corporation Limited (NTPC) issued 1 GW of grid-connected solar PV projects under Phase-II Tranche-I of the Central Public Sector Undertaking (CPSU) program to be developed across the country.
 - Recently, Gujarat Urja Vikas Nigam Limited (GUVNL) retendered two solar projects for a total capacity of 950 MW to be developed in the state's solar parks.
 - MNRE, in its tender trajectory has a target of 30GW to be tendered during 2019-20 of which close to 11GW is planned to be tendered in the next 3 months.
 - In the last 6 months, total capacity bids won by our clients is much more than 2500 MW. HSA Advocates advised them through a 360-degree approach in carrying out each transaction and continues to do the same.
- ❖ HSA has been actively involved in advising clients throughout the complete value chain – starting from bid advisory services to structuring of the project SPV/company incorporation, contract execution, land acquisition, assisting with obtaining statutory approvals, licenses and permits, financing of the project, operational issues and challenges alongside dispute advisory services and regulatory litigation, as required by the clients from time to time.

Road Ahead:

- The 2022 power targets includes achieving 227 GW (earlier the target was 175 GW) of energy from renewable sources - nearly 100 GW through solar power, 66 GW from wind power, 10 GW from biomass power, 5GW from small hydro and 31GW from floating solar and 15 GW from offshore wind power.
- Government of India has announced that no new coal-based capacity addition is required beyond the 50 GW under different stages of construction likely to come online between 2017 and 2022.
- India's renewable energy sector is expected to attract investments of up to USD 80 billion in the next four years.
- Use of renewables in place of coal will save India USD 8.43 billion annually.
- It is expected that by the year 2040, around 49 per cent of the total electricity will be generated by the renewable energy, as more efficient batteries will be used to store electricity which will further cut the solar energy cost by 66 per cent as compared to the current cost.
- Announced in 2009, Government of India proposed to launch its Jawaharlal Nehru National Solar Mission under the National Action Plan on Climate Change. The program was initiated with a target of 20 GW grid capacity by 2022 as well as 2 GW off-grid installations, this target was later increased to 100 GW by 2022 in the 2015 Union budget of India.
- India has set target to produce 15 million tons of biogas/bio-CNG by installing 5,000 large scale commercial type biogas plants which can produce daily 12.5 tons of bio-CNG by each plant.

Electric Vehicle Sector in India:

- Reiterating its commitment to the Paris Agreement, Government of India has plans to make a major shift to electric vehicles by 2030.
 - A Motor Vehicles (Amendment) Bill was passed by the Parliament in 2015, which established battery-powered e-rickshaws as a valid form of commercial transport in India.
 - India's first electric bus was launched in Bangalore in 2014.
 - On 31 March 2017, Government of India announced that the entire rail network in the country will be electrified by 2022.
 - Government of India has started Faster Adoption and Manufacturing of Hybrid and Electric vehicles (FAME) scheme which is a part of National Electric Mobility Mission Plan which provides incentives for purchasing electric vehicles.
 - Recently, Government of India released a two-pronged strategy aimed at both buyers and manufacturers, in which it offers USD 1.4 billion in subsidies to buyers while imposing a hike on import tariffs to increase manufacturing of these vehicles by domestic companies.
 - Delhi Government recently approved 1000 Electric buses to be used in Delhi's public transport system.
 - According to a draft proposal introduced in the parliament, all the IC engine powered two-wheelers and three-wheelers in India starting 2025 for two-wheelers and 2023 for three-wheelers will be banned making it a rule to move to Electric Vehicles only.
 - Niti Aayog (formerly Planning Commission of India) led by Prime Minister, Narendra Modi plans to order taxi aggregators such as Uber and Ola to convert 40 per cent of their fleet of cars to electric by April 2026.
 - Ola Electric Mobility Pvt. Ltd has raised about USD 250 million from SoftBank Group Corp. The funds will help Ola Electric achieve its goal of bringing one million Electric Vehicles on roads by 2021.
 - Phase-II of FAME Scheme encourages faster adoption of Electric vehicles by way of offering upfront incentive on purchase of Electric vehicles by establishing the necessary charging infrastructure for electric vehicles.
- ❖ HSA Advocates has been the legal advisors to Niti Aayog (formerly Planning Commission of India) on preparing the model contractual framework for PPP projects on BOT mode for supply, operation and maintenance of electric buses in urban areas on public private partnership (PPP).

Electric Energy Storage Initiatives in India:

- The launch of the mega storage facility marks a key step forward in modernizing India's power system and improving grid efficiency.
- India is executing a plan to set up 227 GW (Earlier the target was 175 GW) of renewable energy capacity by 2022 and deploying energy storage systems will help network operators mitigate solar and wind resources variability and reduce congestion on the transmission system.
- SECI invited bids for 3.6 gigawatt-hours of storage connected to 1.2 GW of solar on India's interstate transmission system, the biggest battery solicitation seen in the country so far.
- Tata Power, AES Corporation, and Mitsubishi Corporation inaugurated India's first 10 MW grid-scale battery-based energy storage system in Delhi.
- Global Battery Storage Energy System (BESS) market is expected to exceed more than USD 9 billion by 2024 at a compound annual growth rate of 34 per cent.
- The India Energy Storage Alliance (IESA) was launched by Customized Energy Solutions in 2012 to promote Energy Storage and Microgrid technologies and their applications in India.

Waste to Energy Initiatives in India:

- Every year, about 55 million tons of Municipal Solid Waste (MSW) and 38 billion liters of sewage are generated in the urban areas of India. In addition, large quantities of solid and liquid wastes are generated by industries.
 - According to MNRE, there exists a potential of about 1700 MW from urban waste (1500 from MSW and 225 MW from sewage) and about 1300 MW from industrial waste.
 - Around 92 plants with aggregate capacity of around 250 MW have been set up in the country for electricity generation from urban, agricultural and industrial waste.
 - According to the Associated Chambers of Commerce and Industry's report "Value of Waste 2015", investors valued Waste to Energy in India at almost USD 1.5 billion, in 2017 and expected it to grow to about USD 11.7 billion by 2052.
 - The Niti Aayog (formerly Planning Commission of India) has a target of constructing Waste to Energy plants with total capacity of 330 MW in 2017-18 and another 511 MW in 2018-19 under the Swachh Bharat Mission. It has also proposed the Waste to Energy Corporation of India, a nodal agency to set up plants through public-private partnership.
 - IL&FS Environment Company has set up a Waste to Energy plant at the Ghazipur dumpsite, which receives more than 2000 tons per day of Delhi's municipal solid waste. Garbage dumping in Ghazipur was banned after landfill collapsed in September 2017.
 - Indian Institute of Petroleum (IIP)-Dehradun is converting plastic waste like polyethylene and polypropylene, both together accounting for 60 per cent of plastic waste, to either gasoline or diesel. M K aromatics limited - has a plant operating at Alathur, Tamil Nadu using an environmentally friendly system for processing plastic waste into hydrocarbons /crude oil.
 - A significant step towards generating power from garbage under the Swachh Bharat Mission, six Waste to Energy plants with installed capacity of about 74 MW will be commissioned.
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- ❖ HSA Advocates has advised diverse clients in the energy sector and the portfolio of power projects being handled by the Firm exceeds the aggregate of 50,000 MWs including more than 25,000 MWs of greenfield power generation projects.
 - ❖ HSA Advocates has advised clients on more than 40 renewable energy M&A deals across the country aggregating to more than 10,000 MWs. In 2017, HSA Advocates was involved in two of the top 10 M&A deals in India, of which one of the deals was in the renewable energy space.
 - ❖ HSA Advocates has advised on several project finance debt as well as equity raising transactions, and has acted for banks, financial institutions as well as project developers. The aggregate value of these deals exceeds USD 9 Billion.
 - ❖ HSA Advocates has advised and assisted several Renewable Energy developers in acquiring land aggregating to more than 25,000 acres for developing solar/wind projects, across the country.

HSA Advocates is one of the few firms to have advised extensively on development of renewable energy sector in India. It has been actively involved in assisting its clients in establishing, developing and operating renewable energy projects throughout India and on advising clients on the purchase and sale of renewable energy projects, development and construction of renewable energy projects, financing of renewable energy projects, advising clients on regulatory issues and disputes, and purchase and sale of renewable energy credits/CERs. HSA is currently advising diverse renewable energy developers and has one of the largest portfolios in this space, amongst law firms in India



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