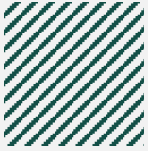


Half Yearly Market Observatory



Wind Turbine Market in India & South East Asia Outlook Update – H2 2020

October 2020



The Eighty – 20 of Industry: What Matters?

Leading Edge - India

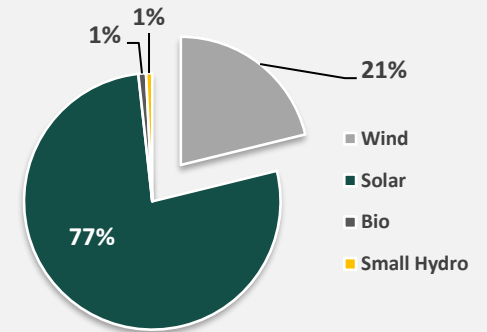
Imports of Wind turbine to India took a massive hit in H1 2020 due to supply chain restrictions, market returning to “Business As Usual” mode in H2 2020

Wind installations levels in India have significantly declined after the reverse auction mechanism was introduced in the wind sector after several years of growth. Moreover, India installed only 2.4 GW (1.23 GW in H1 2019) of wind capacity in 2019 which is close to 34% below the estimated targeted wind capacity. The dismal response of the wind capacity addition is mainly attributed to the financial stress of turbine makers, land acquisition issues and grid connectivity delays resulting in denting investors sentiments in wind segment. However, COVID-19 outbreak has effected the supply chains that begin in or go through China. As a result of the factory shutdowns in China during H1 2020, many disruptions have been felt across the supply chain including the imports. Consequently, India turbine market take a hit due to restrictions on transportation of wind turbine from China as vital parts such as gear box, yaw components, blades for rotor, sub-parts of such blades are imported, mostly from China. As economies are returning back to the normal, the wind projects are also returning to “ Business as usual” mode in H2 2020.

Share of Wind capacity in total renewable generation in H1 2020 (%)

324 MW

Only 324 Mw of Wind capacity added in H1 2020 **reduced by 73%** as compared to addition in H1 2019.



Major vital parts imported from China

Unlike the solar energy sector, **80-85%** of wind-turbine manufacturing takes place in India. However, some vital parts such as gear box, yaw components, blades for rotor, sub-parts of such blades are imported, mostly from China.



The **removal of concessions** will affect wind turbine manufacturers in India. Consequently, With input costs going up, wind tariffs may also be affected.



Round Up Monitor – South East Asia

Revenues from existing wind projects have proven largely resilient to COVID-19 impacts; however, projects in the pipeline have experienced slowdowns due to supply chain disruption

Recent policy changes and stepped-up efforts from policymakers have lifted growth rates for non-hydro renewables in the region. Thailand, an early mover on renewables in the region, saw nearly 5 GW of cumulative wind and solar installations by the end of 2019. However, The COVID-19 pandemic has impacted clean energy in the region which was already behind the renewable capacity addition target. Revenues from existing wind projects have proven largely resilient to COVID-19 impacts; however, projects in the pipeline have experienced slowdowns due to supply chain disruption, regulatory delays, and workforce issues. Many of these projects will be delayed but will come online and are expected to rebound in 2021. Moreover, energy project developers that were completing their projects during this pandemic may have incurred additional costs and delays that could affect their anticipated returns or project milestones.

The COVID-19 pandemic has impacted clean energy in South East Asia Region



Renewable energy project revenues have proven to be the most resilient generation source due to **first in the merit order of dispatch**



Projects in pipeline have experienced slowdowns due to supply chain disruption, regulatory delays, workforce issues & are **expected to rebound in 2021**

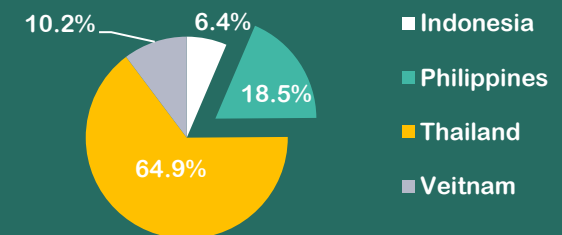


Wind energy project developers that were completing their projects during this pandemic have incurred **additional costs and delays** that could affect project milestones

Total Installed Capacity of Wind Power (GW) in South East Asia as on Dec 2019

2.31

Share of SEA Countries in % as on 2019



Source: NREL, eninrac consulting, Channel Checks

Numbers to Focus Upon – H1 2020



Supply chain disruptions in Wind energy market led to installation of only 324 MW of wind capacity in H1 2020 in India

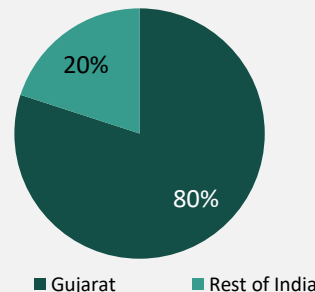
During H1 2020, only 324 MW of wind capacity added in India. Globally, as the supply chain has disrupted, the wind turbine segment also got hit as turbine components are imported from China. Consequently, wind projects stalled the construction leading to lukewarm capacity addition in India.



Wind and Solar generation grew by 10% in H1 2020

Wind and solar generation grew by 13% in H1 2020 compared to the same period last year (in comparison to 14 per cent growth globally) which means wind and solar generated 9.7 per cent of India's electricity (compared to 9.8 per cent globally).

Wind capacity installed in H1 2020



Source: eninrac consulting & Channel checks

Key Features Expected



Siemens Gamesa leads the way in India with the launch of its next generation wind turbine

The company continues to shape the market with this new generation wind turbine in the 3MW segment, which is specifically designed for the Indian winds. The new SG 3.4-145 can operate at up to 3.6 MW with flexible rating strategy and delivers 48% more Annual Energy Production (AEP).

Deployment Trends - Projects

01 Another Deadline Extension for SECI's 5 GW Tender

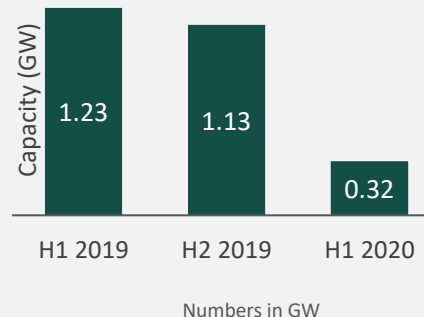
The Solar Energy Corporation of India (SECI) has extended the bid submission deadline for its tender to procure 5 GW of renewable power on a round-the-clock (RTC) basis complemented with thermal power projects.

02 Sembcorp completes 800MW of SECI wind power projects

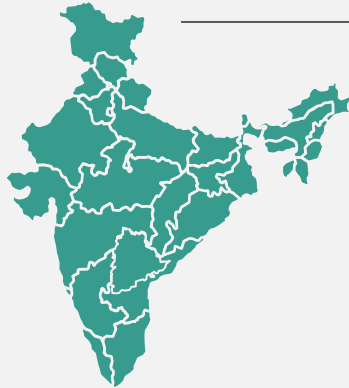
Sembcorp Energy India Limited (SEIL), announced the completion of its 800MW wind power projects awarded by the Solar Energy Corporation of India (SECI).

03 Solar, wind energy projects of 21,142 MW capacity under construction in India

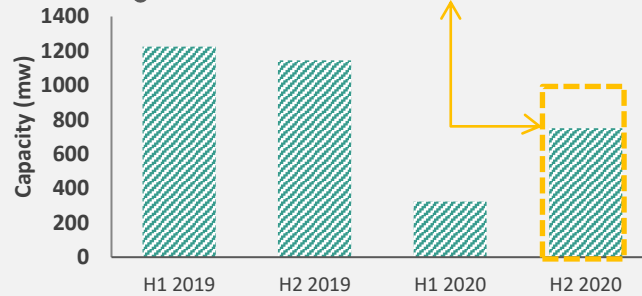
Solar and wind energy projects of over 21,142 Megawatt (Mw) are currently under construction in India over and above the 88,000 Mw already installed generation capacity based on the two clean resources.



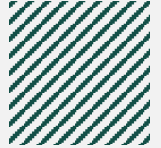
Numbers in GW



Wind power installed capacity is expected to bounce back in H2 2020



Half Yearly Update – H2 CY 2020



- COVID-19 pandemic caused wind commissioning project delays in India. However, wind market expected to bounce back in H2 2020



Key Investments – H2 2020

- Enel Green Power and Norfund entered into a long-term, joint investment partnership to finance, build and operate new renewable projects in India. The agreement is aimed at boosting the development of renewables in India.
- Siemens Gamesa has received a firm order from Adani Green Energy for one of the largest wind power projects in India. The company will deliver 215 SG 2.2-122 wind turbines, totalling 473 MW.
- Renewable energy developer Greenko and analytics and engineering firm ONYX Insight announced they have signed an agreement to modernise 500 wind turbines.



Key Trends – Wind Turbine Market H2 2020

- Siemens Gamesa to supply wind turbines for Vietnam’s 78 MW nearshore wind energy project. Siemens Gamesa has strengthened its market leadership position in Vietnam after securing its fifth nearshore wind farm project as the Vietnamese government quickly advances on its renewable energy goals.
- The COVID-19 pandemic is expected to result in near-term hurdles for wind turbine original equipment manufacturers (OEMs), despite a healthy outlook for the supply chain over the next decade. Consolidation in the wind turbine market in India might be a possibility in near future as Smaller regional players lost market share due to challenging market conditions



Key Signpost – Wind Turbine Market H2 2020

- The pandemic COVID-19 is anticipated to impact 35-45% of the total transmission capacity additions in 2020. The uncertain around the impact of force majeure is likely to stay till H1 2020 and dampen the commissioning of fresh capacity.
- The lack of stringent policy initiative for Wind energy in South East Asia, the wind capacity addition will remain at a moderate level in 2020 unless governments stop prioritizing coal



Contents & Coverage – H2 2020

01 This Half Yearly

The section shall showcase the major highlights for wind turbine segment in India and South East Asia including investments, project developments, policy & regulatory interface, M&A etc.

04 Numbers to Learn

All wind power capacity additions with a split on ownership wise, & state wise break up shall be included. Moreover, the numbers for deals secured by wind turbine manufacturers in India as well as South East Asian countries

07 Deployment Trends

The pace of deployment of projects at wind turbine manufacturers levels covering issues like investments, tenders and capacity additions shall form part of this section

02 Key Features

Key features shall cover the major strengths and development map that the industry has shown over the half year

05 The Eighty - 20 of Industry – What Matters?

In this section the major factors which are acting as the growth catalysts / barriers in the Wind turbine segment are highlighted inclusive of policies, regulations etc.

08 Technology & Price Trends

This section shall cover all the latest technology implementation and trends, price benchmarks of wind turbines in India and South Asia

Wind Turbine Market in India & South East Asia Outlook Update – H2 2020

03 Leading Edge

The current affairs leading business impacts on Wind turbine market with insightful data analytics & our exclusive “Knowledge Grid” feeds covered in the section. Our analyst's viewpoints with sharp edged objectives shall be central to the section

06 Key Signposts

The business factors which shall govern the course of coming half year of business and the industry response to the changes shall be the focus area of this segment

09 Industry Activities & Corporate Strategies

All the industry order track & merger's and acquisition activities shall be tracked. Fresh investments in wind turbine sector as per players profiles shall also be tracked in this section



Must Buy For

- Power Transmission Utilities
- Power Distribution Utilities (DISCOMs)
- Original Equipment Manufacturers
- Power Traders
- Banks/Financial Institutions/Project Financing Agencies
- EPC Service Providers
- Consultants
- Research Firms/Research Institutions
- Regulatory Bodies
- Government Agencies



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Wind Turbine Market in India & South East Asia Outlook Update – H2 2020



Companies Mentioned

- General Electric
- Vestas India
- Suzlon
- Inox Wind
- Wind World
- Indowind Energy Limited
- Siemens Gamesa
- Envision Energy
- Acciona Nordex
- ReNew Power
- Regen Powertech Pvt. Ltd.
- Enercon India Pvt. Ltd.
- Orient Green Power Ltd.
- Enel Green Power India Pvt Ltd
- Senvion India Pvt Ltd
- Continuum Wind Energy India Pvt Ltd
- Hero Future Energies Pvt Ltd
- Indian Wind Turbine Manufacturers Association



The life of a man consists not in seeing visions and in dreaming dreams, but in active charity and in willing service

- Henry Wadsworth Longfellow

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