



IMPACT OF
COVID-19
ON THE
**POWER &
UTILITIES**
INDUSTRY



FutureBridge

Covid-19 impact on electricity demand

In the last quarter, globally electricity demand has fallen due to restriction on non-essential industrial and commercial activities; the trend is expected to continue until year-end with some recovery as the economic activity resumes

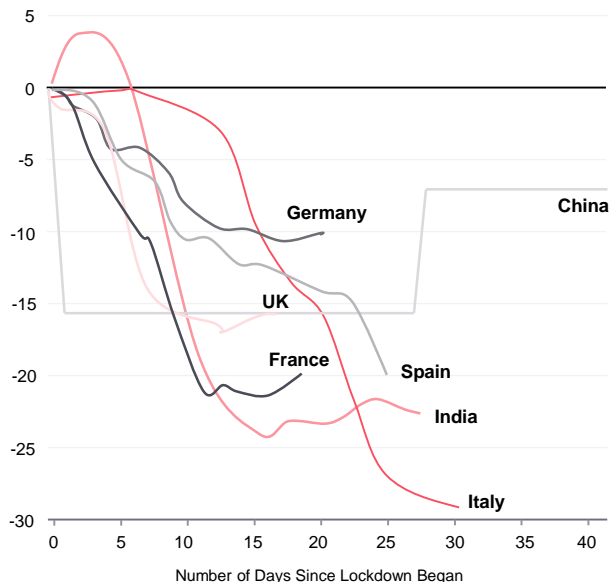
Global Electricity Demand

2.5% decline in electricity demand in Q1 2020 globally compared to Q1 2019

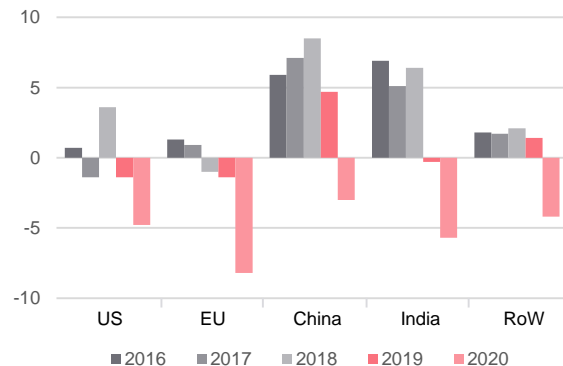
China experienced a **6.5% decline** in electricity demand in Q1 2020 as it implemented containment measures in mid-January

Europe, Japan, Korea, and the United States experienced a **2.5% to 4.5% decline** in electricity demand in Q1 2020

Reduction in Electricity Demand after Lockdown Measures (%)



Annual Avg. Growth Rates of Electricity Demand, 2016-2020

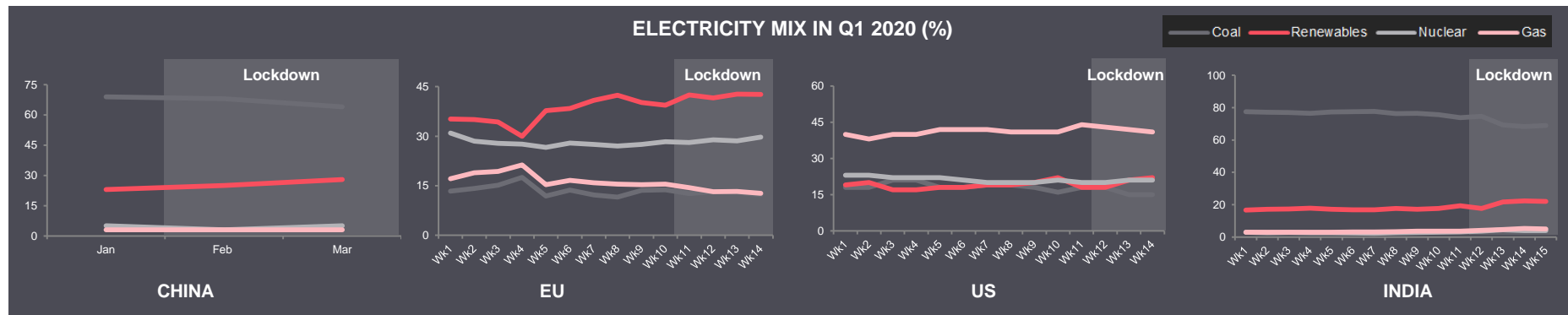


5%

Is the expected fall in global electricity demand in 2020, a faster recovery can reduce this decline to 2%, if all areas of economic activity resume

Covid-19 impact on renewable energy

Renewables have a greater share of electricity generation as a result of lockdown measures and depressed electricity demand



Delay in Renewable Power Projects

- The renewable sector in most of the countries is heavily dependent on imports from other regions, mainly China.
- The disruption in the supply chain due to manufacturing shutdown in China will cause a delay in project implementation

70% of the global supply of solar panels comes from China while another **10-15%** comes from Southeast Asia



Disruptions in the supply of parts from China in February

Manufacturing facilities in **Italy** and **Spain** have been closed since mid-March

Distributed Solar at Risk

- Installation of solar panels by individuals and SME on their roofs or business sites is completely halted



40% of global solar PV deployment in 2019 came from distributed solar

Installation of distributed solar PV has stopped in several countries due to lockdown measures

Multiple projects in the United States have received "force majeure" notices from suppliers warning developers about possible delivery delays.

Households and SMEs facing financial and economic uncertainty may postpone their plans to install solar PV















28%

Share of renewables-based generation in Q1 2020, up from 26 % in Q1 2019

5%

Expected growth in renewable electricity generation in 2020 despite the supply chain and construction delays

Covid-19 impact on electricity consumption across business segments

Business Segment	Subgroups		Energy Use Needs
Manufacturing	Food		<ul style="list-style-type: none"> Production to keep up with demand
	Paper		<ul style="list-style-type: none"> Production due to food- or essential-based packaging demand
	Chemical, Medical, Pharmaceutical		<ul style="list-style-type: none"> But office personnel working remotely
	Non-metallic Mineral Product		<ul style="list-style-type: none"> But office personnel working remotely
	Steel and Metal		<ul style="list-style-type: none"> Output related to automotive industry greatly reduced Production in die manufacturing and operations have seen production continue, if essential
	Auto Supply		<ul style="list-style-type: none"> Ramping down production at various levels. COVID-19 medical ventilator support happening at certain converted facilities.
	Furniture & Related Products		<ul style="list-style-type: none"> Ramped down production to comply with “shelter” orders – with the exception of medical-related lines
Healthcare			<ul style="list-style-type: none"> Some slight variation demands for differing preparations at main facilities and smaller office closures.
Education			<ul style="list-style-type: none"> All K-12 schools canceled Universities/colleges canceled or reverting to on-line only Office staff are working remotely
Retail	Food - Essential		<ul style="list-style-type: none"> Many are adding employees and adjusting store hours to align restocking/cleaning with demand.
	Non-Food		<ul style="list-style-type: none"> Most retail outlets are closed in many states to comply with “shelter” orders.
Public Admin, Governmental			<ul style="list-style-type: none"> Non-essential staff are working remotely; wastewater and critical facilities are operating normally.
Resort, Amusement, Entertainment			<ul style="list-style-type: none"> Closed almost everywhere
Oil, Ethanol			<ul style="list-style-type: none"> Ethanol producers have ramped down production

Source: DNVGL

 Slightly Increased Load  Normal Load  Load Reduction

Short-Term & Long-Term Impact: Post COVID-19 Pandemic

		Current Situation	Short-Term Prospects (<1 Year)	Long-Term Prospects (>1 Year)
INDUSTRY RELEVANCE	Electricity demand scenario	<ul style="list-style-type: none"> Demand declined but has not collapsed 	<ul style="list-style-type: none"> Demand will pick up as the economic activity resumes but not as the precovid-19 levels 	<ul style="list-style-type: none"> Demand is expected to increase as countries aggressively push commercial and industrial activity to revive their economy
	Supply chain disruption	<ul style="list-style-type: none"> Disruption in supply chain from last two months, for renewables in particular Logistical delays 	<ul style="list-style-type: none"> Supply chain bottlenecks to reduce as industrial activity in China resumes 	<ul style="list-style-type: none"> Alternative procurement & inventory reallocation Emphasis on local manufacturing
	Cost and profitability	<ul style="list-style-type: none"> Owing to the decrease in demand, prices in electricity wholesale markets have decreased Inability to cover cross subsidies due to demand reduction from C&I customers 	<ul style="list-style-type: none"> Currency depreciation could cause a dent in the returns of investment. Account for the expense to comply with any 'must buy' commitments as per long-term PPAs 	<ul style="list-style-type: none"> Increase electricity demand and stimuli packages will aid utilities to cover lost revenue
	Investment	<ul style="list-style-type: none"> Investment capacity is sinking due to lower power prices and energy moratorium programs 	<ul style="list-style-type: none"> Development and construction of power generation assets to take a hit 	<ul style="list-style-type: none"> Investment in power sector will resume but at slow pace Investments will be more inclined towards renewable power plants
	Project deployment	<ul style="list-style-type: none"> Lockdown measures are hindering movement of staff and materials for construction sites 	<ul style="list-style-type: none"> Projects to be delayed due to exodus of laborers and financial constraints 	<ul style="list-style-type: none"> Project activities will resume but there will be decline in the new power generation capacity added to grid

Covid-19 impact across the electricity supply chain and the mitigation measure



OEMs



Generation



Transmission



Distribution



Retail



Trading

OEMs
(Electric Equipment Supplier)

ABB

- Continue to produce products and supply services for utilities

SIEMENS
Ingenuity for life.

- Majority of production facilities remain fully or partly operational

EMERSON

- Production hubs in China have largely returned to normal.

FATON

- Decline in demand especially in key regions like China, Germany and Italy



- Supply chain impacts have been minimal

Prysmian
Group

- Decline in Q1 2020 revenue

- Expects revenues to decline in year 2020 across all its businesses due to disruption across production sites and curtailment in product demand, project and service activity.

Utilities



- Decrease in electricity demand



- Owing to the decrease in demand, prices in electricity wholesale markets have decreased



- Inability to cover cross subsidies due to demand reduction from C&I customers



- Challenge in onsite monitoring and maintenance due lack of on-field staff and service engineer



- Lockdown measures are hindering movement of staff and materials for construction sites

- Disruption in supply chain from last two months, for renewables in particular

- Investment capacity is sinking due to lower power prices and energy moratoria programs

- Concerns about the new construction of wind and solar facilities which need to be placed in service to qualify for subsidies and tax credits

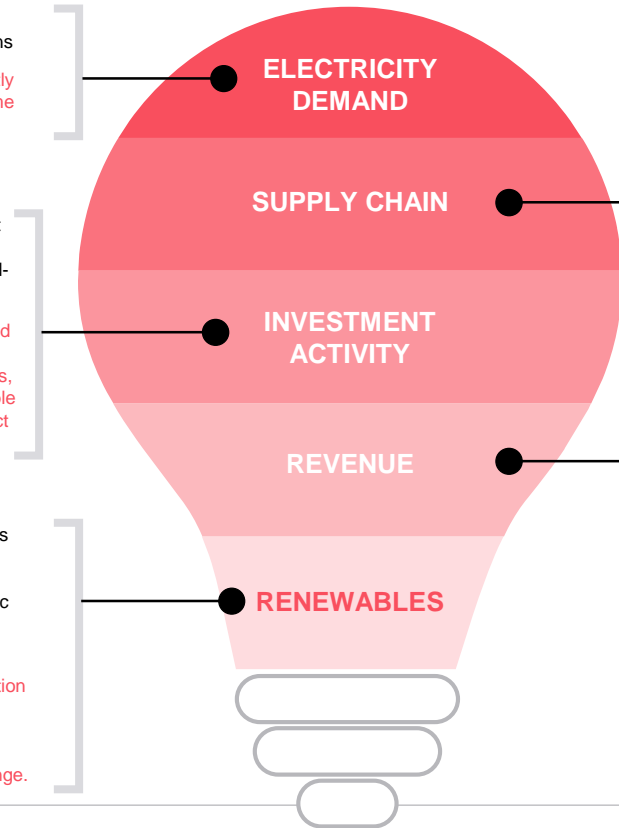
Impact Mitigation Activity

- Production capacity adjustment to meet reduced demand
- Global manufacturing footprint to shift production where possible
- Adopting remote service capabilities
- Build network of partners and suppliers to remain agile
- Aggressive cost containment actions

- Explore other sourcing options as contingency plan for critical infrastructure supplies such as transformers and other restoration materials
- Adopting remote service capabilities
- Maintain liquidity by getting rid of non-operating assets

FutureBridge Outlook

- Electricity demand is expected to recover by the year end, close to the precovid-19 level as industries across sectors resume operations
- Utilities will continue to witness decline demand as it will permanently lose electric loads from brick and mortar operations; work from home will become a norm
- Utilities will limit themselves from any new investment in the current year as they wait for the pandemic to be completely over, instilling confidence for the electricity demand to recover and reach precovid-19 level
- Coupled with continuous reduced electricity demand and plummeted power prices, the energy bill moratoria will have an impact on the capacity of utilities to invest. Rather than opting for new investments, utilities will seek to limit costs to safeguard liquidity and ensure stable operations. The revised credit ratings of the utilities will further affect their ability to raise debts for investment
- Renewable energy operators face relatively lower economic impacts compared to their fossil fuel counterparts. In many national grids, renewable outputs are dispatched first, meaning they can continue selling energy unimpeded. Integration of renewables into the electric grid will increase as government and utilities will look for more sustainable and secure energy options for the future
- Renewables will continue to remain the preferred electricity generation source as it eliminates the fuel procurement challenges during the crisis. There will be a delay in new renewable energy project deployments but efforts will continue to replace fossil fuels with renewables for more electricity security and to combat climate change.



- Supply chain disruptions are limited in case of utilities for existing operating power plants as the business comes under essential services. Challenges in operation and maintenance activity due absence or limited availability of field technicians will also subside post Covid-19. Renewable project which are hard hit due to supply chain disruptions will resume their development activity
- Supply chain can get disrupted if Covid-19 continues for long period and can create challenge for utilities to operate.
- Due to reduced electric load from commercial and industrial sectors for a significant period, inability to cover cross-subsidies and delay in payments from residential customers; Utilities will observe a decline in revenues for the current year even if the crisis is over. OEMs will also observe a decline in revenues due to decrease in electric equipment demand as new electricity infrastructure projects gets delayed
- Utilities will suffer revenue losses due to increase in non-payment activities from homes and businesses, reduction in commercial & industrial operations and in worse case shutting off of various businesses. OEMs will further suffer in their bottom line as utilities suspend and permanently cancel new capacity additions

Scenario by year 2020 end
 Covid-19 Crisis Over
 Covid-19 Crisis Persist

Thank you

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