

COVID-19: IMPACT ON GLOBAL SOLAR MARKET May 2020



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Foreword

The global economy has been severely hit by Covid-19 and global GDP projections for 2020 have plunged from 3% to 1.8%.

Like all other sectors, the solar industry has been adversely impacted, at least in the short term. There has been a decrease in overall energy demand, construction work has stopped, and supply chains have been disrupted. This has unfortunately resulted in many job losses around the world and is contributing to making communities more vulnerable.

The full impacts of the Covid-19 crisis are difficult to predict with conventional forecasting methods. However, there are already many lessons that nations have learnt and need to take into account as they work on their recovery. Energy sector experts believe the coronavirus pandemic may accelerate the shift from fossil fuel spending to investments in renewable energy, a view now supported by global organizations including the IEA.

As the leading international organisation promoting the use of solar energy, ISA has collaborated with Bridge to India to produce an impact assessment of Covid-19 on the global solar market. We want to identify and highlight the new opportunities for the solar power sector. This report covers the policymakers' approach to promote the use of solar during the ongoing crisis across different geographies. We also propose solutions and explain the steps we need to take to drive a solar-led energy transformation.

In my opinion, all public and private stakeholders across the solar value chain have now a role to play to reshape their strategy and make choices now that will have a positive impact and pave the way to a more sustainable recovery.

As we slowly rebuild our economy, we have a unique opportunity to work together and adopt new technologies ways of working, behaviors and societal norms. Let's put all our energy behind solar and build a greener world together.



UPENDRA TRIPATHY
Director General
International Solar Alliance



Executive summary

COVID-19 has caused unprecedented turmoil across the world. Wide-scale suspension of economic activity, supply chain disruption and employee health concerns have created supply and demand shocks across the energy sector. The challenge for governments, policy makers and private sector players is to manage this period of uncertainty and plan for future.

Solar sector was estimated to add record capacity of 130-135 GW in 2020. However, the pandemic has caused several operational and financial setbacks bringing down the estimates by 20% to around 105 GW

Solar sector was estimated to add record capacity of 130-135 GW in 2020. However, the pandemic has caused several operational and financial setbacks bringing down the estimates by 20% to around 105 GW. There are many other short to mid-term implications for the sector.

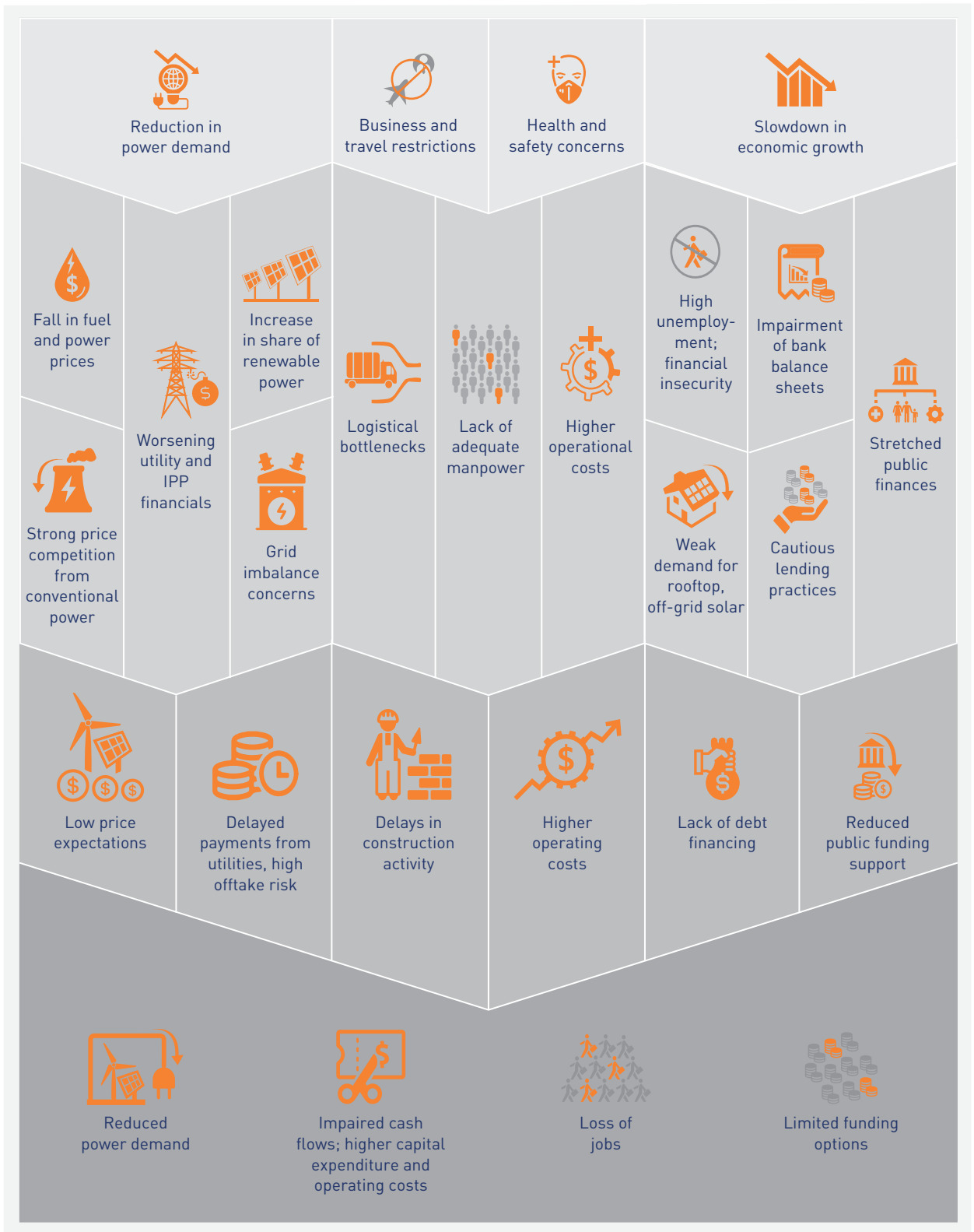
- Fall in fossil fuel and conventional power prices posing viability risk to grid parity-based projects
- Deteriorating financial condition of utilities; higher offtake risk for power producers
- Disruption in construction activity resulting in higher costs and potentially lower revenues
- Delay in government procurement programmes
- Sharp down-turn in end consumer driven markets – off-grid, rooftop and open access C&I solar
- Pressure on smaller equipment manufacturers
- Risk of growing trade barriers and disputes
- Constrained financing as investors and lenders focus on lower risk opportunities

The good news is that long-term drivers for energy transition are even more relevant today than they have been in the past. Regions such as sub-Saharan Africa have a unique opportunity to increase energy access and accelerate transition at the same time. The pandemic has refocused attention of governments and policy makers to fight climate change and localise energy supply. Both these priorities play to solar technology's advantage. Investors in conventional energy are expected to accelerate shift towards renewable energy. The pandemic has also highlighted operational robustness of solar technology and its suitability as a reliable energy source.

The good news is that long-term drivers for energy transition are even more relevant today than they have been in the past. Regions such as sub-Saharan Africa have a unique opportunity to increase energy access and accelerate transition at the same time

Many countries have announced extensive suite of policy actions and stimulus packages. Capacity for direct fiscal support varies widely between developed nations and other parts of the world. When designing economic stimulus packages, the governments need to consider long-term structural benefits – energy access, job creation, reducing emissions and technology innovation. Focus should be on reducing risks especially for small developers and ensuring financing support for the highly vulnerable distributed solar market. Adequate access to low-cost debt and other financing mechanisms needs to be ensured for emerging markets to maintain growth momentum in the sector.

Figure: Negative fallout of COVID-19 for solar sector



Source: BRIDGE TO INDIA research

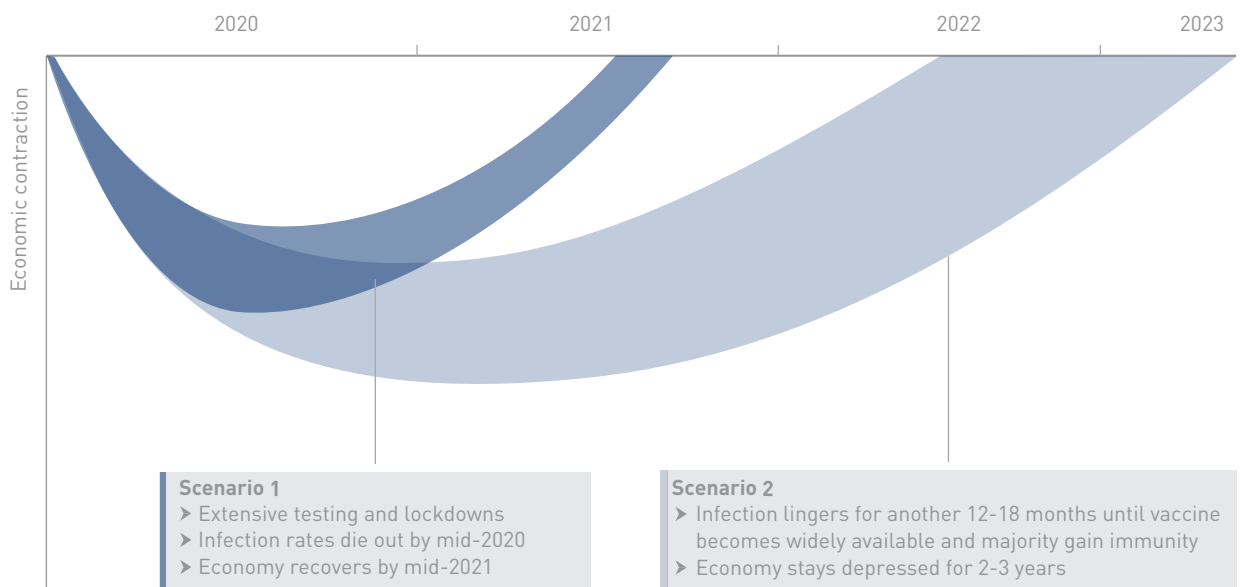
1. Introduction

COVID-19 has caused unprecedented turmoil across the global economy. Wide-scale suspension of economic activity, supply chain disruption and employee health concerns have led to a collapse in energy demand and created significant risks for the entire value chain. Many leading global experts have cited it as a major global economic depression.

Countries around the world are in different phases of addressing the crisis. Many of them are also facing unique challenges owing to availability of financial and operational resources. Some countries like India have imposed a near complete lockdown whereby most commercial and social activity including all international and domestic travel has been banned. China, Singapore, Hong Kong and South Korea have successfully used rigorous testing and tracking approach to curb infection rates. Other nations have taken slightly more moderate approach – ranging from localised lockdowns to advisories.

There is as yet enormous uncertainty around when and if the situation would return to normal. There are innumerable ways in which the crisis could evolve but we outline two broad scenarios in the figure below.

Figure 1: COVID-19 infection and economic recovery scenarios



Source: BRIDGE TO INDIA research

Figure 2: COVID-19 infection growth in select countries

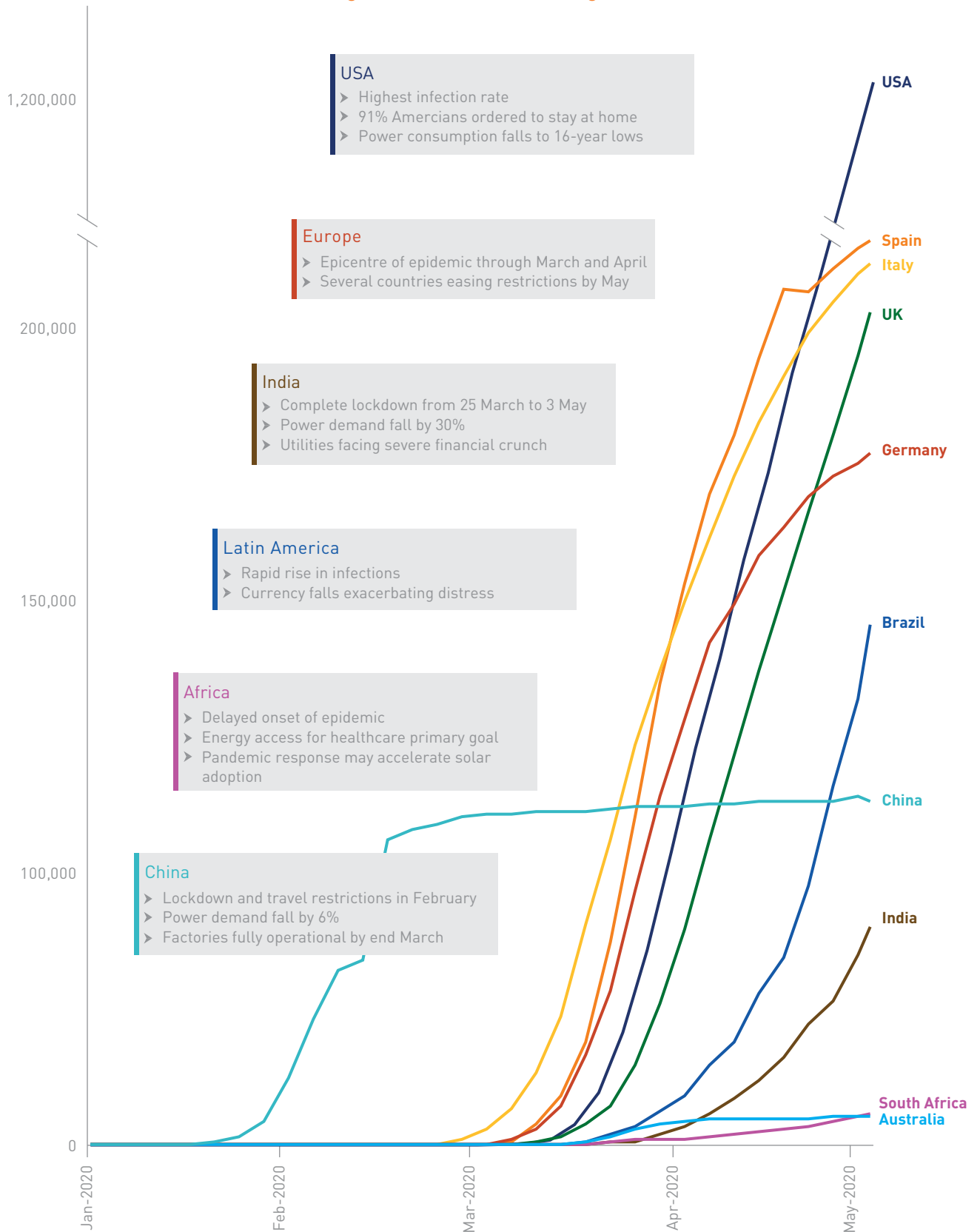


Figure 3: COVID-19 economic impact around the world

Global economy projected to shrink by 3% in 2020, worse than in the 2008–09 crisis

33 million Americans file for unemployment benefits

Africa to use off-grid renewables to bolster pandemic response

Falling currencies makes solar expensive

Biggest recession in over 100 years

European leaders push for
green recovery plan

150 GW of PV and wind
capacity under threat in Asia

30% reduction in
power demand

Australian rooftop solar
market to decline

Total infections



1

1.1 million

2. Impact on solar sector

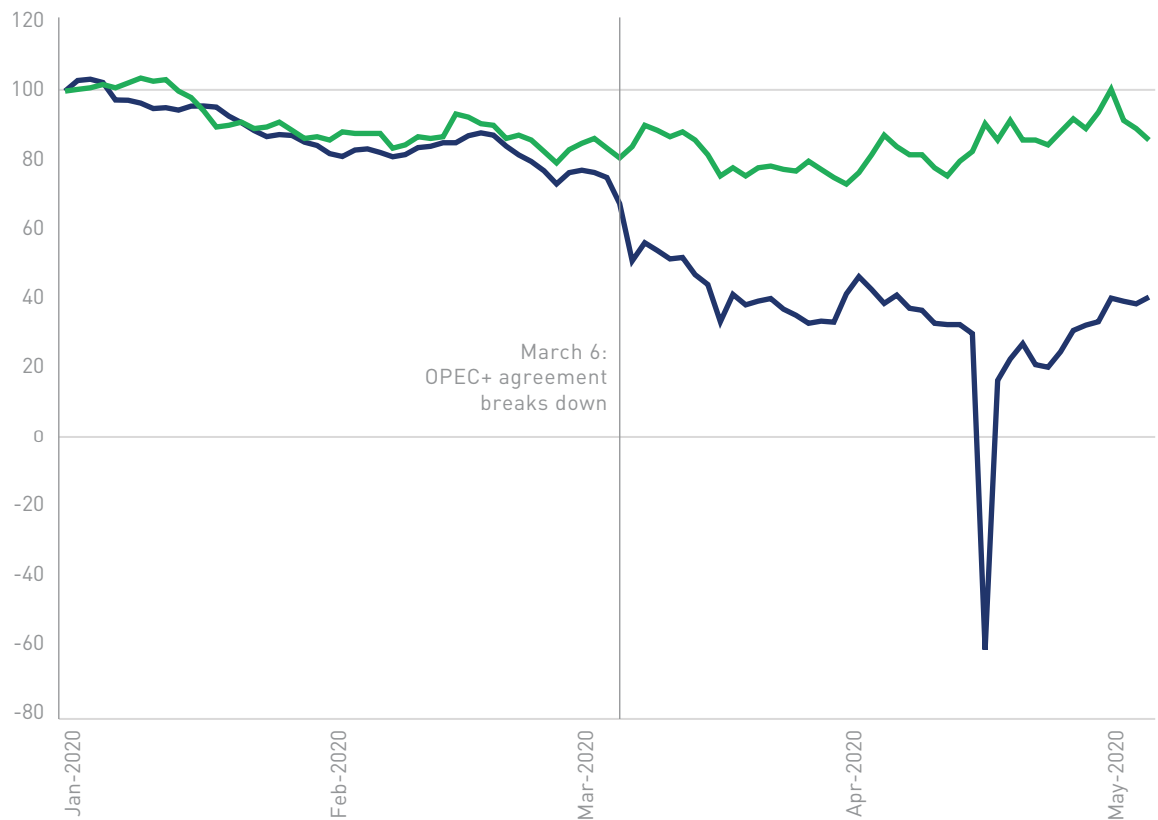
COVID-19 has created supply and demand shocks across the energy sector and put all stakeholders under tremendous pressure. The resultant issues are highly complex and multi-faceted in nature causing multi-pronged impacts on the solar power sector. Solar sector had grown globally at break-neck speed in the last five years. It was estimated to add record new capacity of 130-135 GW in 2020.

However, the pandemic has caused several operational and financial setbacks bringing down the estimates by 20% to around 105 GW. The challenge for governments, policy makers and private sector players is to manage resulting uncertainty and planning for future.

2.1 Power demand reduction and fall in prices

With most business activity coming to a virtual stand-still, there has been a precipitous drop in energy demand which, in turn, has led to steep fall in fossil fuel and power prices.

Figure 4: Oil and natural gas price trajectory



WTI crude, USD/ BBL

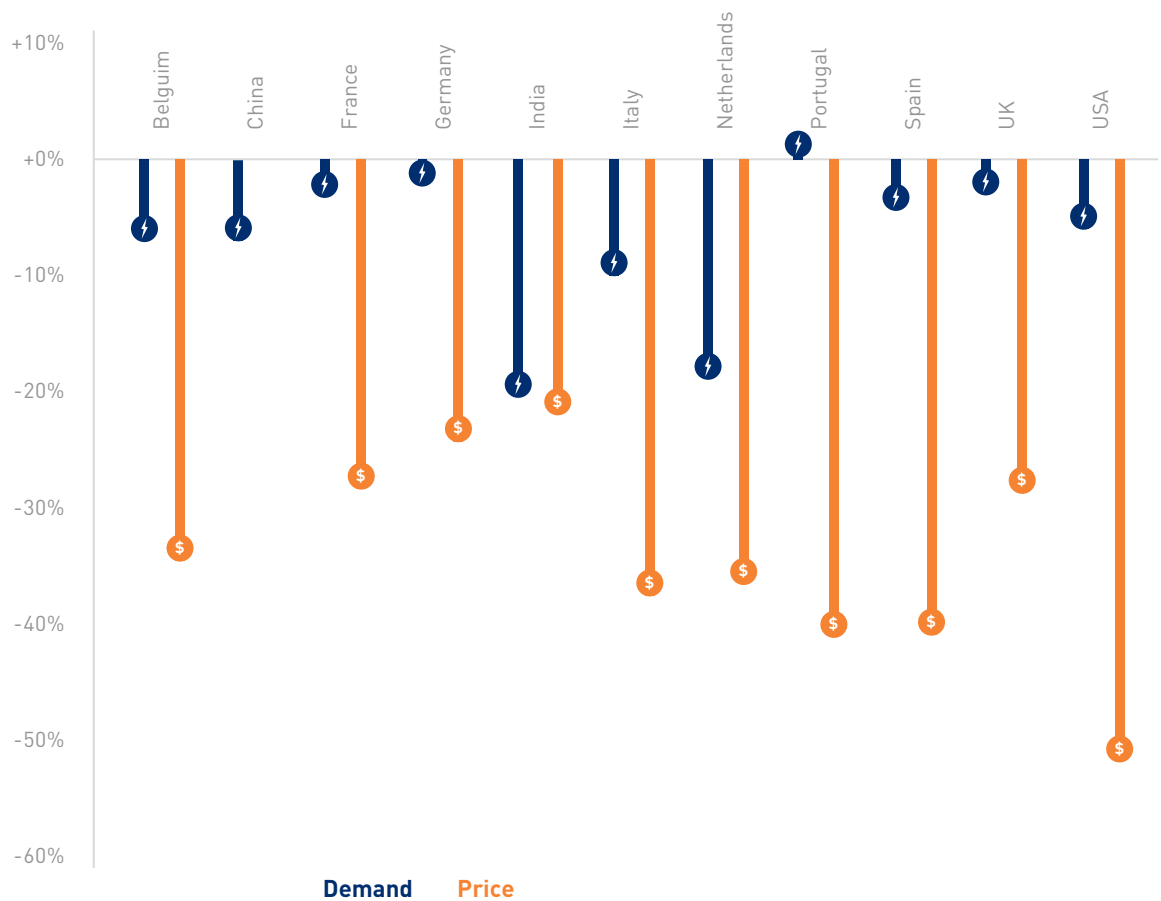
NYMEX natural gas, USD/ MMBTU

Source: Bloomberg

IEA estimates that global power demand has declined by 15% in the last few months. China saw its demand drop by 7.8% nationally in January and February – the lowest in 5 years¹. India, with some of the most extensive lockdown rules, has seen demand drop up to 30%. Japan, South Korea and Taiwan, with more calibrated measures, saw combined annual demand drop by about 2%². In Europe and USA too, where the effects of the contagion were felt beginning in March, YOY demand drop ranged between 8-27%^{3,4}. USA's power consumption touched a 16-year low in the first week of April.

At the same time as the demand has fallen, many countries have seen a spike in power generation from solar and wind plants due to favourable weather conditions. UK has reported the longest period of 18 days without any coal-fired power generation.

Figure 5: Power demand and price falls, March 2020 over March 2019



Source: AleaSoft Energy forecasting, S&P Global Platts, Caixin, BRIDGE TO INDIA research

¹China's Electricity Consumption Drops by Most in Five Years, 2020: <https://bit.ly/3cmPblv>

²Coronavirus impacts power fundamentals across the world, with implications for North America, 2020: <https://bit.ly/2SWXGvU>

³Here's what we know and don't know about the energy transition, 2020: <https://bit.ly/2yMHJle>

⁴Fall in electricity markets prices in march due to the coronavirus crisis, 2020: <https://bit.ly/2xTzEe1>

Taken together, these two factors have resulted in dramatic fall in power prices. Across Europe, power prices fell between 27% to 78%. USA saw prices fall by as high as 54-55%⁵. India's spot power prices also fell by 21% in March in comparison to last year.

Macroeconomic knock-on effects are expected to reach into 2021 and beyond, with utilities pausing on procuring solar power. This effect is expected to be most severe in countries where growth of solar is dependent on growth in power demand – mainly emerging markets in Asia, the Middle East and Latin America.

Meanwhile, depressed power prices and inability to model accurate price forecasts are also likely to weaken case for subsidy-free solar power in unregulated markets across Europe and US. It is feared that solar power may lose price competitiveness against coal and gas-fired power throughout these regions until 2025.

2.2 Deteriorating financial condition of utilities

Financial condition of utilities, already stretched in many countries around the world, has worsened sharply following fall in demand and delayed payments by consumers. Example: a utility in the state of Rajasthan has seen shortfall of nearly 60% in March collections. Aggregate outstanding dues of Indian power utilities have increased by INR 32 billion (USD 429 million) over last two months⁶.

As demand declines and utilities face a surplus power situation and/ or grid disturbance owing to increase in penetration of variable renewable power, risk of curtailment is inevitably increasing

Solar power prices are in many cases higher than market prices. As demand declines and utilities face a surplus power situation and/ or grid disturbance owing to increase in penetration of variable renewable power, risk of curtailment is inevitably increasing. Many utilities are reported to have issued Force Majeure notices to curtail power and/ or wriggle out of power purchase commitments. South African utility ESKOM has issued force majeure to few wind generators in early April. The generators will be compensated by their contracts being extended for time lost.

Solar projects, usually structured as highly leveraged SPVs, have little financial capacity to cope with delayed revenue receipts and curtailment of power. Onerous quarterly debt service requirements and limited financial headroom mean that they face risk of defaulting on debt service payments if prevailing circumstances extend beyond three months.

2.3 Delay in auctions

Many countries have been informally slowing down public procurement programmes due to demand uncertainty and travel restrictions. Several auctions have been frozen or delayed around the world:

- i. France has moved all auctions by two months;
- ii. Germany has frozen deadlines until “the situation calms;”

⁵Power demand, prices begin to slip as coronavirus stay-home orders spread, 2020: <https://bit.ly/3cus0eg>

⁶Payment Ratification And Analysis in Power procurement for bringing Transparency in Invoicing of generators: www.praapti.in/

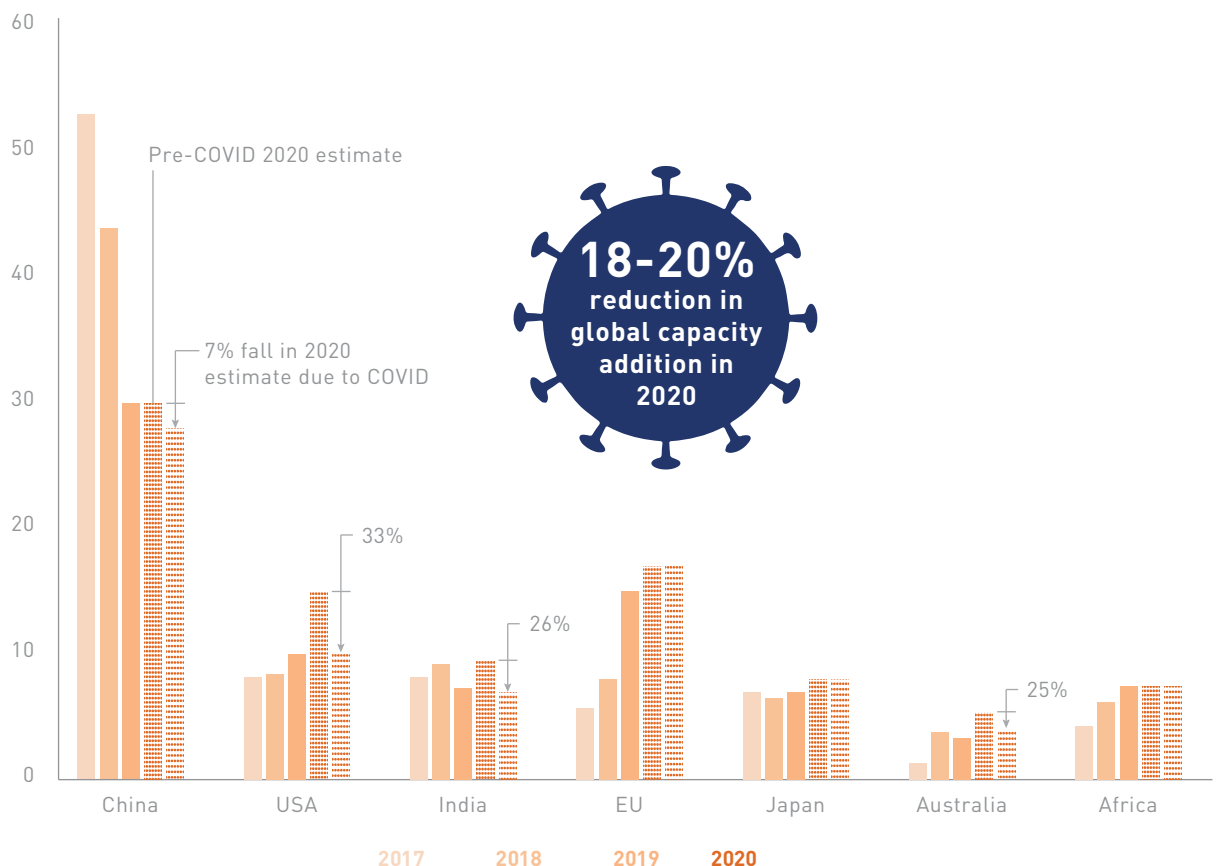
- iii. Portugal has put on hold on its planned solar auction (700 MW);
- iv. Brazil has indefinitely postponed its solar auctions;
- v. Ecuador has delayed announcing results of its 200 MW tender by 5 months;

In India, only two auctions have been completed (40 auctions in 2019) since 20 March 2020. Depressed power demand and worsening financial outlook of utilities is likely to make it difficult to find willing offtakers for new auctions.

2.4 Disruption in construction activity

Pace of constructing new solar power plants has been severely impacted by equipment shortages, supply chain disruptions, labour movement restrictions, delays in permits and financial closures. Global solar installations forecasts for 2020 have already been slashed by 18-20%. Rystad Energy, a Norwegian consultancy has estimated that growth in newly commissioned capacity may be “wiped out” for 2020 and cut by a further 10% next year⁷. Wood Mackenzie, another consultancy, has estimated a reduction in 2020 solar capacity addition of 23 GW (pre-COVID estimate of 129.5GW).

Figure 6: Solar capacity addition, GW



Source: Renewable capacity statistics, IRENA 2019, BRIDGE TO INDIA research

⁷Global renewables expansion in 2020 will be 'wiped out' by COVID-19: Rystad, 2020: <https://bit.ly/2SQcGfd>

The downside impact varies highly across countries. China's pre-COVID estimate for 2020 of around 30 GW may be significantly affected if the 9 GW of subsidy-based projects do not achieve grid-connectivity by June 2020. But most analysts expect new capacity addition to still remain at around 27-28 GW in 2020. In India, stringent lockdown rules have affected construction activity for as much as 4-5 GW of projects. The country added only 715 MW of new solar capacity in Q1 2020, the lowest in last 2 years. Despite government permission to resume construction activity from 20 April 2020, there are concerns that annual installations may be down by about 2-3 GW in comparison to pre-COVID estimates.

Europe is not likely to see major impact on new installations during the year (18-20 GW). A 6-8 week delay is expected but is considered manageable. Pipeline projects in early-planning stages may also be delayed due to office closures and/ or remote working inefficiencies.

US market forecasts for 2020 have been reduced to 10 GW (from 15 GW) with a significant loss in rooftop solar installations. Australian market's capacity addition forecast (5.4 GW pre-COVID) might see reduction by 25%. Bulk of pipeline is in the nature of rooftop solar, corporate PPA or merchant power projects – markets contingent on demand revival from end users⁸. Mexico's power market operator has moved to freeze connectivity for new renewable plants citing grid instability. This puts nearly 5 GW of solar and wind power plants under construction at risk.

2.5 Sharp down-turn in end consumer driven markets

Growth of distributed solar faces critical risks as lockdown measures prevent access to buildings, consumers face loss of income and financing avenues become more limited

Decentralised or distributed solar PV accounted for over 40% of global solar deployment in 2019. It has gained widespread government and consumer support due to falling costs (USA, Europe, Australia, China, Japan and India) and improving energy security particularly in areas where grid access is still unreliable (Africa, parts of Asia, island nations).

Growth of distributed solar faces critical risks as lockdown measures prevent access to buildings, consumers face loss of income and financing avenues become more limited. Faced with economic uncertainty, smaller consumers (residential, off-grid and SME businesses) are likely to postpone or abandon plans to install solar systems. Rooftop installations in India are also expected to shrink by 30-40% this year (1,534 MW in 2019). US and Australian rooftop solar markets, booming in the run up to March 2020, are also expected to see sharp declines because of market uncertainty⁹.

Meanwhile, C&I consumers, facing upheavals in their core businesses, are jittery about incurring fresh capital expenditure and/ or providing long-term purchase commitments. There are many known instances of consumers trying to renegotiate PPAs or serving Force Majeure notices on developers to escape purchase commitments.

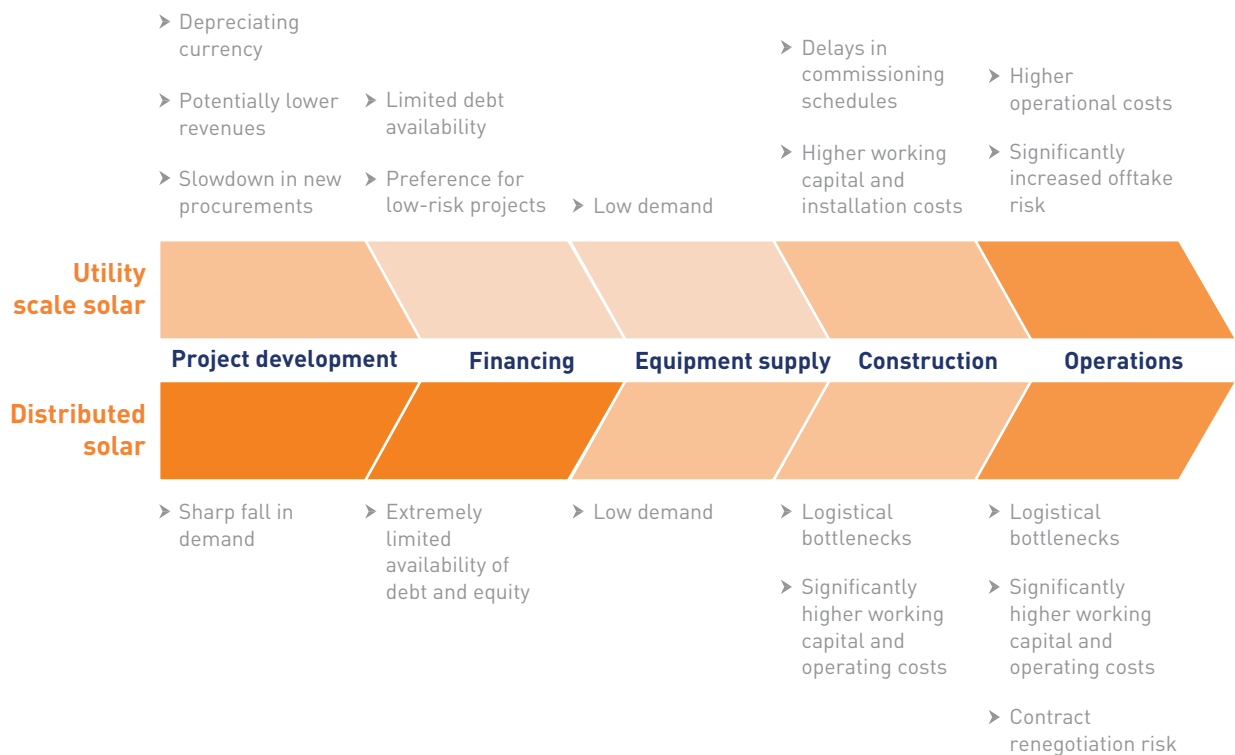
⁸Rooftop solar surges to record highs before lockdown, 2020: <https://bit.ly/2xTREVN>

⁹Survey: COVID-19 to cause 50% decline in Australian rooftop solar, 2020: <https://bit.ly/2YRP6SX>

Large utility scale developers with strong cash positions are generally well equipped to manage construction delays and additional financial risks. However, most of the small, local installers, usually accounting for bulk share of distributed solar market, are not expected to survive sharp demand contraction and higher operating costs. These markets are likely to see consolidation with smaller players exiting the business or worse, a significant loss in market capacity. These businesses need urgent injection of capital in the form of bridge loans to survive.

The US rooftop solar market has already begun seeing large scale lay-offs. Around 20,000 unemployment claims were filed by workers in renewable energy space in March 2020 alone. It is estimated that 125,000 renewable sector jobs may be lost worldwide as a result of the pandemic¹⁰.

Figure 7: Impact of COVID-19 on solar value chain



Low impact Medium impact High impact

Source: BRIDGE TO INDIA research

¹⁰Expanding Energy Tax Credits in a Long-Term Economic Recovery Package, 2020: <https://bit.ly/35TG61q>

2.6 Pressure on smaller equipment suppliers

The solar supply chain is increasingly concentrated in China with 70-80% of module and inverter supplies originating there. Initial knee-jerk reactions regarding price hikes due to low production have proven to be unfounded. Most of the Chinese plants resumed production by end March and are already reported to be running at full capacity utilisation levels.

Instead of worrying about equipment shortages or price hikes, the concern now is if global demand would be sufficient to absorb growing manufacturing capacity

Instead of worrying about equipment shortages or price hikes, the concern now is if global demand would be sufficient to absorb growing manufacturing capacity. It is estimated that there was around 160 GW of operational module manufacturing capacity at the end of 2019. Another 20 GW capacity was slated to come online by end 2020. With global demand revised down to 100-110 GW, the over-supply position is expected to exert downward pressure on prices. It is likely that some tier-2 and tier-3 capacity in China and other countries would be phased out due to inability to withstand lower volumes and margins.

2.7 Risk of growing trade barriers and disputes

Disruption over last few months has cast spotlight on securing control over equipment supplies. In particular, there is growing awareness amongst the larger nations including the US, India, Japan and parts of Europe that to gain full energy security benefits, they need to localise equipment manufacturing.

Asian Development Bank noted recently that it will “expand its support...to build (PV) manufacturing capacity...” in other countries. We are likely to see a wave of protectionist moves (import duties and quotas, direct and indirect subsidies for local manufacturers, demand guarantees) and international trade disputes.

In his address to the nation on 13 April 2020, President Macron of France stated that supply chains – from food to pharma – would have to become more “local”.

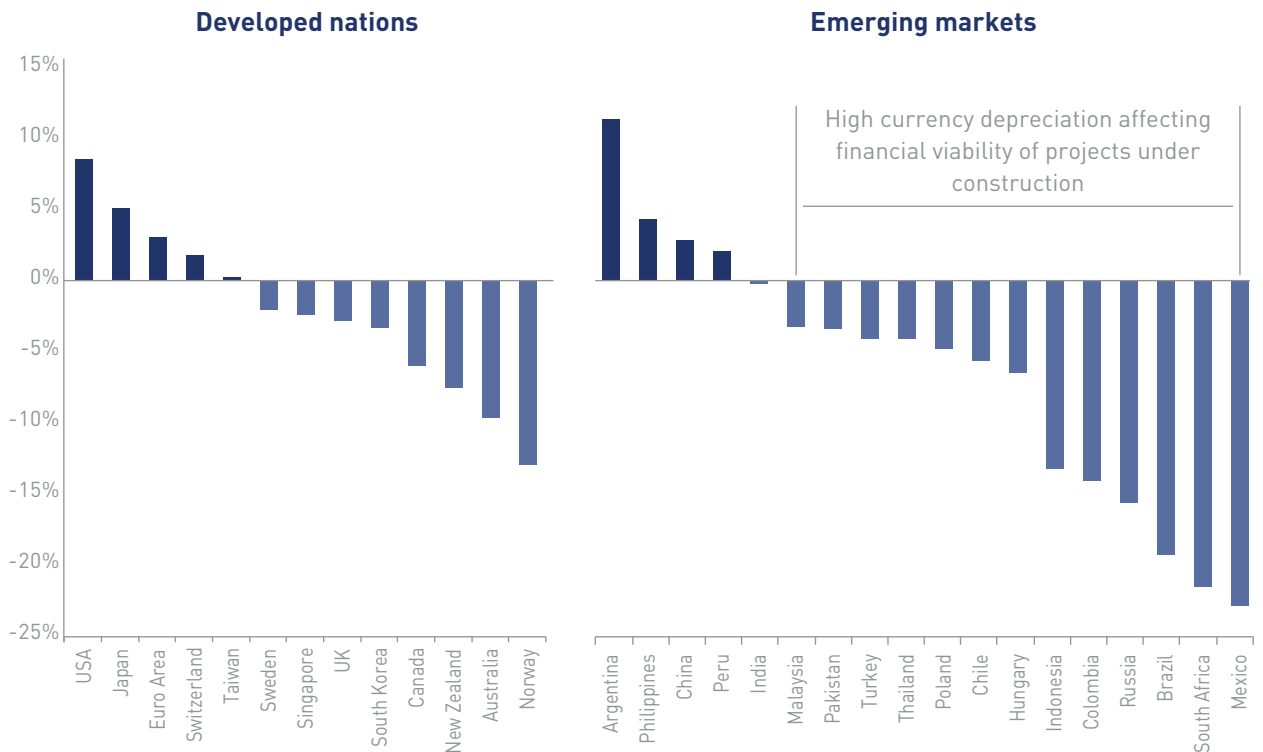
The most relevant example here is India which remains dependent on Chinese suppliers for nearly 80% of its module and inverter requirements. There is a renewed government focus on domestic manufacturing with the country considering a series of measures including capital subsidies, customs and safeguard duties, and demand enhancement to support local manufacturers. Similarly, Japan has announced that it is earmarking USD 2.2 billion towards economic stimulus package specifically for encouraging companies to shift production out of China.

2.8 Worsening risk-return profile of projects

Projects under construction face triple whammy of higher capital costs, higher execution risks and potentially lower revenues. The impact is particularly severe in emerging economies such as Brazil, India, South Africa and Mexico, which have been hit hard by currency depreciation of between 7-28% in the last three months. The Australian Dollar fell by 20% between January and March 2020 putting viability of 1-2 GW of pipeline projects at risk.

Rystad Energy expects procurement in Mexico and Brazil, both experiencing steep currency declines, to come to a complete halt on most projects¹¹. In addition to higher equipment purchase costs owing to currency depreciation, developers face higher costs of between 10-30% on account of higher working capital, operating costs (logistics, health & safety) and greater due diligence.

Figure 8: Real effective exchange rate changes, December 2019 - April 2020



Source: World Economic Outlook, April 2020: The Great Lockdown

¹¹COVID-19 set to wipe out global solar and wind project growth for 2020, slash new capacity from 2021, 2020 <http://bitly.ws/8yGH>

Developers in many countries need to complete projects by specified deadlines to meet contractual obligations and avoid risk of potential reduction in revenues:

- i. In India, some projects face tariff reduction if completion is delayed beyond July 2020 because of expiry of safeguard duty on module imports;
- ii. Chinese projects usually have strict completion deadlines with feed-in-tariffs declining if completion is not achieved by stipulated timelines (June 2020 and December 2020);
- iii. In the US, the investment tax credit (ITC) benefit is due to fall progressively on an annual basis and expire completely by 2022. Delay in project completion could reduce ITC benefit for many projects.

2.9 Financing at risk

The immediate implication for solar sector is a knock-on effect for financing of ongoing projects particularly in frontier markets, newer technologies and off-grid applications where risk management structures are not well established

Financing for solar projects is expected to become even more challenging as financiers turn cautious and increased costs hurt project economics. Liquidity has become more scarce in the post COVID-19 world. Investors are moving to safe havens and away from riskier opportunities.

Central banks across US, India, Europe and Japan have undertaken multiple measures to ease liquidity and injected trillions of dollars in the monetary system. But banks are still expected to be cautious because of massive impairment in their balance sheets and concerns about asset quality. Equity investors are also expected to sit out the period of high uncertainty and wait for normalcy to return before committing more funds to the sector.

The immediate implication for solar sector is a knock-on effect for financing of ongoing projects particularly in frontier markets, newer technologies and off-grid applications where risk management structures are not well established. Smaller developers with projects not yet off the ground could also be hit hard, as their financing becomes scarce or more expensive.

2.10 Reasons to be optimistic

The crisis has refocused attention of governments and policy makers to fight climate change and localise energy supply. Both these priorities play to solar technology's advantage

Amidst all the negative news, there is huge optimism about future prospects of solar power. The crisis has refocused attention of governments and policy makers to fight climate change and localise energy supply. Both these priorities play to solar technology's advantage. The World Economic Forum has said that the pandemic is an opportunity to rebuild a more sustainable economy and fight climate change.

Enhanced funding prospects over time

Investors in conventional energy, suffering huge losses due to reduction of output and lower prices, are expected to accelerate shift towards renewable energy.

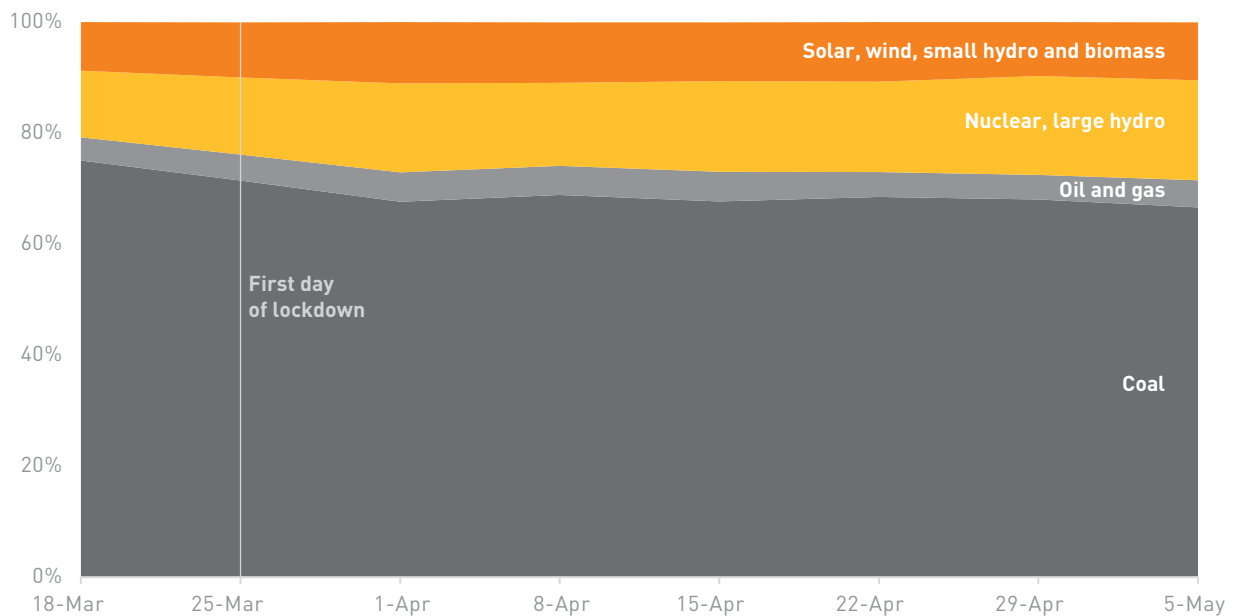
Operational robustness of solar technology

The pandemic has highlighted operational robustness of solar technology – low complexity, minimal reliance on goods and labour, and advanced remote diagnostic abilities – and its suitability as a reliable energy source. While conventional power production has suffered extensive losses due to logistical hold-ups, lack of fuel or labour and increases in operational costs, solar projects have largely managed to sustain power production with minimal interruption. Indeed, solar power production has actually soared due to cleaner air and growing share in total power production.

Less reliance on fossil fuels and improving grid resilience

Many countries around the world have reported record high levels of variable renewable energy penetration (77% in Portugal) providing comfort in resilience of national grids. Carbon intensity reduction in power sector has varied from 16-36% across the EU member nations. There have also been reports of new record periods without any coal-fired generation in Portugal (52 days) and the UK (14 days). In India, the share of non-fossil based power has touched all-time highs in the range of 27-29%. The experience has highlighted valuable lessons learnt by grid managers in phasing out thermal power and coping with increasing variability in demand-supply.

Figure 9: Changes in India's power generation mix



Source: Daily reports, National Load Dispatch Centre

3. Key regional developments

3.1 Asia

Asia accounts for 57% of total solar capacity addition globally. In China, the world's largest solar country by annual capacity addition, new installations are expected to decline only marginally as economic activity returned to near normal status in March 2020. Elsewhere, utility scale capacity addition is likely to suffer by 10-20% due to man-power shortages and logistical bottlenecks. Some countries including China and Vietnam have been planning transition from feed-in-tariffs to competitive bidding but these plans are likely to be delayed. Vietnam extended its FIT scheme in April 2020 by eight months to December 2020¹².

Key COVID-19 related themes across the region are highlighted below.

Drastic slowdown in rooftop solar and merchant markets

Rooftop solar and open access solar markets are expected to suffer a significantly larger decline across India and Australia.

Focus on domestic manufacturing policies

The Chinese factories have been quick to resume operations but the pandemic has nonetheless focused attention on risks of over-dependency on China. There are active attempts in India and Japan to promote domestic manufacturing.

Worsening financial condition of distribution utilities

Distribution utilities in many south Asian countries, already facing financial distress, are facing huge losses due to lower demand and collection shortfalls.

3.2 Americas

As of 22 April 2020, a total of 42 US states had issued stay-at-home orders. The lockdown has resulted in a 6% reduction in power demand - biggest fall in 16 years. Capacity addition in 2020 is expected to fall to 10 GW (pre-COVID forecast 15 GW). Large scale layoffs are expected through June 2020 particularly in the rooftop solar segment¹³.

The pandemic arrived late in Latin America owing mainly to limited international exposure. However, the region is fast becoming the next hotspot due to poor infrastructure, cramped and densely populated living conditions¹⁴. Brazil, the worst affected country in the continent, has "indefinitely postponed" solar auctions putting a whopping 28.66 GW of bids in a limbo¹⁵.

There are fears that sharp currency falls in many countries including Brazil, Mexico and Chile may significantly slow or even indefinitely delay projects due for completion in 2021¹⁶.

¹²Vietnam's renewable energy industry amid COVID-19: facts, force majeure and (patchy) Government support, 2020: <https://bit.ly/2zySEPI>

¹³COVID-19 Impacts on the U.S. Solar Industry, 2020 : <https://bit.ly/2zqm1n4>

¹⁴"A major outbreak and a major collapse": South America's worrying coronavirus future, 2020: <https://bit.ly/35PhpmF>

¹⁵COVID-19 brings 'indefinite' delays for Brazil's solar-friendly auctions, 2020: <https://bit.ly/2AkG0nJ>

¹⁶COVID-19: Currency fallout to 'wipe out' global momentum of PV, wind in 2020, 2020: <https://bit.ly/2SWyFBc>

3.3 Europe

EU's recovery package is likely to integrate green energy transition and sustainable growth. However, pipeline visibility for 2021 and 2022 is affected by cancellations and delays in new auctions

Despite severity of the pandemic in many European countries, there is expected to be little downward deviation in the pre-COVID capacity addition estimates of 16-18 GW for 2020. Moreover, EU's recovery package is likely to integrate green energy transition and sustainable growth. However, pipeline visibility for 2021 and 2022 is affected by cancellations and delays in new auctions. France, Germany and Portugal have all deferred project auction timelines. Portugal's 700 MW solar plus storage tender, initially planned for March 2020, is now scheduled for June¹⁷. Growth of grid parity market, just beginning to take off in Spain and Portugal, is also likely to be hampered by depressed power prices¹⁸.

Germany is considering extensions of project deadlines without penalties on a case-by-case basis. The UK has also extended completion deadlines for FIT-based community solar projects by six months to September 2020. Meanwhile, in Turkey, the regulators have decided to halt processing of net metering applications¹⁹.

3.4 Africa

Africa seems to have avoided a large-scale outbreak but South Africa and Nigeria, two of the largest economies in the continent, have enforced strict lockdowns. Lacking financial means to provide generous social welfare protection, most nations have resisted complete movement restrictions to avoid adverse impact on livelihoods.

While the pandemic is estimated to result in substantial economic contraction in Africa with GDP growth falling by 3-8 percentage points²¹, demand for power is actually believed to be rising with off-grid solar a key beneficiary

It is estimated that only 43% of sub-Saharan Africa is electrified and 23% of health care facilities have access to reliable electricity²⁰. Solar off-grid and mini-grid solutions with innovative business models have tried to bridge this gap. While the pandemic is estimated to result in substantial economic contraction in Africa with GDP growth falling by 3-8 percentage points²¹, demand for power is actually believed to be rising with off-grid solar a key beneficiary. Almost 80% of jobs come from SMEs, ill-equipped to sustain the downturn with low cash reserves and inability to support remote working. Inability of consumers to pay for power would, in turn, put young off-grid power start-ups at risk. A recent survey by GOGILA, an association of off-grid solution providers, says that 50% of such companies would face serious financial hardships if the crisis extends beyond three months²².

Attempts to accelerate off-grid system deployment are gaining momentum during the pandemic. For instance, a USD 500,000 relief fund has been set up by an impact investor All On (established by Shell) to provide healthcare organisations in sub-Saharan Africa with reliable power.

¹⁷COVID-19 outbreak sparks temporary delay for Portugal's solar auction, 2020: <https://bit.ly/2zxcyuo>

¹⁸European power and carbon markets affected by COVID-19 – an early impact assessment, 2020: <https://bit.ly/2xTfeC1>

¹⁹Turkey to introduce net metering scheme for residential PV, 2020: <https://bit.ly/2YXAIOz>

²⁰Energy access takes center stage in fighting COVID-19 (Coronavirus) and powering recovery in Africa, 2020: <https://bit.ly/2zrUH7V>

²¹The macroeconomic impact of COVID-19 in Africa, 2020: <https://brook.gs/3bo2MYz>

²²Op-Ed: COVID-19 is a huge threat to Africa's off-grid energy sector and its millions of customers – here's what needs to be done, 2020: <https://bit.ly/2SV7I0x>

Nigeria's pandemic response includes provision of solar home systems and mini-grid solutions for health centres²³. The country is also pushing its central bank to include off-grid power and energy access in its "COVID-19 intervention scheme". Liberia and Zimbabwe have also asked for aid to provide lighting in their health care centres²⁴.

The current crisis provides an opportunity to fast track clean energy access in the continent through financial aid or grants and technical support.

²³Offgrid goes global, 2020: <https://bit.ly/3fJ2Wxg>

²⁴SOS -A CALL FOR HELP, 2020: <https://bit.ly/2WGMvIM>

4. Remedial policy measures

COVID-19 has posed a huge headache for governments and policy makers across the world. Many countries have already announced extensive suite of policy actions and stimulus packages. But faced with stretched fiscal resources and conflicting demands from other parts of the economy (healthcare, transport, manufacturing, social welfare, amongst others), specific support for renewables has been limited so far.

Capacity for fiscal support varies widely between the richer western nations and other parts of the world.

- i The US has announced the biggest stimulus package worth USD 2 trillion. Although the package does not specifically address clean energy or include extensions of solar Investment Tax Credit (ITC) benefits, it has several elements including long-term unemployment insurance and business loans likely to benefit solar businesses.
- ii In Europe, early European Council meetings suggest there is a strong likelihood of integrating clean energy support in the Europe COVID-19 stimulus aid²⁵.
- iii Australia's USD 18 billion policy package includes solar in its remit²⁶.
- iv South Korea's green stimulus package includes plans to phase out fossil and increase investments in renewables²⁷.
- v Japan's stimulus package mentions support for corporate renewable PPAs that support RE 100²⁸.
- vi Israel's recovery plan includes funds to deploy 2 GW of additional PV capacity across the country²⁹.

Priority for richer nations and donor agencies should be to target funding assistance programmes towards emerging markets and highly vulnerable distributed solar schemes.

4.1 Support emerging markets

Adequate access to low-cost debt and other financing mechanisms needs to be ensured for poorer nations to maintain growth momentum in the sector. Focus should be on reducing risks, providing technical assistance and financial incentives such as tax credits, investment grants and specific loan schemes to small-scale players. Over 70% of African population lacks access to clean cooking increasing their vulnerability to respiratory illnesses such as COVID-19 and pneumonia. Proper measures to increase access to clean cooking fuel and technologies are more critical than ever.

²⁵Solar can play a key role in the EU COVID-19 stimulus package, 2020: <https://bit.ly/2WmYEE1>

²⁶Australian government stimulates PV in the face of COVID-19 threat, 2020: <https://bit.ly/2zrVCFp>

²⁷South Korea Embraces EU-Style Green Deal For COVID-19 Recovery, 2020: <https://bit.ly/3dxxFe8>

²⁸Renewables Find Mention in COVID-19 Economic Stimulus Package Of Japanese Government; Up To \$1 Billion To Support Corporate Renewable PPAs Under Commitment To RE100, 2020: <https://bit.ly/2YVmf0m>

²⁹Israel's plan to recover from Covid-19 crisis includes 2 GW of new solar, 2020 <http://bitly.ws/8z2R>

4.2 Support utilities

Power utilities need to stay viable for ensuring business continuity. They need emergency financial support for maintaining operations, keeping work environments sanitised and giving staff adequate protective equipment. External support may also be needed to monitor compliance with PPAs to avoid termination of contracts and other offtake risks.

4.3 Support projects and programmes under implementation

Many countries have been gradually withdrawing subsidy support and subjecting renewable projects to market forces but it is important to rethink the timelines to ensure that projects do not get abandoned because of rising costs and short-term risks. When designing economic stimulus packages, the governments need to consider needs of the solar sector in view of its structural benefits – energy access, job creation, reducing emissions and technology innovation.

There are many non-monetary ways in which governments can help the sector:

- i. Local authorities in California have allowed ‘no touch’ online permitting process to minimise delay in installation of rooftop solar systems;
- ii. Deadlines have been relaxed for projects in construction phase in India and many parts of Europe;
- iii. France and Germany have adjusted ongoing tender schemes to avoid financial penalties and loss of incentives for developers due to missed deadlines;

India's policy measures to mitigate COVID-19 impact on solar sector

The Indian government has been proactively taking steps to mitigate impact on the sector:

- i. Declared power as an essential service allowing projects to operate without interruption;
- ii. Guidance to utilities to not curtail renewable power and pay power producers on time;
- iii. Deadline extension for projects under construction;
- iv. Allowed construction activity for new projects to resume half-way through the lockdown;
- v. Issue of new tenders aggregating 3,525 MW and a 2,000 MW solar auction during lockdown;
- vi. Waiver of demurrage and other penal charges for shipments stuck at ports;
- vii. Flexibility of up to three months in debt service payments;
- viii. Relaxation in working capital loan limits;
- ix. Financing support of USD 12 billion for cash-starved utilities.

5. Conclusion

COVID-19 has caused major ructions across the energy sector and threatens to undermine efforts to accelerate clean energy transition. Most nations are still in crisis-tackling mode with considerable uncertainty remaining over both the length and extent of lockdown.

Falling costs and strong policy support have made solar power increasingly attractive and cost competitive. But the sector faces critical challenges:

- i. Diminished growth prospects due to uncertainty over future electricity demand
- ii. Higher offtake risk including delayed payments, PPA renegotiation and curtailment
- iii. Slowdown in distributed solar market due to loss of capacity and/ or suspension in aid programmes
- iv. Lack of competitive financing solutions

When designing economic stimulus packages, the governments need to consider its long-term structural benefits – energy access, job creation, reducing emissions and technology innovation

When designing economic stimulus packages, the governments need to consider its long-term structural benefits – energy access, job creation, reducing emissions and technology innovation. Focus should be on reducing risks especially for small developers and ensuring financing support for the vulnerable distributed solar market.

The good news is that long-term drivers for energy transition remain as valid today as they have been in the past. Notwithstanding the short-term bumps, there is no evidence to suggest that solar industry or broader renewable industry will witness any slowdown in the medium to long-term.

Acronyms

BBL	Barrel
C&I	Commercial and Industrial
COVID 19	Coronavirus disease 2019
ESKOM	Electricity Supply Commission
EU	European Union
FIT	Feed-in Tariffs
GDP	Gross Domestic Product
GOGLA	Global Off-Grid Lighting Association
IEA	International Energy Agency
IPP	Independent Power Producer
ITC	Income Tax Credit
MMBTU	Metric Million British Thermal Units
NYMEX	New York Mercantile Exchange
OPEC	Organization of the Petroleum Exporting Countries
PPA	Power Purchase Agreement
SME	Small Medium Enterprise
SPV	Special Purpose Vehicle
WTI	West Texas Intermediate



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