JK Capital Management Ltd.

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Solar goes through the roof in the world's two most populated countries

On 20th June 2021, the National Energy Administration (NEA) of China launched a program to promote rooftop solar power in pilot counties. According to the notice issued by the administration, those counties with enough suitable roof area shall apply for participation in the pilot project which has an application deadline on 15th July 2021. Qualifying counties are those where the proportion of roof area that is suitable for hosting rooftop solar panels is at least 50% for government organisations, 40% for public buildings such as schools and hospitals, 30% for industrial and commercial premises and 20% for rural residences.

Prior to this pilot project announcement, on 9th June 2021, the government released a document to promote the use of green energy in counties to reduce the share of fossil fuel in the energy mix by rising the proportion of roof area installed with photovoltaic (PV) systems and promote the application of Building Integrated PV (BIPV). In contrast to the BAPV, or Building Applied Photovoltaics which is adding solar panels to pre-existing buildings, BIPV is becoming more popular in China and worldwide as this integrates PV elements at the construction stage of new buildings. BIPV integrates photovoltaics modules into the building such as the roof or the facade. It serves the dual purpose of being used as a building envelope material and a power generator. BIPV systems can provide savings in materials and electricity costs, reduce the use of fossil fuels and emission of ozone depleting gases while adding to the building's architectural aesthetics.

According to data issued by the National Bureau of Statistics and the Chinese Academy of Building Research, China's current existing building area is about 80 billion square metres. Another 100 million square metres of daylighting tile roof area are added every year. Once applied on a large scale, BIPV can have widespread adoption in China. NEA believes BIPV has greater application potential than BAPV. While BAPV model requires some renovation to the roof, BIPV is part of the building which lowers the cost. The ownership of the equipment and of the electricity produced is also clear as it is owned by the building owner, which reduces the complexity of the business model and the number of parties involved. According to calculations by Tianfeng Securities, the BIPV market may

grow by more than 80% on an annual compounded basis between 2020 and 2025 as the industry is in a stage of rapid expansion. With the combined effort of government bodies, the emphasis on BIPV's widespread adoption in pursuit of carbon neutrality by 2060 as promised by Xi Jinping cannot be understated. The command economy of China combined with instructions given by the very top of the State makes this goal achievable assuming actions such as the one described here are implemented, and we have all reasons to believe that they will.

Separately, a similar development on rooftop solar panels was observed in India. One of India's largest listed companies Reliance Industries Limited (RIL) announced its plans to spend USD 10bn towards the development of solar energy over the next three years. It plans to spend USD 8bn towards building four "Giga factories" that would produce solar cells, modules, hydrogen, fuel cells and a battery grid to store electricity on 5,000 acres of land at Jamnagar, Gujarat where RIL's refining complex is located. An additional US$2bn would be spent towards developing a value chain, partnerships and futuristic technologies associated with green energy development.

As part of the company's plan, the integrated solar photovoltaic module factory would establish and enable at least 100GW of solar energy by 2030. A majority of this power is expected to come from rooftop and decentralised solar installations in villages. Reliance is known for executing large sized projects in record time. It became the number one telecom operator in India in a matter of two years after launching RJio on the back of establishing itself as the world's largest oil refinery group in the mid 2000s. Reliance's commitment to clean energy may prove beneficial for India to meet its sustainability goals, but the path to success will be more uncertain given the limited involvement of the central government of India.