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India's aggressive renewable energy plan and its implementation

The government of India is not being conservative when it comes to the country's renewable plans. India currently has around 150GW in renewable energy capacity today. During the Conference of the Parties (COP 26) in Glasgow in 2021, India announced a 500GW renewables capacity target by the year 2030, up from the previous 2030 target of 450GW. The 500GW target would imply that more than 70% of India's added capacity until 2030 is to come from renewables.

India is the third-largest producer of energy in the world at around 1,700TWh. 70% of India's power is generated from coal-fired power plants. India went through a power shortage from late April to early May, which we discussed in a previous article. Shortage of coal, combined with an ongoing heatwave, were contributing factors to the power shortage. The government reacted by imposing several supply side measures such as

restricting the number of passenger trains to make room for coal transportation. By the middle of May, the demand-supply imbalance in the Indian power sector had largely subsided. Renewables were 14% of India's total power generation in May vs. 10% in April, and hence renewables assisted in the tackling of the power shortage as well.

With its 2070 net-zero target, the Indian government is pushing aggressively for renewables given the country's tight power situation combined with its status as the world's third-largest CO2 producer. Renewables are not only cleaner but also more economically feasible for India. In today's India, solar power costs for end consumers are lower than that of coal power, while wind power is at parity vs. coal.

At the end of May, the Ministry of Power of the federal government announced a plan to phase out 81 coal-fired plants in the next four years. By decommissioning nearly half of its existing 173 coal power plants, the country is expected to save 34.7 million tonnes of coal and cut carbon emissions by 60.2 million tonnes on an annual basis.

The idea to replace thermal coal creates a bigger gap in energy demand for renewables to fulfil. Today, coal power plants are legally required to run at a minimum of 55% of total capacity, but the power ministry has said that this mandate can come down to 40% levels in 2-3 years.

The Indian government has been undertaking tangible steps to promote renewable energy. In 1992 it set up the Ministry of New and Renewables Energy (MNRE) with the aim of having a well-formed renewable energy plan. In 2011, the Indian government formed SECI (Solar Energy Corporation on India) which helps MNRE execute its solar targets. In 2014, the MNRE announced a 'National Solar Mission" which set a renewables capacity target of 175GW by the end of 2022. SECI was one of the entities assigned with ensuring India reaches those targets.

One example of how SECI started executing India's renewable plans is by directly initiating tenders of utility scale solar projects and select generating companies (GENCOs) from lists of bidders. SECI would then be assigned the responsibility of selling the power to the distribution companies (DISCOMs) through long term contracts. This contract structure reduces the risk of DISCOMs defaulting on these long-term contracts as defaulting on SECI would essentially mean defaulting on the government, as opposed to a direct

contract between a GENCO and a DISCOM where the DISCOM could just default on a private GENCO.

SECI is already undertaking wind projects and is soon to be renamed RECI (Renewable Energy Corporation of India). SECI is increasingly involved in solar and wind projects: Currently around 70% of new Indian renewable tenders have SECI has a middleman, resulting in default rates having come down significantly.

Despite its aggressiveness, we think it is nearly impossible for India to reach the 500GW 2030 target. India has a history of over-promising and underachieving its renewable targets. As of May 2022, India had 150GW of renewable energy capacity, still short of its end-2022 target of 175GW, but even this number is quite misleading: When India set its 2022 targets, it did not consider large hydro projects. Around 2020, as it became evident that India would not be able to reach its 2022 target, it started to include hydro projects in the renewable energy capacity. Hydro projects today have 40GW of capacity. Focusing exclusively on solar and wind capacity, India had only reached 60% of its end-2022 target by the end of March 2022:

Fiscal Year														Target	Target
GW	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	CY'2022	Reached
Solar	0.2	0.5	1.2	2.3	2.6	3.7	6.8	12.3	21.7	28.2	34.6	40.1	52.5	100.0	53%
Add	-	*0.3*	*0.7*	*1.1*	*0.3*	*1.1*	*3.0*	*5.5*	*9.4*	*6.5*	*6.4*	*5.5*	*12.4*	-	-
Wind	16.1	18.4	20.1	21.3	23.4	26.8	32.3	34.0	35.6	37.7	38.8	40.0	43.2	60.0	72%
Add	-	*2.3*	*1.7*	*1.1*	*2.1*	*3.4*	*5.5*	*1.8*	*1.6*	*2.0*	*1.1*	*1.2*	*3.2*	-	-
Total	16.2	18.9	21.4	23.6	26.0	30.5	39.0	46.3	57.3	65.9	73.4	80.1	95.7	160.0	60%
Add	-	*2.6*	*2.5*	*2.2*	*2.4*	*4.5*	*8.5*	*7.3*	*10.9*	*8.6*	*7.6*	*6.7*	*15.6*	-	-

Source: Ministry of Power, JKC Research

Note: Fiscal Year represents March end for India. For example, Fiscal Year 2022 represents March 2022 end

Moreover, given India's constant power shortages, there is a risk that aggressively cutting down coal generation to promote renewables will amplify the shortage problem. Hence, even with all the anti-coal sentiment from the government in the past years, we saw the government trying to help coal-fired power plants during the April-May power shortage. But even if India reaches 70% of its 2030 renewable energy target, it will imply that more than 200GW in renewable energy capacity needs to be added from today. All said, we are

excited about the Indian renewables space moving forward as it offers numerous investment opportunities within a well-defined legal framework.

Sources: Emkay, InCred, Business Standard, Investopedia, Reuters, S&P Global, Ministry of Power, ReNew Power company filings, JK Capital research