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## A State Model for Development Inclusion of Solar in Building Bye-Laws

The noticeable correlation between state policies and development is well defined. State in India is known to have made a tremendous stride in nurturing the manufacturing sector. The GDP index has reached a record high as the GDP growth rate touched the 7.5% mark. In the past few months, metrics to quantify results of state policies have yielded in positive notes. Ease of business ratings improved

and Moody's analysis upgraded its ratings towards India. As a developing nation, a state sponsored initiative was imperative for achieving ambitious development goals and the government has responded with the same. The government has set a target of reaching a total of 100 GW of solar power by the year 2022. Considering India crossed 12 GW this year, a 100 GW target is ambitious to say the

least. However, a variety of state sponsored policies have considerably pushed private firms in achieving the targets the government set. A combination of subsidies, norms and other incentives have reduced return on investment and made it possible for people to own solar power plants at considerably cheaper rates than before. However, the most intriguing aspect of solar policy framework is its evolving

nature. Policies are amended constantly to suit the growing needs of the nation. Building Bye-Laws & Codes are no exception. The general unawareness of the public on the advantages of solar power is viewed with some scepticism by people within the solar industry. However, this stands a fundamental challenge for adopting solar. Targeting this, the central government has recommended its state counterparts to enact policies that mandate solar power plants on buildings in their respective states. To ensure that this doesn't entail a high financial burden on the end user, the minimum quantum of solar power to be installed is extremely low. For instance, Uttar Pradesh, Orissa, Haryana and Orissa have already adopted policies in the building bye laws that mandate solar power installations. Depending upon the state and type of end user—residential, commercial or industrial,

the state government sets a small portion of the user's power consumption to be generated from renewable energy. It can be seen that a mix to high range of per capita energy consumption of these four states should command a stringent policy on development of renewable energy infrastructure, incorporating the provision for solar (even though a small capacity) in existing and future building laws is mandatory for this to happen.

**Small scale to Large scale:**

The building bye laws make it mandatory for all residential, commercial and other buildings covering an area greater than 300 square yards to ensure a solar power plant. Though, by the policy, it enforces the provision of solar power, the capacity of the solar plant to be installed (as per the bye law) is quite low. It is desirable that the solar power plant on the rooftop will make any real benefit in reducing the carbon footprint of the building, but it will make the plant aware of the benefits of the solar power. For instance, in Haryana, building bye laws stipulate a mandatory solar system of 5% of the sanctioned load of private residences, educational premises covering an area greater than 300 square yards. Going by the law, a 12.5 kW solar power plant on building where sanctioned load is 250 kW. Obviously, this will not put a strain on the consumption pattern of the plant, but if the plant is connected with the operations of the plant, it will look for options to expand the capacity of the plant.

Building Bye laws have also incorporated the provision for solar installation in residential roofs of area greater than 300 square yards. Traditionally, solar power plants have not been popular in residential premises owing to longer return on investment. However, with the provision of net metering, residential customers can enjoy the benefits of exporting surplus usage to the grid whenever there is a load. Net metering provisions integrated with government mandated solar power plant should be the primary objective of installing solar plants in residential areas as well.



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about inclusion of solar system in the building bye laws. Implementation of the scheme remains a challenge. A lot of awareness by end customers about mandatory solar installation poses a challenge to the smooth implementation of the scheme. The government should take the opportunity of urging popularity of solar to bring up the policies in a forthcoming. For future considerations, stringent regulatory approvals must be enacted to ensure the end user is not able to skip the requirement of solar power.

On a positive note, the government is addressing the growing needs of Indian consumers reflected in introduction of new policies and amendment of the old ones, incorporating a provision of solar plants in building bye laws in such states. However, the challenge remains that though people are adopting solar, this seems to be a disparity in the acceptance between sectors. A state driven policy is essential to the 'right plant to accept solar' for all its benefits.

Solar in India is witnessing a surge with plants being installed at a rapid pace. Although, acceptance of the state's high-tech technology is slowing, becoming commonplace, state mandates do not seem essential to push India to meet the target of 100 GW of solar power.

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