

WAAREE-GTAT TIE-UP HIGHLIGHTS SCOPE FOR FURTHER COST REDUCTION IN SOLAR POWER

NOVEMBER 24, 2014

[THE HINDU BUSINESS LINE](#)

Waaree-GTAT tie-up has scope for solar cost-cut

Innovations in material science and technology work towards cost reduction

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Chennai, November 23

The recent technology tie-up between Waaree Energies and US-based GT Advanced Technologies highlights the scope for further cost reduction in solar power.

GTAT announced in March

ANALYSIS

its new technology for connecting photo voltaic cells into a module. The technology, dubbed 'Merlin', will help reduce the use of silver in the modules.

Mumbai-based module manufacturer Waaree, with a capacity to produce 250 MW a year, claims that this will bring the cost of the module down by 10 per cent. The com-

pany, one of the big manufacturers in India, has supplied 90 MW to Indian projects and says it has another 100 MW under execution. Today, the prices of modules range from 60 cents to 75 cents a watt, which roughly translates to between ₹35,000 and ₹45,000 per kW.

Waaree recently announced that it would incorporate the Merlin technology into its production process. No financial details were given, but the announcement said that Waaree would "aggressively participate" in India's solar market.

The market is dominated by overseas manufacturers such as First Solar of US, and other Chinese companies. Indian manufacturers, including Tata Power Solar, have a small

share of the market. Solar power costs have been coming down, as is evident from the recent results of the tariff-based bidding for projects in Andhra Pradesh, Telangana and Karnataka.

Making profit

The results show that solar power companies trust they will be able to make profit selling solar power at prices between ₹6.5 and ₹7 a kWh.

The question now is whether there is scope for prices to come down further. The Waaree-GTAT tie-up must be seen in this context.

Every company is doing its own bit to bring down costs significantly. Last month, polysilicon manufacturer, SunEdison, announced it could produce the basic solar raw material with a lot less energy than previously. Pashupathy Gopalan, who heads the Asia-

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Pacific operations of the company, said this will reduce the cost of producing one kWh of solar power by ₹1.

Other companies, such as DuPont, are working in the area of material science to bring costs down. "Sixty per cent of the cost of a solar PV plant is of the modules, and 70 per cent of the cost of the module is of materials," observes Rahul Bhudwar, Vice President - Strategy and Business Development, Tata Power Solar.

The GTAT technology is an example of reduction in material cost. Solar manufacturers are coming up with thinner

glass and frameless modules.

A big chunk of cost reduction will come from how much of the sun's energy is converted into electrical energy. Currently its about 17 per cent, but companies are achieving higher numbers. The US solar major, First Solar, recently announced it had achieved efficiency level of 21 per cent and expects 22 per cent in 2017.

Numbers of this order are for commercial scale plants, but much higher figures are reported in labs. The Fraunhofer Institute for Solar Energy Systems announced an efficiency level of 44.7 per cent, though using 'fresnel - concentrator photo voltaic' technology, where lenses concentrate sunlight onto the cells. When such technologies come to the market, solar power could cost half of what it is today.