



Imposition of anti-dumping duties on import of solar cells and modules – impact analysis

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A white paper analysing the impact of imposing anti-dumping duties on import of solar cells in India

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Headway Solar Pvt. Ltd. is a solar energy consulting firm based in Delhi NCR, India. Our expertise, insight and network have enabled organisations in making strategic decisions within the Indian solar market, and in executing solar energy projects.

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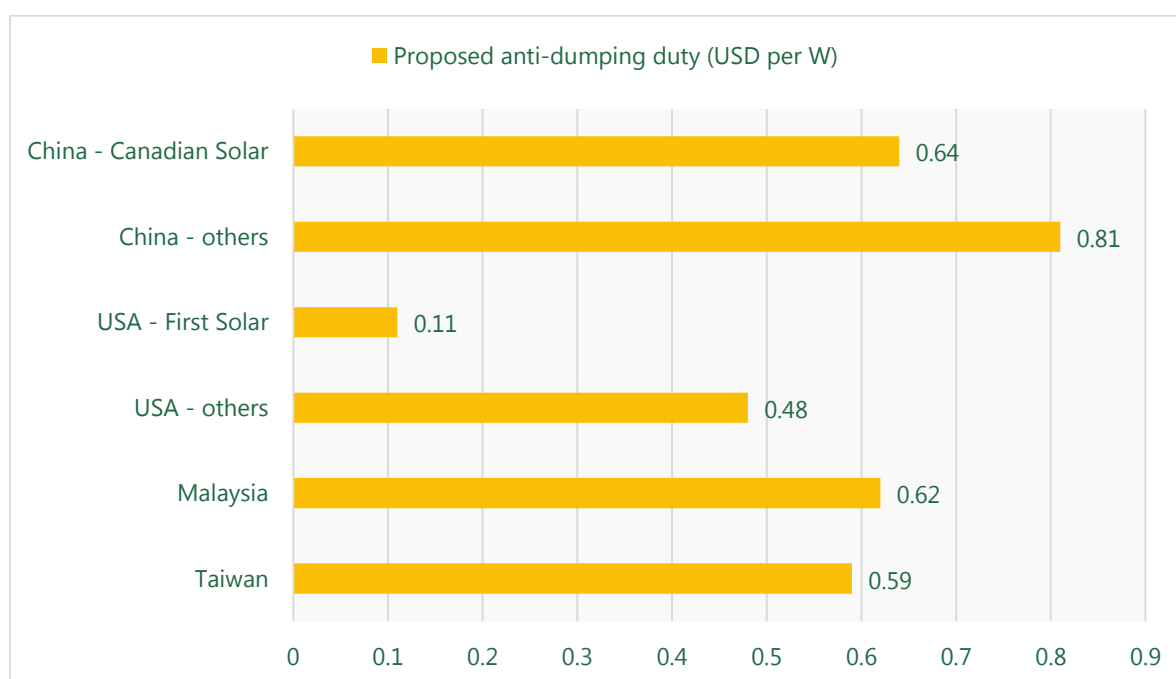
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1 Introduction

According to a notification on 22 May 2014, the Directorate General of Anti-Dumping and Allied Duties (DGAD) under India's Ministry of Commerce and Industry has recommended imposition of anti-dumping duty on import of solar cells and modules from China, Taiwan, Malaysia and the US. Investigation into the issue began in November 2012 after Indian Solar Manufacturers' Association complained that imports from these target countries were damaging the domestic solar manufacturing.

Figure 1-1: Proposed anti-dumping duty structure on solar cell imports



In its notification, DGAD has noted that there are 42 solar crystalline cell and/or module manufacturers in India. DGAD has noted that 39 of these manufacturers have imported subject goods from target countries, and have been not considered as part of the domestic industry for this investigation. It was also highlighted that domestic thin film industry has negligible presence and the few manufacturers with nominal output of thin film solar modules in India reportedly rely on imports from target countries. Only three companies, with 12% of the total domestic production, represented the domestic industry during the investigation. According to DGAD, the domestic industry considered for investigation, comprising of Indosolar, Websol and Jupiter Solar, companies which do not import subject goods from target countries, accounted for about 1.2% of the Indian market share during the period of investigation.

The Indian solar module market is highly fragmented, with First Solar leading the pack. At least two-thirds of the total photovoltaic capacity installed in India uses Chinese and Taiwanese cells. According

to Headway Solar estimates, total Indian solar cell production capacity is approx. 350 MW annually, while the current annual demand is more than four times the domestic production¹.

Headway Solar team has analysed the impact of imposing anti-dumping duties on solar imports in this document.

¹ Headway Solar analysis

2 Impact analysis

2.1 Domestic manufacturing

The objective of the anti-dumping duties is to protect local interests against imported products which may threaten the local industry. With the duties imposed, imported solar cells and modules will cost 1.15 - 2.3 times the recent prices and this is perceived to benefit domestic manufacturing. It is estimated that consequently, the Indian modules will cost 10-25% more than the currently prevalent Tier-1 photovoltaic prices.

Currently, almost all the cell manufacturing facilities in India are not operational. There were hopes for revival after 375 MW capacity was reserved for locally manufactured modules during the latest biddings under the phase 2 of National Solar Mission, but even after months of allocation, there are no clear signs of restarting the production.

Bolstered by the duty coupled with drying supply from China, many larger module manufacturers may plan to integrate backwards to produce cells. Out of the current lot, only a few manufacturers will be able to invest into cell manufacturing, which requires bigger quantum of investment than technologically simpler module assembling. Investors will be reluctant to put their money on such plans due to incongruent policies, volatility in an emerging market and international competitors. It should be noted that the manufacturers haven't got much support from the lenders and investors even after 375 MW was reserved for 'Made in India' modules under the National Solar Mission's Phase 2 Batch 1 (Domestic Content Requirement category). Absence of a clear long-term view of the business of these manufacturers will add to the investors' doubts.

Joint ventures and partnerships is another option for the local manufacturers riding on favourable rules, but chances of that happening are slim. For the potential JV partner, local manufacturers, with their limited market reach and know-how, will not be able to add substantially to the partnership.

Contract manufacturing (case in point – Renesola) might be another possibility for the domestic manufacturers. While this might be beneficial over short-term, long-term the contractors would want to keep the important pieces of supply chain in-house.

Mergers & Acquisitions books will not see prominent new entries related to solar manufacturers as they may not be regarded as good investment targets because of their financing health, limited technology capital, and nascence of the Indian solar market coupled with policy volatility. Potential acquirers such as Chinese solar giants have easier options to enter the Indian market – such as starting their own manufacturing unit here, or shipping products from a neutral location such as Thailand.

Many module manufacturers might consider forward integration and come in as project developers during the project allocations in future, but inferring from low participation of domestic manufacturers in the latest NSM biddings where 375 MW was reserved for domestic supplies, coupled with lack of capital, chances of this happening are low.

2.2 Project developers

Project developers are the major opponents of the anti-dumping duties. More than 1600 MW capacity of solar projects are being developed under various state and central policies along with nominal capacity of 'Group captive' projects. Most of the projects rely on imported modules and place bids according to the price estimates and therefore, work on very thin margins. If the project budget shoots up even by 10% (such as in case of using local solar cells and modules), the project developers will have to cancel the ongoing projects. According to our estimates, in the best-case scenario, not more than 30% of the ongoing projects will be commissioned.

Project developers will have the following choices to procure:

1. **From Indian suppliers:** According to our interaction with project developers, Indian products have uncompetitive price-performance ratio and in present situation, Indian suppliers might not be able to service long-term performance guarantees on the solar panels. Project developers have also conveyed their doubts on capability of Indian suppliers to supply on time.
2. **From international suppliers not based in target countries:** Indian project developers would look at suppliers from countries such as Japan, South Korea and EU for imports under the new rules and duties. The modules from these places are costlier than the recently available Tier-1 Chinese suppliers' modules by 10-20%, but will have the advantage of perceived higher quality and servicing of long term performance guarantees over the Indian ones.
3. **Integrate backwards, upstream:** Chances of strategic backward integration to manufacture cells locally to meet the new rules by any project developer are slim as it's highly capital intensive and technically complex.

If the anti-dumping duties are imposed, more than 70% of the ongoing projects under central and state solar policies will be shelved. The next round of biddings will see lesser participation from smaller project developers, who have relied on competitive Chinese imports.

2.3 International suppliers

With restrictions on Chinese, Taiwanese, Malaysian and American suppliers, prominent solar cell and module suppliers based in Japan, South Korea, Thailand, Singapore, Israel, South Africa and EU stand to benefit. After speaking with Indian project developers and EPC players, we reckon tier-1 suppliers from the aforementioned countries will be given preference over Indian supplies due to perceived better quality, cost competitiveness and ability to commit to long-term performance guarantees of the modules. The supplies from these countries will definitely be costlier than the recent Chinese tier-1 supplies by approx. 10-25%.

The suppliers of target countries, specifically China, may consider the option of starting cell manufacturing in India and might implement used technology and equipment from their existing facilities elsewhere. The target suppliers may also consider the option of supplying from their

subsidiaries or partners not based in target countries, for example, many Chinese suppliers have cell manufacturing facilities in South Korea.

2.4 Suppliers of components and services other than modules

Engineering, Procurement and Construction services will cost more as the cost of procurement will rise along with cancellation of long term supplier contracts. While the bigger players will endure, smaller companies, which relied on smaller projects, might turn away from the sector, at least temporarily. Since most of EPC service providers are domestic, these will go through hard time till dust settles, whereas for international EPC players, things will be comparatively more difficult with higher pressure to cut costs. Inverter suppliers as well as others will also be affected with project pipeline drying up.

While Indian investors might initially show enthusiasm to set manufacturing units, module assembly line suppliers will not benefit from the anti-dumping duties, which includes solar cells. Suppliers to cell manufacturers will be benefitted from the duties in the shorter run.

2.5 National Solar Mission

Because of the increase in cost of solar modules resulting from repercussions of anti-dumping duties, almost all of the projects allocated under National Solar Mission Phase 2 Batch 1 – open category will be impacted negatively. Because of fierce competition during the bidding, project developers have been working on thin margins. Almost all of 375 MW capacity allocated under the category would consider cancelling the projects and losing bank guarantees as a serious option.

With fewer options of procurement in the market and pressure on domestic suppliers, prices of modules are expected to see an upward moment. Even the projects allocated under the DCR category may have to pay more for Indian modules.

For the upcoming biddings under the central and state policies within the next one year, average tariff (or viability gap funding requirement) will go up by approx. 10%, and government will have to pay more for clean energy. For the next proposed batch of project allocations under the National Solar Mission, fewer bids per MW will be placed.

3 Conclusion

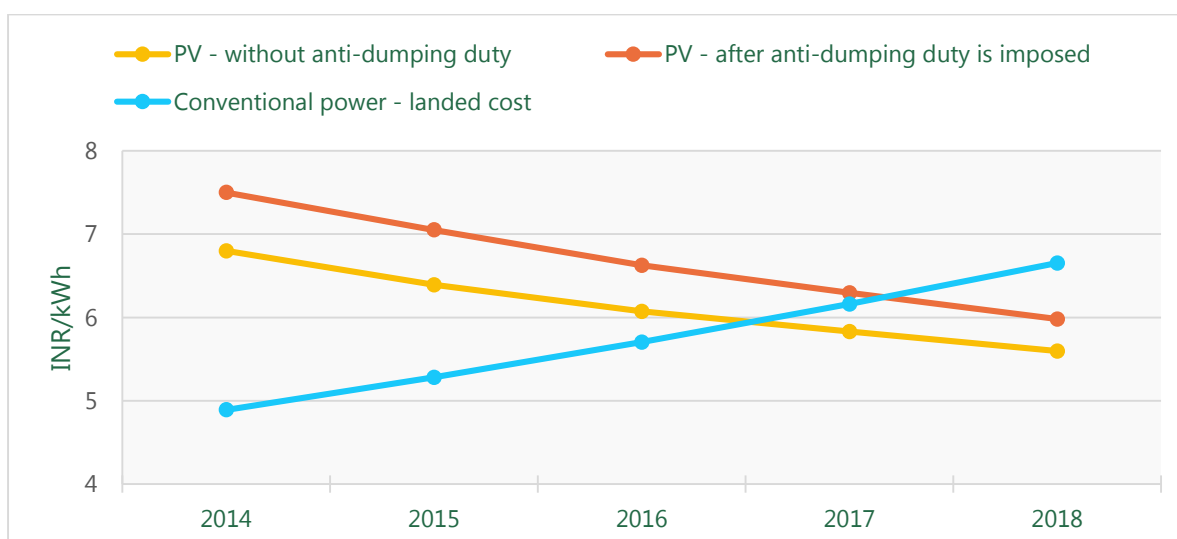
According to Headway Solar analysis, the imposition of anti-dumping duty would negatively impact the Indian solar market. Since the period of investigation, the Indian solar market has evolved considerably. Imposing anti-dumping duties now will jolt the market momentum built over the last four years and shake the investor confidence.

It should be noted that only a few manufacturers will stand to benefit from anti-dumping duties. Even DGAD has mentioned in its notification that only 3 out of 42 registered domestic manufacturers represent domestic industry. Anti-dumping duties will impact majority of Indian module manufacturers as well. Since these duties favour a select few within India itself, a review by regulatory bodies related to competition might be required.

Most of the technology-based value addition to products sold by Indian manufacturers is done outside India. With lack of upstream technological capability, India has to depend on international suppliers which supply products at costs which are favourable to reaching India’s solar energy targets. Unless Indian companies are upstream integrated, anti-dumping duty imposition seems to be futile.

It is highly improbable that National Solar Mission targets of phase 2 (ending 2017) or phase 3 (ending 2022) will not be achieved by depending on domestic supply. According to Headway Solar estimates, about 1600 MW capacity of solar projects are in pipeline under various central and state policies. After the imposition of anti-dumping duties, we estimate that not more than 450 MW of these will be commissioned.

Figure 3-1: Energy cost projections – utility scale²



² 8% annual increment in price of conventional power is assumed. Solar energy costs (without anti-dumping duty) are assumed to decrease by 6% annually. 10% increase in cost of solar energy is assumed due to imposition of anti-dumping duties on solar imports.

According to our analysis, to reach installed capacity milestone of 10 GW after completion of phase 2 of the National Solar Mission, the government will have to pay an additional INR 4,200 crores. In Headway Solar team's opinion, this money might be better spent if state-owned companies such as BEL consider acquiring technical capabilities by overseas acquisition commercially functional technical entities. Also, pursuing programs similar to 'Sunshot' in the US, in collaboration with Indian technical universities and private ventures would be a better idea to promote domestic manufacturing.

Also, according to our modelling results, grid parity of utility scale installations will be postponed by approximately a year. With increase in effective cost of solar power, group captive projects may have to wait for an extra year before market shows signs of adoption. Commercial rooftop solar projects, which have already suffered recently due to lack of government funds, will also suffer setback as costs rise.

Compared to the domestic solar manufacturing industry, downstream activities such as project development and O&M employ considerably more number of people. Anti-dumping duties will favour a handful of companies at the expense of thousands of employees and small and medium scale businesses involved in the Indian solar sector.

While domestic manufacturing is important in the long run, this might not be the right time to focus on it. Downstream consumption over the period of time would lead to stability in the global market and India might stand benefitted by focusing on upstream integration at a later stage, which currently getting the benefit of cheaper supplies to create a robust market. With market consolidation in EU and the US already over, the global solar market is approaching a more mature state. Riding on reduced prices, India has been able to see solar tariffs dropping close to INR 6.5/kWh. At this point in the evolution of the market, Indian policy makers should focus on creating this market rather than promoting setting up of assembling shops with technological value deficit and without any buyers.

Solar energy is of strategic importance to India, and Modi government understands this. Anti-dumping duty measure would certainly not please China and the US, which might reply with similar penalties on non-solar Indian imports. Indian solar industry would sincerely hope that the new government takes a wholesome view of the issue, gauge the long-term impact of anti-dumping duties at this point of time and take possible steps in the right direction.

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