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**F. No. 6/26/2024-DGTR
Government of India
Ministry of Commerce & Industry
Department of Commerce,
Directorate General of Trade Remedies
4th Floor, Jeevan Tara Building, 5, Parliament Street, New Delhi – 110001**

Date: 29.09.2025

**FINAL FINDINGS
Case No. AD (OI)-24/2024**

Subject: Anti-dumping investigation concerning imports of ‘Solar Cells whether or not assembled in Modules or made up into Panels’ originating in or exported from China PR.

A. BACKGROUND OF THE CASE

1. FS India Solar Ventures Private Ltd., Jupiter International Ltd., RenewSys India Private Ltd., Tata Power Solar System Ltd. and TP Solar Ltd. filed an application, before the Designated Authority (hereinafter referred to as the “Authority”) in accordance with Customs Tariff Act, 1975 as amended from time to time (hereinafter also referred as the “Act”) and the Customs Tariff (Identification, Assessment, and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995, as amended from time to time (hereinafter referred to as the “Rules” or “Anti-Dumping Rules”) for initiation of anti-dumping investigation concerning imports of Solar Cells whether or not assembled in Modules or made up into Panels (hereinafter referred to as the “product under consideration” or the “subject goods”) from China PR (hereinafter also referred to as the “subject country”).
2. And whereas, in view of the duly substantiated application filed, the Authority issued a public notice vide Notification No. 6/26/2024-DGTR dated 30th September 2024, published in the Gazette of India, initiating anti-dumping investigation into imports of the product under consideration from China PR in accordance with Rule 5 of the Anti-Dumping Rules to determine the existence, degree and effect of the alleged dumping of the subject goods and to recommend the amount of anti-dumping duty, which if levied, would be adequate to remove the alleged injury to the domestic industry.
3. During the course of the investigation, it was informed to the Authority that RenewSys India Private Ltd. was unable to continue as an applicant in the investigation. Accordingly, the following producers have been considered as “applicants” in the present investigation –

- a. FS India Solar Ventures Private Ltd.
- b. Jupiter International Ltd.
- c. Tata Power Solar System Ltd.
- d. TP Solar Ltd.

B. PROCEDURE

4. The procedure described below has been followed with regard to the investigation:
 - i. The Authority notified the Embassy of the subject country in India about the receipt of the present anti-dumping application before proceeding to initiate the investigation in accordance with sub-rule (5) of Rule 5 of the Rules.
 - ii. The Authority issued a public notice dated 30th September 2024, published in the Gazette of India, Extraordinary, initiating an anti-dumping investigation concerning import of subject goods from the subject country.
 - iii. The Authority sent a copy of the initiation notification to the Government of the subject country, through its Embassy in India, known producers and exporters from the subject country, known importers / users of the subject goods and the domestic industry as well as other interested parties, as per the addresses made available by the applicants and requested them to make their views known in writing within the prescribed time limit.
 - iv. The Authority provided a copy of the non-confidential version of the application to the known producers/exporters and to the Government of the subject country, through its Embassy in India, in accordance with Rule 6(3) of the Anti-Dumping Rules. A copy of the non-confidential version of the application was made available to other interested parties, wherever requested.
 - v. The Authority also issued an economic interest questionnaire to the interested parties seeking inputs on the economic impact of the proposed duties.
 - vi. The Authority sent exporter's questionnaire to the following known producers/exporters to elicit relevant information in accordance with Rule 6(4) of the Rules:

1.	Aidu Energy Co. Ltd.	2.	Akashi Exports Ltd.
3.	Anhui Huasun Energy Co. Ltd.	4.	Anhui Tianda New Energy Co Ltd.
5.	Anhui Yingfa Desheng Technology Co. Ltd.	6.	Blue Carbon Technology Inc.
7.	C and B International Holdings Co. Ltd.	8.	Canadian Solar International Limited
9.	CECEP Solar Energy Technology	10.	Centro Energy Co. Ltd.
11.	Changzhou Foreign Trade Co.	12.	Changzhou GS Energy and Tech Co. Ltd.
13.	Changzhou Sichuang Energy Co. Ltd.	14.	Chizhou Shoukai New Energy Co. Ltd.

15.	Chuzhou Jietai New Energy Tech Co. Ltd.	16.	Consort Solar Co. Ltd.
17.	Das Solar Co. Ltd.	18.	Dongguan Sunworth Solar Energy Co. Ltd.
19.	Econess Energy Co. Ltd.	20.	Eversola Holding Co. Ltd.
21.	Global Chip Components Ltd.	22.	Guangdong Aiko Solar Energy Tech Co. Ltd.
23.	Guangdong Jinwan Goajing Solar Energy Co. Ltd.	24.	Guangdong Juan Intelligent Tech Joint Stock Co. Ltd.
25.	Guilin LVY Photovoltaic Tech Ltd.	26.	Hangzhou Ezviz Network Co. Ltd.
27.	Hefei GCL System Integration New Energy Tech Co. Ltd.	28.	Hefei JA Solar Tech Co. Ltd.
29.	Hefei Pinergy Solar Tech Co. Ltd.	30.	Hefei Sing Solar New Energy Technology Co. Ltd.
31.	Henan Winall Traffic Facilities Co. Ltd.	32.	Hengdian Group DMEGC Magnetics Co. Ltd.
33.	Hongjoy International	34.	Hongkong First Energy Co. Ltd.
35.	Huaian Jietai New Energy Tech Co. Ltd.	36.	Hunan Red Solar New Energy Science and Tech Co. Ltd.
37.	Huzhou Juxin New Energy Co. Ltd.	38.	JA Solar International Ltd.
39.	Jaingsu Huaneng Intelligent Energy	40.	Jiangsu Fujihalo New Energy Co. Ltd.
41.	Jiangsu Joy Sun New Energy	42.	Jiangsu Phoenty Photoelectric Tech Co. Ltd.
43.	Ronma Solar Technology (Jinhua) Co. Ltd.,	44.	Jiangsu Runenergy PV Tech Co. Ltd.
45.	Jiangsu Sunfly Renewable Co. Ltd.	46.	Jiangsu Xinchun PV Tech Co. Ltd.
47.	Jiangxi Risun Solar Energy Co. Ltd.	48.	Jiangxi Risunsolar Tech Co. Ltd.
49.	Jiangxi Risunsolarsales Co. Ltd.	50.	Jiangxi Sun Risen new Energy Co. Ltd.
51.	Jiangxi Sun Risen New Energy Co. Ltd.	52.	Jiangxi Zetai New Energy Tech Co. Ltd.
53.	Jiawang Photovoltaic Tech (Shanghai) Co. Ltd.	54.	Jinko Solar Co. Ltd.
55.	Jinneng Photovoltaic Tech Ltd.	56.	Jolywood (Taizhou) Solar Tech Co. Ltd.
57.	Lanergy International Trading	58.	Lianyungang Shenzhou New Energy Co. Ltd.
59.	Lishui Zhanxin Import and Export Co. Ltd.	60.	Longi Solar Tech Co. Ltd.

61.	Maanshan Kinse Energy Tech Co. Ltd.	62.	Nanjing First Energy Co. Ltd.
63.	Nanjing Saintek Solar Co. Ltd.	64.	New Solar Energy Co. Ltd.
65.	Nextracker Inc.	66.	Ningbo Osda Solar Co. Ltd.
67.	Ningbo Renpower New Materials Tech Co. Ltd.	68.	Ninghai Baijian Solar Energy Tech Co. Ltd.
69.	Orient International Holding	70.	Q Sun Ltd.
71.	Renesola Yixing Co. Ltd.	72.	Risen Energy Co. Ltd.
73.	Shadong Ronma Solar Co. Ltd.	74.	Shanghai Foreign Trade Enterprises Pudong Co. Ltd.
75.	Shanghai Leadjoy New Energy Co. Ltd.	76.	Shanghai Siddhartha Epandst Co. Ltd.
77.	Shanghai Yang ER Import and Export Co. Ltd.	78.	Shangrao Jie Tai New Energy Technology Co. Ltd.
79.	Shanxi Lu AN Phtovoltaics Tech Co. Ltd.	80.	Shenzhen Ahony power Co. Ltd.
81.	Shenzen Guangfasheng Tech Co. Ltd.	82.	Solar N Plus New Energy Tech Co. Ltd.
83.	Solarspace Technology (Suqian) Co. Ltd.	84.	Sumec Energy Holdings Co. Ltd.
85.	Sunna (Hong Kong) Co. Ltd.	86.	Sunri International Co. Ltd.
87.	Supreme Co. Ltd.	88.	Suzhou Fly Solar Tech Co. Ltd.
89.	Suzhou Jinso Tech Development Co. Ltd.	90.	Suzhou Ronma International Trade Co. Ltd.
91.	Suzhou Safety New Energy Tech Co. Ltd.	92.	Suzhou Safety New Energy Trading Co. Ltd.
93.	Suzhou Sunergy Tech Co. Ltd.	94.	Tianjin Aiko Solar Energy Tech Co. Ltd.
95.	TN Solar Co. Ltd.	96.	TP Link Co. Ltd.
97.	Trina Solar (Hua An) Tech Co. Ltd.	98.	Unifit Industrial Supply Co. Ltd.
99.	United Profit Global Holdings Co. Ltd.	100.	United Renewable Energy Co. Ltd.
101.	Vlctex International (HK) Co. Ltd.	102.	Wu Xi Amphenol Solar Energy Tech Co. Ltd.
103.	Wuhan Ooitech Trading Co. Ltd.	104.	Wuxi Grow Well Import and Export Co. Ltd.
105.	Wuxisuntech Power Co. Ltd.	106.	XI AN Yuanfar International Trade Co.

107.	Xiamen Xiangyu New Energy Co. Ltd.	108.	Yangzhou Jiahui New Energy Co. Ltd.
109.	Yibin Yingfa Deyao Tech Co. Ltd.	110.	Zhangjiang Shengfeng Trade Co. Ltd.
111.	Zhejiang Aiko Solar Energy Tech Co. Ltd.	112.	Zhejiang G and F Foreign Trading Co. Ltd.
113.	Zhejiang G and P Sun Energy Tech Co. Ltd.	114.	Zhejiang kesun New Energy Co. Ltd.
115.	Zhejiang Winhitech New Energy Co. Ltd.	116.	Zhejiang Y1 Sheng New Energy Tech Co. Ltd.
117.	Zhejiangang Sengfeng Trade Co. Ltd.	118.	Znshine PC Tech Co. Ltd.

- vii. The Embassy of the subject country in India was requested to advise the exporters/producers from their countries to respond to the questionnaire within the prescribed time limit.
- viii. In response to the initiation of the subject investigation, the following producers/exporters from the subject countries have responded by filing questionnaire response:

1.	Anhui Schutten Solar Energy Co. Ltd.	2.	Astronergy New Energy Technology (Singapore) Co.
3.	Canadian Solar International Ltd.	4.	Canadian Solar Manufacturing (Changshu) Inc.
5.	Canadian Solar Sunenergy (Jiaxing) Co., Ltd.	6.	CECEP Solar Energy Technology (ZhenJiang) Co., Ltd.
7.	Chinaland Solar Energy Co., Ltd.	8.	Chint New Energy Technology (Yangcheng) Co., Ltd.
9.	Chint New Energy Technology Co., Ltd.	10.	Chuzhou Jietai New Energy Technology Co. Ltd.
11.	Econess Energy Co., Ltd.	12.	Guangdong Aiko Solar Technology Co., Ltd.
13.	Hefei JA Solar Technology Co., Ltd.	14.	Hengdian Group DMEGC Magnetism Co., Ltd.
15.	Huaian Jietai New Energy Technology Co. Ltd.	16.	JA Solar International Ltd.
17.	Jiangsu DMEGC New Energy Technology Co. Ltd.	18.	Jiangsu Huaheng New Energy Co., Ltd.
19.	Jiangsu Longheng New Energy Co., Ltd.	20.	Jinko Solar (Chuxiong) Co., Ltd.
21.	Jinko Solar (Chuzhou) Co, Ltd.	22.	Jinko Solar (Feidong) Co., Ltd.
23.	Jinko Solar (Haining) Ltd.	24.	Jinko Solar (Shangrao) Co., Ltd.
25.	Jinko Solar (Yiwu) Co., Ltd.	26.	Jinko Solar Co., Ltd. (Jiangxi)

27.	Jinko Solar Middle East DMCC.	28.	Jinko Solar Trading Private Ltd.
29.	Jolywood (Shanxi) Solar Technology Co., Ltd.	30.	Jolywood (Taizhou) Solar Technology Co., Ltd.
31.	Lianyungang DMEGC New Energy Technology Co. Ltd.	32.	LONGi Solar Technology (Chuzhou) Co., Ltd.
33.	LONGi Solar Technology (Jiaxing) Co., Ltd.	34.	LONGi Solar Technology Co., Ltd
35.	Risen Energy (Ningbo) Co., Ltd.	36.	Risen Energy Co., Ltd.
37.	Ronma Solar Technology (Jinjua) Co., Ltd.	38.	Shandong Ronma Solar Co. Ltd.
39.	Shangrao Guangxin Jinko Photovoltaic Manufacturing Co., Ltd.	40.	Shangrao Jietai New Energy Technology Co. Ltd.
41.	Shangrao Jinko Photovoltaic Manufacturing Co., Ltd.	42.	Solar N Plus New Energy Technology Co., Ltd.
43.	Solarspace New Energy (Chuzhou) Co., Ltd.	44.	Solarspace New Energy (Xuzhou) Co., Ltd.
45.	Solarspace Technology (Suqian) Co., Ltd.	46.	Solarspace Technology (Xuzhou) Co., Ltd.
47.	Solarspace Technology Co., Ltd.	48.	Suzhou Ronma International Trade Co. Ltd.
49.	Tianjin Aiko Solar Technology Co., Ltd.	50.	Tonghe New Energy (Jintang) Co., Ltd.
51.	Tongwei Solar (Chengdu) Co., Ltd.	52.	Tongwei Solar (HEFEI) Co., Ltd.
53.	Tongwei Solar (Jintang) Co., Ltd.	54.	Tongwei Solar (Meishan) Co., Ltd.
55.	Tongwei Solar (Pengshan) Co., Ltd.	56.	Tongwei Solar (Yangcheng) Co., Ltd.
57.	Tongwei Solar Co., Ltd.	58.	Trina Solar (Huai'an) Technology Co. Ltd.
59.	Trina Solar (Suqian) Science & Technology Co. Ltd.	60.	Trina Solar (Yangcheng) New Energy Co. Ltd.
61.	Trina Solar Co. Ltd.	62.	Trina Solar Energy Development Pte. Ltd.
63.	Xuzhou Zhonghui Photovoltaic Technology Co., Ltd.	64.	Yangcheng Trina Guoneng Solar Energy Technology Co. Ltd.
65.	Yiwu JA Solar Technology Co., Ltd.	66.	Yuhuan Jinko Solar Co., Ltd.
67.	Zhejiang Aiko Solar Technology Co., Ltd.	68.	Zhejiang Jinko Solar Co., Ltd.
69.	Zhejiang Ronma Solar Group Co. Ltd.	70.	Zhengxin Photoelectric Technology (Suqian) Co., Ltd.

71.	Znshine Powertek Changzhou Co., Ltd.	72.	Znshine PV-Tech Co., Ltd.
73.	Wuhu GCL System Integration New Energy Technology Co., Ltd.	74.	Hefei GCL System Integration New Energy Technology Co., Ltd.

- ix. The Authority sent Importer's and User's Questionnaire to the known importers / users of the subject goods in India calling for necessary information in accordance with Rule 6(4) of the Rules.

Aatmanirbhar Solar Pvt. Ltd.	ITI Limited Naini	Rolta Power Private Limited
Abhishek Solar Industries Private Limited	Jain Irrigation Systems Limited	Saatvik Green Energy Pvt. Ltd
Abhishek Solar Industries Pvt. Ltd	Jakson Engineers Ltd.	SAEL Solar Mfg Private Limited
AG Solar Urja Udyog	JJ PV Solar Pvt. Ltd	Sahaj Solar Private
Agrawal Renewable Energy Pvt. Ltd	Junna Solar Systems Private Limited	Sanelite Solar Pvt
Akshaya Solar Power (India) Private Limited	Jyotitech Solar LLP	SASA Energy LLP
Alpex Solar Pvt. Ltd.	Kosol Energie Pvt. Ltd.	Shanti Solar
Ameya Solar & Semiconductor Pvt. Ltd.	Kotak Urja Pvt Ltd	Shivam Photovoltaics Private
Ankur Traders & Engineers Private	Lanco Solar	Sirius Solar Energy Systems Pvt. Ltd
Australian Premium Solar (India) Pvt.	Lubi Electronics	SLG Solar System
Bharat Electronics Limited	Luminous Power Technology Pvt. Ltd.	Solarium Green Energy LLP.
Bharat Heavy Electricals. Ltd	Maglare Technologies Private Limited	Solberry Energy Private Limited
Bluebird Solar Pvt. Ltd	Maharishi Solar Technology Pvt Ltd	Solex Energy Limited
Central Electronics Ltd.	MAS Solar Systems Private Limited	Solex Energy Ltd
Citizen Solar Pvt. Ltd.	Microsun Solar Tech Private Limited	Sova Solar Ltd
Contendre Greenergy Pvt. Ltd.	Mundra Solar Energy Ltd	Spark Solar Technologies Pvt. Ltd.
Cosmic PV Power Pvt. Ltd.	Mundra Solar PV Limited	Sri Savitr Solar Pvt. Ltd
Credence Solar Panels Private Limited	Navitas Green Solutions	Sun N Sand Exim (India) Pvt. Ltd.

Credence Solar Panels Private Limited	Navitas Green Solutions Pvt. Ltd.	SUNBOND Energy Pvt Ltd.
DSM India Pvt Limited	Neety Euro Asia Solar Energy	SunField Energy Private Ltd.
ECE (India) Energies Pvt. Ltd	Neosol Technologies Private Limited	Sungrace Energy Solutions
Emmvee Photovoltaic Power Private Limited	Novasys Greenergy Pvt. Ltd.	Sunify Solar LLP
Emmvee Photovoltaic Power Pvt. Ltd.	Novus Green Energy Systems Ltd	Surya International Enterprise Private Limited
Enkay Solar Power and Infrastructure Private Limited	Nyalkaran Energy LLP	Suryakamal Energy Pvt Ltd.
Fujiyama Power Systems Private Limited	Orb Energy Private Limited	Swelect HHV Solar Photovoltaics Pvt. Ltd
Ganesh Electricals Pvt. Ltd	Oswal Solar Structure Private Limited	Tapan Solar Energy Private Limited
Gautam Solar Pvt. Ltd.	Pahal Solar	Topsun Energy Limited
Genus Innovation Limited	Patanjali Renewable Energy Pvt. Ltd	Total Solar Technologies Private Limited
Goldi Green Technologies Private Limited	Pennar Industries Ltd.	Udhaya Energy Photovoltaics Private Limited
Goldi Solar Pvt Limited	Photon Energy Systems Limited	Unique Sun Power LLP
Goldi Sun Private Limited	Pixon Green Energy Pvt. Ltd.	Urjastrot Enterprise Pvt
Green Brilliance Energy	Plaza Power & Infrastructure Co	Vikram Solar Ltd
Grew Energy Private Limited	Prashant Plastic Industries LLP	Vikram Solar Ltd
Gujarat Borosil	Premier Energies International Private Limited	Visaka Industries Limited
H R Solar Solution Private Limited	Premier Energies Photovoltaic Pvt. Ltd	Waaree Energies Limited
HHV Solar Technology Pvtl Ltd.	Premier Energies Photovoltaic Pvt. Ltd	Waaree Energies Limited
Himalayan Solar Pvt. Ltd	PV Power Technologies Private Limited	Waaree Energies Limited
HR Solar Solution Private Limited	Raajratna Ventures Limited	Websol Energy Systems Ltd.
Icon Solar En Power Technologies Private Limited	Rajasthan Electronics and Instruments Limited	Wolt Techniques
Indo Solar Limited	Rayzon Solar Private	Integrated Batteries India Pvt Ltd

Innovative Solar Solutions	Redren Energy Pvt	Inter Solar Systems Private Limited
Insolation Energy Pvt. Ltd	ReNew Photovolotics Private Limited	Rhine Solar Limited
Insolation Green Energy Pvt. Ltd	Ritika Systems Pvt	

x. In response to the initiation of the subject investigation notification, following importers/users have responded by filing questionnaire response:

- i. Adani Solar, India
- ii. Ayana Renewable Power
- iii. Azure Power
- iv. Bharat Electronics Ltd.
- v. Bharat Heavy Electricals Ltd.
- vi. Bluebird Solar
- vii. Eden Renewables India, LLP
- viii. Fortum India Pvt. Ltd.
- ix. Greenergy Solar Solutions
- x. Hero Solar Energies Pvt. Ltd.
- xi. Juniper Green Energy
- xii. Loom Solar Pvt. Ltd.
- xiii. Mahindra Susten Pvt. Ltd.
- xiv. MMEPL
- xv. O2 Power Pvt. Ltd.
- xvi. Om Sai Renewable Energy Pvt. Ltd.
- xvii. Oriana Power
- xviii. Power Grid Corporation of India Ltd.
- xix. Rays Power Infra Ltd.
- xx. ReNew Pvt. Ltd.
- xxi. Saatvik Solar
- xxii. Solar Arise
- xxiii. Solar Saarthi
- xxiv. Sprng Energy
- xxv. Tata Power Solar Systems Ltd.
- xxvi. UPC Solar India Pvt. Ltd.
- xxvii. Vena Energy
- xxviii. Vikram Solar Ltd.
- xxix. Welspun New Energy Ltd.

xi. In response to the initiation notification, following other importers/ users have responded and submitted questionnaire responses and/or legal submissions:

- a. Goldi Solar Private Ltd.
- b. Goldi Sun Private Ltd.
- c. Solex Energy Ltd.

- xii. The Authority sent a copy of the non-confidential version of the application to the following users' associations.
 - a. Indian Solar Manufacturers Association (ISMA)
 - b. Sustainable Projects Developers Association
 - c. North India Module Manufacturer Association (NIMMA)
 - d. All India Solar Industries Association (AISIA)
- xiii. The Authority also received submissions from China Chamber of Commerce for Import and Export of Machinery and Electronic Products and Vikram Solar Ltd. during the course of the investigation.
- xiv. The Authority made available non-confidential version of the evidence presented by various interested parties. A list of all interested parties was uploaded on the DGTR website, along with the request to all of them to email the non-confidential version of their submissions to all the other interested parties.
- xv. Request was made to DG Systems to provide the transaction-wise details of imports of subject goods for the injury period and also the period of investigation. The Authority has relied upon the DG Systems data for computation of the volume of imports and required analysis after due examination of the transactions.
- xvi. Interested parties were provided a time of 30 days from the date of initiation of investigation, to file their comments on the scope of product under consideration and product control numbers (PCN) methodology.
- xvii. On 19th November 2024, the Authority conducted a meeting where all the interested parties were invited to discuss and clarify their comments on the scope of the product under consideration and PCN methodology.
- xviii. The Authority vide Notification No. 6/26/2024-DGTR, dated 4th December 2024 notified the scope of the product under consideration and also notified the PCN methodology to be adopted in the present investigation.
- xix. In accordance with Rule 6(6) of the Rules, the Authority provided opportunity to all interested parties to present their views orally in a public hearing held on 21st July 2025. The parties, which presented their views in the oral hearing, were requested to file written submissions of the views expressed orally, followed by rejoinder submissions.
- xx. The non-injurious price (NIP) based on the optimum cost of production and cost to make & sell the subject goods in India, based on the information furnished by the domestic industry and having regard to Generally Accepted Accounting Principles (GAAP) and Annexure III to the Rules, has been worked out so as to ascertain whether anti-dumping duty lower than the dumping margin would be sufficient to remove injury to the domestic industry.
- xxi. The period of investigation (POI) for the purpose of present investigation is 1st April 2023 to 31st March 2024. The examination of trends in the context of injury analysis covered the periods 2020-21, 2021-22, 2022-23 and the period of investigation.
- xxii. The submissions made by the interested parties during the course of this investigation, to the extent supported with evidence and considered relevant to the present investigation, have been appropriately considered by the Authority, in this final finding.

- xxiii. The Authority circulated the disclosure statement containing all essential facts under consideration for making the final recommendations to the Central Government to all interested parties on 21st September 2025. The Authority has examined all the post-disclosure comments made by the interested parties in these final findings to the extent deemed relevant. Any submission which was merely a reproduction of the previous submissions, and which had been adequately examined by the Authority, has not been repeated for the sake of brevity.
- xxiv. Information provided by the interested parties on confidential basis was examined with regard to sufficiency of the confidentiality claim. On being satisfied, the Authority has accepted the confidentiality claims wherever warranted and such information has been considered as confidential and not disclosed to other interested parties. Wherever possible, parties providing information on confidential basis were directed to provide sufficient non-confidential version of the information filed on confidential basis.
- xxv. Wherever an interested party has refused access to or has otherwise not provided necessary information during the course of the present investigation, or has significantly impeded the investigation, the Authority has considered such parties as non-cooperative and recorded the views/observations on the basis of the facts available.
- xxvi. The Authority, during the course of the investigation, satisfied itself as to the accuracy of the information supplied by the interested parties, which forms the basis of the present final finding to the extent possible and verified the data/documents submitted by all the interested parties to the extent considered relevant, practicable and necessary.
- xxvii. ‘***’ in this notification represents information furnished by an interested party on confidential basis and so considered by the Authority under the Rules.
- xxviii. The exchange rate adopted by the Authority for the subject investigation is 1 US\$ = ₹ 83.69

C. PRODUCT UNDER CONSIDERATION AND LIKE ARTICLE

C.1. Submissions by other interested parties

5. The following submissions have been made by the other interested parties regarding the scope of the product under consideration and like article.
- Solar cells and solar modules should be treated as separate products in the present investigation since the products are different in terms of technology, production process and capital investment.
 - The industries for the two products are completely different. There is only 1 producer of cells, 5 producers of both cells and modules, while there are 134 producers of modules which are not backwardly integrated. Further, the import volume and production capacities of solar modules are higher than that for cells.

- c. Solar cells and solar modules are different products considering the fact that the HS Code for cells and modules are different at 6-digit level and the customs duty is also different.
- d. Solar modules are priced 70% higher than cells. Under various FTAs, change in HS code and value addition of 35% implies that a different product has been produced in the exporting country.
- e. Solar modules comprise of cells and additional raw materials and change in the prices of these additional raw materials would affect solar modules but not solar cells.
- f. The customers of cells and modules are different as solar cells are only bought by module producers while solar modules are purchased by power developers.
- g. TOPCon cells and Back Contact cells should be excluded from the scope of the product under consideration since they differ from PERC cells in terms of different production process, high efficiency, long-term stability. Further, the domestic industry has admitted that they do not produce TOPCon cells.
- h. Inclusion of TopCon cells on the basis of end-use substitutability is not justified.
- i. Thin-Film Cadmium Telluride (CdTe) solar modules claimed to be produced by FS India differ from crystalline silicon-based solar cells and modules in terms of manufacturing process, raw material used, efficiency, performance, costs and price. Thus, the domestic industry has not produced like article to the imported goods
- j. The Authority should devise separate PCNs for cells and modules produced using different technologies, as per the table below, since there is a significant difference in cost and price between the cells and modules of different technology.

Type of cell	<ol style="list-style-type: none"> i. Monocrystalline Cells ii. Multi-crystalline Cells
Type of modules	<ol style="list-style-type: none"> i. Monocrystalline Cells ii. Multi-crystalline Cells
Type of technology (cell)	<ol style="list-style-type: none"> i. Crystalline silicon based (C-Si) technology ii. Thin film technology
Type of technology (modules)	<ol style="list-style-type: none"> i. Crystalline silicon based (C-Si) technology ii. Thin film technology

- k. Copies of sample commercial invoices clearly show that there is a significant difference in the cost and price of different product types based on technology, justifying the creation of PCN based on technology.
- l. The Authority should determine PCNs based on the CONNUM prescribed by the US Department of Commerce in the anti-dumping investigation concerning crystalline silicon photovoltaic cells whether or not assembled into modules. The PCNs should be based on following parameters
 - i. Product Form
 - ii. Crystal Type
 - iii. Cell Technology
 - iv. Power Output Modules
 - v. Frame Form

- vi. Backing Material
- vii. Junction Box
- viii. Inverter

C.2. Submissions by the domestic industry

6. The following submissions have been made by the domestic industry with regard to the product under consideration and like article:
 - a. The product under consideration includes solar cells and solar modules since they share the same primary physical characteristics and perform the same function of generating photovoltaic energy.
 - b. Solar cells represent a substantial portion of the cost and value of the finished modules, and cells undergo only one manufacturing step to become modules. As such, solar cells and modules are merely different stages of the same product.
 - c. Solar cells have no independent application other than being assembled as a module. Exclusion of either solar cells or solar modules is likely to result in increased exports of the excluded product, which would nullify the purpose of the investigation.
 - d. The Authority has considered solar cells and modules are one single product in past anti-dumping and safeguard investigations concerning the same product.
 - e. The European Commission, in a past investigation, also held that solar cells and modules constitute a single product considering the physical, chemical and technical characteristics, end uses, nomenclature, value addition, market, interchangeability, distribution channels and consumer perception.
 - f. Inclusion of different stages of a product within the product scope is not prohibited by the WTO Anti-dumping Agreement or the Indian Anti-dumping Rules.
 - g. The Authority has, in a number of cases in the past, included a product and its subsequent or prior stage product within the scope of the product under consideration in the same investigation and as one product, including in the case of Chlorinated Polyvinyl Chloride Resin and Ofloxacin and its intermediates.
 - h. Solar cells and modules produced using either Crystalline Silicon (c-Si) or thin film technology are included within the product scope.
 - i. While solar products produced using c-Si or thin film technology use different production process and raw materials, they are used interchangeably and have the same end-use. Further, the products are not treated differently by the Ministry of New and Renewable Energy as well.
 - j. The Authority in previous investigation concerning the same product determined that solar products produced c-Si technology or thin film technology are both included within the product scope.
 - k. While thin film products were excluded from the product scope in the investigations conducted in the USA and the EU, it must be noted that the domestic industry in those countries did not seek duties on such products in the first place.
 - l. While Jupiter produces only solar cells using c-SI technology, First Solar only produces solar modules using thin film technology. In absence of an identical like

article to solar modules or panels based on c-Si technology in India, solar modules or panels produced using thin film technology should be treated as like article, being a directly competitive and substitutable product.

- m. TopCon cells should not be excluded from the product scope as the domestic industry produces a like article to the product, in the form of Passivated Emitter and Rear Cell (PERC) solar cell which has closely resembling characteristics.
- n. While PERC and TopCon cells have different manufacturing processes and raw material, they can be produced interchangeably using same production lines, have similar size and appearance, and have the same end-use.
- o. Exclusion of TopCon cells may lead to circumvention of duties and would defeat the purpose of duties, since the product can be used interchangeably as PERC cells and is available at dumped prices.
- p. The Authority, in the investigation concerning Phosphoric Acid, included food grade acid since it was produced by the Indian industry and could be used in place of other grades of acid.
- q. Four major domestic producers namely Mundra Solar, Tata Power, Emvee Photovoltaics and Premier Energies are producing and selling TopCon cells. Further, the applicant, Jupiter is also in the process of expanding capacities to produce TopCon cells.
- r. Both Jupiter and FS India are producing latest technology solar cells and modules respectively. In fact, FS India has set up a new plant for production of subject goods.
- s. The following PCNs provided in the application should be considered for the present investigation. The domestic industry has already provided all information based on such PCNs.

S.N.	Type of product under consideration	Code Description	Abbreviation
1.	Solar Cells	Monocrystalline cells	Mono-cells
		Multi-crystalline cells	Multi-cells
2	Solar Modules		Modules

C.3. Examination by the Authority

7. At the time of initiation of the present investigation, the Authority considered the following as the scope of product under consideration.

“2. The product under consideration is ‘solar cells or photovoltaic cells whether or not assembled in modules or made up into panels, produced using c-Si or thin film technology. Solar modules or panels made up of solar cells are within the scope of the product under consideration. Further, solar cells may be ‘Monocrystalline’ or ‘Multi-crystalline’, both of which are included within the scope of the product under consideration.

3. The product under consideration is majorly manufactured using two production technologies, namely, crystalline silicon based solar cell technology (c-Si) and thin

film technology. Solar cells and modules or panels produced through c-Si based technology and thin film technology are both included within the scope of the product under consideration.

4. Solar cell, also known as photovoltaic cell, is a solid-state electrical device that converts sunlight directly into electricity by the photovoltaic effect. In order to achieve a particular amount of wattage or current, a number of solar cells are connected together to form a solar module or panel. For large-scale generation of solar electricity, several solar panels are connected together into a solar array. The modules using thin film technology are also connected in a similar manner, to form an array.

5. The subject goods are classified under Chapter 85 of Schedule I to the Customs Tariff Act, under tariff items 8541 4200 and 8541 4300. The customs classification is only indicative and is not binding on the scope of the product under consideration.

6. The applicants have proposed the following product control numbers (PCNs) for the purpose of the present investigation, considering the difference in terms of cost and price.

<i>S.N.</i>	<i>Type of product under consideration</i>	<i>Code Description</i>	<i>Abbreviation</i>
<i>1.</i>	<i>Solar Cells</i>	<i>Monocrystalline cells</i>	<i>Mono-cells</i>
		<i>Multi-crystalline cells</i>	<i>Multi-cells</i>
<i>2</i>	<i>Solar Modules</i>		<i>Modules”</i>

8. The interested parties were directed to provide comments or suggestions, if any, on the scope of the product under consideration and PCN methodology within 30 days from the date of initiation of investigation. Comments were received from various interested parties. A meeting was held on 19th November 2024 to understand the submissions made by various interested parties on the scope of the product under consideration and the PCN methodology proposed.
9. The applicants have submitted that both solar cells themselves and solar cells assembled into modules or panels are included within the scope of the product under consideration. However, during the course of the investigation, various interested parties have claimed that solar cells and solar modules or panels should not be considered as a single product and the scope of the product under consideration cannot include both products. The Authority has examined the submissions made by various interested parties in this regard.
10. The Authority notes that WTO Anti-dumping Agreement or the Indian Rules do not provide for factors or parameters that are required to be considered by the Authority in order to determine the scope of the product under consideration. However, based on the practice regularly adopted by the Authority as well as the practice known to be adopted by investigating authorities in other jurisdictions, factors such as physical, chemical and technical characteristics, use and application, degree of interchangeability and consumer

perception are considered while determining the product under consideration. The investigating authorities consider production substitutability or product substitution or both as the criteria to decide whether different types of a product would constitute one product within the meaning of the Rules. If the consumers would readily switch from one product to other, the two should be considered as one product. Similarly, if the producers would readily switch from one product to other, the two should be considered as one product. It is also well understood that the scope of the product under consideration is required to be determined in a manner that the same provides necessary and intended relief to the domestic industry, while also ensuring that the scope of the product under consideration does not lead to excessive protection to the industry. **As held by the CESTAT in the case of Huawei Technologies Co. Ltd vs Designated Authority Anti-dumping and Allied Duties [2016 (334) E.L.T. 339 (Tri. - Del.)], the product under consideration must be defined in a manner that the purpose of imposition of anti-dumping duty is not defeated.**

“29. In our view it is permissible for the Authority to include within the purview of the PUC, parts and components, which if not included, would make the levy ineffective. The coverage of the product for levy of duty should be such that the purpose and intent of the levy is achieved. Anti-dumping duty is levied to safeguard the domestic producers from ill effects of dumping. If the parts and components meant for SDH application are excluded, the importers could simply bring the items in different consignments, in unassembled form, and assemble the same in India and defeat the levy.”

11. It is noted that solar cell is a solid-state electrical device that converts sunlight into electricity by the photovoltaic effect. Electrical connections are made to the solar cells in a series to achieve the desired output wattage and/or in parallel to provide a desired current capability. Such an assembly of solar cells is called a solar panel or a solar module. Thus, to make practical use of solar cells, they are placed in modules or panels, and a solar module or panel is simply a packaged, connected assembly of solar cells. It is ultimately the modules that is consumed. Solar cells is only an intermediate product in crystalline technology, whereas solar cell is an integral part of the production process in thin film technology. A consumer would readily switch between thin film module and crystalline module, depending on relative price advantage between the two.
12. The Authority notes that solar cells are manufactured and then assembled into modules or panels to serve the intended purpose. Such solar cells do not have any independent application and must be necessarily connected and assembled into modules or panels. Conversely, modules or panels necessarily require assembly of solar cells in order to eventually generate electricity, since modules or panels are nothing but a packaged array of solar cells. Such assembly of solar cells into modules or panels does not translate into a significant manufacturing process and there is no major value addition involved in the form of manufacturing process, in placing cells on a module or panel. The same only requires a number of components, which are mostly bought-out items. This was also

observed by the Authority in the previous investigations concerning this product wherein it was noted that to make practical use, solar cells are placed on devices like panels/module etc and are not separate product per se. Accordingly, the Authority held that solar cells and solar modules are not different products but one single product.

13. Based on the above, information on record and past determinations made by the Authority considering the product under consideration, the Authority notes as below –
 - a. Solar cells are an intermediate product which eventually must be assembled into modules or made up into panels. There is no independent use of solar cells. Electricity generated by solar cells as such cannot be used. Such solar cells cannot be used as it is, and they must be necessarily assembled into modules or made up into panels for making them usable.
 - b. Solar cells and modules or panels are photovoltaic devices used for generation of electricity. While the solar cells must be assembled into modules or panels for generation of electricity, the electricity generation capacity of the solar modules or panels originates from the solar cells embedded inside the module. Thus, the products are functionally and physically same.
 - c. The process of assembly of solar cells into solar modules or panels does not require significant investment, manufacturing activity, and production skills. Manufacturing of solar cells requires significant amount of investment, which is nearly 6.5 times that of the assembly process. As such, the assembly of the intermediate solar cells into the final solar modules is only incremental production process, and does not require significant value addition in the form of manufacturing activities undertaken.
 - d. During the period of investigation, there were only 6 known producers of solar cells in India, while there were almost 130 known producers of solar modules or panels in the country. The majority of such producers are importing solar cells and assembling them into modules or panels. In view of the same, exclusion of solar cells or solar modules or panels from the purview of the levy of anti-dumping may lead to increase in the export of the excluded product. This would essentially nullify the purpose of the present investigation and the subsequent imposition of duties.
14. Certain parties have argued that solar cells and solar modules or panels are different products. In as much as these products are classified under different HSN codes at 6-digit level and different customs duties and the contention that the same implies that the products are considered differently by all WTO countries, the Authority notes that the HSN classification of a product is not considered as binding parameter to determine the scope of the product under consideration. The Authority has recommended measures on several products in the past wherein a product may have been imported under a number of different HSN codes, and such HSN codes were not considered to have binding effect on the scope of the product. Similarly, the Authority has recommended measures on

several products where the product under consideration was not the sole product falling under that HSN classification. The Authority notes that the HSN classification is only for the purpose of enabling the customs authorities to collect anti-dumping duty on the product as defined by the Authority.

15. With regards to the argument that solar cells and solar modules or panels are sold to different customers and have different sales channels, it is noted that solar cells are invariably sold to companies that are engaged in producing solar modules or panels. The solar modules or panels are then sold to entities that are engaged in setting up solar power generation. Thus, the eventual sales channel for the product is sales from cell producer to module producer and thereafter to power generator. It is noted that each step of this sales channel is not independent and are interlinked.
16. With regards to the argument that solar cells and solar modules or panels have different cost of production and are priced differently, it is noted that such differences in the cost and prices of the two products have been already noted by the Authority and have been addressed by way of creation different PCNs for the two products, in order to ensure an apple-to-apple comparison. Difference in the cost of production of different types per se does not imply different products and merely implies different product types with significant difference in costs.
17. The Authority holds that solar cells are manufactured for use in solar modules or panels, and do not have any other independent use. The assembly of solar cells into solar modules or panels does not require significant value addition in so far as manufacturing activities are concerned. The two products have the same ultimate end-use – generation of photovoltaic energy. The module producers are importing solar cells and assembling them into modules or panels. It is considered that solar cells and solar modules or panels, being an intermediate and final product, are both included within the scope of the product under consideration.
18. Certain interested parties have argued that Tunnel Oxide Passivated Contact (TopCon) solar cells and Back Contact solar cells must be excluded from the scope of the product under consideration. It has been argued that TopCon cells and Back Contact cells are not produced by the domestic industry, which produces only Passivated Emitter and Rear Cell (PERC) solar cells. Further, it has been argued that TopCon cells have a different production process, higher efficiency, and have long-term stability when compared to PERC cells. With respect to Back Contact cells, it has been argued that it is a next-generation technology and it follows a different structural design and manufacturing process. On the other hand, the applicants have submitted that TopCon and Back Contact cells cannot be excluded from the scope of the product under consideration since the domestic industry has produced and offered like article in the form of PERC cells which have closely resembling characteristics. Further, it has been claimed that other Indian producers are already producing TopCon cells and the domestic industry is also in the process of setting up plant for production of TopCon cells.

19. The Authority has examined the arguments made by the other interested parties and the domestic industry, with respect to exclusion of certain types of solar cells.
20. With regards to TopCon solar cells, it is noted that TopCon solar cell structure consists of a thin tunnel oxide layer sandwiched between a transparent conductive oxide layer and a p-doped crystalline silicon layer. On the other hand, PERC solar cells include a passivation layer at the back side of the cell, which helps to minimize recombination losses and increase light absorption. Thus, the production process and certain raw materials for the two types of cells are different. However, the domestic industry has submitted that the production lines used for production of PERC cells can also be used for the production TopCon cells with a few additional processes. Further, domestic industry has also submitted while the input raw materials used in TopCon cells and PERC cells is different, majority components such as chemicals, gases and metallization elements are same in PERC Cells and TopCon cells. Lastly, the Authority notes that even where the technology used in TopCon cells and PERC cells is different, the cells find the same end-use application – assembly into solar modules or panels for generation of electricity. Thus, the two cells can be used interchangeably since they have the same end-use. Cells produced from both the technologies have been imported from China and were in competition with each other as well as with Indian industry. Indian industry has been in competition with the imported product as well as products supplied by the Indian industry from the two technologies. Considering the same, exclusion of TopCon cells from the scope of product under consideration is likely to lead to increased imports of this product type for use in solar modules or panels which would result in continued injury to the domestic industry. Further, the domestic industry has demonstrated that other Indian producers, namely Mundra Solar, Tata Power, Emvee Photovoltaics and Premier Energies are producing and selling TopCon cells in India. Further, Jupiter International is also in the process of setting up capacities for production of TopCon cells.
21. The Authority also notes that the domestic industry is not required to produce an identical article to the imported products. In the absence of an identical article, an article which has characteristics closely resembling those of the product under consideration may be considered a ‘like article’. In the present case, it is seen that the PERC cells produced by the domestic industry can be produced using same production lines, have same components and have the same end-usage as that of TopCon cells. Since the domestic industry has produced and offered cells which have similar characteristics, exclusion of the TopCon cells is not warranted. Dumping of TopCon cells and imposition of anti-dumping duty on remaining products would lead to continued dumping and consequent injury to the Indian industry in the domestic market.
22. With regard to exclusion of Back Contact cells from the scope of the product under consideration, it is noted that it is the settled practice of the Authority to consider exclusion of product type which has been imported into India in the period of investigation, and like article to which has not been offered in the country. A claim for

exclusion of a particular type cannot be entertained unless the same has been exported to India during the relevant period, as the fact of non-supply of like article by the domestic industry cannot be established. The Authority has examined the import data and found no imports of Back Contact cells till the period of investigation. Since there were no imports of Back Contact cells, it would not be appropriate to exclude the same from the scope of the product under consideration.

23. It has also been argued that the domestic industry has not produced like article to crystalline silicon-based (c-Si) solar modules, since FS India has only produced thin film modules which are different than c-Si modules in terms of manufacturing process, raw material, cost and prices. It is an undisputed fact that FS India only produces solar modules using thin film technology and does not produce solar modules using c-Si cells. Further, Jupiter International has only produced solar cells using c-Si technology in India, and has not produced solar modules. Thus, the defined domestic industry has not produced identical articles to c-Si based solar modules.
24. In this regard, it is undisputed that solar modules can be produced using c-Si technology and thin film technology. Crystalline silicon cells are made from thin slices cut from a single crystal of silicon or from a block of silicon crystals. Once the cells are manufactured, they are connected through wires and assembled into modules or panels. On the other hand, thin film modules are produced by coating float glass with a transparent conductive layer, onto which the photovoltaic absorbing material is deposited. Using laser scribing, cell strips are patterned to form an interconnect pathway between adjacent cells. Copper ribbons are applied, an encapsulant sheet and second sheet of glass are placed on top, resulting in a module. As such the c-Si based solar modules and thin film solar modules have different production process and raw materials. Thus, the two products differ in terms of associated production technology and raw materials. Consequently, the manufacturing facilities differs. However, the modules produced using either of the production technology and production process are comparable in all material aspects, including the technical properties, function & uses, end applications. The two are technically & commercially substitutable. Both modules are used for generation of photovoltaic energy for conversion into electricity and can be used interchangeably. This was also noted by the Authority at the time of previous investigation concerning the same product. It is seen that c-Si based solar modules have closely resembling characteristics and have same end-use application as thin film modules.
25. The Authority has in the past determinations considered modules produced using the two technologies as same product. It is also noted that difference in the production technology, manufacturing process and raw materials have not been considered as determining factor as to whether two products constitute one article for the purpose of Anti-dumping Rules. The Authority has repeatedly held that difference in production technology is immaterial, if the resultant products are interchangeable and are technically and commercially substitutable.

26. It is seen that while c-Si modules are being imported into the country, thin film modules are being produced and supplied by the domestic industry. As per the provisions of Rule 2(d) of the Rules, in the absence of an identical or alike article, an article having closely resembling characteristics with the imported article should be considered as like article. It is undisputed that the effect of dumping of solar cells and modules produced using c-Si technology has had adverse effects on the modules produced using thin film technology. Therefore, in the absence of an identical article, solar modules or panels produced using thin film technology are like article to solar modules or panels producing using c-Si cells.
27. On the basis of information and evidence on record, past determinations made by the Authority in investigations concerning this product and other products, and having regard to the above, the scope of the product under consideration is as follows.

“The product under consideration is solar cells or photovoltaic cells whether or not assembled in modules or made up into panels, produced using c-Si or thin film technology. Solar modules or panels made up of solar cells are within the scope of the product under consideration. Further, solar cells may be ‘Monocrystalline’ or ‘Multi-crystalline’, both of which are included within the scope of the product under consideration.

The product under consideration is majorly manufactured using two production technologies, namely, crystalline silicon based solar cell technology (c-Si) and thin film technology. Solar cells and modules or panels produced through c-Si based technology and thin film technology are both included within the scope of the product under consideration.

Solar cell, also known as photovoltaic cell, is a solid-state electrical device that converts sunlight directly into electricity by the photovoltaic effect. In order to achieve a particular amount of wattage or current, a number of solar cells are connected together to form a solar module or panel. For large-scale generation of solar electricity, several solar panels are connected together into a solar array. The modules using thin film technology are also connected in a similar manner, to form an array.”

28. With regard to the submissions on PCN methodology, the Authority notes that submissions have been made by the domestic industry and the other interested parties. These have been considered by the Authority while finalizing the PCN methodology.
29. Certain interested parties suggested making separate PCNs based on the CONNUMs adopted by the US Department of Commerce in their investigation. However, the parties did not provide any evidence showing that there exists a difference of more than 5% in the cost pertaining to the parameters proposed. Further, the interested parties did not demonstrate that such PCN methodology is necessary based on the products imported

into the country. Therefore, in the absence of evidence demonstrating the need for such PCN methodology, the methodology proposed by exporters based on the CONNUMs adopted by the US Department of Commerce was not accepted. No further information and evidence has been provided by the interested parties which warrants reconsideration of the PCN earlier notified. The Authority therefore concludes that the PCN parameters considered by the US Department of Commerce in their determination is not appropriate for the present investigation.

30. The domestic industry and certain interested parties have proposed creation of PCN methodology based on different technologies. In support of their claim, certain exporters submitted commercial invoices to show that there is a difference in the cost and prices of the PCNs based on technology. Based on the same, the Authority has considered the following PCN for the purpose of the present investigation.

Product	Type	Abbreviation
Solar Cells	Monocrystalline cells	Mono-cells
	Multi-crystalline cells	Multi-cells
Solar Modules / Panels	Monocrystalline cells	Mono-Modules/ Panels
	Multi-crystalline cells	Multi-Modules/ Panels
	Thin Film	Thin Film Modules/ Panels

31. It is noted that the domestic industry has not produced modules using the c-Si technology. The Authority notes that in the absence of the identical article being produced by the domestic industry, the article most closely resembling the imported goods, i.e., thin film modules or panels, has been considered for making the determination.
32. The Authority notes that the product produced by the domestic industry is like article to the subject goods imported from the subject country. The product produced by the domestic industry and that imported from the subject country are comparable in terms of physical & chemical properties, functions & uses, product specifications, pricing, and distribution & marketing. The subject goods imported from the subject country and produced by the domestic industry are technically and commercially substitutable and used by the consumers interchangeably. In view of the same, the product manufactured by the domestic industry is considered as like article to the product imported into India, as per Rule 2(d) of the Rules.
33. The subject goods are classified under Chapter 85 of the Customs Tariff Act under heading 8541 and tariff items 85414200 and 85414300, with effect from 1st January 2022. For part of the injury period, that is 1st April 2020 to 31st December 2021, the subject goods were classified under tariff items 85414011 and 85414012. It is noted that during the period of investigation, the subject goods were classified under tariff items 85414200 and 85414300. The customs classification is only indicative and is not binding on the scope of the product under consideration.

D. SCOPE OF THE DOMESTIC INDUSTRY & STANDING

D.1. Submissions by other interested parties

34. The following submissions have been made by the other interested parties with regard to the scope of domestic industry and standing.
- i. The domestic industry accounts for less than 1 GW production of the total 25 GW cell production in the country, despite taking hyper-technical arguments to justify eligibility to constitute domestic industry.
 - ii. The share held by FS India and Jupiter is unrepresentative and is not credible for injury analysis. While FS India produces only solar modules, Jupiter has limited solar cell production. Further, Jupiter alone constitutes only 2% of the total demand, while the domestic industry constitutes only 5% of the demand.
 - iii. Article 4.1 of the WTO Agreement states that injury must be assessed in relation to domestic industry as a whole or at least a major proportion, which is not present in the current investigation. Therefore, the investigation must be terminated.
 - iv. FS India was not involved in commercial production during the period of investigation and is not a producer of like article, which can be seen from significant low revenue reported at MCA website. Further, the producer has consumed its product captively and does not compete in open market.
 - v. The interests of FS India do not reside with the Indian industry as it is a wholly owned subsidiary of First Solar Inc., USA and its plant was funded by U.S. International Development Finance Corporation. Its interests may not align with the interests of domestic producers and as such, they cannot be considered as eligible to constitute domestic industry.
 - vi. Jupiter International has a capacity of 800MW as per CARE Rating Reports, 2024, which is negligible in comparison to total Indian capacity, and the producer does not account for a major share of total production. Further, the producer has undergone restructuring of its business model, accompanied by low utilization, volatile production, and frequent shifts in operational focus.
 - vii. The selection of sampled domestic producers lacks transparency and the same may distort injury analysis.
 - viii. Major producers such as Adani Solar, Tata Power Solar, Vikram Solar, and Waaree Energies, have not participated in the investigation.
 - ix. Complete exclusion of production of 133 module producers cannot be justified based on assumption of domestic industry that they are importers from subject country.
 - x. The applicants must disclose the complete production numbers used to determine standing.
 - xi. There is no legal justification for considering 5 producers as applicants and only 2 as domestic industry. Further, it is unclear as to what information has been submitted by the other three applicants. As such, the initiation notification is bad in law.

- xii. RenewSys India Private Ltd. has registered itself as importer/user while Tata Power Solar Systems Ltd. and TP Solar Ltd. have not registered. These producers should file importers' questionnaire response and should not be identified as applicants.
- xiii. ISMA, AISMA and NIMMA cannot be considered as supporters of the application as members of these associations are themselves importers or users.

D.2. Submissions by the domestic industry

35. The following submissions have been made by the domestic industry with regard to the scope of domestic industry and standing:
 - i. The application requesting initiation of investigation was filed by FS India Solar Ventures Private Ltd., Jupiter International Ltd., RenewSys India Private Ltd., Tata Power Solar Systems Ltd. and TP Solar Ltd.
 - ii. During the course of investigation, RenewSys India expressed inability to continue as the applicant. However, the applicants constituting domestic industry still constitute major proportion as required under the Rules, and non-participation by the producer has no impact.
 - iii. At present, there are 6 producers of solar cells in the country. These producers also produce solar modules in the country. 4 of these producers excluding Jupiter and Websol Energy System Ltd. have imported significant volume of the subject goods during the period of investigation. In some cases, the volume of imports exceeds the production capacity of the company. Accordingly, such producers are ineligible to constitute domestic industry.
 - iv. Websol Energy System Ltd. is located in Falta SEZ. As per the past practice of the Authority, units established in a **SEZ** are not within the customs territory of India and thus, are ineligible to be treated as part of the domestic industry.
 - v. Since Tata Power and Adani Solar have undertaken significant imports and Vikram Solar registered itself as importer, consideration of production by such producers would lead to double counting of Indian production.
 - vi. Certain producers who are also importing the subject goods have supported the imposition of anti-dumping duty since dumping of the subject goods has caused significant injury to the Indian producers making domestic production uncompetitive.
 - vii. The fact that the other domestic producers are ineligible to constitute domestic industry on account of significant imports indicates that the dumping has wiped out intent to produce in India.
 - viii. Other Indian producers of solar cells, namely Bharat Heavy Electricals Ltd., Bharat Electronics Ltd., Indo Solar Ltd., Moser Bear Solar Ltd., Solar Semiconductors and Euro Multivision have ceased production.
 - ix. Jupiter and FS India have not imported the subject goods from the subject country during the period of investigation, and is not related to exporter of subject goods in the subject country or importer of subject goods in India.
 - x. Other than FS India, all other Indian producers of solar modules or panels are either purchasing solar cells domestically or importing the same from the subject country.

Inclusion of production of such producers would lead to double counting of same volumes.

- xi. In the safeguard investigation concerning the same product, the Authority did not consider the producers of solar modules using imported solar cells as part of the domestic industry. Further, the Authority in past investigations has excluded production of importers of subject goods as well as the production of subject goods produced using domestically procured intermediate goods.
- xii. Production volume of Jupiter and FS India accounts for 100% of the total eligible domestic production in the country as per Rule 2(b) of the Anti-dumping Rules.
- xiii. The Authority has not undertaken sampling of the domestic producers.
- xiv. FS India does not captively consume subject goods and only sells in open market. As such, FS India is a domestic producer which engaged in production of subject goods in India during the period of investigation and is thus, eligible to constitute domestic industry under Rule 2(b) of the Anti-dumping Rules.
- xv. The fact that the FS India has American shareholding is irrelevant. The Authority in past cases has not considered the location of the holding company as relevant for determination of domestic industry.
- xvi. Contrary to the claims of other parties, Jupiter continues to be a producer of subject goods and has expanded its production lines. Further, Jupiter suffered low utilization as it was unable to sell due to dumped imports.
- xvii. The domestic industry cannot require any specific producer to participate in the investigation and non-participation by other producers has no bearing on the present investigation.
- xviii. While the other interested parties have claimed that the domestic industry has taken hyper-technical argument to justify standing, they have not submitted any evidence or logic to show that such arguments are without merits.
- xix. There is no requirement under the WTO Anti-dumping Agreement or the Anti-dumping Rules that all applicants must necessarily constitute domestic industry.
- xx. The Authority has in the past clarified that there is a distinction between domestic producer and domestic industry and that each domestic producer may not be domestic industry.
- xxi. In the case of Purified Terephthalic Acid, the Authority held that while an applicant may be ineligible to constitute domestic industry, it still has the right to seek redressal from the Authority.
- xxii. Even in the USA, the investigating authority has initiated an investigation based on application filed by a domestic producer and association of workers engaged in production of subject goods.
- xxiii. ISMA, AISMA and NIMMA are associations which represent the interests of users as well the domestic producers of the subject goods in the country. Further, it is not necessary that an association of users or importers must necessarily oppose duty.
- xxiv. Even though support by associations may not be considered for determination of standing of application under Rule 5(3), there is no bar in expressing support against unfair trade.

D.3. Examination by the Authority

36. Rule 2(b) of the Anti-Dumping Rules defines domestic industry as under:

“(b) “domestic industry” means the domestic producers as a whole engaged in the manufacture of the like article and any activity connected therewith or those whose collective output of the said article constitutes a major proportion of the total domestic production of that article except when such producers are related to the exporters or importers of the alleged dumped article or are themselves importers thereof in such case the term ‘domestic industry’ may be construed as referring to the rest of the producers”.

37. The application for initiation of the present investigation was filed by FS India Solar Ventures Private Ltd., Jupiter International Ltd., RenewSys India Private Ltd., Tata Power Solar Systems Ltd. and TP Solar Ltd. During the course of investigation, RenewSys India Private Ltd. stated it was unable to continue as an applicant.

38. During the course of the investigation, various interested parties have claimed that the domestic industry does not constitute a major proportion of the total Indian production and is thus, not representative of the Indian industry for the product under consideration. It has been claimed that the two producers constituting domestic industry, Jupiter International Ltd. and FS India Solar Ventures Private Ltd., do not have standing to justify the investigation.

39. On the other hand, the applicants have claimed that Jupiter International and FS India are the only domestic producers eligible to constitute domestic industry. It has been claimed that out of the 6 known producers of solar cells in the country, 4 of the producers have imported the subject goods in significant quantity. While Websol Energy System Ltd. and Jupiter International have not imported the subject goods, Websol is located in SEZ and thus, cannot constitute domestic industry. It has been further claimed that FS India Solar Ventures Private Ltd. has produced solar modules using thin film technology and has not imported the subject goods from the subject country during the period of investigation. Other than the known cell producers and FS India, all other domestic producers manufacture solar modules, by buying solar cells from the Indian producers or by importing cells from China and other countries. The applicants have claimed that other than Jupiter International and FS India, none of the other domestic producers are eligible to constitute domestic industry since such producers are either importers of the product under consideration or are not undertaking significant production process in conversion of solar cells to solar modules to be classified as domestic industry under Rule 2(b), or are in SEZ.

40. The Authority has examined the submissions made by the domestic industry and the other interested parties with respect to the constitution of the domestic industry.

41. It is evident that during the period of investigation, there were few known producers of solar cells in the country, viz. Adani Green Energy Limited, Mundra Solar Energy Limited, Mundra Solar PV Limited, Premier Energies Photovoltaic Private Limited, Premier Energies Limited, RenewSys India Private Limited, Tata Power Solar Systems Limited and Jupiter International Limited. Barring Jupiter International, all other cell manufacturers are also engaged in production of solar modules or panels. It is noted that TP Solar Limited had not commenced production during the period of investigation and was in the process of setting up production capacities.
42. Other than these cell manufacturers, there are more than 100 producers of solar modules or panels in the country. They are sourcing solar cells either from the Indian producers or are importing from China.
43. FS India is manufacturing solar modules using thin film technology, which does not require assembly of solar cells. The company has not imported cells or modules from China and qualifies to be treated as domestic industry within the meaning of Rule 2(b).
44. The Authority has examined the imports data and notes that other than Jupiter International Ltd. and Websol Energy System Ltd., all other cell producers in India have imported significant volumes of subject goods from the subject country during the period of investigation.

Name of domestic industry	Imports (MW)	Capacity (MW)
Adani Green Energy Ltd., Mundra Solar Energy Ltd. and Mundra Solar PV Ltd.	***	***
Premier Energies Photovoltaic Private Ltd. and Premier Energies Ltd.	***	***
RenewSys India Private Ltd.	***	***
Tata Power Solar Systems Ltd.	***	***

45. As per the information submitted by the domestic industry with regard to capacity of the above listed companies, it is noted that the volume of imports made by some of the aforementioned producers is significant in relation to their production capacities. This implies that the focus of these producers is not limited to manufacturing subject goods in India, and are, rather, major importers of the subject goods. Accordingly, based on the established practice of the Authority, these cell manufacturers who are importing significant volume of the product under consideration from the subject country are not eligible to be treated as domestic industry under Rule 2(b) of the Rules.
46. Jupiter International is neither an importer of the subject goods nor is related to an exporter of the subject goods or importer of the subject goods in the country. Jupiter International is eligible to constitute domestic industry under Rule 2(b).

47. It is noted that Websol Energy System Ltd., which is a producer of solar cells, has not imported the subject goods from the subject country during the period of investigation. However, the producer is an SEZ unit, located in Falta SEZ. The Authority considers that a producer established in SEZ would export majority or all of its manufactured products. Based on the established practice of the Authority, Websol Energy System Ltd. is not eligible to constitute domestic industry under Rule 2(b) of the Rules.
48. With respect to the producers of solar modules in India, FS India produces solar modules using thin film technology. The producer has not imported the product under consideration from the subject country during the period of investigation and is not related to an exporter or importer of the subject goods from the subject country. Accordingly, the company is eligible to constitute domestic industry under the Rules.
49. The Authority notes that other than FS India, all other Indian producers of solar modules have produced modules by either using solar cells produced domestically or imported solar cells. Producers who have imported solar cells to assemble the same into solar modules or panels cannot be considered as eligible to constitute domestic industry under Rule 2(b), since such producers are importing the subject goods, in the form of solar cells from the subject country.
50. In order to determine the total eligible production of the subject goods in the country, the Authority has excluded the production of those producers who are importing solar cells and are converting the same into solar modules. Further, the Authority has excluded the production of solar modules since such modules are produced using solar cells, the production of which has already been taken into account as the production of cell manufacturers or imports of cells.
51. In view of the above, it is noted that the production of FS India Solar Ventures Private Ltd. and Jupiter International Ltd. accounts for 100% of the total eligible domestic production. Thus, these domestic producers account for a major production of the subject goods in the country. As noted above, both the producers have not imported the product under consideration into India, and are not related to an exporter or importer of the alleged dumped article. Accordingly, Jupiter International Ltd. and FS India Solar Ventures Private Ltd. constitute domestic industry within the meaning of Rule 2(b) of the Rules. Further, none of the other producers have opposed or directly supported the present application and thus, the application satisfies the requirement of standing in terms of Rule 5(3) of the Anti-Dumping Rules.
52. Certain interested parties have highlighted that FS India cannot be considered as domestic producer since (a) the producer did not commence production during the period of investigation; (b) the producer had very low revenue during the period of investigation; (c) the producer has consumed the product captively and has not sold the product in open market; and (d) the interests of the producer do not align with country since the ownership of the company is held by its American parent.

53. In this regard, the Authority notes that FS India commenced commercial production during the period of investigation, which was duly verified by the Authority. Further, it is noted that the fact a producer may have low revenue or that its ownership is held by non-Indian entities is not relevant in the determination of whether such producer is eligible to constitute domestic industry under Rule 2(b). Rule 2(b) requires a producer to be engaged in the production of the subject goods in the country, subject to certain qualifications. The Authority also notes that the FS India is engaged in production of solar modules using thin-film technology which are directly used for power generation. Since the producer is not a power developer, it cannot be said that FS India is captively consuming its production.
54. With regards to the argument that certain other major producers of the subject goods have not participated in the present investigation, it is noted that non-participation by such other producers does not negate the fact that FS India and Jupiter account for a major proportion of the total eligible Indian production. Even if such other producers would have participated in the investigation, it would not have precluded the Authority from finding that the two eligible domestic producers constitute domestic industry in the present case.
55. It has been contended that since only 2 producers have been considered as domestic industry, there is no basis for the application to be filed by 5 applicants. Further, since some of the applicants are themselves importers, they cannot be considered applicants. In this regard, the Authority notes that while the application was filed by 5 applicants, not all of such applicants were eligible to be treated as domestic industry within the provisions of Rule 2(b) in view of the significant imports made by such producers. Further, the fact that such the producers are importers only precludes them from being eligible to constitute domestic industry. The fact that such producers have been excluded from the scope of domestic industry does not debar them from approaching the Authority as applicants nor do such producers lose their locus standi in seeking suitable redressal against dumping.
56. With regards to the argument that the sampling of domestic industry has been undertaken in a very opaque manner, it is noted that the Authority has not undertaken sampling of the domestic producers and scope of the domestic industry has been determined as examined hereinabove. Accordingly, submissions in this regard do not require examination.

E. CONFIDENTIALITY

E.1. Submissions by other interested parties

57. None of the other interested parties have made any submissions regarding confidentiality.

E.2. Submissions by the domestic industry

58. The domestic industry has submitted that certain producers / exporters have claimed excessive confidentiality, in violation of Trade Notice 10/2018. Further, it claimed that information available in the public domain has also been claimed confidential by certain parties.

E.3. Examination by the Authority

59. The information provided by all the interested parties on confidential basis was examined with regard to sufficiency of the confidentiality claims. On being satisfied, the Authority has accepted the confidentiality claims, wherever warranted and such information has been considered confidential and not disclosed to the other interested parties. Wherever possible, the parties providing information on confidential basis were directed to provide sufficient non-confidential version of the information filed on confidential basis.

F. MISCELLANEOUS SUBMISSIONS

F.1. Submissions by other interested parties

60. The following miscellaneous submissions have been made by the other interested parties.
- i. The Indian industry is habitual of seeking protection of anti-dumping and safeguard measures on imports of subject goods, whenever its performance deteriorates. As such, there is no requirement for imposition of anti-dumping duty.
 - ii. In the sunset review for safeguard measures, the Authority stated that duties were being extended for only 1 year as industry received sufficient protection and only needed time to adjust.
 - iii. The domestic industry should explain the steps taken to adjust in response to when the safeguard measures imposed and why such measures did not help the industry.
 - iv. Despite being protected by anti-dumping duties for years, the domestic industry has not shown significant improvement or financial stability, which raises questions regarding the root cause of injury.
 - v. The Basic Customs Duty on solar cells and modules has already been enhanced to provide sufficient protection to the domestic industry.
 - vi. The petition filed is short of any legal and factual basis. The petitioner has exaggerated the increase in imports and deliberately invented injury.
 - vii. Considering the upcoming production capacities for solar cells in 2026-27, the Authority should not impose duty now and evaluate the need for duty once such new capacities come online.
 - viii. Since Jupiter is itself in the process of setting up a plant for production of solar modules, seeking levy of duty before establishment of the plant is premature.
 - ix. In case Jupiter is suffering injury, it can start consuming cells and produce modules which have a higher demand, since the domestic industry has self-admitted that there is no significant value addition from cells to modules.

- x. The import data filed by the domestic industry from secondary sources is not authentic and reliable. As per the Manual, the Authority must rely on DGCI& data for examining imports and dumping.

F.2. Submissions by the domestic industry

- 61. The following miscellaneous submissions have been made by the domestic industry.
 - i. Contrary to the argument of the other interested parties, the Authority found that the subject imports caused injury to the domestic industry and recommended imposition of duties in the anti-dumping investigation conducted in 2014 and the safeguard investigations conducted in 2018 and 2020.
 - ii. Anti-dumping investigations were terminated in 2018 and 2022 based on withdrawal request by domestic industry due to intensified injury subsequent to investigation and increase in Basic Customs Duty respectively.
 - iii. Claims of misuse of trade remedy investigation are misplaced, as it is the foreign producers that are abusing fair market.
 - iv. While the Authority recommended safeguard measures considering significant increase in the imports, the domestic industry cannot now be blamed for seeking anti-dumping duties to remedy injury caused due to dumping.
 - v. Even though the domestic industry had adjusted and recovered due to the safeguard measures, increase in dumped imports during the injury period have led to a decline in profitability.
 - vi. While there is a requirement of cooling period between imposition of safeguard measures on the same product, there is no requirement for such gap between safeguard and anti-dumping duty.
 - vii. The Anti-Dumping Rules do not require the Authority to consider past safeguard measures or whether the domestic industry adjusted to such measures.
 - viii. Despite imposition of safeguard duty and increase in Basic Customs Duty, the subject imports continued to surge as the Chinese exporters absorbed the impact of duties.
 - ix. Claims of the other parties that Jupiter should cease production of solar cells and start producing modules is contrary to the purpose of the Anti-dumping law which intends to provide remedy to an industry suffering injury, rather compelling industry to shift to produce other products.
 - x. The fact that Jupiter has made investments to add production capacities for solar modules does not bar the producer from seeking remedy against dumping.
 - xi. Since the domestic industry is suffering losses at present due to the dumping of subject goods, it cannot be claimed that duties should be imposed after new capacities come online. Further, non-imposition of duties at present would discourage future investment.
 - xii. Since the domestic industry does not have access to DGCI&S data, it provided information as was reasonably available to it.

F.3. Examination by the Authority

62. The other interested parties have submitted that the industry is misusing trade remedial measures as it is known to approach the Authority as and when its performance declines. It is noted that an anti-dumping investigation was conducted by the Authority in 2014, and it was found that the domestic industry suffered injury due to the dumped imports. Accordingly, the Authority recommended imposition of duties. Thereafter, the Authority conducted an anti-dumping investigation in 2018. The investigation was terminated based on withdrawal by the domestic industry citing that injury had intensified in the post-POI period and that the volume of imports had increased substantially. Considering the sudden and sharp increase in the volume of imports, and on the basis of an application by the domestic industry, the Authority initiated a safeguard investigation, wherein it was found that the domestic industry was seriously injured due to increased imports. Such safeguard duties were continued pursuant to a sunset review. In 2022, the Authority conducted another anti-dumping investigation. However, the same was terminated, as the domestic industry withdrew its application when it believed that increase in the Basic Customs Duty would provide necessary relief. Thus, in each of these investigations, the Authority recommended trade remedial measures taking into account the facts of the case or terminated the investigation based on request of the domestic industry, in accordance with provisions of Act and Rules.
63. As regards the submissions that the Authority should require the domestic industry to first establish the steps undertaken to adjust pursuant to previous safeguard measures before recommending anti-dumping duties, the Authority notes the scope of the present investigation is whether the product has been exported at dumped prices, and whether the same has caused material injury to the domestic industry. If the investigation establishes the same, the Authority is required to recommend anti-dumping. Thus, contentions raised in this regard are found irrelevant.
64. With regard to the submissions that the increase in Basic Customs Duty would restrict imports into India, the Authority notes that the purpose of Basic Customs Duty and imposition of anti-dumping duty is different. While duties collected at customs borders intended to regulate trade and generate revenue, the purpose of anti-dumping duty is to remedy the situation of dumping and injury to the domestic industry. The anti-dumping duty may even be in the form of price undertaking and may not necessarily imply collecting duties in cash.
65. With regard to the submissions that the domestic industry has not relied upon the DGCI&S data, the Authority notes that none of the interested parties have access to transaction wise DG Systems or DGCI&S data. However, for the purpose of the initiation of the present investigation, and for the purpose of the determination, the Authority has relied upon the DG Systems data. Hence, no prejudice has been caused to the interests of any interested parties by virtue of the fact that the domestic industry has not relied on DGCI&S data and has relied on other sources to procure import data.

66. With regard to the submission that since Jupiter and other producers are expanding capacities, the present investigation may be premature, the Authority notes that an anti-dumping investigation is conducted with respect to the injury suffered by the domestic industry producing the subject goods due to dumping during the period of investigation. The fact that Jupiter International and other domestic producers are expanding capacities in the future does not invalidate the fact that the domestic industry may have suffered injury due to dumping in the period of investigation.

G. NORMAL VALUE, EXPORT PRICE AND DUMPING MARGIN

G.1. Submissions by other interested parties

67. The following submissions have been made by the other interested parties, with reference to determination of normal value, export price and dumping margin.
- i. Price of imports from Malaysia cannot be considered as a surrogate rate for producers from China PR for determination of normal value.
 - ii. The normal value for producers from China PR should be determined based on the responses filed by cooperative producers from China. Alternatively, it should be determined based on normalized cost of domestic industry, since it incurred huge financial and depreciation cost.
 - iii. The normal value for Trina Group should be determined based on the information submitted in the questionnaire response since the company has operated under market economy conditions. Under Paragraph 8 of Annexure I to the Rules, MET is to be granted if a firm satisfies the five specific criteria, including market-based decision-making, compliance with GAAP, and acquisition of land and inputs through commercial means, which Trina has done.
 - iv. The mere existence of subsidies at the national or sectoral level does not justify a rejection of MET, unless it is clearly demonstrated that such subsidies have directly distorted the individual firm's cost or price structure.
 - v. The suggestion that the Chinese Government directly subsidizes all or even most raw material inputs across the entire market is not only speculative but economically irrational and financially unsustainable.
 - vi. The Petitioners have failed to provide any direct, verifiable, or entity-specific evidence demonstrating that Trina Solar or any of its raw material or utility suppliers benefited from actionable subsidies.
 - vii. Trina Solar has demonstrated through substantial evidence that procurement of raw materials, utilities, and land was conducted through commercial transactions at market-determined prices, without government interference, and findings to the contrary based on past CVD decisions of DGTR and other authorities is misplaced.
 - viii. The Chinese domestic market, like most modern economies, is predominantly comprised of privately-owned entities.
 - ix. Assertion that China operates under NME conditions implies that all economic actors globally producers, traders, and consumers alike who interact with Chinese suppliers are participating in a distorted market.