

**Ministry of New and Renewable Energy
(Standards & Quality Control Division)**

Dated 21st August 2020

Subject: Recommendation of the Experts Committee on the revised Indian Standards on SPV Modules and Inverter notified by BIS for implementation.

The Ministry of New and Renewable Energy(MNRE) is implementing a Quality Control Order on SPV Systems, Devices and Components Goods Order 2017 under BIS Act(Compulsory Registration Scheme). The said order includes SPV Modules, Inverter and Battery Storage with specified Indian Standards adopted from IEC Standards for these products.

2. BIS vide gazette notification dated 14th June 2019 published the revised Indian Standards for SPV Modules and inverter, and suggested that MNRE may hold stakeholder consultations for concurrent running of the same before 11.6.2020. BIS has extended the time period to 9th September 2020 due to Covid 19 lockdown. The details of revised standards are given in Annexure.

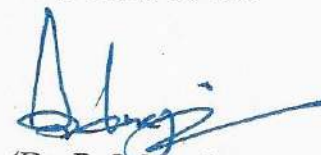
3. MNRE set up a three members Expert Committee comprising a representative each from MNRE, Solar Energy Corporation of India(SECI), New Delhi and a BIS recognized Test Lab to examine the said revised standards for implementation. The committee through a virtual meeting held on 17th July 2020 at 12:00 Noon discussed the revised standards adopted from IEC Standards in detail. Out of eight standards 5 standards are applicable to crystalline and 7 for thin film based modules, five for each of three types of thin film technologies. The committee also discussed the relevance of recently published Indian Standard on "Photovoltaic Modules-Test Methods for detection of Potential-Induced Degradation (IS 17210 Part I: 2019) adopted from IEC TS 62804-1:2015".

4. The Experts Committee felt that standards in too many parts are incoherent, and considered that the same need to be organized technology-wise inclusive of all relevant testing requirements for easy understanding and for efficient implementation. One standard for one product with testing sequences properly organized would be the best solution to simplification of testing and certification process and ease of doing business. Therefore, the committee recommended to make two separate Indian Standards one for crystalline and the other for thin film based modules by organizing properly the revised standards, including standard on PID Test. The committee also recommended that fire test as per existing standard should be continued as it has important relevance in field conditions. In the case of revised IS 16169(2019) for inverters for islanding prevention measure test, the committee recommended that the same may be adopted for implementation. The committee recommended that one inclusive standard for inverter needs to be formed encompassing all performance testing requirements for off-grid and grid connection requirements.

5. The Experts Committee made recommendation to make two separate Indian Standards for Crystalline and Thin Film based Modules by combining related standards, including the standard on PID Test for crystalline modules, and implementation of revised standard on inverter as follows;

Sl. No.	Product	Standards	Remarks
1	Solar PV Modules (Crystalline)	IS 14286-1:2019/IEC 61215-1: 2016 IS 14286-2: 2019/IEC 61215-2: 2016 IS 14286-1-1: 2019/IEC 61215-1-1: 2016 IS/IEC 61730-1: 2016 IS/IEC 61730-2: 2016 IS 17210-1: 2019/IEC TS 62804-1: 2015	* Since IS IEC 61730-2 refers Fire test MST 23 as National/Local code we need to mandate this test in IS IEC 61730-2 * As per IS 17210 test duration for PID is 96Hrs (Chamber method) and 168Hrs (Ambient method). However, requirement from MNRE is 288Hrs, which may be incorporated.
2	Solar PV Modules (Thin film)	IS 14286- 1-Sec 2: 2019/IEC 61215-1-2: 2016 IS 14286-1-Sec 3: 2019/IEC 61215-1-3: 2016 IS 14286-1-Sec 4: 2019/IEC 61215-1-4: 2016 IS 14286-1: 2019/IEC 61215-1: 2016 IS 14286-2: 2019/IEC 61215-2: 2016 IS/IEC 61730-1: 2016 IS/IEC 61730-2: 2016	* Since IS IEC 61730-2 refers Fire test MST 23 as National/Local code we need to mandate this test in IS IEC 61730-2
3	Inverters	IS 16169: 2019/IEC 62116: 2014	The revised standard may be adopted for implementation.

6. It has been decided to seek comments from the related stakeholders on the recommendations of the Experts Committee as above. All related stakeholders are requested to please provide their comments positively by 7th September 2020 at the following address.



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To

All related stakeholders

Annexure

Sl No (1)	Existing Indian Standard in force(2)	Revised Standard (3)	Title (4)
i.	IS 14286: 2010/ IEC 61215: 2005	IS 14286 (Part 1) : 2018/ IEC 61215-1 : 2016	Terrestrial photovoltaic PV modules - Design qualification and type approval- Part 1: Test requirements (second revision)
ii.		IS 14286 (Part 2): 2018/ IEC 61215-2 : 2016	Terrestrial photovoltaic PV modules - Design qualification and type approval- Part 2 Test procedures (second revision)
iii.		IS 14286 (Part 1/Sec 1) : 2018/ IEC 61215-1-1: 2016	Terrestrial photovoltaic PV modules - Design qualification and type approval - Part 1 : Test requirements - Sec 1 : Special requirements for testing of crystalline silicon photovoltaic PV modules (second revision)
iv.	IS 16077: 2013/ IEC 61646: 2008	IS 14286 (Part 1/Sec 2) : 2018/ IEC 61215-1-2 : 2016	Terrestrial photovoltaic PV modules - Design qualification and type approval- Part 1 : Test requirements - Sec 2 Special requirements for testing of thin - Film cadmium telluride CdTe based photovoltaic PV modules (second revision)
v.		IS 14286 (Part 1/Sec 3) : 2018/ IEC 61215-1 -3 : 2016	Terrestrial photovoltaic PV modules - Design qualification and type approval - Part 1 Test requirements - Sec 3 : Special requirements for testing of thin - Film amorphous silicon based photovoltaic PV modules (second revision)
vi.		IS 14286 (Part 1/Sec 4) : 2018/ IEC 61215-1-4 : 2016	Terrestrial photovoltaic PV modules - Design qualification and type approval - Part 1 Test requirements - Sec 4: Special requirements for testing of thin - Film Cu In ga S se 2 based photovoltaic PV modules (second revision)
vii.	IS/IEC 61730 - 1 : 2004	IS/IEC 61730 - 1 : 2016	Photovoltaic (PV) module safety qualification: Part 1 Requirements for Construction (first revision)
viii.	IS/IEC 61730 - 2 : 2004	IS/IEC 61730-2 : 2016	Photovoltaic (PV) module safety qualification: Part 2 requirements for testing (first revision)
ix.	IS 16169: 2014/ IEC 62116: 2008	IS 16169 : 2018/ IEC 62116 : 2014	Utility-Interconnected photovoltaic inverters-Test procedure of islanding prevention measures (first revision).