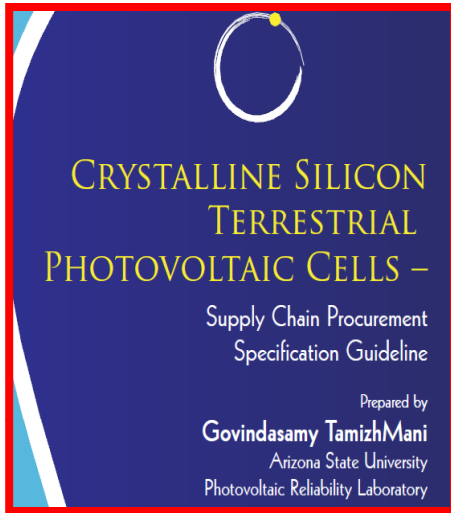

***Solar ABCs Policy on Standards:
Adoption of Qualification and Power Rating Standards
in the United States***

**Mani G. TamizhMani
Arizona State University**

manit@asu.edu

Solar ABCs Policy on Standards (www.SolarABCs.org)

Standard Protocol

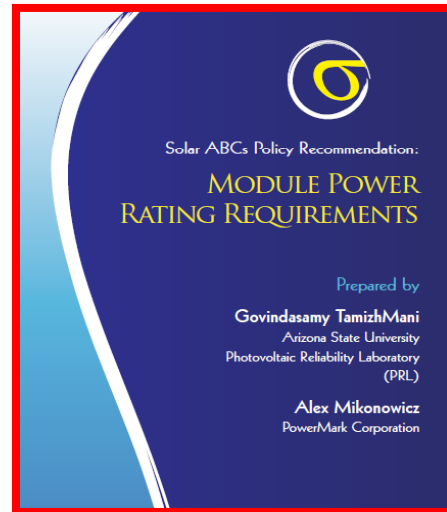


Supply Chain: PV Cells



Adoption by
SEMI or ASTM
standard?

Standard Policy

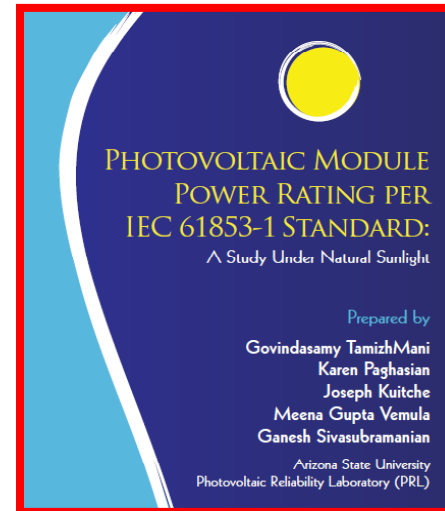


Standard Protocol for
Nameplate Rating
Tolerance



Adoption by
IEEE, IEC or ASTM
standard?

Standard Validation

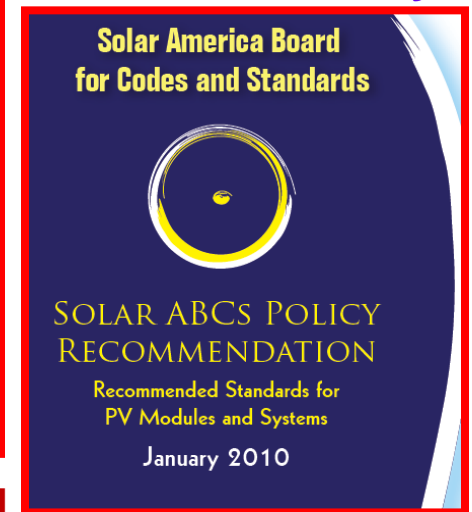


Power Rating Standard
(IEC 61853-1)



Adoption by
United States?

Standard Policy



Adoption of
Qualification Standards
(IEC 61215/61646/62108)

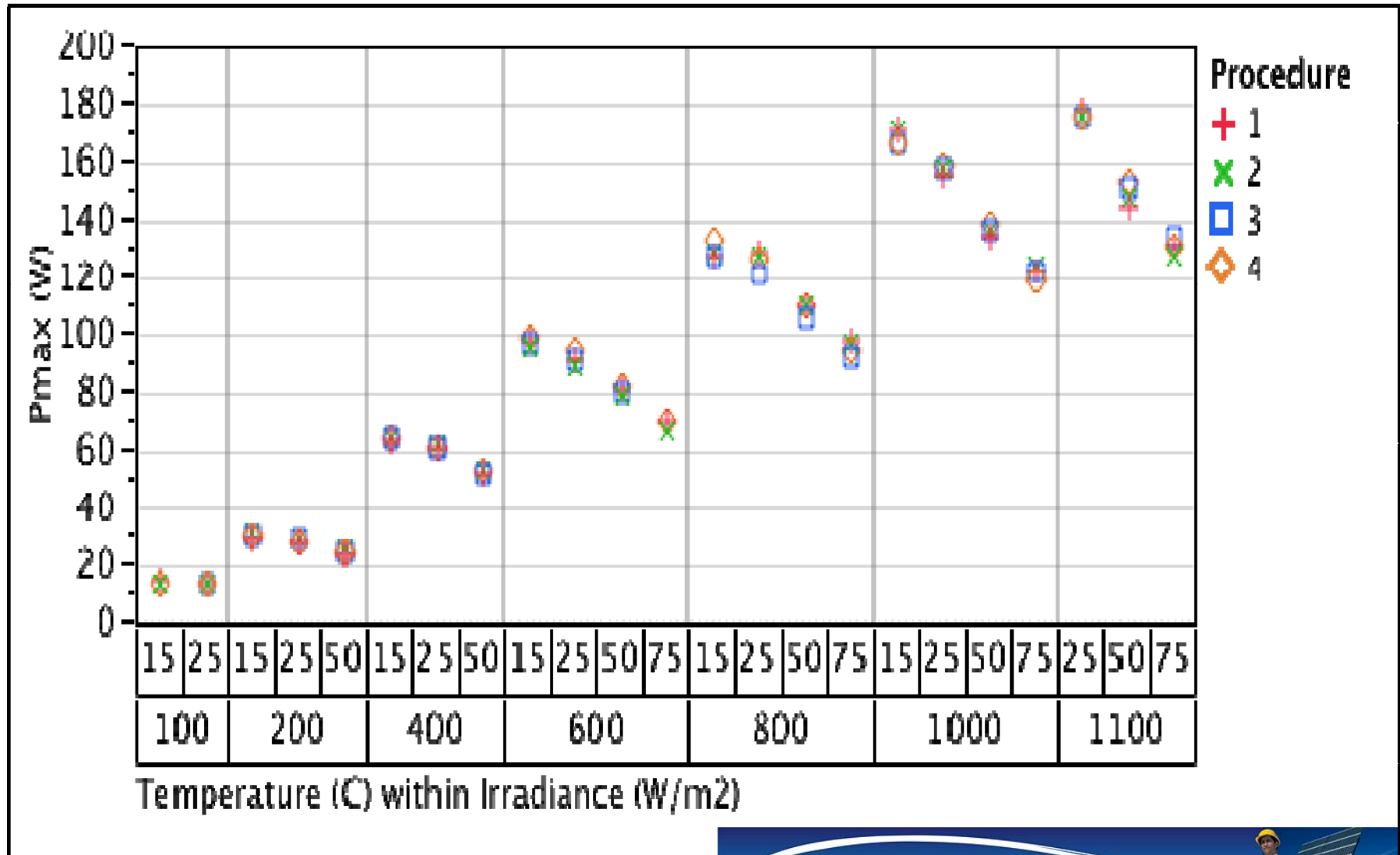


Adoption by
United States?



IEC 61853-1 (Power Rating Standard): Motivation and Validation

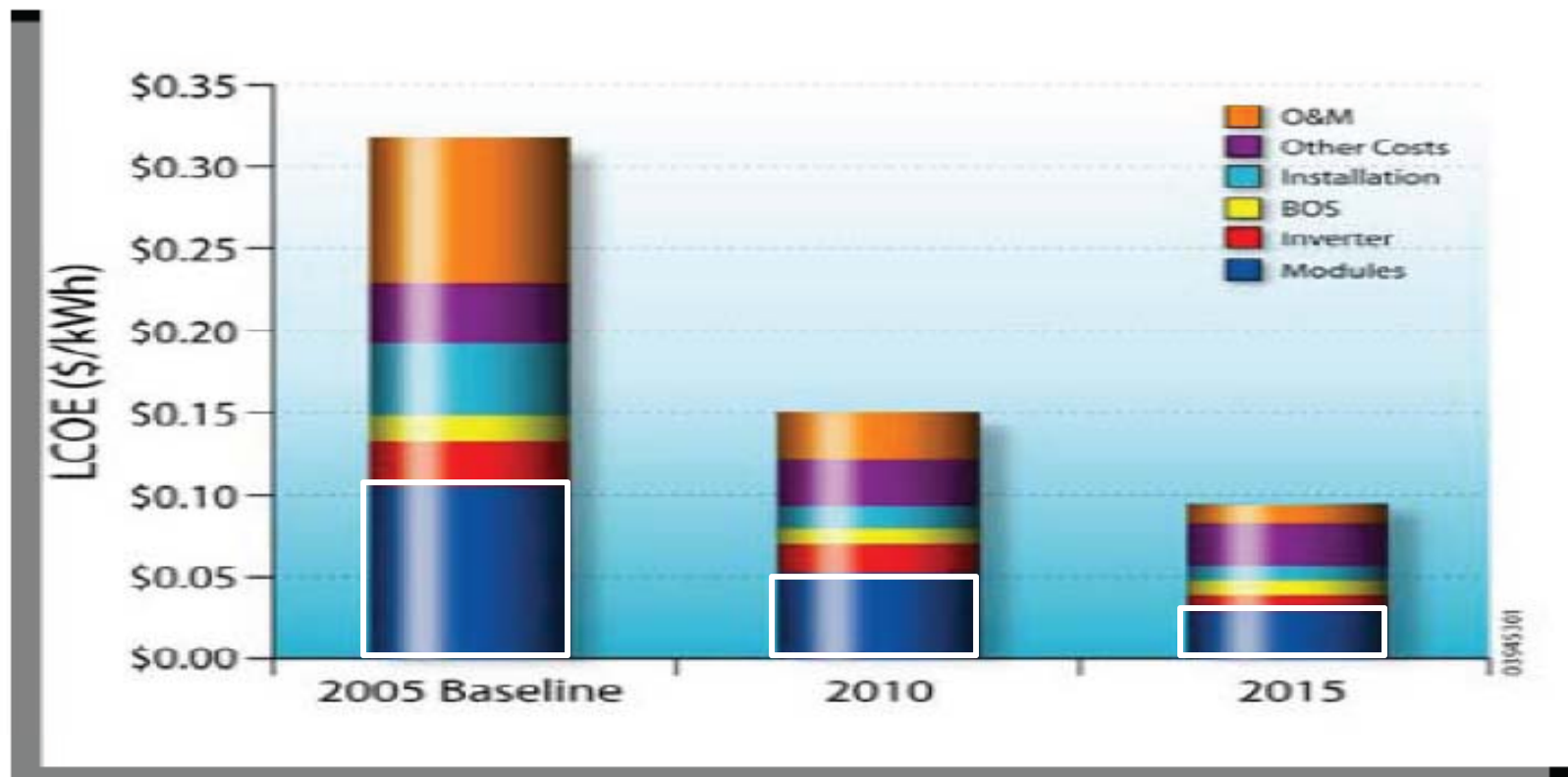
Power/energy rating models require performance data at multiple test conditions, not just one test condition of STC (25°C; 1000 W/m²)



Why focus on PV reliability?

U.S. DEPARTMENT OF
ENERGY

- 1) Long-term Reliable Performance of Modules & Systems Critical to Cost Parity .
 - More than 20 years required for most components and systems.




Source: Sandia National Labs

Solar America Board for Codes and Standards



IEC 61215/61646/62108 (Qualification Stds): Motivation – No Certification

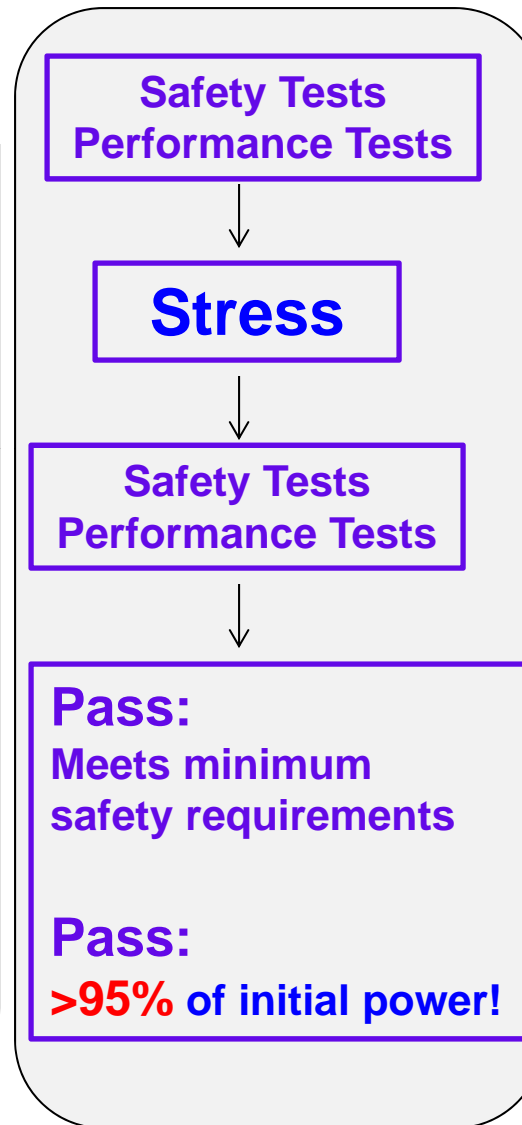


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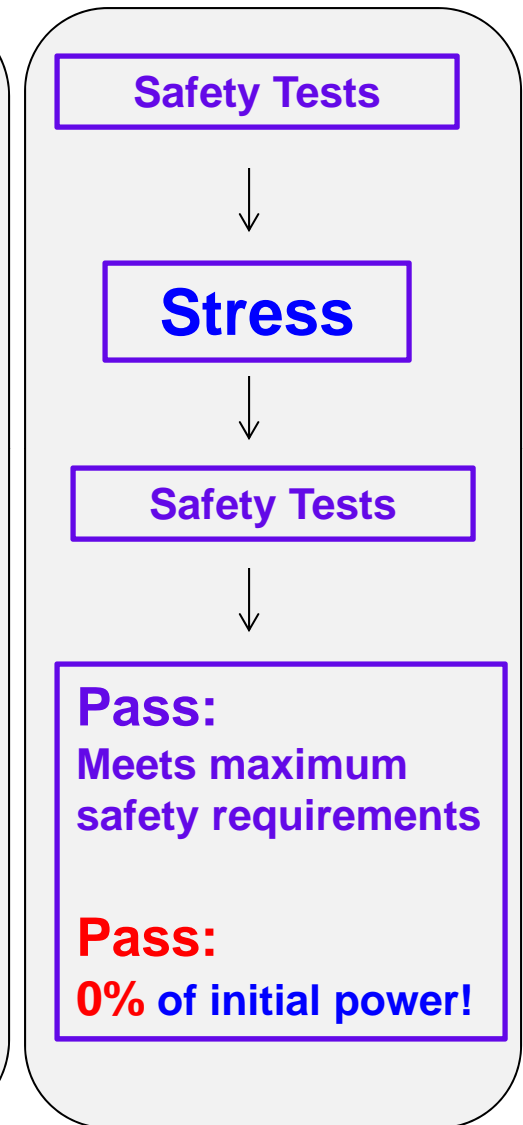
science & technology | solar modules | survey

Survey Evidence:
There are modules **certified to UL 1703 (US Safety), but not to IEC 61215** (minimum durability/reliability)

IEC 61215



UL 1703



IEC 61215/61646/62108 (Qualification Standards): **Solar ABCs Policy**

Solar ABC Policy recommends (January 2010) the use of qualification standards for PV modules:

“Meeting the requirements of qualification standards is considered to be a minimum requirement for any module procurement. Photovoltaic modules sold or installed in the U.S. shall be independently tested and certified to the following qualification standard: IEC 61215 (crystalline silicon flatplate modules), IEC 61646 (thin film flatplate modules) and IEC 62108 (concentrator modules / assemblies).”

