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**SOUTH ASIA
ENERGY SERIES
SCALING
GRID-CONNECTED
DISTRIBUTED
SOLAR
IN SOUTH ASIA**

 23 March

 10:00-11:35 a.m. (IST)



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program

**MEET OUR
PANELISTS
& SPEAKERS**

Co-Organized by

**SOUTH ASIA REGIONAL
ENERGY HUB**

PACE-D
PARTNERSHIP TO ADVANCE
CLEAN ENERGY – DEPLOYMENT
Technical Assistance Program

NREL
NATIONAL RENEWABLE ENERGY LABORATORY



Solar Quality and Safety Issues and Solution

March 23, 2021

USAID PACE-D 2.0 RE Team



Quality and Safety aspects in DPV – A concern

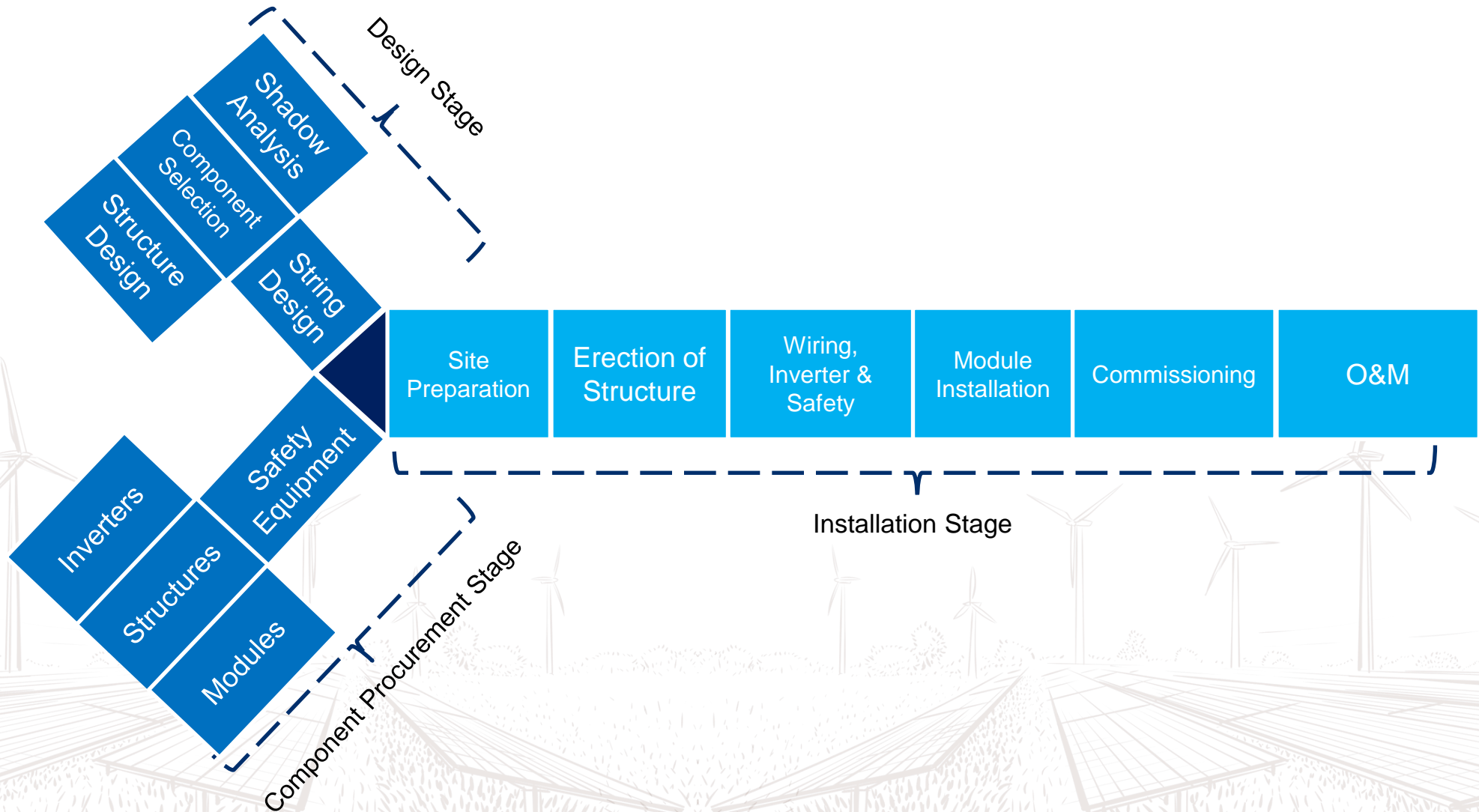
- Lack of quality standards and a push for low prices
- A compromise on the quality of the components, the systems, and the workmanship
- Safety risks for business and homeowners
- Inferior quality stall development of the RTSPV markets, especially for small and medium enterprises, and the residential sector
- Implementing quality and safety measures requires obeying to international and national standards for component manufacturing, design, installation, and workmanship
- Implementing a framework is critical to enforcing standards and associated services, such as testing, inspection, and evaluating



To understand challenges in DPV quality and safety, USAID PACE – D 2.0 RE, with NREL, performed a research, in three stages - literature review, interviews and an in-person workshop



The Distributed Solar PV Project Development Chain





The Distributed Solar PV Project Development Chain – 3 distinct phases - surveys & literature show that each distinct phase has specific issues

Design Quality (15%)

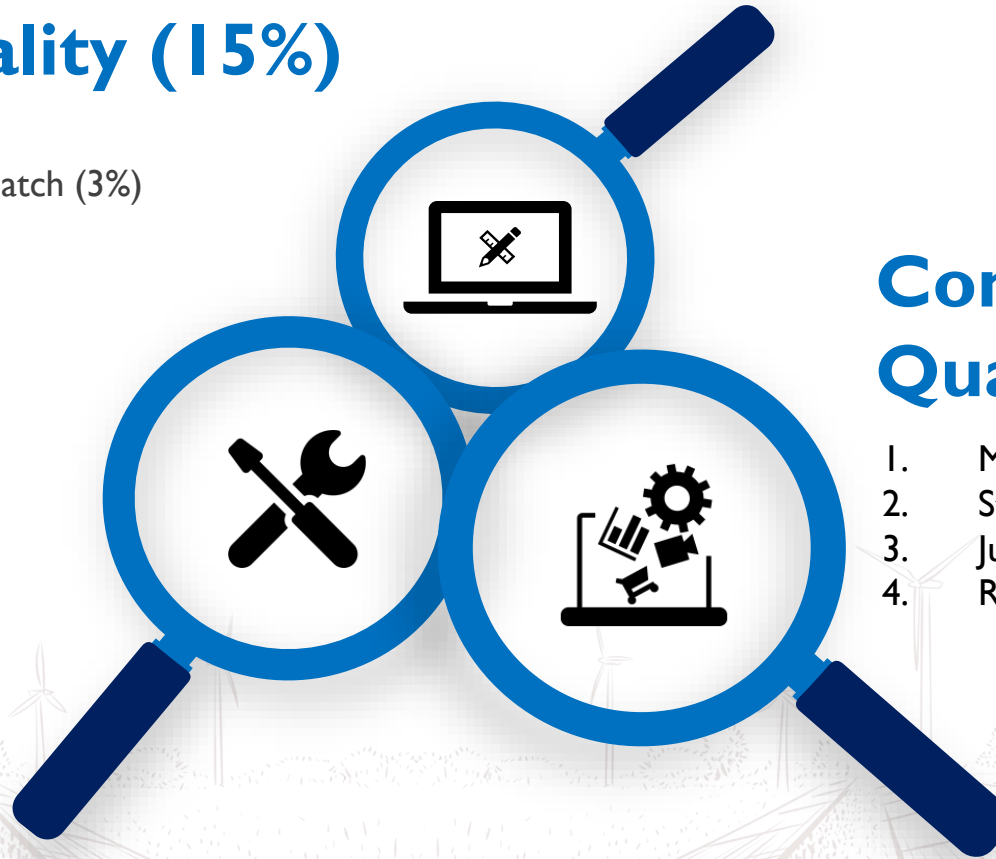
1. Array Layout (7%)
2. String Inverter Mismatch (3%)
3. Access to Site (3%)
4. Rest (2%)

Installation & O&M Quality (35%)

1. Fasteners (15%)
2. Handling of Modules (5%)
3. Earthing and Protections (5%)
4. Rest (10%)

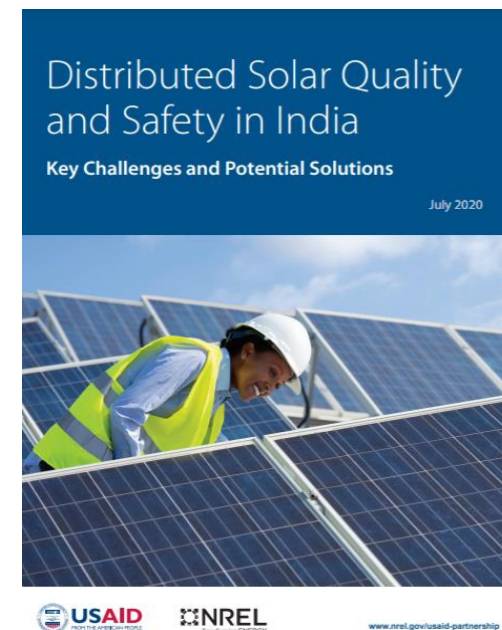
Components Quality (50%)

1. Modules (15%)
2. Structures (15%)
3. Junction Boxes (10%)
4. Rest (10%)



PACE – D 2.0 RE Intervention

- Workshop on **Creating a Framework for Quality Management for Distributed Solar and Solar Rooftop Installations** attended by around 50 professionals on quality assurance for solar PV systems and vendors.
- PACE-D 2.0 RE and NREL developed a report on **“Distributed Solar Quality and Safety in India – key challenges and potential solutions”**
- The report outlines a new framework to enable faster deployment and integration of rooftop solar in India.
- The report was formally released in the U.S.-India Strategic Energy Partnership ministerial meeting in July 2020.





Objective, Goal and Salient Points



What is Vendor Rating Framework?

- A **procedure** to rate vendors **on a variety of factors** related to the **design, procurement and installation**
- Provide a **single point of reference** for all stakeholders – to identify top-rated quality vendors
- Allow consumers, developers and investors to **compare and rank vendors** on the quality of workmanship/ procured components, installation practices and level of safety
- Provide **incentive to Vendors to raise their game**, offer better services and ensure delivery of quality systems

Goal of Vendor Rating

Provide objectively verifiable data and information about vendors to consumers and key stakeholders

01

02

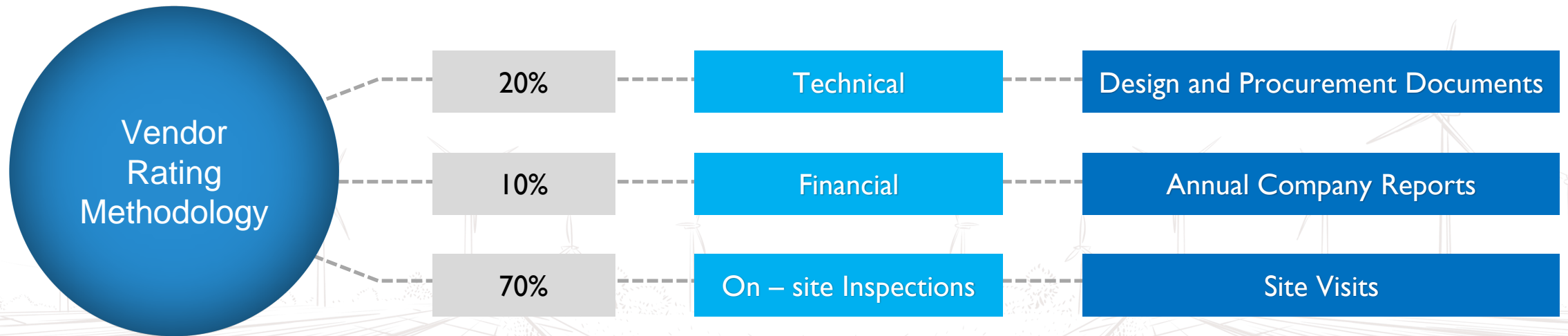
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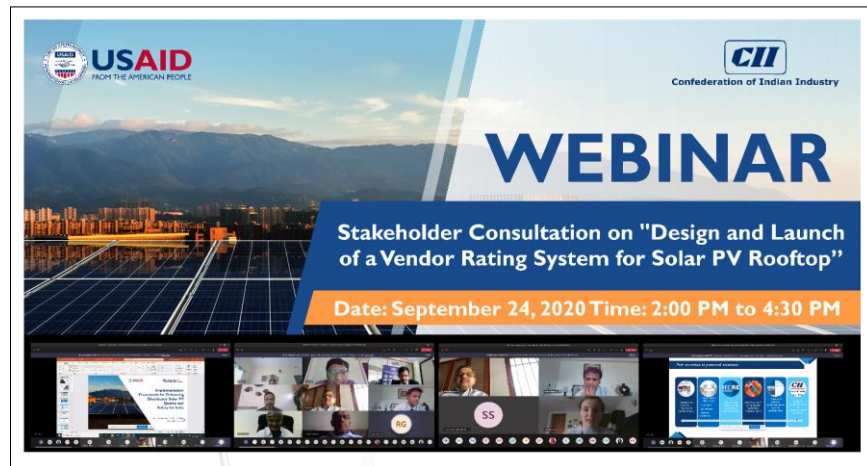
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How will Vendor Rating Framework work?

- The rating will be **time bound** and will need to be restructured and redesigned as per the changing requirements and nature (the **validity will be 18 months**)
- Random sampling of systems will compel vendors to **continuously improve quality**
- Aim will be to make **certification essential** for every EPC/installer to compete in the market



Demonstration of Benefits of VRF through Pilot Testing



- **Pilot Testing** for the assessment of VRF in the state of Gujarat
- Pilot for 10 EPCs - 5 solar PV installations were selected for each EPC, bringing the total inspected sites to **50**.
- Online Meet of Rooftop PV EPC companies on sharing their **“Experience of Participating in Vendor Rating System Pilot”** in February 2021
- The event marked the felicitation of certificate to participants and a public release of report on Vendor Rating Framework-Experience from the Pilot



Key findings from the Pilot in Gujarat

- EPCs were selected based on Geographic distribution, Category of EPC, System capacity and overall experience in SPV installations.
- Most of the EPCs had good practices for cable management, inverter and protection system
- Scope of improvement observed in
 - MMS quality
 - Customer training and awareness
 - System design and documentation
 - Safety and Accessibility

NEXT STEP

PACE – D 2.0 RE working with VRA for national roll out of the VRF

Good Practices



Bad Practices





Thank You for your Time and Attention

March 23, 2021

USAID PACE-D 2.0 RE Team

