**Summary Outline**

**UI-ASSIST: US-India collaborative for smart distribution System with Storage** is a 6 year, $30M project that is finishing on October 1, 2023.

- WSU is US lead with 15 organizations across US.
- Project involved R&D to lab demonstrations to field demonstrations as well as policy and social impact research
- US Field Demonstrations and Industry Interactions
  - AVISTA University District, Spokane, WA
  - WSU Pullman Battery Backup, Pullman, WA
  - Snohomish PUD, Everett, WA
    - Collaboration with Tulalip Tribes [Student microgrid project brings sustainability, resilience to Tulalip Tribes – WSU Insider](https://www.wsuinsider.org)
  - Orcas Power & Light Co-op, San Juan Islands, WA
- India team helped electrify two hamlets for first time.
PROJECT TEAM

India Leads
S. Mishra
A. Sharma

US Leads
N. Schulz
A. Srivastava

- BSES
- Synergy, Gurgaon
- TERI
- Customized Energy Solutions
- IIT Delhi
- IT Roorkee
- IIT Kanpur
- Uttar Pradesh Power Corporation
- IIT Bhubaneswar
- IIT Madras
- GE Global
- VCS
- ETAP
- LBNL
- L&T
- National Renewable Energy Lab
- Texas A&M Uni.
- Hawaiian National Energy Institute
- Snohomish PUD
- GE Grid Solutions
- Avista Utilities, Wash.
- Washington State Uni.
- Burns & McDonnell
- WVE
- National Rural Electric Cooperative Association
- Massachusetts Institute of Technology

- NTPC
- Panasonic
- GE Global Research
- GE
- HNEI
- NRECA
- Pacific Northwest National Laboratory
- Berkeley Lab
- NREL
- Grid Solutions
- Digital Solutions
- Power Transmission & Distribution
RURAL PILOT - SCHEMATIC AND RECENT ACTIVITIES

- New Community Management Model: Through a local society, already approved.
- Single Point metering by utility in each hamlet.

PROCESS FLOW DIAGRAM FOR 30kW BIOMASS PLANT

LEGENDS
1. FERMENTATION RESIDUE
2. FEEDS TOCK
3. BIOGAS
4. WATER
WSU: Microgrid and Battery integration

AVISTA-Spokane: Distribution Market and Distributed Volt/Var Control

US Pilot Demonstration Projects 2022-2023
Synergy between UI-ASSIST and other funded projects across all India and US partners for leveraging advances as well as additional testing and validation opportunities.

Testbeds across multiple institutions provide foundation for continued collaborations.

Field demonstration relationships enhanced university-research lab-technology and service provider-utility-end user relationships and built trust and communication channels for dialog in future.

Solutions from UI-ASSIST partners included modifying existing systems as well as developing new solutions for advanced distribution systems and microgrids providing alternatives for a variety of situations worldwide.

Identification of gaps and challenges in policy, market structures and interactions, technical standards and practices, and societal understanding in two countries helps develop priorities and roadmap for next steps.

Unique framework for transforming R&D activities to the field demonstrations including lessons learned for team dynamics and interactions especially during worldwide pandemic.