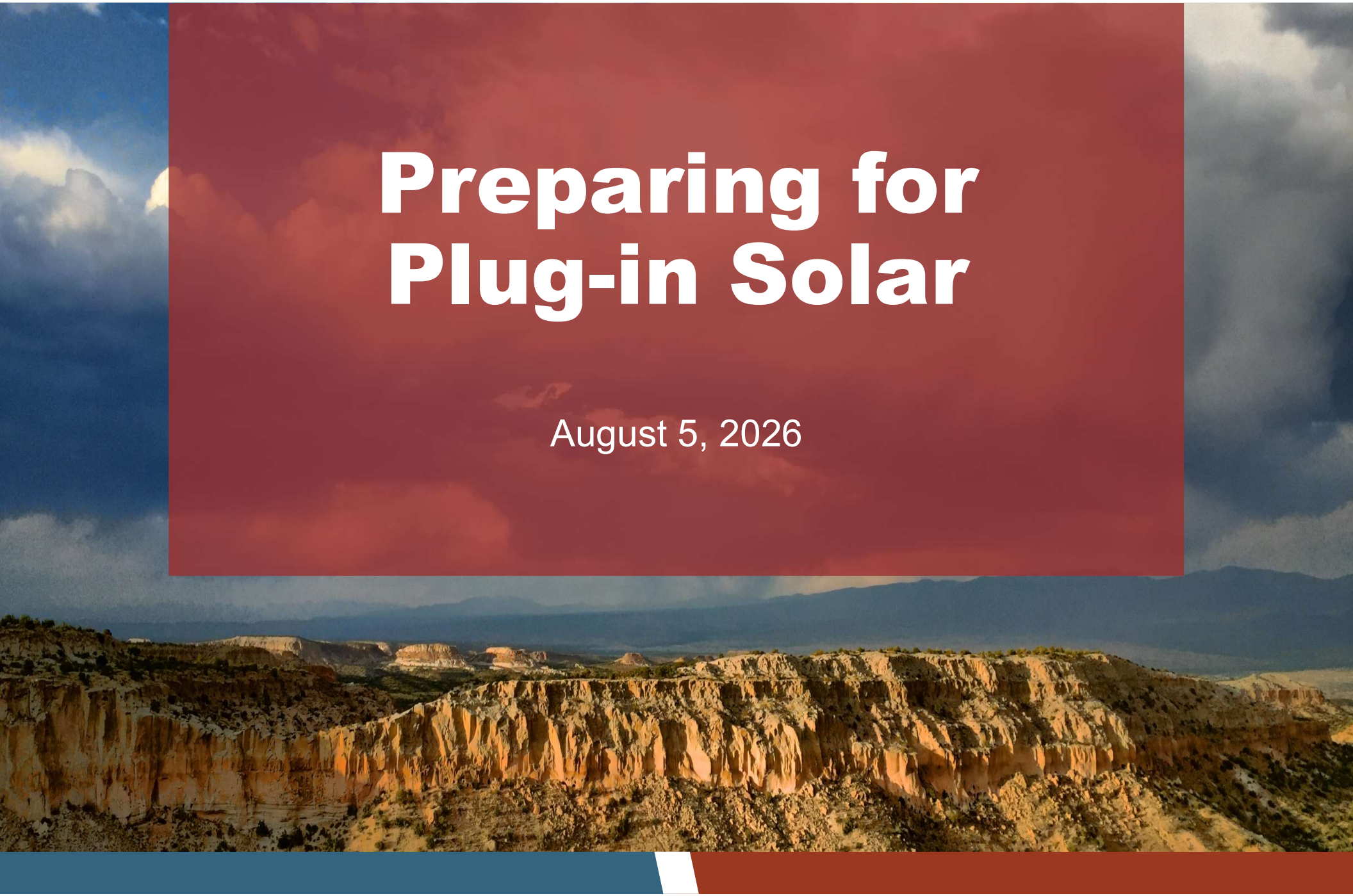

# Preparing for Plug-in Solar

August 5, 2026

LOS ALAMOS
where discoveries are made

# Purpose of Presentation



- As a follow-on to the overview of plug-in solar presented to BPU on April 1, 2026, this presentation:
  - Explains why DPU needs to prepare for Plug-in Solar, hereafter called PIPV (Plug-In PhotoVoltaic)
  - Evaluates safety, Distribution System impacts, and rogue PIPV systems
  - Describes what choices DPU can pick from
  - Considers ways for DPU to help inform customers
  - Identifies staff's recommended choices

# Why Does DPU Need to Prepare?



- Because DPU's customers are going to be using PIPV systems! They can be:
  - Inexpensive; 30% to 50% lower per-watt installed cost than rooftop solar
  - Easy to install by a customer, just find a sunny spot for the PV panels and plug the cord in to an outlet
  - Portable, just unplug it and move it
- Already popular in Europe with 4+ millions in use, and interest is growing across the United States
- **DPU's decisions now will support the safe adoption of PIPV and formalize the associated DPU rules**

# Evaluate the Safety



- Line worker and customer safety is addressed by UL 1741, UL 3700, and line worker engineering controls
- UL 1741 covers automatic shutdown of grid-tied inverters to prevent back feed during power outages, supplements engineering controls for line workers
- Currently there are no UL 3700 certified systems available for sale in the US
- Obstacles are being overcome - state and local regulations and policies are changing, and safety issues are being mitigated
- It's a "Buyer Beware" market, meaning that buyers (not DPU) assume the risks of PIPV

# UL 3700 Requirements are Tough



- Has requirements for specialized plug/receptacle combo and dedicated branch circuit
  - Should only be permitted, and installed by a licensed electrician or homeowner, with state inspection
  - UL 3700-compliant systems cannot be easily plugged in to an existing receptacle
- “Guerilla” installs of non-compliant systems likely, and will probably be safe, if not “super safe”. Again, buyer beware
- DPU can stay out of this issue if we don’t require interconnection agreements, or we could decide that the safety issues are significant enough to merit an interconnection agreement

# Evaluate Distribution System Impacts



- Expected to be minor for PIPV systems below the average DPU residential load of 900 watts
- Occasional power exports are to be expected as customer loads vary hourly
- Meters for customers without interconnection agreements are not set up to monitor exported power
  - DPU does not currently monitor for exported power on non-interconnection agreement customers
  - Potential issue if no interconnection study is performed

# Handling Rogue PIPV Systems



- Potential for customers putting in many or unusually large PIPV systems that export potentially concerning levels of power
- Potential for customers with existing rooftop PV and interconnection agreements to put in PIPV thus expanding beyond the agreement capacity
  - Would be compensated for exported PIPV energy since it is indistinguishable from rooftop PV
  - May be able to detect these PIPV systems, when the exported power exceeds the interconnection agreement or a baseline production measurement
  - Consider capping compensation for exports at each customer's baseline measurement

# Background on the Customer-Owned Generation Process



- DPU's *Application for Operation of Customer-Owned Generation* and *Standard Interconnection Agreement* define the process for connecting customer-owned generation
- Grid-tied PV systems can export energy, sending power from the PV system to the distribution system
- DPU customers ***with interconnection agreements*** get credit for exported energy under Rule E-5.05

> *Credit for energy supplied to the Utility. The credit to the Customer for energy supplied to the Utility will be based on the wholesale cost. The wholesale cost is the Utility's Electric Coordination Agreement (ECA) total capacity and energy costs, for a twelve-month rolling average, calculated from the Los Alamos County Resource Pool invoices.*

# Pick a PIPV Interconnection Approach



## Here are Four approaches for PIPV interconnection

1. Require all PIPV systems to use a Customer-Owned Generation interconnection process
2. Require only PIPV systems (or multiple systems) that exceed a power threshold, say 800 or 1200 watts, to use a Customer-Owned Generation interconnection process

For Options 1 & 2:

- $500 net meter installation fee would apply unless changed; may not apply to customers who already have an interconnection agreement
- Can allow for energy export credit, the same as for rooftop PV or under a different method
- Lets DPU communicate guidance, and indemnification and liability clauses
- Can choose whether DPU would indirectly enforce requirements under UL 3700 and partially address rogue systems
- Can provide metrics
- Requires PIPV modifications to the process documents

# Pick a PIPV Interconnection



3. Create a new PIPV registration process
   - Like options 1&2 but separating the process from the existing process could make it easier for customers to understand and easier for staff to manage
   - Requires the creation of new process documents
4. No interconnection agreement required
   - No burden on staff and customers but no DPU control or knowledge of installations
   - No net meter or installation fee and no metrics
   - No export energy credit
   - No enforcement or review by DPU of requirements under UL 3700
   - Relies on public communications for safety messaging

# Pick a PIPV Export Approach



Here are three approaches for PIPV export credits

1. Provide credit for exported energy under Rule E-5.05
2. Provide credit for exported energy under a new PIPV-specific rule
3. No credit for PIPV exports

Important Point: the PIPV Interconnection and the PIPV Export choices are independent of each other!

# Share Info With Customers



- Regardless of the selected approaches for handling rogue PIPV systems, PIPV interconnections and the PIPV export approach, DPU must share PIPV info
  - Pros and cons
  - Safety considerations
  - Places to get PIPV information
  - No assumption of risk by DPU
- DPU is not responsible or liable for any harm from the use of PIPV systems
- DPU is not reviewing or approving the safety of PIPV systems
- Customers using PIPV systems assume all risks

# Staff Recommendations



- Respond to rogue PIPV systems if it becomes an issue
- Staff recommends no PIPV interconnection agreements, because it lowers the barrier to entry for distributed solar
- Staff recommends no credit for exported energy because it follows from choosing to have no PIPV interconnections, eliminates associated staff time, and fits with the PIPV ethos of self-reliance and anti-bureaucracy
- Share information with customers

# Summary



- PIPV is an emerging technology that DPU can manage now to prevent future issues
- There are several reasonable paths that DPU can take, staff recommends
  - No PIPV interconnection agreement or registration
  - No compensation for exported PIPV energy
  - Share information with customers

# Next Steps



- BPU to identify its preferred choices
- Staff to draft plans, documents and customer resources
- BPU to review drafts

# Thank you!
# Questions?


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