

A. Smart Electric Panel Lab/Field Test

1. Overview

In recent years, electric panel manufacturers have started to add connected technologies to traditional electric panels. These technologies include integrated or add-on software controls that provide customers with additional information and capabilities beyond a traditional panel.

There are two phases of this study:

Lab test –

- Evaluate smart panel installation difficulty
- Evaluate smart panel customer app functions
- Evaluate smart panel utility app functions
- Validate that the smart panel is safe to operate for field demonstrations

Field test –

- Demonstrate the ability of smart electrical panels to deliver targeted, firm reductions in residential demand during critical tested DR events via a whole-home load limiting capability
- Demonstrate the capability for smart electrical panels to provide a platform for residential demand response that does not require direct control of end-use devices

2. Collaboration

PG&E's DR Emerging Technology and PG&E's Applied Technology Service (ATS) teams jointly designed and will implement the test cases and procedures for the lab tests.

3. Results/Status

The ATS team installed two smart panels at its San Ramon location. The panels are connected to a load simulator, which may expand to real residential electric loads such as air conditioning, electric vehicles, and water heaters in the future. The team is currently developing test cases for the customer and utility apps.

4. Next Steps

The ATS team started testing the customer and utility apps from last quarter of 2022 to the first quarter of 2023. The DRET team is in the process of reviewing the draft test results, lab results and report will be finalized by the 2nd quarter of 2023.