

TECH Clean California Tariffed On-Bill Investment Pilot

Stakeholder Working Group, Workshop #6

Supply Chain Procurement, QA/QC, and Risk Management

December 16, 2021




TECH CLEAN
CALIFORNIA

The TECH Clean California initiative is funded by California gas corporation ratepayers under the auspices of the California Public Utilities Commission.

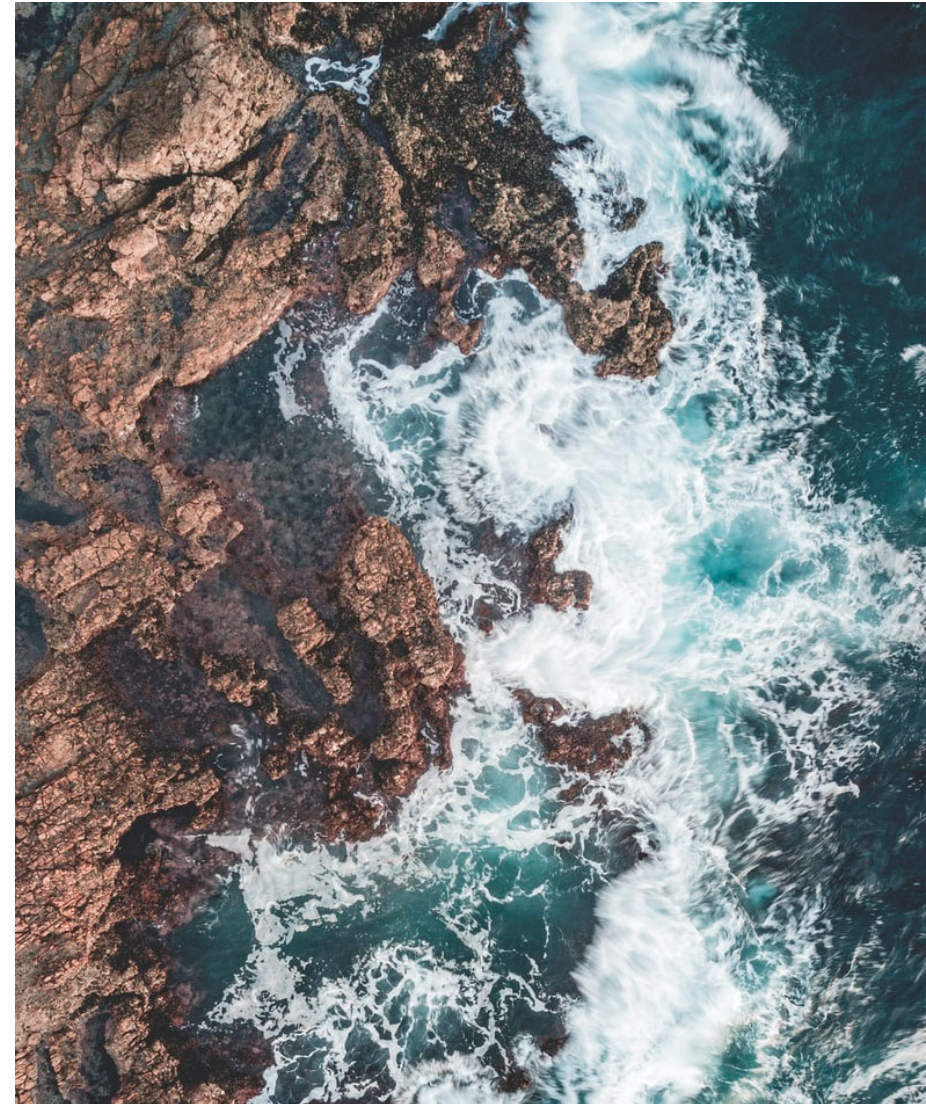


We Are Here:

Session	Date	Topic
#1	Sept. 23	Goals and metrics, workplan and timeline
#2	Oct. 7	Tariff terms, authority to adopt, ownership of assets
#3	Nov. 4	Customer economics
#4	Nov. 18	Consumer protections
#5	Dec. 2	Information system requirements
 #6	Dec. 16	Supply Chain, Quality Assurance, Risk Mitigation
#7	Jan. 6	Implementation Plan, Timeline, Budget

Workshop #6 Agenda

- 1 Introductions
- 2 Supply Chain Procurement
- 3 Equipment Installation QA/QC
- 4 Risk Management



Who's In the Room?

- Name, preferred pronoun, organization, role

Workshop Format & Ground Rules

Workshop objective: Information sharing and feedback on opportunities and challenges, pros and cons of program design alternatives from stakeholders who might implement a program.

Not a joint decision-making process.

Workshop discussions are **off the record**. Notes and recordings are for the benefit of Working Group participants only.

All meetings will be recorded and shared with workshop stakeholders

Resources: to be posted on SharePoint site for workshop attendees, recordings, presentation slides, draft documents, etc

Gathering Feedback & Information

During Workshops

- Opportunities for Q&A
- TOB team will solicit direct feedback through questions and open discussion
- Participants can share their proposals or information on different topics (ideally scheduled ahead of time)

Following each Workshop:

- A survey will be sent to each participant giving them opportunity to provide answers or feedback on key issues
- Sometimes (including today), the survey will include material mentioned but not described in detail during the presentations
- We encourage you to complete those right away, following each workshop, but no more than one week later
- Surveys are to generate feedback to TECH team; results will not be distributed

1 Introduction



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Introduction to Risk Management

- **Design principles**
 - Program ensures that improvements perform as designed
 - Property owner and occupant properly maintain and operate improvements in keeping with manufacturer's recommendations
 - Occupant responsible for unrelated energy usage changes
- **Consumer-facing risks that the TOB program should address**
 - Over-paying for upgrades (installation costs)
 - Equipment failure and performance degradation over time
 - Cost-recovery charges that exceed bill savings attributable to upgrades

Consumer protections require Program Sponsors and Operators to adopt extra mitigations against business risks stemming from ownership of the investment asset.

2

Installation Cost Management



Installation Cost Risk

- **The issue:** Participants could over-pay for upgrades
- **The challenges:** In the absence of strong market competition, installers and product suppliers have an inherent incentive to charge as much as the program can pay; service delivery inefficiencies can add unnecessary costs

Utilities have an obligation to ensure that customer charges are cost-based, just, reasonable, and fair. Therefore bid and installation process must more be tightly managed than a conventional incentive program.

- **Consumer risk:**

Overall project cost burden that translates to

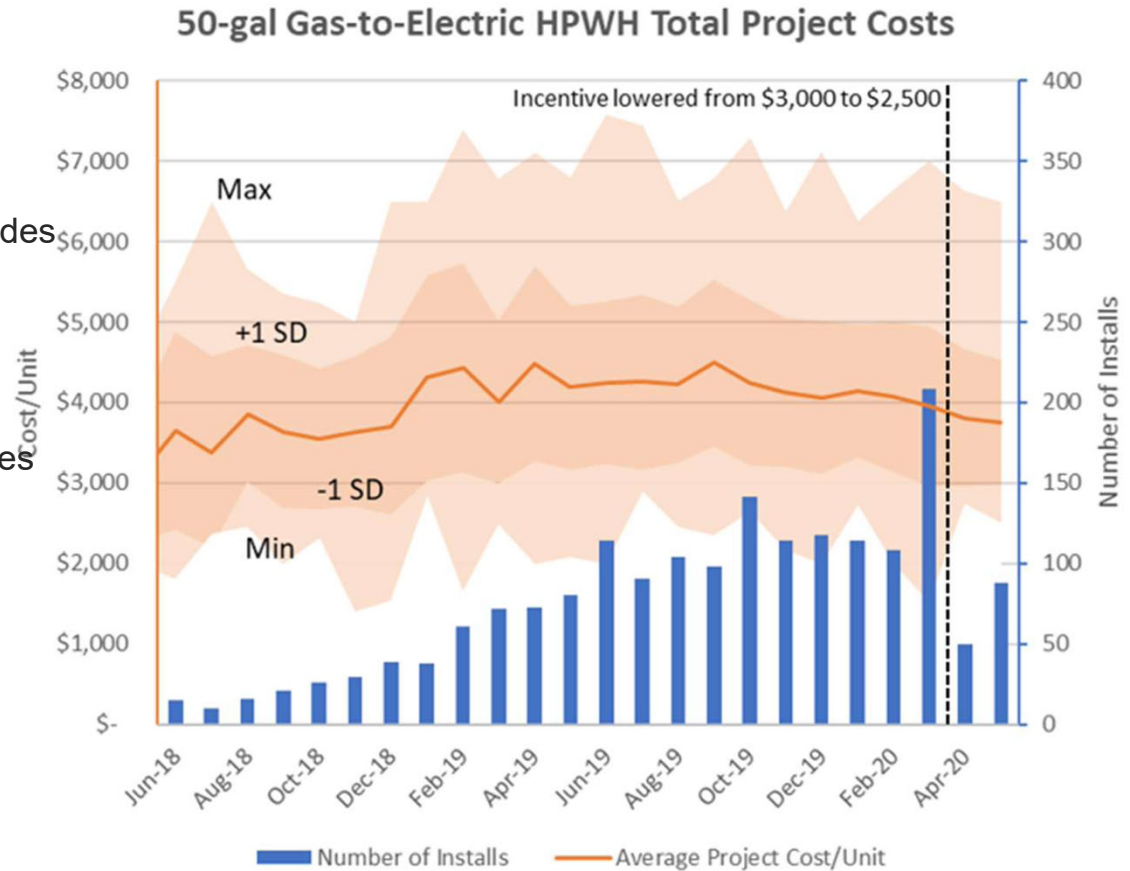
- Cost-recovery charges that are higher than necessary
- Cost-recovery periods that are longer than necessary
- Unnecessary copay requirements

- **Program sponsor risk:**

- Projects disqualified for financial infeasibility

HPWH Installation Cost Examples from the Field

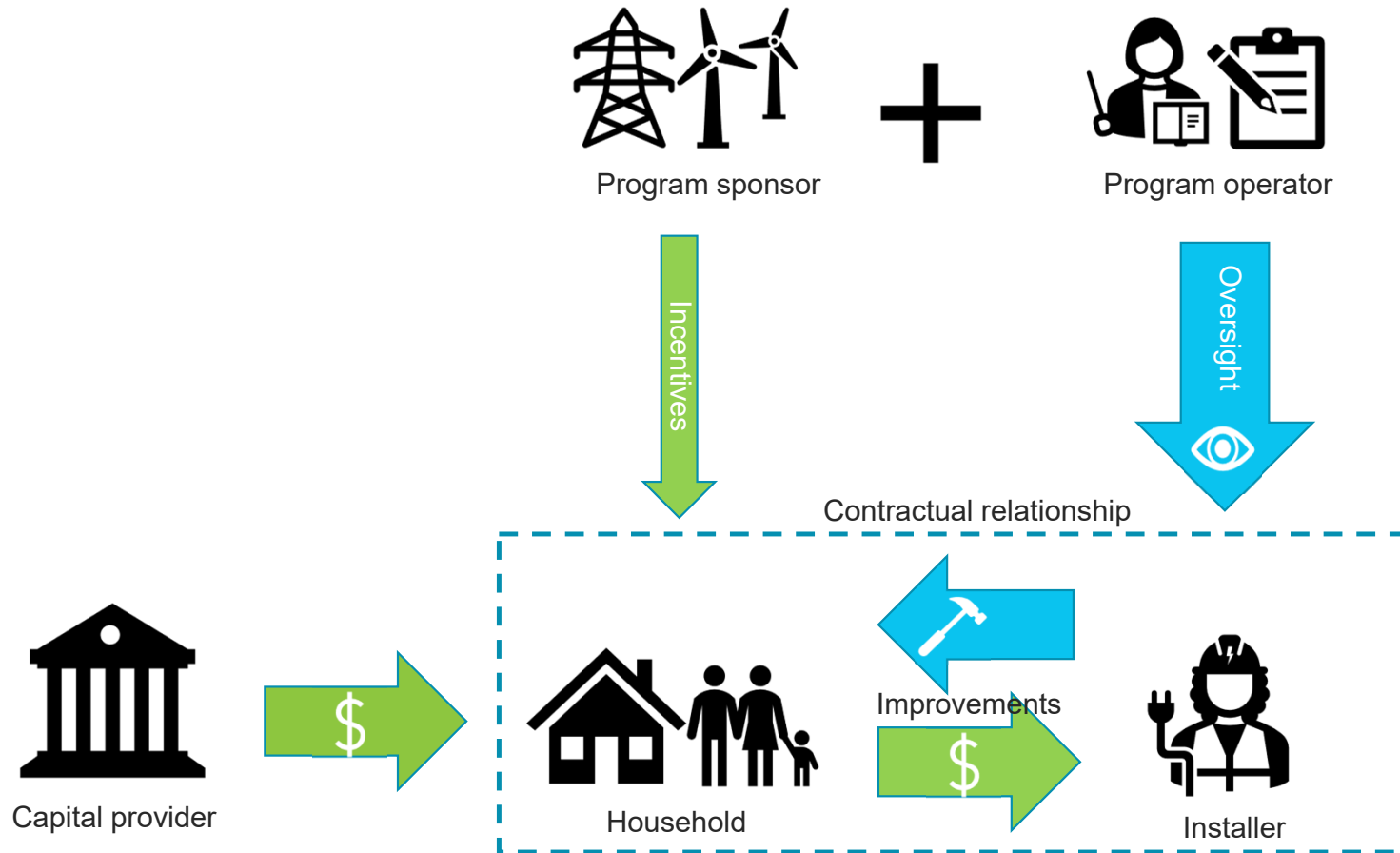
- SMUD, 2018-2020, 1650 HPWH installs
 - Average installation costs \$3,500-4,500
 - Min-max range of \$2,000-7,000
 - 68% of projects in \$3,000-5,000 range
- PCE, Jan-June 2021, 48 HPWH installs, no panel upgrades
 - Average cost \$6,615
 - Min-max range of \$3,186-15,300
 - 68% of projects in \$5,350-\$7,100
- SVCE, 2019-2021, 156 HPWH installs, no panel upgrades
 - Average cost \$4,582
 - Min-max range of \$1,867-9,590
- SVCE 68% ranges
 - 156 projects, no panel upgrades \$2,836-\$6,454
 - 31 self-installed: \$2,083-4,050
 - 125 with contractor: \$3,487-6,550
 - 62 with service panel upgrade: \$6,299-10,592



Possible Cost Drivers

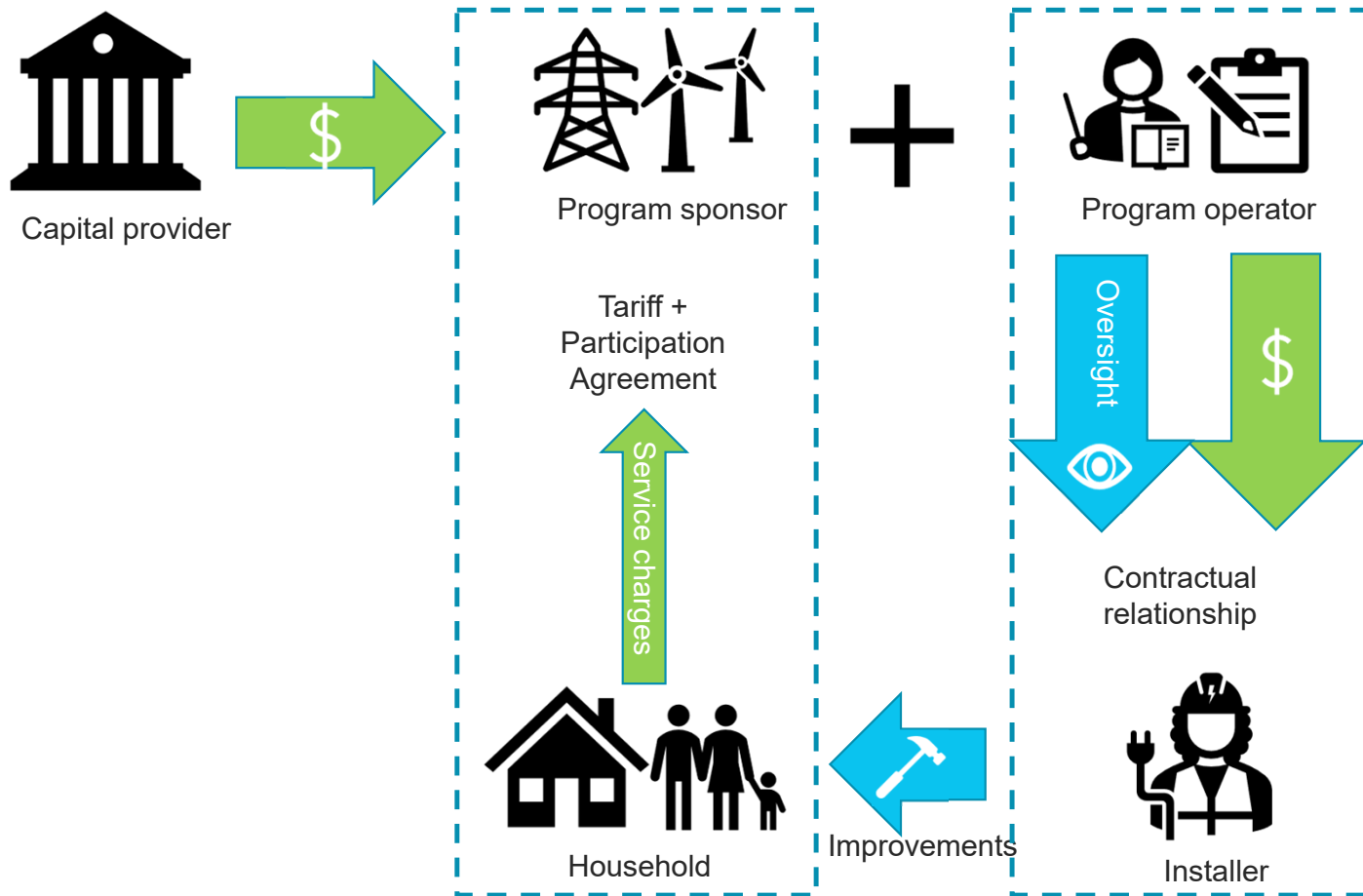
- Possible reasons for high and variable costs:
 - Markups for soft costs, customer acquisition, profit, etc
 - Supply chain constraints
 - Extra labor for permitting, CAZ testing, electric load calcs, etc.
 - Electrical circuit design challenges, service panel upgrade requirements
 - Premium for "niche product" installations that fall outside of standard practices
 - Learning curve premium
 - Lack of meaningful competition in the marketplace

Program Delivery Model: Open Market



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Program Delivery Model: Closed Market



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Recommended Program Delivery Model: Closed Market

- Hire a Program Operator and assign full responsibility for cost containment
- Program Operator manages installers as subcontractors. Hire only best qualified, most price-competitive installers capable of handling projected project volume.
- Program Operator handles all functions that could otherwise create installer conflict of interest, plus functions that offer economies of scale. Examples:
 - Project planning, including site assessment, project scope and specifications development, project permitting
 - Financial analysis, including site data collection, energy modeling, determination of TOB capital contribution
 - QA/QC
 - Customer acquisition
 - Bulk purchase of materials
- Installation contractor's role limited to installation services, based on pre-determined project scope and specifications. Financial compensation determined by negotiated fee schedule.
- Benefits:
 - Directly addresses many (but not all) project cost drivers
 - Minimizes duplicative site visits
 - Exercises market buying power for cost containment

Options for Procuring Program Operator & Installer Services

1. Sequential

- Sponsor issues RFP for Program Operator
- Sponsor and selected Program Operator issue joint RFQ for installers
- **Preferred approach if timeline permits.**

2. Bundled

- Sponsor issues RFP for Program Operator+ installer teams
- Sponsor may lack meaningful input into selection of installers
- Manageable if time is of the essence. Give sponsor an opportunity to reshape team composition if necessary

3. Parallel

- Sponsor issues Program Operator RFP and installer RFQ simultaneously
- Recommend against unless there's an opportunity for Program Operator to reshape the installer list later

Proposed Program Operator Qualifications

- CSLB General Contractor's (B) license
- Ability to provide performance assurance, bonding, and insurance
- No adverse judgements; good credit rating or D&B score
- Background checks for employees, representatives, and agents
- Marketing, outreach, and sales capabilities
- Installation-quality job scope development
- Experience managing trades and construction projects
- Ability to manage ongoing equipment O&M & accept risk for equipment failure
- Expertise and track record conducting QA/QC
- Financial analysis expertise
- CRM; in-house ability to build and manage information systems
- Ability to comply with program data security and confidentiality provisions

Ongoing Cost Management Options

- Annual price competitions for equipment, materials, installation, and related services
 - Builds in market competition while avoiding winner-take-all scenario
- Default installation price schedule to determine the maximum amount that the utility will invest for any project of a given scope
- **Beware of adding program reporting and compliance costs to contractor expenses.**

Questions

3

Installation Quality Management



Equipment Performance Risk

- **The issue:** Installed equipment could fail prematurely, or its performance could degrade over time
- **The challenge:** The program should be responsible for ensuring that improvements are properly installed and perform as designed, but the property owner and occupant should remain responsible for proper operations and maintenance in keeping with manufacturer's recommendations
- How to avoid arguments over which party is at fault?
- **Consumer risk:** Loss of expected bill savings, unanticipated repair costs
- **Program Sponsor risk:** Loss of cost recovery revenue, unanticipated repair costs

Consumer Protections Built Into the TOB Tariff

- Requirement for independent certification that products are appropriate, and savings estimates exceed payments in both the near and long terms.
 - Assign this responsibility to the Program Operator.
- Charges stop if upgrades stop working until they are repaired and working again. Charges are also suspended for vacancy if meter is shut off.
- Repairs or vacancy may extend the duration of charges but not increase the monthly payment amount.
- Cost recovery is calculated based on the amount of savings expected at the end of cost recovery for upgrades whose savings degrade over time

Customer Responsibilities

Enumerate terms in the customer participation agreement for regular maintenance and care, including:

- Assignment to customer of financial liability for damaging or removing installed improvements
- Requirements to notify the TOB program administrator of non-functioning products
- Option or requirement for ongoing annual service agreements

Protections Against Equipment Failure and Performance Degradation

- Installation Quality Control
 - Require installers to provide geo-coded and date-stamped video and photographic documentation of all equipment installations
 - Require or reward installers for systems commissioning of new mechanical systems
 - Program Operator to perform quality-control inspections and acceptance testing of equipment installations on at least a sampled basis
 - Charge installers for failed inspections and increase project sampling rates
- Warranties
 - Require extended manufacturer warranties (e.g., 10-12 years) on installed equipment
 - Require installer to provide a one-year warranty on labor
- Feedback loop: post-installation fault detection and diagnostics
 - Perform “big data” analytics of metered energy consumption data, smart thermostat data (HVAC), and hot water controls to detect possible instances of equipment performing outside of design parameters
 - Program Operator investigate suspect cases via customer phone interviews, site visits, as appropriate

Offer Optional Annual Service Plans?

- Customer offered the option of subscribing to annual service plan, delivered by installer
- Service technician performs all manufacturer-specified maintenance
- Program cost shares service plan fees with subscribers
- Service technician prohibited from upselling extra services

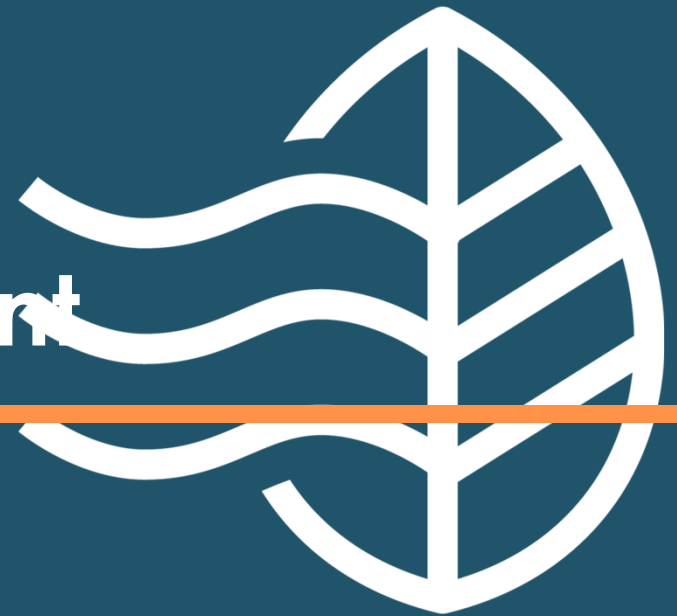
- Customer liability limited to active damage and removal of installed equipment

- Options for paying for repairs:
 1. Charge to individual customer
 2. Repair fund derived from surcharge to all participants
 3. Charge to all ratepayers

Questions

4

Risk Management



Capital Provider's Financial Risk

- Financial risk is almost zero
- Program sponsor commits to repay capital regardless of collections from customers
- Sponsor commitment backed up by
 - Sponsor credit rating
 - Pledge of general ratepayer revenues to fund any gaps between collections and repayment obligation
- Financial risk profile should be comparable to high-grade bonds

Customer Financial Obligations

Repay principal investment via monthly Program Service Charge, subject to (limited) performance guarantee

Other Project Costs

- Copay as necessary
- Surcharge for pooled repair costs?
- Cost-share on annual service agreements?
- Project assessment and permitting costs?
- Service panel upgrades?

Ratepayer Financial Obligations and Risks

Program Implementation Costs

- Supplementary incentives (e.g., TECH)
- Set up costs (information systems, etc.)
- Program operator fees, including
 - Admin
 - Marketing, outreach, and sales
 - Implementation activities
 - Information systems
 - Performance incentives / risk management premiums
- M&V costs
- Interest payments on capital
- Any added costs from high-road workforce requirements
- Cost-share on annual service agreements?
- Project assessment and permitting costs?
- Service panel upgrades?

Risk Management & Customer Protections

- Performance guarantees to participants
- Supplementary end use metering
- Investigation of customer complaints & under-performing projects
- Extended warranties? 3rd party insurance?
- Charge-offs for uncollectible charges
- Equipment repair costs (that exceed participant-funded repair pool)

Program Sponsor Financial & Legal Risks

- Direct financial risks are any costs / risks that cannot be assigned to ratepayers or participating customers
- Other risks **may** include:
 - Constraints on ability to borrow capital for other purposes (if source capital is on balance sheet)
 - Impacts to credit rating
 - Program Operator bankruptcy, fraud, or failure to perform
 - Legal liability for installer actions or inactions
 - Regulatory consequences from failure to deliver on promised customer protections, other commitments

Mitigate risks via contractual terms with Program Operator and installers

Questions

Thank You

For more information, contact:

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Tre'Laine



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