

# Clothes Washer Recycling Proposed Research Plan



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# Presentation Overview

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## **Objective: Seeking TF approval of draft work paper**

- Measure description
- Recap of comments from Feb 2015 TF Meeting
- Proposed research plan

# Measure Description

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## Base Case

Top-loading clothes washer  
w/ center agitator

- Transferred to secondary market & remains in use at recipient household



## Measure Case

Top-loading clothes washer  
w/ center agitator recycled

- Diverted from secondary market



# Issues and Concerns

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- Comments from the Cal TF – Feb 2015 Meeting
  - ❑ Size of secondary clothes washer market in California
  - ❑ Characteristics of secondary market
    - ❑ Peer-to-peer transfers between households
    - ❑ Transfers through retail channel (e.g., used appliance dealers)
    - ❑ Flow of units to/from other states/countries
  - ❑ Concern about ability of measure to impact secondary market
    - ❑ Reduce purchases of used clothes washers within service territory

# Proposed Research Plan

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- Research Objectives

- ❑ Confirm that a recycling measure would capture used clothes washers that would have been transferred through the secondary market and remained on the grid.
- ❑ Confirm that the number of used clothes washers that can realistically be recycled by a utility program will support a cost-effective measure.
- ❑ Confirm that a clothes washer recycling incentive would shrink the secondary clothes washer market in the utility service territory.

# Proposed Research Plan

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- Primary Research Questions

- How are used clothes washers disposed of in California?
- How many used clothes washers are transferred through “peer-to-peer” or retail channels and remain on the grid in California?
- Is there used clothes washer leakage to locations outside of California, or an influx of used clothes washers to California?
- How many used clothes washers could be removed through a recycling measure?

# Proposed Research Plan

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- Secondary Research Questions
  - What is the typical remaining useful life of used clothes washers?
  - Of the fraction of owners that keep their existing washer as a second unit, are these second units used, and do they reduce the use of the primary clothes washer?

# Proposed Research Plan

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- Existing Information on Secondary Clothes Washer Market
  - 2010 AHAM Survey – 2<sup>nd</sup> unit clothes washer use
- Secondary Market for Refrigerators/Freezers
  - EM&V Study of 2004-05 Statewide Residential Appliance Recycling Program (RARP)
    - ✦ Method: non-participant surveys, new refrigerator sales, market actor interviews, internet listings analysis
    - ✦ 12% of used refrigerators captured by RARP
    - ✦ 38% of all used refrigerators disposed of or transferred remain in use (54% in IOU territory)



# Proposed Research Plan

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- Secondary Market for Refrigerators/Freezers
  - 2010-12 ARP Impact Evaluation (WO 35 Report)
    - ✦ Method: Market actor interviews, Craigslist analysis
    - ✦ Annual secondary market volume: ~850,000
      - 92% through peer-to-peer transfers
      - 8% through retail channel (e.g., used appliance retailers, charities, auction houses)
  - PG&E ARP Process Evaluation Research: Retailer Haul-Away Market Intervention (RHAMI)
    - ✦ Method: Market actor interviews
      - Wholesaler receipts: 70% of haul-aways resold locally; 30% de-manufactured
      - 90% entering JACO Hayward facility scrapped; 10% sold to 3<sup>rd</sup> parties
        - 90% sold outside PG&E territory; 10% sold locally

# Proposed Research Plan

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- Upcoming Research Opportunities
  - 2015 Planned ARP EM&V Studies – PG&E
    - ✦ Role of Auction Houses in the Secondary Market
    - ✦ Online Peer-to-Peer Market Characterization Study
  - Next Steps
    - ✦ Opportunity to add clothes washers into planned research studies
    - ✦ Outreach to IOUs and POUs
    - ✦ Prioritize collaboration on research – drought crisis
      - Significant water savings
        - SFm/MFm In Unit: 7,000 gallons/year
        - MFM Common Area: 29,500 gallons/year

# Questions or Comments?