Load Reduction or Load Growth
It Matters How You Design Your Program

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Some Interesting Approximations Relating Households and Refrigerators

<table>
<thead>
<tr>
<th>Households</th>
<th>Percent</th>
<th>In the US</th>
<th>Per 100,000 customers</th>
<th>Per million customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>With a second refrigerator</td>
<td>20</td>
<td>22.7 million</td>
<td>20,000</td>
<td>200,000</td>
</tr>
<tr>
<td>That transfer* a refrigerator annually</td>
<td>7</td>
<td>8 million</td>
<td>7,000</td>
<td>70,000</td>
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* That get rid of a refrigerator because they bought a new one or because they got rid of an existing one.
A Year in the Life of the Refrigerators in 100,000 Homes

New Units in equal replacement plus population growth plus additions

Primary units

100,000

Non-primary units

8,400 units transferred

5,200 Leave the system

Stay

Stay
Households with a Second Refrigerator Are More Likely to Have

- An area greater than 2000 square feet
- Electricity consumption greater than 6,000 kWh and especially greater than 8,000 kWh
- The same residents for more than 10 years
- Two adults with no children in their 50s and 60s
- Recent remodel
- Income greater than $75,000
Where Old Refrigerators Go (Transfers)
Run a Load Reduction Program
Not a Load Growth Program

• A refrigerator incentive program without recycling is a load growth program
  – A new unit transaction (Energy Star versus Standard (-150 kWh))
  – An Energy Star replacement without a removal (+ 400 kWh and you missed an opportunity to reduce the load by 1000 kWh)
  – A replacement with an operational removal (-1000 kWh)
  – Removing an operational old unit and not replacing it (The Holy Grail -1400 KWH)

• The first life of a refrigerator is 14 years — The second lives of refrigerators are forever (well sorta)
There is a lot of wailing and gnashing of teeth about net-to-gross

Many studies suggest that the net-to-gross is about:

\[ \frac{3}{5} \]

They are wrong, it is really around

\[ \frac{6}{10} \]
Take away — Tie your incentives to recycling, for example

- A new unit transaction $50.
- A replacement without a removal $50
- A replacement with an operational removal $300
- A removal of a unit greater than 15 years old $200
- Families receiving weatherization or energy bill assistance with an old unit more than 15 years old. Replace it outright with a quality equivalent or next step up equivalent.
The Effects of Refrigerator Recycling

- Grid effects (You don’t have to build that power plant and reinforce the grid)
- Grid emission effects (Reduce the stacks)
- Environmental effects (if you own beach property you will appreciate this and the polar bears thank you)
- Citizens pocket book effects
  - The capital by-down (Modest)
  - The operational savings (Potentially huge but you have to remind them to hug you when they see you)
- Honey I cleaned the (basement) garage today
- “Loss” leader to other efficiency actions
Characteristics of an Effective Program and Accountable Program

• Marketing
• Tracking
• Logistics
• De-manufacture
• Customer Care
Marketing (It's about Customer Care)

- An incentive is not enough — It's about the customer doing the right thing and reminding them to feel good.
- Vigorous Marketing
- Utility top methods of getting to the customers
  - Bill Insert 30 percent
  - Friends and neighbors 17 percent
  - Info in a letter from the utility 10 percent
  - Appliance Store 8 Percent
  - Website 7 percent
  - TV 5 percent
  - Other stuff
Marketing Themes

• Tell them how it works
• Emphasize Convenience
• Customer operational savings in addition to the incentive
• Tell’em why it is important. Hold down future electricity costs. The environment and global warming (the CFC’s don’t end-up in the environment)
• Tie something else into it. A smart power strip, CFLs or a high quality LED lamp.
Tracking = Accountability

- Do it in real time
- Do it electronically (no paper)
- Do it directly and through appliance dealers
- Track
  - Customer
  - Characteristics of the customer unit
  - Unit (model and serial number)
  - The fateful journey of the unit (i.e., chain of custody)
  - The incentive
  - Pictures of the name plate anyone.

- Whether for practice or for real you track those TCE’s
Logistics — Get Those Puppies Quick — A Waiting Unit Is a Unit on The Grid Forever

- Know who your customer is and where they are when they call
- Route your pick-ups electronically
- Use real time communication to manage your schedule and input your data - chain of custody starts at the pick-up
- Verify units as operable
- Get them in less than a week
- Avoid the number one newbie mistake! Don’t let your marketing our run your logistics capability
Logistics — Have the appliance dealer retrieve it when she delivers the new unit

- Train the appliance sales staff on the program
- Provide literature
- Have the sales person sign up by computer while in the store
- Use a non-removable sticker with an order number to assure chain of custody.
- Do your QC
De-manufacture

• Every unit is de-manufactured (absolutely no exceptions)
• Capture the refrigerant and have it disposed safely
• Get the other toxics out of the unit (mercury and pcbs from older units)
• The foam has CFC’s don’t forget
• Track the unit into the facility and document its death!
It’s about customers

• They are the king
• On their schedule
• At their convenience
• Do good pick-ups
• Be ready for Franny
It’s about partners (utilities, appliance dealers, community organizations, advocacy groups)

- Talk to them
- Motivate them
- Train them
- Use them wisely