

Workpaper PGECOAPP128

Retail Plug Load Portfolio (RPP)



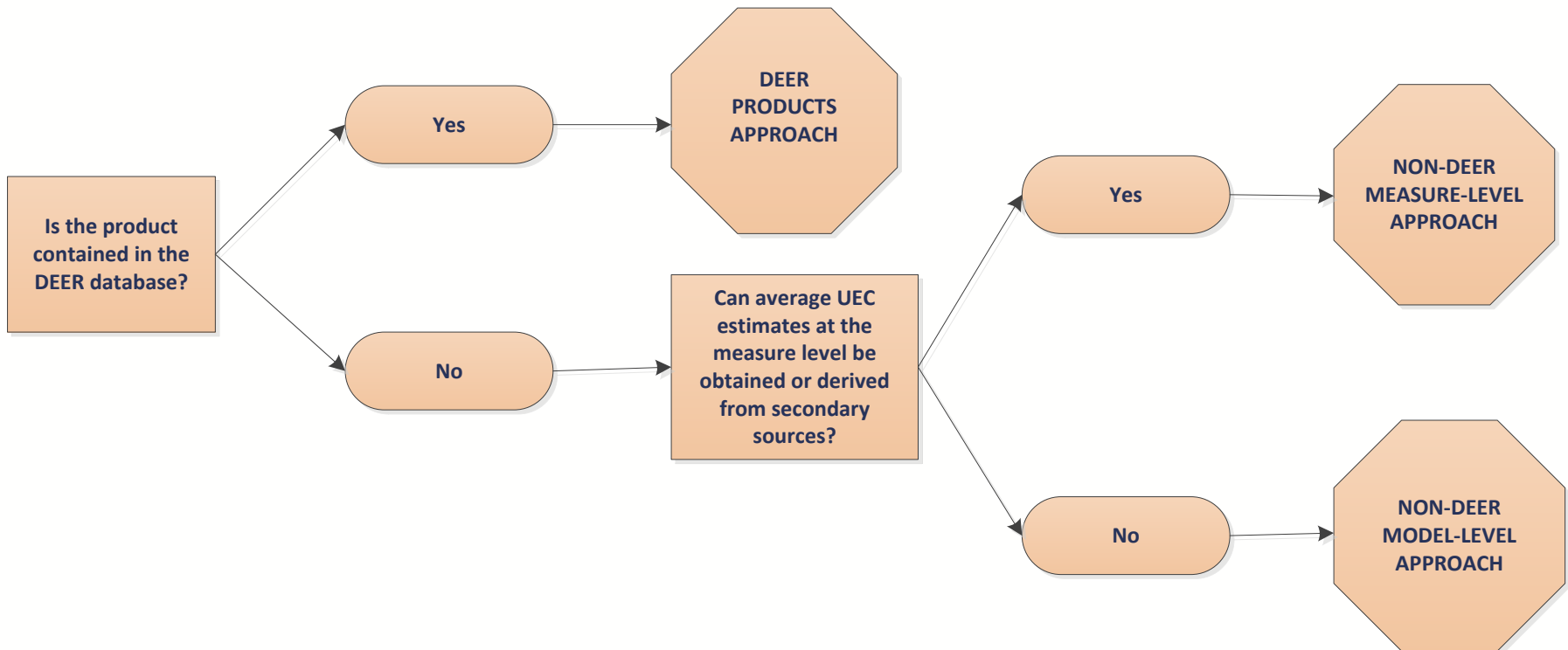
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Presentation Overview

- Today's Objectives
 - CalTF endorsement of methods for estimating key parameters (UES, NTGR, EUL and IMC) as documented in the RPP work paper.
 - Cal TF endorsement of EUL values.
 - Drill-down on implementation of IMC methodology (separate deck).
 - CalTF endorsement of IMC values.
 - Discuss next steps for CalTF on RPP endorsement.
- Appendix: Product Transition Strategy

UES Methodology

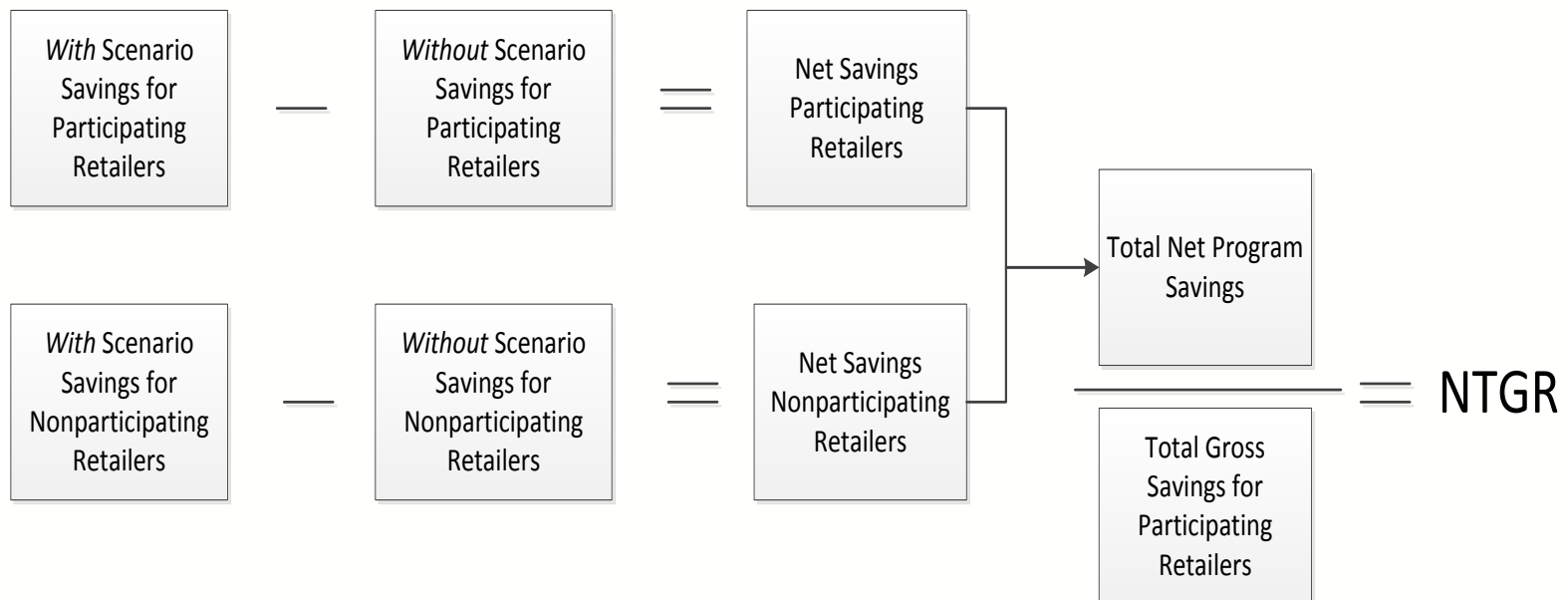
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NTGR Methodology

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- RPP Program will utilize the Generalized Bass Diffusion Model to estimate RPP market share with and without the program
- Methodology included in Appendix 8 in the work paper



Use the following hierarchy of sources to estimate EUL, from most preferable to least preferable:

1. DEER, as required by the CPUC
2. Sources cited by ENERGY STAR, when available
3. Other available studies
4. Convene a Delphi panel, when no credible studies are available

EUL Values and Sources

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Product Category	Recommended EUL	Sources
Air Cleaners	9 years	EPA's Appliance Calculator; EPA's source is Appliance Magazine, <i>Portrait of the U.S. Appliance Industry</i> , 1998
Sound Bars	4 years	Two sources: 1) Ecos. <i>Market Analysis for Standby Power. Report to Natural Resources Canada</i> , 2008 – 4.4 years ; 2) DOE's <i>Energy Conservation Standards Rulemaking – Battery Chargers and External Power Supplies Market Assessment and Product Price Determination Workbook – 4-6 years</i>
Home Theaters-In-A-Box	7 years	EPA. EPA's source is Consumer Electronics Association (CEA). <i>Home Audio Systems Total U.S. Market Forecasts. CEA Consumer Electronics Detailed Forecast Module 2012-2017</i> . January 2014.
Freezers	11 years	Database for Energy Efficiency Resources (DEER). DEER's likely source: Appliance Magazine's December 2013 Market Research Report, <i>The U.S. Appliance Industry: Market Value, Life Expectancy & Replacement Picture 2013</i>
Electric Clothes Dryers	12 years	Appliance Magazine's December 2013 Market Research Report, <i>The U.S. Appliance Industry: Market Value, Life Expectancy & Replacement Picture 2013</i>
Gas Clothes Dryers	12 years	Appliance Magazine's December 2013 Market Research Report, <i>The U.S. Appliance Industry: Market Value, Life Expectancy & Replacement Picture 2013</i>

Note: EULs shown above incorporate all types of “failures” including early replacement practices.

IMC Methodology

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- The IMC estimation approach proposed for the RPP Program is *web harvesting*, which involves:
 - Ongoing, automated data collection from retailer web sites
 - Retail pricing, brand, model, and relevant product specifications collected from major online web sites
- Using data collected through web harvesting, IMCs will be developed using *hedonic price modeling*, which identifies key drivers of price to determine the fraction of price that is explained by specific variables.
- Further detail will be presented in the following deck.

IMC Results

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Product	Base Case Avg. Price (\$)	ENERGY STAR Avg. Price (\$)	Difference	ESTAR IMC Estimate	ESTAR IMC Estimate (%)	ESTAR IMC Estimate p-value
Air Cleaners	\$194	\$318	\$122	\$109	56%	<0.0001
Electric Dryers	\$856	\$1,046	\$190	\$80	9%	0.11
Upright Freezers	\$849	\$864	\$16	\$13	2%	0.82
Chest Freezers	\$412	\$374	(\$38)	\$4	1%	0.86
Soundbars	\$615	\$353	(\$262)	-\$6	-1%	0.96
HTIB	\$600	\$150	(\$450)	-	-	-

Average Price of non-ENERGY STAR and ENERGY STAR products; estimated \$Δ due to ENERGY STAR in our multiple regression model

Product	Base Case Avg. Price (\$)	Measure Avg. Price (\$)	ENERGY STAR IMC (%)	ENERGY STAR IMC (\$)
Air Cleaners	\$194	\$303	56%	\$109
Electric Dryers	\$856	\$936	9%	\$80
Upright Freezers	\$849	\$849	0%	\$0
Chest Freezers	\$412	\$412	0%	\$0
Soundbars	\$615	\$615	0%	\$0
HTIB	\$600	\$600	0%	\$0

Base case, measure case, and ENERGY STAR IMC for all products

Requests for the CalTF

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- CalTF endorsement of the methodologies for estimating:
 - Unit energy savings (UESs)
 - Net-to-gross ratios (NTGRs)
 - Effective useful life (EUL), and
 - Incremental measure costs (IMCs).
- EUL values resulting from application of the methods.
- IMC values resulting from application of the methods (following presentation of the IMC methods drill-down presentation).

Appendix: Product Transition Strategy

- ❑ When a product category is introduced into RPP, the program team will develop two tiers, where possible:
 - ✓ Tier 1 should serve to increase the total volume of efficient models being sold, and generally have starting market share of 15-30%.
 - ✓ Tier 2 should serve to support the increased adoption of the most efficient products on the market, and have starting market share of 5-15%.
- ❑ For each product category, the RPP Program Sponsors will evaluate market share annually.
 - ✓ Tier 1 reviews are triggered once a product tier achieves 6 months of market penetration greater than 35%.
 - ✓ Tier 2 qualifying levels will be reviewed on an annual basis, coinciding with EPA's Most Efficient product review.
- ❑ When market penetration for a product category exceeds the 35% threshold, Program Sponsors shall work with EPA to review current market trends and provide supporting data to assist EPA in identifying whether a specification revision is warranted.

Appendix: Product Transition Strategy

Example Program Transition Strategy

