

BPA Impact Evaluation Policies



QSSI



Impact Evaluation

Impact Evaluation

Reliability

Impact Evaluation

Reliability

Reliability

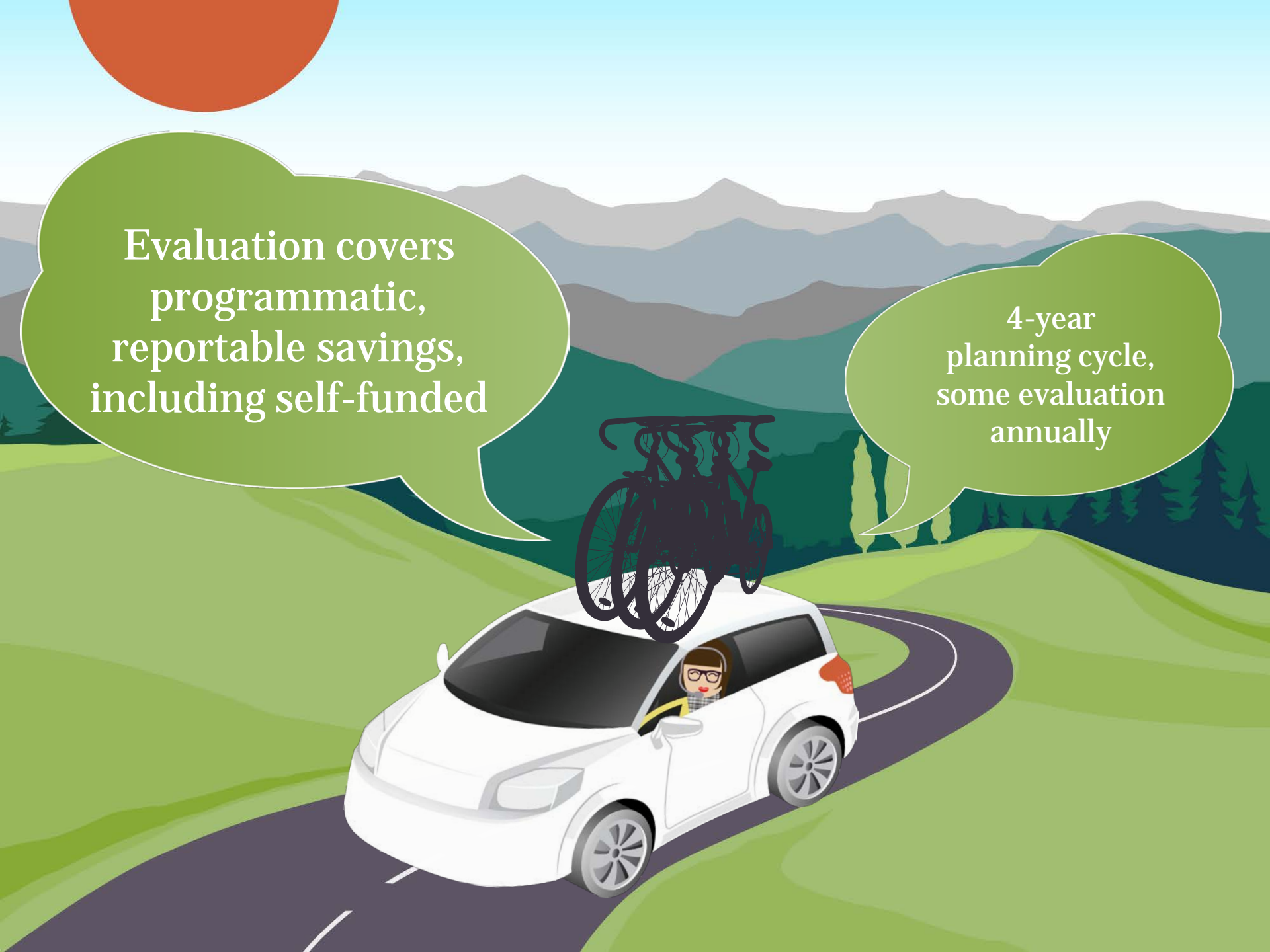
Drivers: Industry
Best practice, Power
Act, RTF Guidelines,
confidence savings





Focus: savings reliability
with independent verification

Secondary goal is improving programs
Independent evaluations, but may
align closely with program QC



Evaluation covers
programmatic,
reportable savings,
including self-funded

4-year
planning cycle,
some evaluation
annually

Impact Evaluation

BPA balances objectives of portfolio coverage, strategic research needs, timely feedback, annual budgets and the cost and effort of the evaluation.

Strives to minimize time between measure completion and impact evaluation

Generally follow RTF Guidelines on Impact Evaluation

Exception: 4 year cycle instead of 3 year cycle

Cover 80% of the savings of the portfolio, but strive for 90% coverage; across multiple years

Minimum confidence/precision of 90/10 at portfolio level, 80/20 at domain level; Strive for 90/5 (portfolio), 90/10 (domain).

Methods consistent with RTF Guidelines

Delivery verification for proven measures, savings assessment for non-proven

Impact Evaluation

Customers required to participate if sampled

- Transparency and input into any end-user contact protocols
- May opt out of the measure savings assessments

Maximize coordination with COTR Oversight

Evaluation reports include: evaluated savings, cost-effectiveness and realization rates

- BPA's impact evaluation reports are publicly available
- Realization rate results used on historical, multi-year reporting



Impact Evaluation of the UES Portfolio

2016 Activities

Objectives

Evaluate

Evaluate the energy savings of the UES Portfolio for consistency with the savings claimed

(Cover between 80-90% of savings within the UES portfolio, which may take a couple of years)

Feedback

Provide strategic feedback to improve program operation and measures

Contribute

When appropriate, contribute to measure development and/or validate RTF savings estimates



What's our
plan of attack?



Aim for the biggest
chunks first

What's our
plan of attack?



What's our
plan of attack?

Target the largest
domains in the
largest sector in
Year 1

1

2

3



What's our
plan of attack?

Make it as easy
as possible
(minimal
burden/cost)

Definition of Key Terms

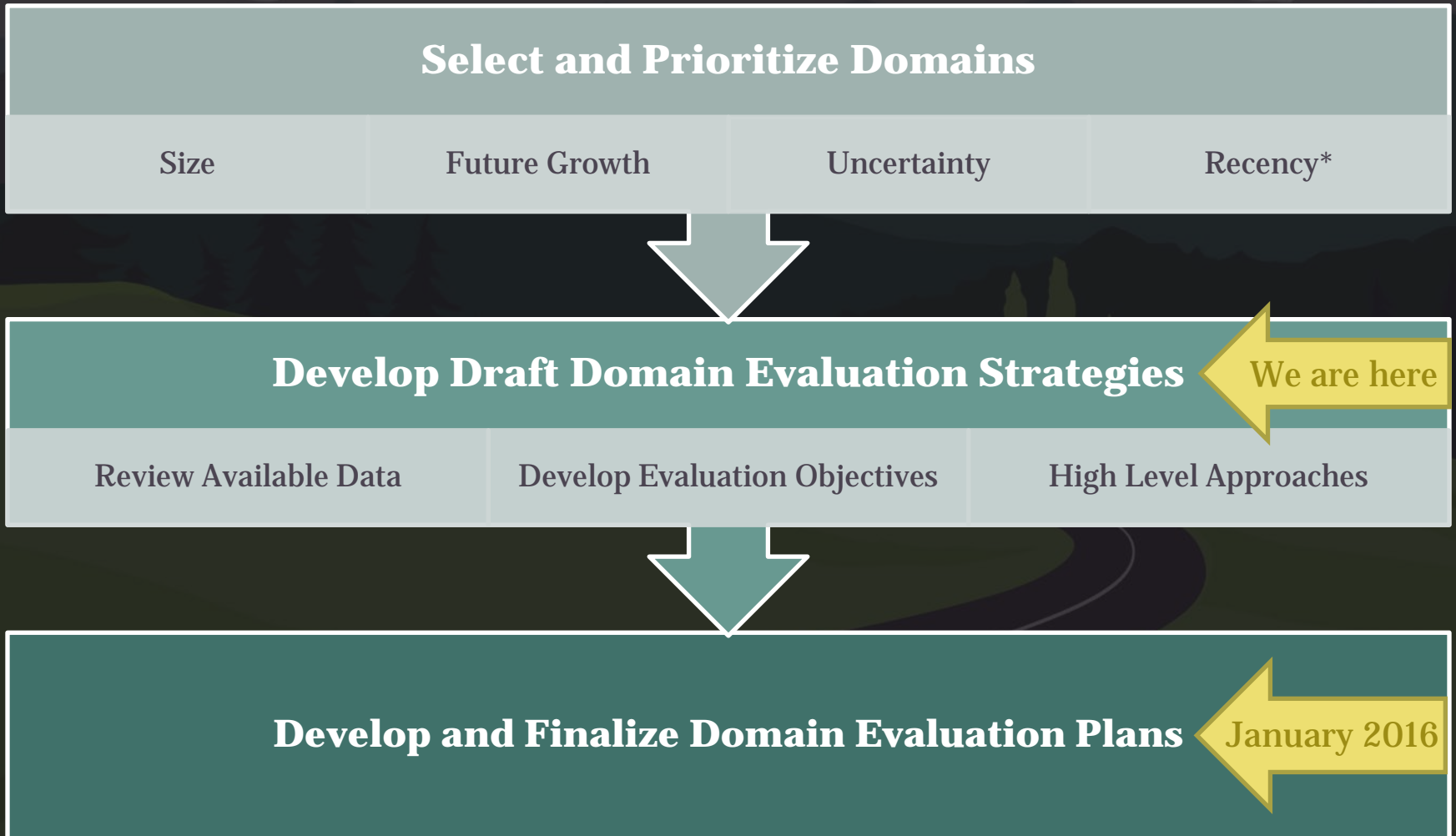
Domains

A group of measures targeting similar end uses using similar program delivery methods (i.e. combo of **end use and delivery method/ BPA measure category**)

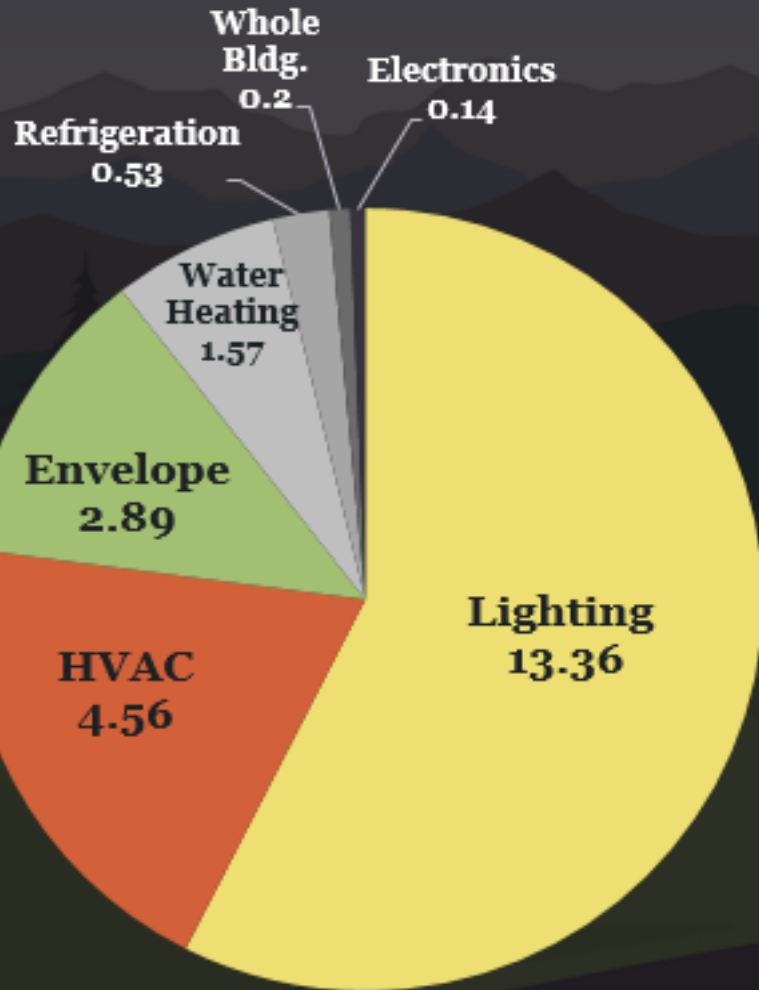
Technology/Activity/Practice (TAP)

The standardized taxonomy used by BPA reporting system for classifying measures

The Process



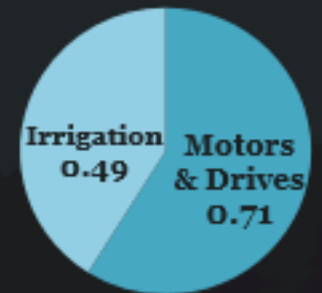
FY-2014 Summary



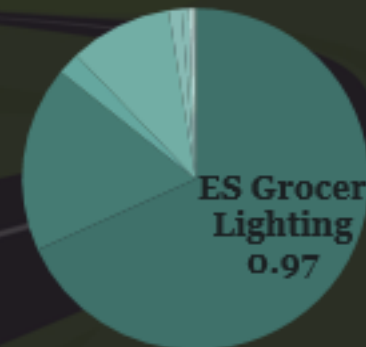
Residential:
23.24 aMW



Federal:
1.63 aMW

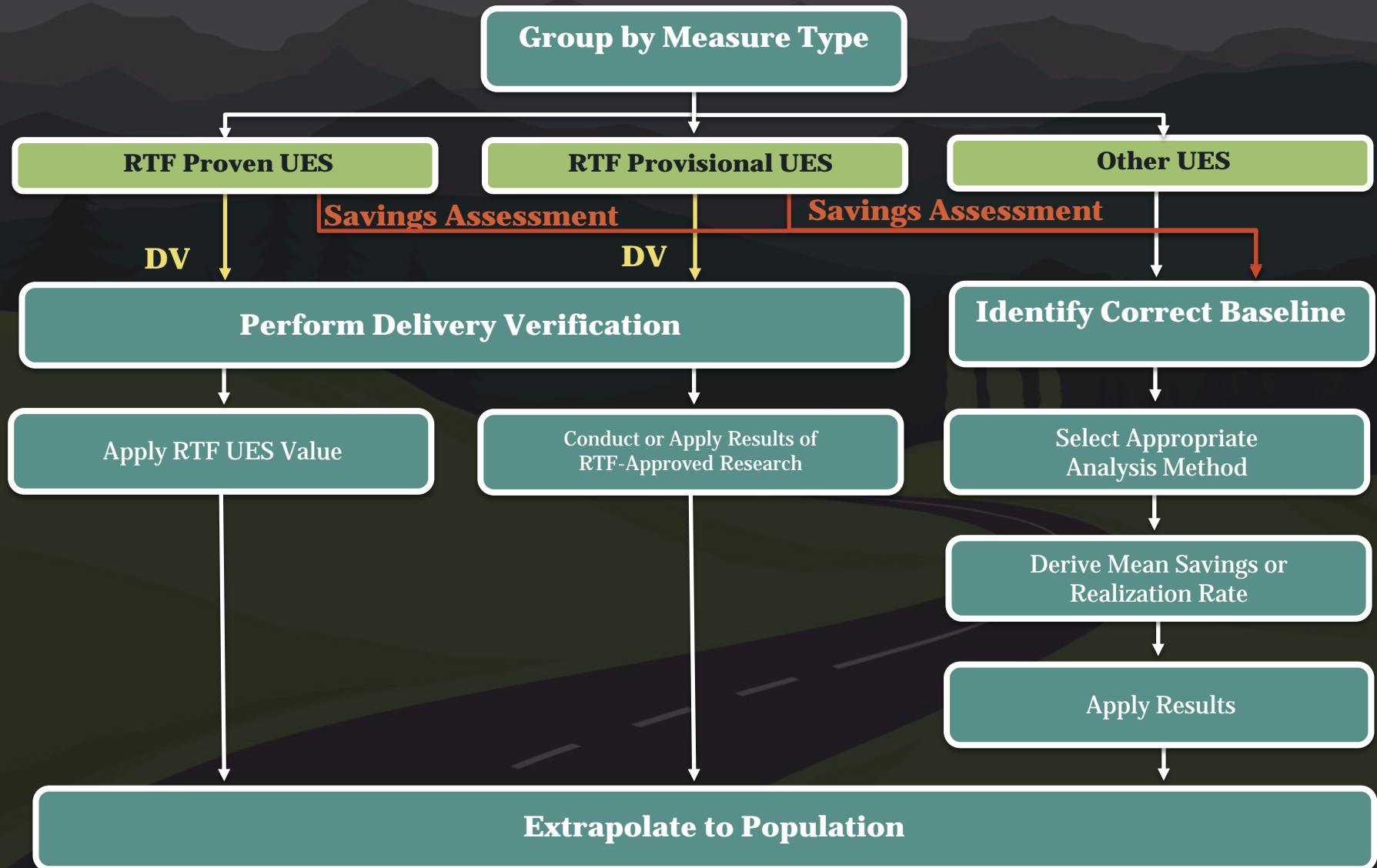


Ag/Industrial:
1.20 aMW



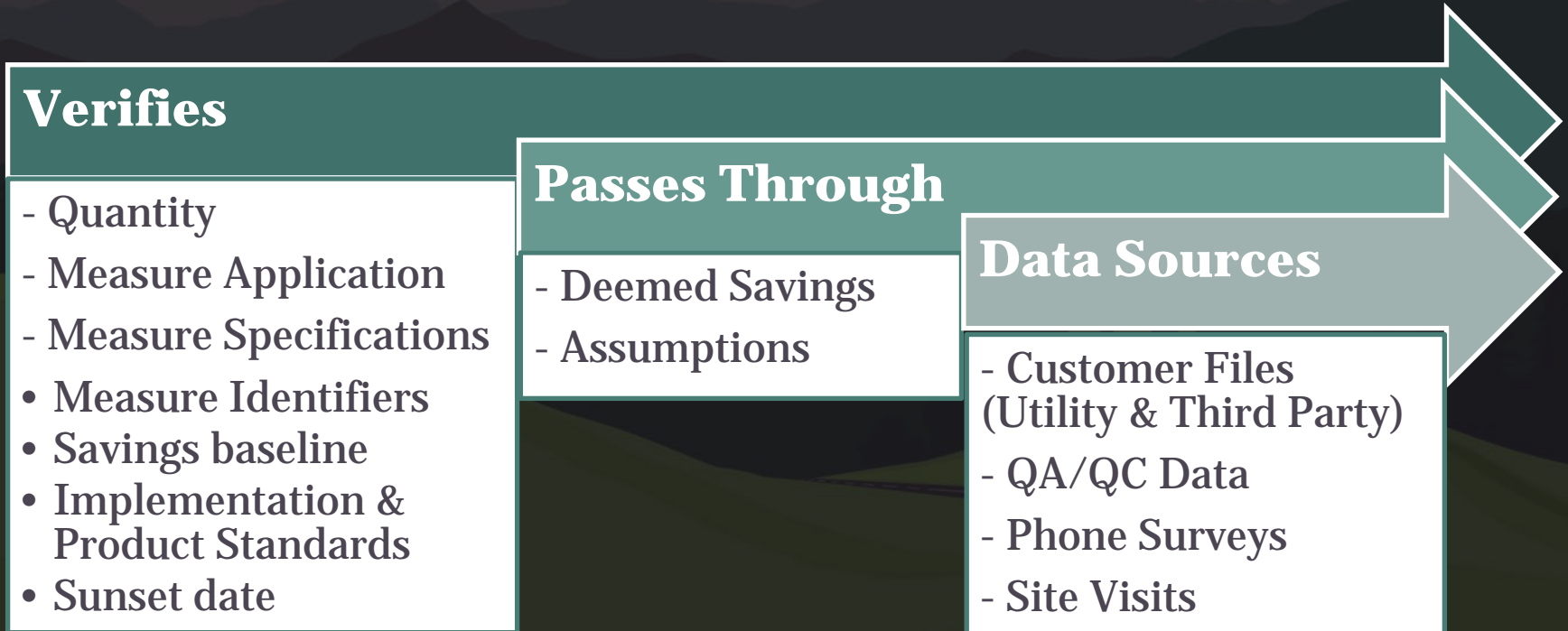
Commercial:
1.42 aMW

How did we select an approach?



Delivery Verification (DV)

DV requirements have been defined by the RTF

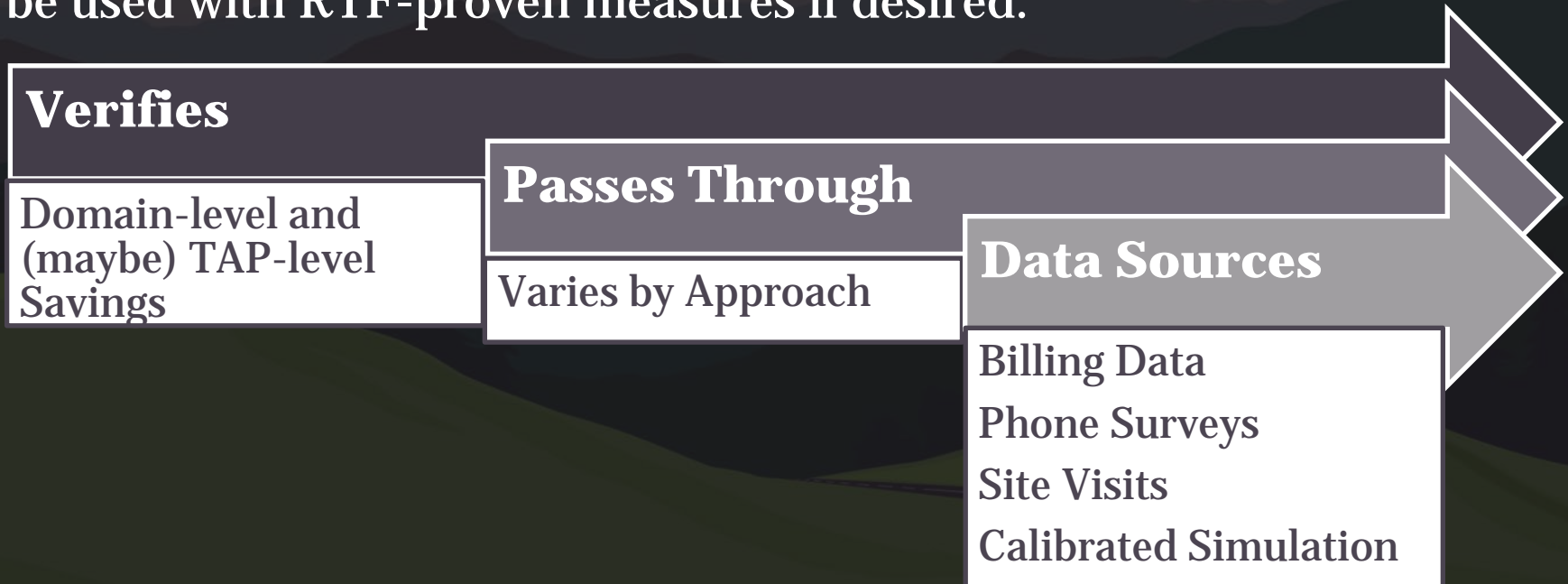


Potential issues with DV:

- End user contact
- Passing through poor assumptions

Savings Assessment

Savings assessment is required for all non-proven measures and can be used with RTF-proven measures if desired.



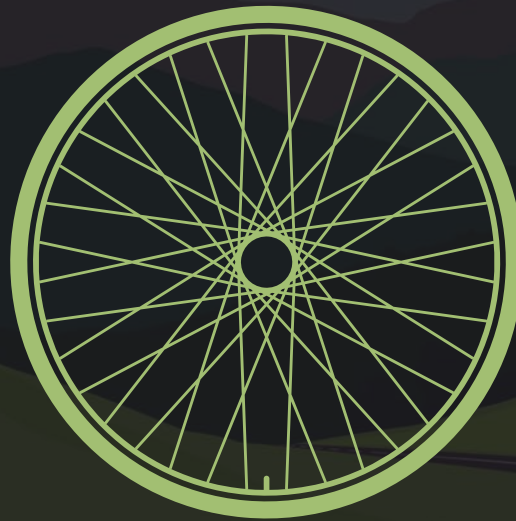
Potential issues with Billing Analysis:

- Might not produce measure-level results
- Might produce different results than UES values
- Might not provide insight into drivers behind results

Draft Domain-Specific Approaches



**Residential
Lighting**



**Residential
Envelope**



**Residential
HVAC**

2016 Overview

File Reviews

All Domains

Billing Analysis

Res Envelope
&
Res HVAC

Phone Surveys

Res Lighting
&
Res Envelope
(Maybe)

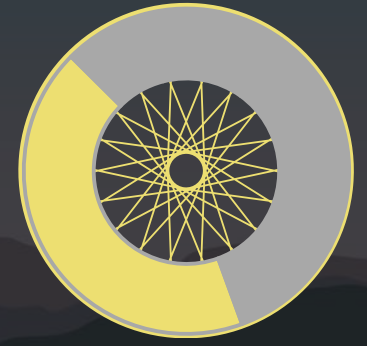
On-Site Metering

~~Not in
2016~~

Increasing Effort



Res-Lighting Domain Summary



Res-Lighting	FY 2014			Data Collection in Year 1?
	Total Size (aMW)	% of UES Portfolio	% of Domain	
Domain-Level	13.36	43%	100%	Yes
Measure Group - Delivery Mechanism				
<i>Retail (Simple Steps included)</i>	10.95	35%	82%	Yes
<i>By Request</i>	1.44	5%	11%	Yes
<i>Unknown (Fixtures TAP)</i>	0.67	2%	5%	Yes
<i>Direct Install</i>	0.30	1%	2%	Yes
<i>Mailed Non-request</i>	0.001	0%	0%	No

Res-Lighting Domain

Evaluation Approaches for 2016

Measure Group	Measure Status	Proposed Evaluation Approach	Data Sources
Retail	Proven	Delivery verification using project files	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ Simple Steps program data ▪ Customer files for non-Simple Steps lamps
(Mail) By Request	Proven	Delivery verification using phone surveys*	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ Simple Steps program data ▪ Customer files for non-Simple Steps lamps, including end-user contact info

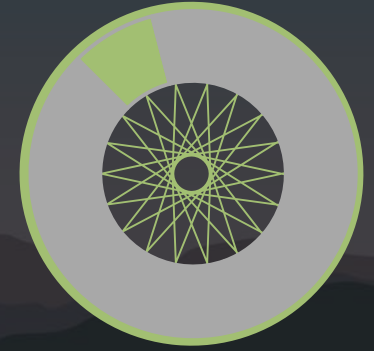
**Phone surveys will only assess whether or not lamps were delivered, they will not be used to directly update HOU, storage/removal rates or installation location assumptions, although responses in these topic areas might be collected and used to qualitatively address those current assumptions.*

Direct Install – review a sample of program documentation to potentially inform an evaluation in the future

Fixtures – review a sample of program documentation to potentially inform an evaluation in future years

Mailed Non-Request delivery mechanism – the team has decided NOT to evaluate these measures in 2016 as their current relative contribution to savings is small.

Res-Envelope Domain Summary



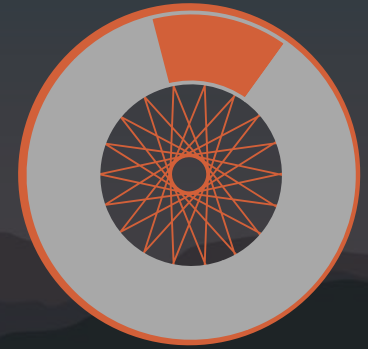
Res-Envelope	FY 2014			Data Collection in Year 1?
	Total Size (aMW)	% of UES Portfolio	% of Domain	
Domain-Level	2.66	8.5%	100%	
Measure Group – TAP				
<i>Windows</i>	1.79	5.7%	68%	Yes
<i>Insulation</i>	0.84	2.7%	32%	Yes
<i>Walls</i>	0.37	1.2%	14%	Yes
<i>Attic</i>	0.34	1.1%	13%	Yes
<i>Floors</i>	0.12	0.4%	5%	Yes
<i>Air Sealing</i>	0.02	0.1%	1%	No

Res-Envelope Domain Evaluation Approaches for 2016

Measure Group	Measure Status	Proposed Evaluation Approach	Optional Additional Evaluation Methods	Data Sources
Insulation	Proven	Billing analysis using customer files	<ul style="list-style-type: none"> ▪ SEEM model calibration ▪ Phone surveys 	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ Energy consumption data ▪ Customer files
Windows	Proven			

Air Sealing TAP – the team has decided NOT to evaluate these measures in 2016 as their current relative contribution to savings is small.

Res-HVAC Domain Summary



Res-HVAC	FY 2014			Data Collection in Year 1?
	Total Size (aMW)	% of UES Portfolio	% of Domain	
Domain-Level	4.56	14%	100%	
Measure Group – TAP				
<i>DHPs</i>	2.86	9%	63%	Yes
<i>Duct Sealing</i>	0.74	2%	16%	Yes
<i>AHPs w/o Duct Sealing</i>	0.43	1%	10%	Yes
<i>AHPs w/Duct Sealing</i>	0.41	1%	9%	Yes
<i>GHPs w/o Duct Sealing</i>	0.06	0%	1%	Yes
<i>Commissioning Controls Sizing</i>	0.04	0%	1%	Yes
<i>Variable Speed HPs w/o Duct Sealing</i>	0.01	0%	0%	Yes
<i>Thermostats</i>	0.00	0%	0%	No

Res-HVAC Domain

Evaluation Approaches for 2016

Measure Group	Measure Status	Proposed Evaluation Approach	Data Sources
Duct Sealing	Mix	Billing analysis using customer files & QA/QC data	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ Energy consumption data ▪ QA/QC Data ▪ Customer files
Ductless Heat Pumps replacing Forced Air Furnaces	Mix	Billing analysis using customer files	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ Energy consumption data ▪ Customer files
Ductless Heat Pumps – All Other	Proven	Delivery verification using QA/QC data or customer files	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ QA/QC Data ▪ Customer files
Heat Pumps - All	Mix	Delivery verification using QA/QC documentation	<ul style="list-style-type: none"> ▪ UES Reporting System data ▪ QA/QC Data
Commissioning, Controls & Sizing	Planning		

Thermostat TAP – the team has decided NOT to evaluate these measures in 2016 as their current relative contribution to savings is small.

Draft 2016 Schedule

Domain	Pull Sample*	Data Collection	Analysis	Final Report
Res-Lighting	March 15, 2016	March – April	June – July	Sep 30, 2016
Res-Envelope	March 15, 2016	April – June	June – Sep	Dec 15, 2016
Res-HVAC	March 15, 2016	April – June	June – Sep	Dec 15, 2016

**The evaluation team plans to work with oversight staff to coordinate data requests and reduce burden on utility staff*

2016 Overview

File Reviews

All Domains

Billing Analysis

Res Envelope
&
Res HVAC

Phone Surveys

Res Lighting
&
Res Envelope
(Maybe)

On-Site Metering

~~Not in
2016~~

Increasing Effort



Questions?

