



2020-2021 Impact Evaluation Plan

Brown Bag
January 2020



Bonneville
POWER ADMINISTRATION



Agenda

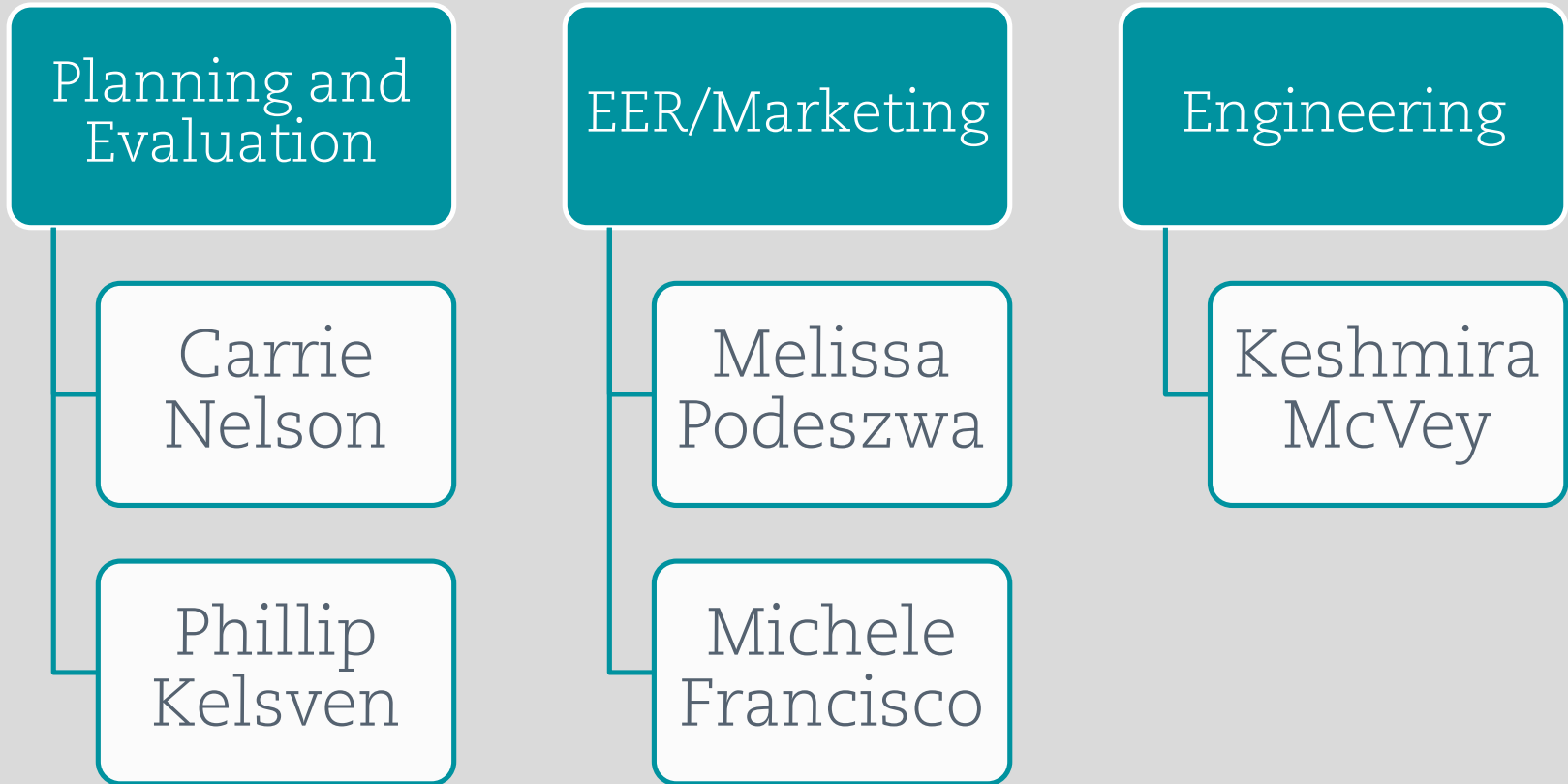
Why Evaluation

Evaluation Planning Process

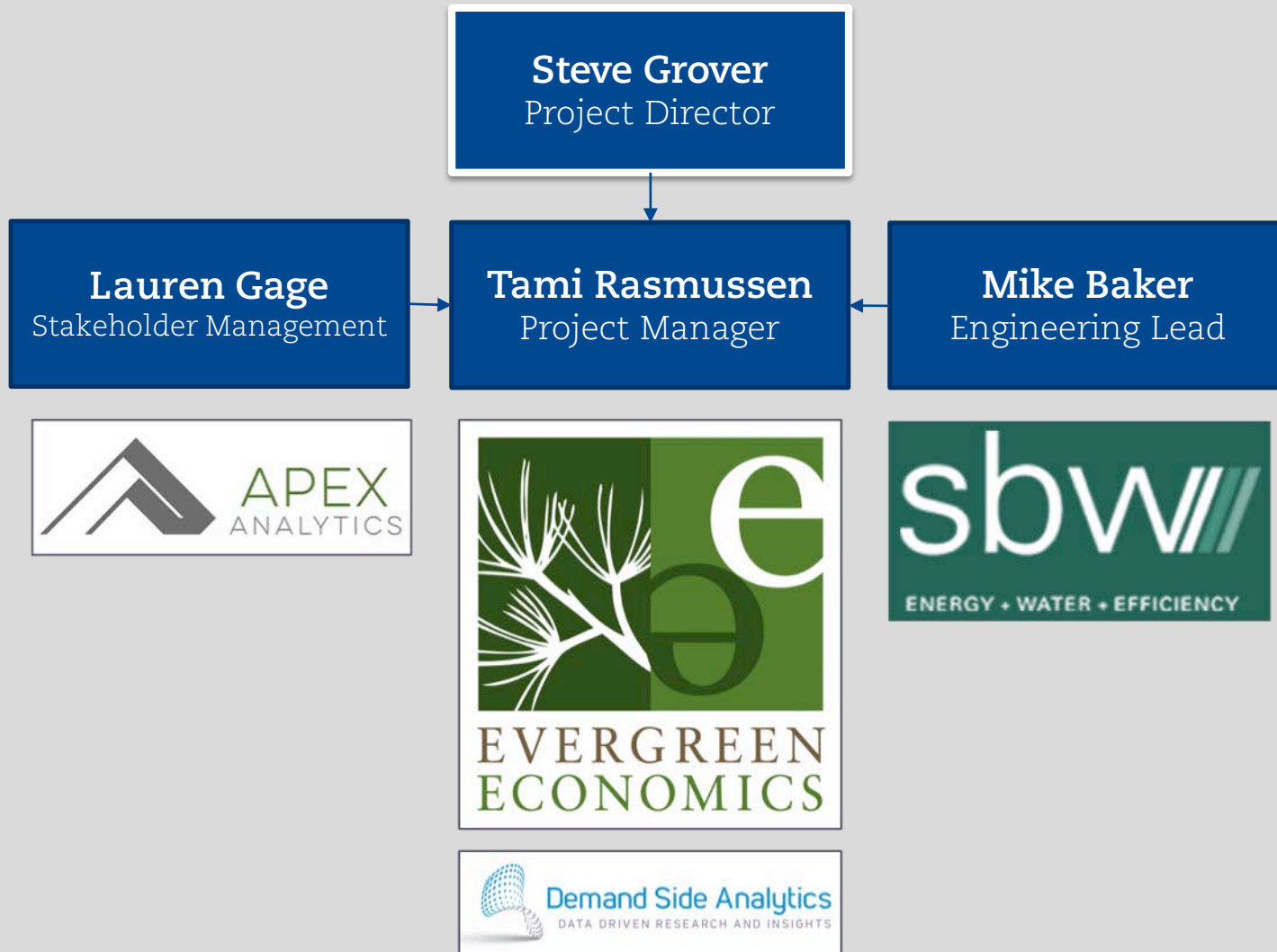
FY20-21 Plan Draft Overview
Custom and C/I/Ag Lighting
Other areas

Questions?

BPA Core Team



Contractor Team



Why Evaluation?



What do
we all
want?

Energy
efficiency
programs that
save customers
money and
energy.

To be
trustworthy
stewards of
their money.

Evaluation

What did we achieve?

How do we improve?



Impact Evaluation



Savings reliability
with independent
verification

+

Program
improvement
opportunities

Relevant Evaluation Policies

Implementation Manual

- Identifies implementation requirements and includes requirement to provide access to project, documentation and billing data for evaluation and oversight purposes.

BPA Internal Policies

- Defines BPA's impact evaluation activities as minimum of 80% of portfolio every 4 years. Consistent with RTF Guidelines and national standards.
- BPA M&V Protocols.

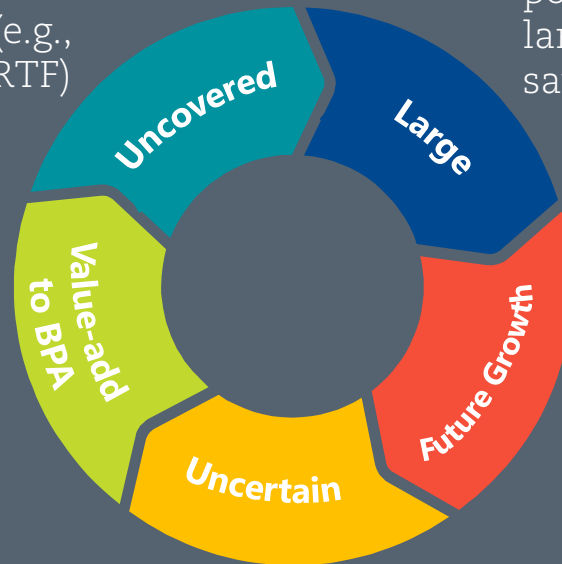
Evaluation Planning Process

Evaluation Planning Considerations

Evaluation should focus on areas that are not covered by previous evaluation or other research activities (e.g., engineering, NEEA, RTF)

To meet the internal BPA policy goals and focus on largest portfolio impacts, savings should be large

Evaluation should support programs, engineering, momentum savings wherever possible



Future areas with increasing savings add insight to BPA and the region

Areas of savings uncertainty benefit from evaluation learnings

Evaluation Planning Process

Assess & understand portfolio

Linked: BOOM data, UES Measure List and RTF measure status, historic evaluation coverage, engineering priorities, research activities for NEEA, RTF, Momentum Savings

Identify potential evaluation opportunities

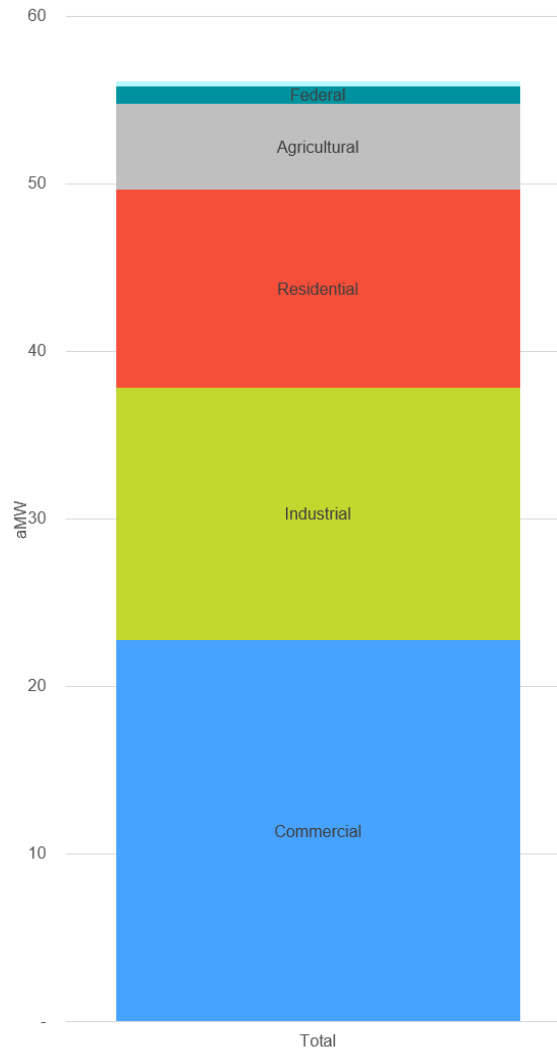
Draft Evaluation Plan

Finalize Plan: Review, discuss, revise

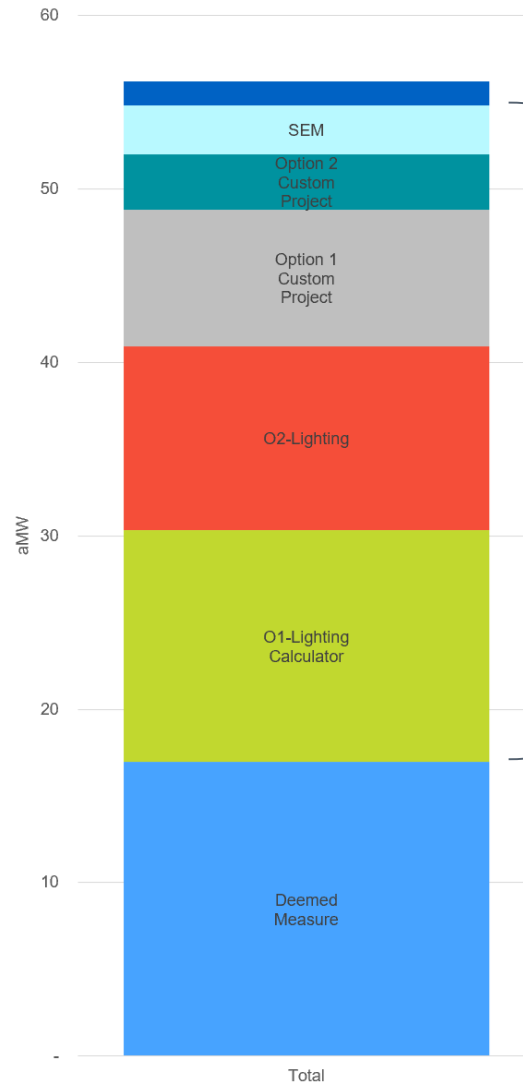
Internal core team and program teams
Brown bag

2018 Portfolio Savings: By Sector

*Commercial
dominated 2018
savings*



2018 Portfolio Savings: By Measure Type



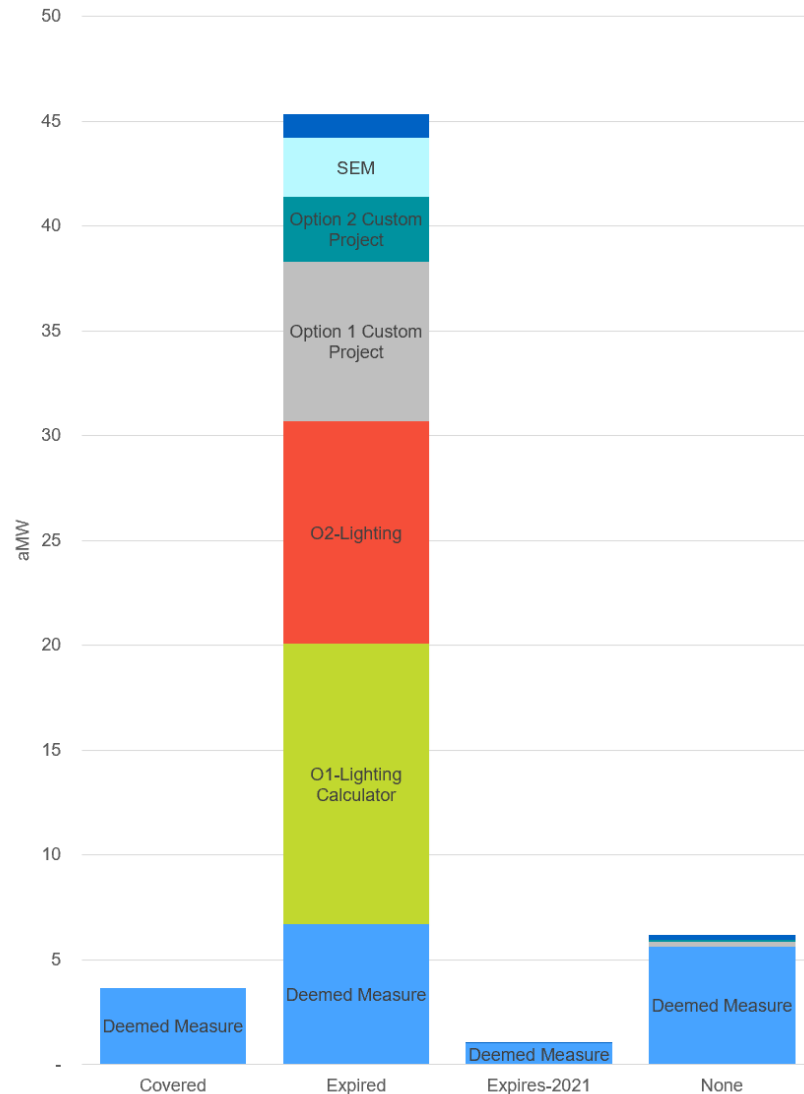
*Custom projects,
lighting calculators,
SEM are 70% of
portfolio*

Evaluation Coverage

From 2012-19, BPA evaluated 89%* of portfolio

Most coverage has expired (i.e., more than 4 years old)

- ~7% covered by current UES billing analysis



* Based on 2018 savings.

FY2020-2021 Evaluation Plan

Overview of FY20-21 Evaluation Areas



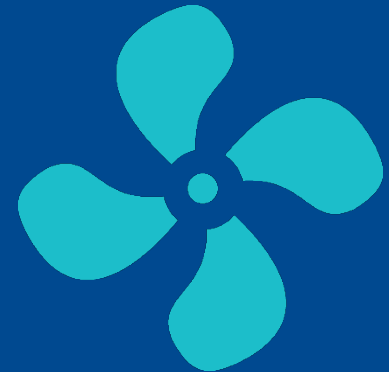
Custom and C/I/Ag Lighting

Engineering-based
evaluation of projects



Strategic Energy Management

Persistence assessment to inform
measure life and (if feasible)
assessment of how capital
measures affect SEM savings



BPAQ HVAC Commercial

Billing analysis to support
BPAQ measure assessment

DATA COLLECTION

More information
More effort

Customer site visits

Customer Surveys

Electric bills/AMI

Project Documents

Engineering Modeling

Billing Analysis

Delivery Verification

Less information
Less effort

SAVINGS ESTIMATION

Evaluation Activities by Measure Group

		Data Collection Activities				Saving Estimation Methods	
		Project Documents	Billing Data	Customer Surveys	Site Visits	Engineering Modeling	Billing Analysis
Custom and C/I/Ag Lighting		✓		✓	✓*	✓	
Strategic Energy Management	Persistence	✓		✓	✓*		
	Capital	✓		✓	✓*	✓	
BPAQ HVAC Commercial		✓	✓	✓*			✓

*Activity only if needed

Evaluation Activities by Measure Group

Area		FY2020- 21 Sample Size	Technique	Sampled Years
Custom and C/I/Ag Lighting		~113	Savings stratified random sample	One-year prior for each domain
Strategic Energy Management	Persistence	~15	Simple random	2015-2019
	Capital	~10	Simple random	One year prior
BPAQ Commercial HVAC		~150	Census	2017-2019

Evaluation Activities: Timing

Evaluation Activity		FY2020				FY2021			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Custom and C/I/Ag Lighting	Option 1 Custom Industrial		Planning		Report and Results Communications				
	Option 2 Custom Industrial				Planning	Report and Results Communications			
	Option 1 Lighting					Planning	Report and Results Communications		
	Option 2 Lighting								Planning
SEM Evaluation			Planning		Report and Results Communications				
BPAQ Commercial HVAC		Planning		Report and Results Communications					
Clark Thermostat Pilot Evaluation						Planning	Report and Results Communications		
(FY2019) Residential HVAC Evaluation		Report and Results Communications							



Utility and End-User Contact Principles



Utilities are notified of projects in evaluation prior to start and provided with clear information on samples, timelines, and requirements.



BPA provides opportunities for utilities to understand the details of the evaluation plan and data request.



Utilities have reasonable timeline to collect project and billing data; escalation protocol of timelines missed.



BPA provides minimum of 2 weeks notice to utilities prior to end-user contact, including phone surveys and site visits.

Evaluation and Oversight Coordination

Goals: minimize impacts on customers,
maximize information sharing

Share focus areas, processes, and results

We are working on the ability to cross-reference sampled projects with COTR-collected project information to minimize customer effort.

Custom and C/I/Ag Lighting

Custom and C/I/Ag Evaluation ideas



Staged evaluation

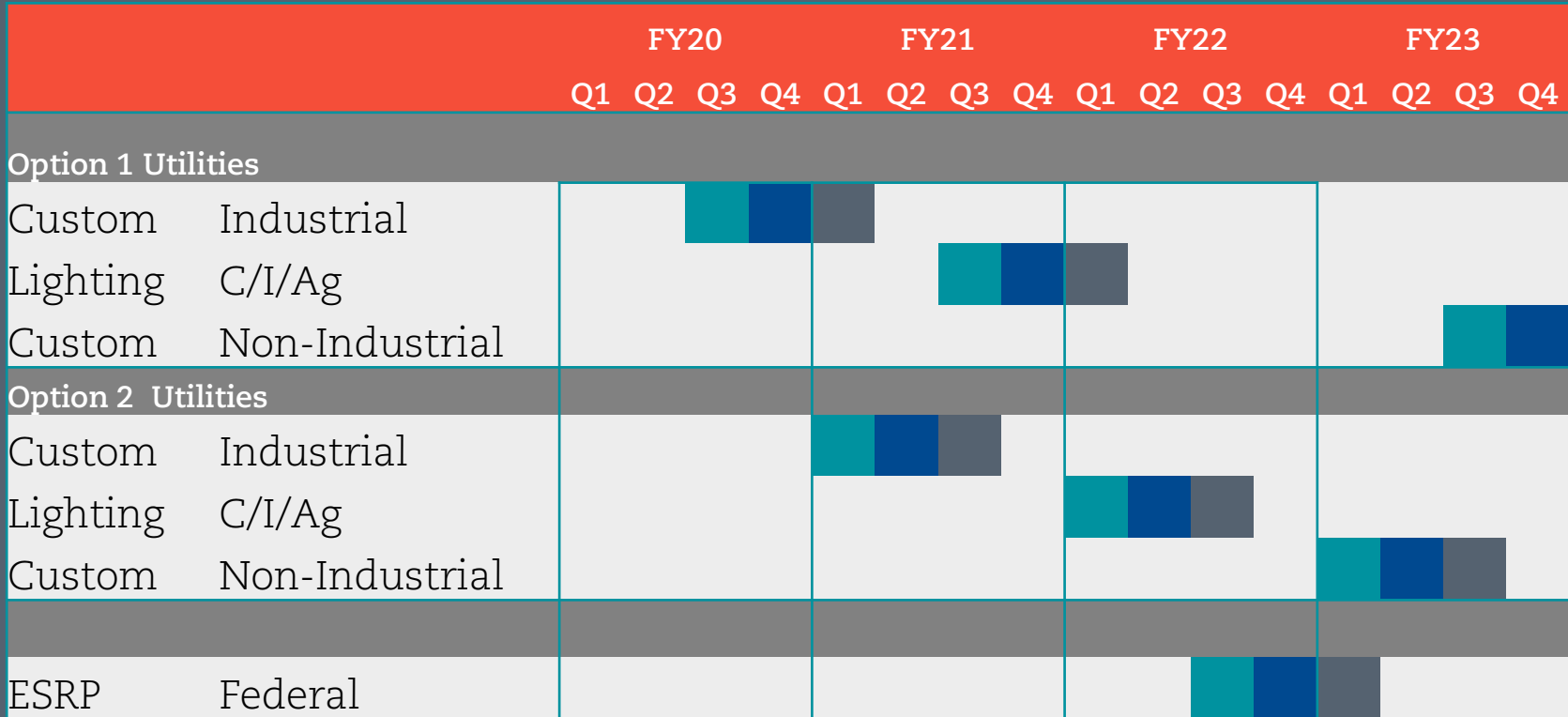
- Focus areas (domains)
- Smaller sample sizes
- Bi-annual sampling
- Distributed over 4 years



Leverage inspection reports/QC

by utility and BPA
to avoid site-visits
wherever possible

Custom and C/I/Ag Lighting Staged Timing



Custom and C/I/Ag General Approach



Other Evaluation Areas

Strategic Energy Management

Historic evaluation showed reliable MT&R modeling. Recommend new objectives:



Investigate Persistence of SEM Changes

- Determine how long SEM-initiated changes are operational

Verify Capital Savings Deduction

- Verify capital measure savings, determine if errors/incompatibilities create errors in SEM savings

BPA-Qualified Commercial HVAC

BPA offers ASHP and DHP measures as BPA Qualified

- DHP have most units: 124 in 2018

Evaluation collected project data and billing data on ~105 projects in 2019

- Will collect more for recent projects

Approach

- Pooled billing analysis
- Survey – if needed



Evaluation Watch List

- Commercial thermostats
- C&I Lighting controls
- Showerheads
- Showerheads/TSV
- Power strips (res and com)
- Ag: Hardware, pumps
- Low-E storm windows
- Commercial pumps and fans

- Commercial VFDs
- Commissioning/Controls/
Sizing efficient case research
(if needed after baseline research)
- Other new measures
(e.g., New BPAQ measures)
- Low rise multifamily
- Understanding building shell
for residential HVAC

Thank you!

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