

CADMUS



Energy Efficiency Potential Study Fourth Stakeholder Meeting

November 18, 2020

Webinar Logistics & Guidelines



All parties except presenter muted to avoid unnecessary noise distraction

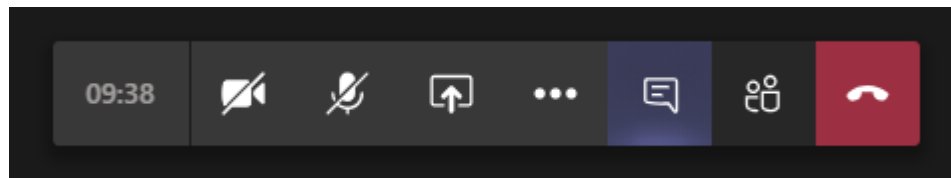


If you have an immediate question, or audio or video is poor please send an instant message to the moderator



We will stop today's presentation several times to take questions

Your Settings



Agenda

1

Potential Study Scenarios

- Approach to reporting and modeling scenarios
 - Overview and discussion of scenarios under consideration
-

2

Ramp Rates

- Ramp rates sub-group engagement process
-

3

Measure Feedback

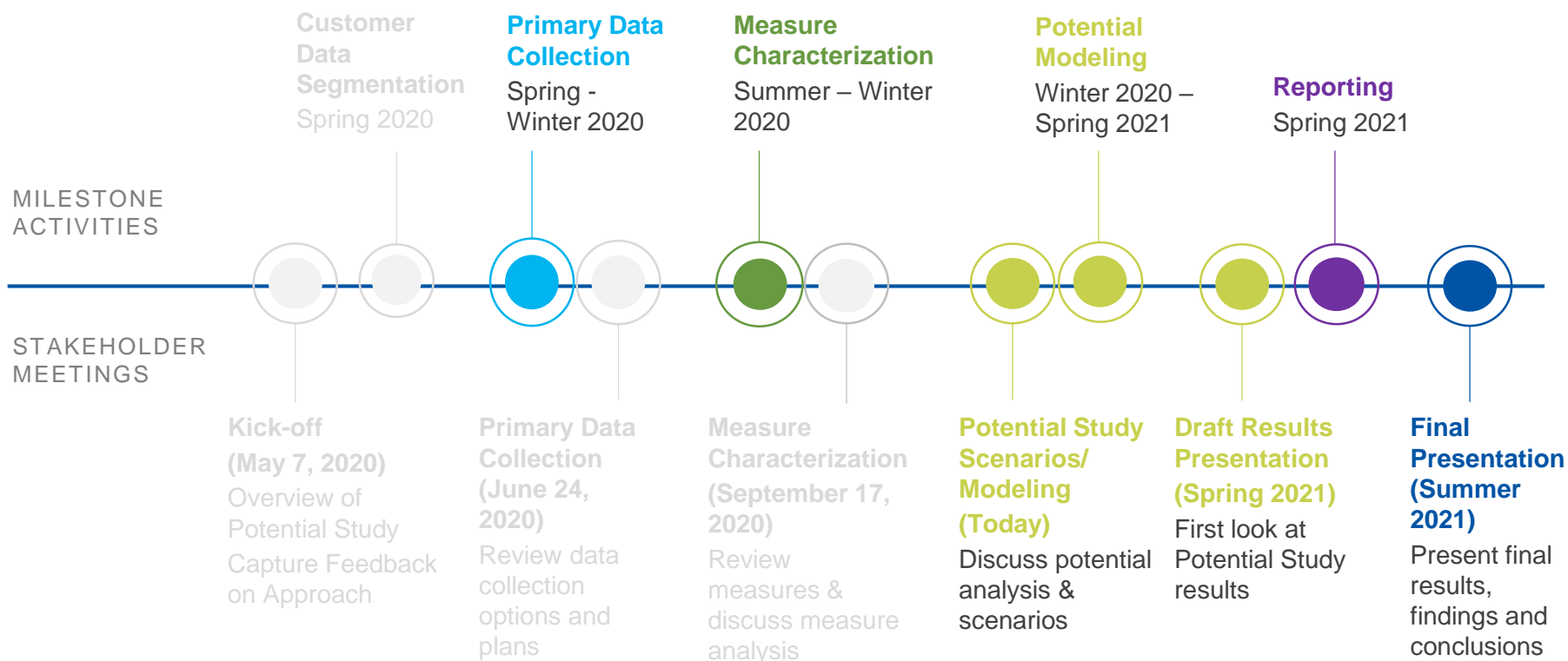
- Measure feedback received and Cadmus action
-

4

Data Collection Update

- Virtual site visits
- Commercial and agricultural surveys
- Residential panel
- Industrial expert interviews

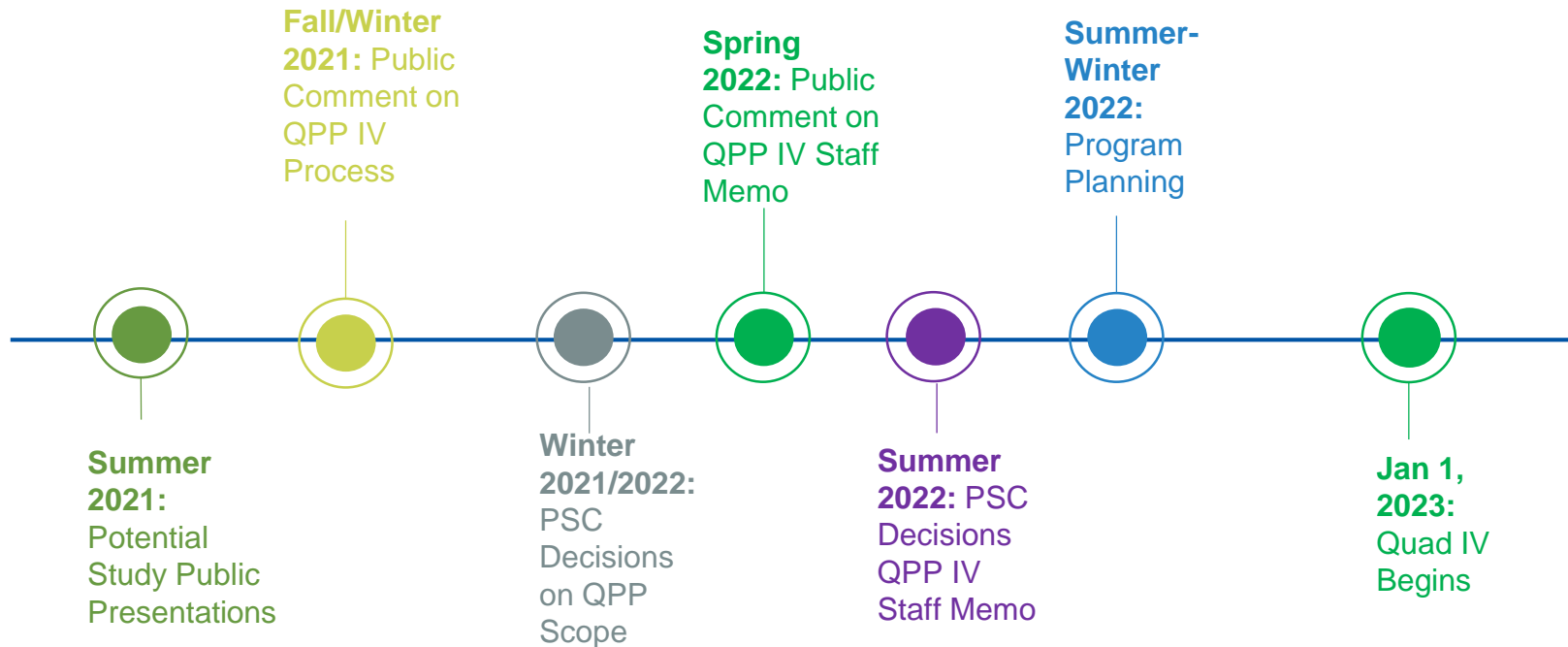
Timeline of Milestones and Meetings



Potential Study Integration With Program Planning



Potential Study and Stakeholder Engagement 1st Step in multi-year Quadrennial IV Planning Process (QPP IV), PSC Docket 5-FE-104



The background is a collage of blue-tinted images. At the top left, there's a close-up of a person's hands working with a document. To the right, a red tractor is shown in a field of young plants. Below these, there's a close-up of a person wearing a blue hard hat and safety vest, looking at a computer monitor. In the center, a dense forest of tall trees is visible. To the right of the forest, a person in a white hard hat is working on a piece of machinery. Further right, a body of water with a small boat is shown. At the bottom left, there's a close-up of industrial pipes and machinery. At the bottom center, a large industrial structure, possibly a cooling tower or chimney, is visible. At the bottom right, there's a close-up of a large circular industrial component, possibly a fan or turbine.

1. Potential Study Scenarios

Purpose of Scenarios

The future is inherently uncertain - so it makes sense to consider a range of possible outcomes

2017 Potential Study: 13 scenarios

- Economic potential scenarios
 - Carbon values
 - Discount rates
 - Cost tests
 - Combined effects
 - TRC thresholds
- Budget scenarios
- Residential lighting scenarios

Value to PSC and stakeholders:

- Provides clear insight into which policy levers affect potential
- Provides data on the magnitude of policy choices
- Provides detailed information for Quad IV planning considerations

2021 Potential Study Scenarios

May wish to consider reducing the number of scenarios.

More focused number of scenarios could (1) ensure changes in potential are comparable and (2) streamline reporting

Reminder of Primary Reporting

Optimized potential is the cost-effective EE savings attainable with minimized implementation constraints

Current policy potential, will be subset of optimized potential, constrained by annual budget amounts based on current Focus funding levels.

Optimized Potential

Analogous to the maximum achievable potential from 2017

Current Policy Potential

Subset of Optimized Potential, constrained by annual budgets and based on current Focus funding levels

These were proposed during the third stakeholder meeting on Sep. 17

Overview of Scenarios Under Consideration

Possible Scenarios

- Funding levels
- Discount rates
- Cost-effectiveness test
- Measure level cost-effectiveness thresholds
- Carbon value
- Avoided T&D costs
- Combined effects
- EISA backstop timing

Considerations

- Sensitivity to inputs
- Value to the planning process
- Likelihood of occurrence

Reporting Considerations

- Suggest limiting scenarios to a reasonable number
- Focus on most essential, impactful, and informative scenarios

Scenarios

2021 Scenario	2021 Input	Baseline Input Value	Type of Potential Initially Affected	2017 Scenario Input	2017 Scenario Sensitivity (Electric / Gas)*
Funding Level	+50%	Current Policy	Policy Potential	Not a scenario (analyzed incentive level impacts on budget)	N/A
	+100%				
Deferred Transmission and Distribution Costs	Included	Not Included	Economic	Not a scenario	N/A
Energy Independence and Security Act (EISA) Backstop Timing	Accelerated compliance	Most likely compliance timing	Technical	Specialty bulbs not impacted	2%
				Delayed EISA backstop implementation	-1%

*Impact on electric Savings, sensitivity compared to base scenario.

Scenarios

2021 Scenario	2021 Input	Baseline Input Value	Type of Potential Initially Affected	2017 Scenario Input	2017 Scenario Sensitivity (Electric / Gas)*
Carbon Value	Market Value (TBD)	Current Value (\$15/ton)	Economic	\$50/ton	7% / 4%
	Social Cost Value (TBD)			\$30/ton	3% / 1%
				\$0/ton	-3% / -1%
Discount Rates	0%	2%	Economic	0%	6% / 8%
	5%			5%	-5% / -6%
Cost-Effectiveness Test	Societal Cost Test (SCT)	Modified Total Resource Cost Test (mTRC)	Economic	SCT	3% / 5%
	Utility Cost Test (UCT)			UCT	9% / 41%

*Impact on savings, sensitivity compared to base scenario.

Scenarios

2021 Scenario	2021 Input	Baseline Input Value	Type of Potential Initially Affected	2017 Scenario Input	2017 Scenario Sensitivity (Electric / Gas)*
Measure Level Cost-Effectiveness Threshold	0.50	1.00	Economic	0.5	21% / 37%
	0.75			0.75	7% / 18%
Combined Effects	TBD		Economic	UCT	15% / 41%
				SCT	9% / 15%

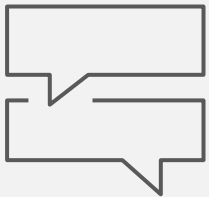
*Impact on savings, sensitivity compared to base scenario.

The Floor is Open – Feedback Welcome!



Questions/Comments?

- Questions about scenario reporting?
- Questions about scenario modeling?
- Questions or comments about scenarios considered?
- Other questions or comments?



Please add your questions to the meeting chat: we will address questions in the order that they are received & provide opportunity for clarification

Please remain muted until your question is announced



2. Ramp Rates: Stakeholder Engagement

Stakeholder Ramp Rate Engagement Process



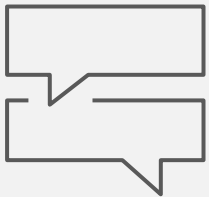
Next step: Identify sub-group members

Stakeholder Ramp Rate Engagement Process!

Additional information



- Cadmus and PSC will contact potential members based on expertise
- Time commitment:
 - Approximately 1.5 hours for first meeting
 - 3-5 hours for ramp rate assignments (depending on expertise)
- Other questions or comments?



Please add your questions to the meeting chat: we will address questions in the order that they are received & provide opportunity for clarification

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3. Measure Feedback

Measure Feedback

Feedback Received - Thank You!

5 Organizations Provided Feedback

28 Proposed Measures

3 Emerging Tech
25 Existing Tech

3 Sectors

Commercial (18)
Industrial (7)
Residential (4)

Cadmus Action

Adding measures
Conduct additional research

Example of feedback incorporated:

Smart Water Heaters as Residential Measure
Non-residential boiler controls
Emerging technology refrigeration measures

Feedback not incorporated:

Proposed measures with similar measures on existing list
(eg. commercial lighting, motor upgrades)

Status of Measure List:

Updated list includes 724 measures
Characterization ongoing – plan to complete December 2020



4. Data Collection Update

Data Collection Update

General Population Residential	Income Qualified Residential	Industrial	Agricultural
Panel 600 of 600	Phone Survey 140 of 140	Industrial Experts Interviews 11 of 10	Dairy / Farm Surveys 70 of 70
Key equipment saturation and end use data	Key equipment saturation and end use data	Collected information on remaining potential opportunities of key end uses or industrial improvements	Gathered supplemental data to complement extensive research conducted for 2016 Study

Commercial
9 Segments Surveys 604 of 630
Key equipment saturation and end use data

Challenges: Commercial Surveys

Lower than expected response rates for some segments

Healthcare discontinued due to Covid

Virtual Site Visits

Data Collection Ongoing Despite Challenges

33 of 68 office visits completed

8 of 68 retail visits completed

4 of 68 school visits completed

Primary Focus

- Lighting equipment saturations
- Other equipment information when available

Challenges

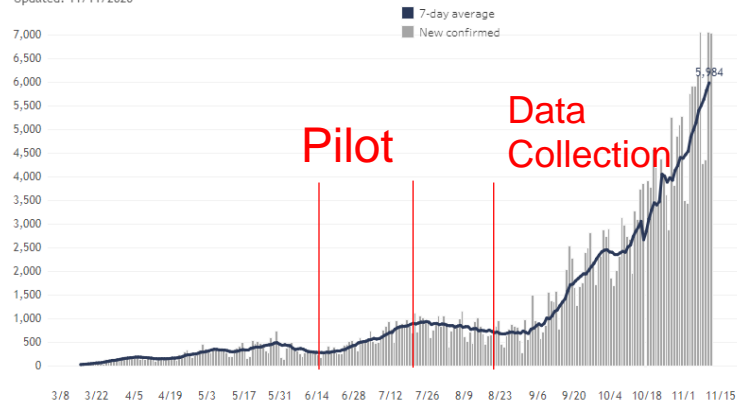
Time intensive to schedule sites

- Difficulty speaking with contact

High frequency of sites dropping out

New confirmed COVID-19 cases by date confirmed, and 7-day average

Updated: 11/11/2020



Moving Forward

Focus on retail and offices spaces to obtain high confidence and precision in sectors

Focus on schools following completion of office and retail site visits



4. Q&A and Next Steps

Q & A and Next Steps



Please add questions and comments to the meeting chat.

Anything that we have or have not discussed today?

Next Stakeholder Meeting:

Draft Results (April 2021) | In the interim, email updates as needed

Your feedback and input is important, please send us feedback

Other feedback opportunities

Email **Jeremy Eckstein** at Cadmus
(jeremy.eckstein@cadmusgroup.com)

or contact **Mitch Horrie** at PSC
(Mitch.Horrie@wisconsin.gov)