From:	Errichetti, Megan M
To:	Richard Faesy; Philip Mosenthal; Skumatz (serainc.com); Executive Secretary - CTEEB; AMcLean@acadiacenter.org; Viglione, John; Kate.Donatelli@ct.gov; Michael.Malmrose@ct.gov; ralph.prahl@gmail.com; wirtino@comcast.net; Dakers Gowans; pjacobs@buildingmetrics.biz; Bruno, Stephen J; Ramdani, Ghani; Esthus, Ryan G; Emerick, Ma Romilee; Glenn Reed; richard.oswald@uinet.com; george@caerbannogconsulting.com; Dan Mellinger; Stacy Sherwood; michael.doucette@uinet.com; LAWRENCE RUSH; Williams, Kiersten M; VIRAJ SHETH; glen.eigo@uinet.com; kfay@nhsofnewhaven.org; Shubhada.kambli@ct.gov; jruhnke@primeenergysolar.com; Rebecca.dube@ct.gov; Seema.Alim@ct.gov; lillianees1@gmail.com
Subject:	RE: CT - Heat Pumps - Project Needs - please REPLY by 9/9 (Friday)
Date:	Friday, September 9, 2022 3:27:23 PM
Attachments:	image001.png

Hi Lisa,

Below I've listed some priorities from our team for the 3 heat pump studies. Some of these are ideas we have submitted previously as feedback on the evaluation plan.

Cross Cutting

- X2231 is a high priority study - Assess market, technical, and economic potential for HP/HPWH to help inform the state's deployment targets for new and existing buildings in the residential and C&I sectors. Also, please assess the following:
  - Quantity of customers that will require electric service upgrades to accommodate a HP installation
  - Interventions needed to accomplish the deployment targets
  - Potential of industrial heat pumps and commercial (split system) water heaters
  - How many oil and propane heated homes are there and what percent of the market has been touched by the programs already
  - How many oil and propane boilers and furnaces are installed each year
  - How many heat pumps can potentially be installed through the programs
- Assess the amount of fossil fuels displaced by heat pumps (C&I and Residential) including the average fossil fuel baseline based on system size to support savings from either full or partial conversion from fossil fuels. Determine the temperature setpoints customers are using to rely on their legacy heating systems when a hybrid system is installed.

Residential

- Assess customer satisfaction with technology post installation, to include ease of using the equipment for heating, cooling, partial or full displacement, home comfort, maintenance, and overall investment costs and use costs. Please determine if customers have installed solar panels, are considering adding solar panels, or have not installed solar panels.
- Assess the probability of customers to switch from natural gas, oil, and propane heating to heat pumps in the immediate future and the GHG benefit of providing heat with electricity generated by natural gas plants vs using natural gas for heat directly. What incentive/information is needed for customers to switch from fossil fuels to electric? What is the impact of electrification at the customer level based on CT's current generation? How clean is generated electricity? What amount of generation from wind/solar/hydro energy is needed to support electrification goals with GHG emissions in mind?

Commercial and Industrial

- Assess the financial and market feasibility of installing heat pumps to help design C&I offerings that will motivate customers to switch to heat pumps to help achieve state electrification goals.

Thank you!
Megan

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From: Richard Faesy <rfaesy@energyfuturesgroup.com>
Sent: Friday, September 9, 2022 12:09 PM
To: Philip Mosenthal <Philip.Mosenthal@nv5.com>; Skumatz (serainc.com) <Skumatz@serainc.com>; ExecutiveSecretaryCTEEB@theenergygroup.biz; AMcLean@acadiacenter.org; Viglione, John <john.viglione@ct.gov>; Kate.Donatelli@ct.gov; Michael.Malmrose@ct.gov; ralph.prahl@gmail.com; wirtino@comcast.net; Dakers Gowans <dgowans@leftfork.com>; pjacobs@buildingmetrics.biz; Bruno, Stephen J <stephen.bruno@eversource.com>; Ramdani, Ghani <abdelghani.ramdani@eversource.com>; Esthus, Ryan G <ryan.esthus@eversource.com>; Emerick, Ma Romilee <maromilee.emerick@eversource.com>; Errichetti, Megan M <megan.errichetti@eversource.com>; Glenn Reed <greed@energyfuturesgroup.com>; richard.oswald@uinet.com; george@caerbannogconsulting.com; Dan Mellinger <dmellinger@energyfuturesgroup.com>; Stacy Sherwood <SSherwood@energyfuturesgroup.com>; michael.doucette@uinet.com; LAWRENCE RUSH <lawrence.rush@uinet.com>; Williams, Kiersten M <kiersten.williams@eversource.com>; VIRAJ SHETH <vsheth@uinet.com>; glen.eigo@uinet.com; kfay@nhsofnewhaven.org; Shubhada.kambli@ct.gov; jruhnke@primeenergysolar.com; Rebecca.dube@ct.gov; Seema.Alim@ct.gov; lillianees1@gmail.com
Subject: RE: CT - Heat Pumps - Project Needs - please REPLY by 9/9 (Friday)

I added a few to Phil's list.

Thanks, Richard

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Sent: Friday, September 9, 2022 11:21 AM
To: Lisa Skumatz <skumatz@serainc.com>; ExecutiveSecretaryCTEEB@theenergygroup.biz; AMcLean@acadiacenter.org; John.Viglione@ct.gov; Kate.Donatelli@ct.gov; Michael.Malmrose@ct.gov; ralph.prahl@gmail.com; wirtino@comcast.net; dgowans@leftfork.com; pjacobs@buildingmetrics.biz; stephen.bruno@eversource.com; abdelghani.ramdani@eversource.com; ryan.esthus@eversource.com; maromilee.emerick@eversource.com; megan.errichetti@eversource.com; Glenn Reed <greed@energyfuturesgroup.com>; Richard.Oswald@uinet.com; Richard Faesy <rfaesy@energyfuturesgroup.com>; george@caerbannogconsulting.com; Dan Mellinger <dmellinger@energyfuturesgroup.com>; Stacy Sherwood <SSherwood@energyfuturesgroup.com>; michael.doucette@uinet.com; Lawrence.Rush@uinet.com; kiersten.williams@eversource.com; vsheth@uinet.com; Glen.Eigo@uinet.com; kfay@nhsofnewhaven.org; Shubhada.kambli@ct.gov; jruhnke@primeenergysolar.com; Rebecca.dube@ct.gov; Seema.Alim@ct.gov; lillianees1@gmail.com
Subject: RE: CT - Heat Pumps - Project Needs - please REPLY by 9/9 (Friday)

Lisa,

Attached is a list of areas the technical consultant team suggests are worth looking into for the EM&V heat pump studies. We are happy to explore/discuss these further with the evaluators/evaluation team if it is worthwhile.

From: Lisa Skumatz <skumatz@serainc.com>
Sent: Thursday, September 1, 2022 5:11 PM
To: ExecutiveSecretaryCTEEB@theenergygroup.biz; AMcLean@acadiacenter.org; John.Viglione@ct.gov; Kate.Donatelli@ct.gov; Michael.Malmrose@ct.gov; Lisa Skumatz <skumatz@serainc.com>; ralph.prahl@gmail.com; wirtino@comcast.net; dgowans@leftfork.com; pjacobs@buildingmetrics.biz; stephen.bruno@eversource.com; abdelghani.ramdani@eversource.com; ryan.esthus@eversource.com; maromilee.emerick@eversource.com; megan.errichetti@eversource.com; greed@energyfuturesgroup.com; Philip Mosenthal <mosenthal@optenergy.com>; Richard.Oswald@uinet.com; rfaesy@energyfuturesgroup.com; george@caerbannogconsulting.com; dmellinger@energyfuturesgroup.com; SSherwood@energyfuturesgroup.com; michael.doucette@uinet.com; Lawrence.Rush@uinet.com; kiersten.williams@eversource.com; vsheth@uinet.com; Glen.Eigo@uinet.com; kfay@nhsofnewhaven.org; Shubhada.kambli@ct.gov; jruhnke@primeenergysolar.com; Rebecca.dube@ct.gov; Seema.Alim@ct.gov; lillianees1@gmail.com
Cc: Lisa Skumatz <skumatz@serainc.com>
Subject: CT - Heat Pumps - Project Needs - please REPLY by 9/9 (Friday)
Importance: High

We have 3 heat pump studies starting right now in CT, covering all the different sectors (residential, C&I, and cross), and also with other variations (one more metering, etc.). We are currently tweaking / refining the scopes. We want to really capitalize on the opportunity to make sure we answer the

range of savings, process, design, technical, and other questions you have on heat pumps. Rather than try to address this question (only) piecemeal during our Evaluation Plan update discussions or our up-front interviews with utilities and TCs, would you please give serious thought to the high priority and lower priority questions / needs / outputs you need associated with heat pumps, and send bullets back to me? You may want to forward the question to implementation staff, etc. I will look for responses that are Replies to this subject line.

I really appreciate your input to let us best prioritize the study research and apportioning tasks among the projects in the most efficient and effective way. Priorities change, research has progressed, so I am happy with you reacting to a blank page and sending bullets on the outcomes / answers you need. Do not bother with the "how" – that is our job ().

However, for those of you who do not prefer blank pages, feel free to consult the adopted 2022-24 evaluation plan, which I circulated a bit ago and is also posted.

Lisa A. Skumatz, Ph.D.

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"Work is much more fun than fun." Noel Coward
Note: Fridays are largely email / phone-free days.
