Question text	Answer Text
Do you foresee a change in building code to switch to usage of heat pumps in buildings?	Building energy codes are a big opportunity for new buildings, but many existing buildings will be unaffected by new building codes. It will take more than just codes to drive heat pump adoption. Moreover, many states in the US are on older versions of building energy codes, so there is a need to continue to drive adoption of recent codes.
Most applications will be air sourced HP but did you look at ground sourced & thermal energy networks opportunities? High efficiency and the thermal storage allows load management.	Yes - we actively discussed these topics and many of the grid stress scenarios would be alleviated by ground source and thermal network heating architectures. The downside, of course, is more expensive installation cost.
Does modelling suggest load shapes due to electrification will be more variable or 'flat' and does that affect temp assumptions for ability to overload assets?	Yes and No - the modeling suggests that load profiles will be more volatile with electrification during extreme weather. Electrification and energy efficiency will create more "flat" profiles during mild weather, so it really depends on the situation.
Do the electric load shape models being developed using gas consumption data account for changing building thermal envelopes?	Thermal envelope variables are usually considered seperately from electrification. By doing so, one can identify the value in envelope improvements. While I can't comment on specific models, caution is needed in directly applying gas consumption data to power system demands because of how the different end uses translate input energy to output heat. Electric and gas furnaces have different operating characteristics.
Heat pump loads peak nonlinearly under cold temps. What weather year should be used for grid upgrades planning? 1in2 v 1in10 v 1in40?	This is a great question and one that needs more study in the industry. I suggest that it is highly dependent upon the difference in those 1in2 v 1in10 v 1in40 events, and in a given jurisdiction's tolerance for reliability.
How do you envision "touch the grid once" working when there is high uncertainty on the timing and location for long-term adoption?	The philosophy is helpful in addressing that uncertainty because it works its way across the entire system over time. Explicit projects will still be needed in the short term, but the hope is that long-term electrification will be enabled by decisions that are made today, avoiding the need for future rework when adoption is known.

Can you talk about the major challenges in designing and building the grid to accommodate full electrification, particularly in terms of cost recovery?	The Task Force did not get into cost recovery mechanisms, but the challenge of designing and building to full electrification is very simply that full electrification occurs beyond our normal planning horizon. Distribution plans typically look 3-5 years out and use some sort of longer-term forecast horizon to inform things, but the longer-term needs are not fully included in near and medium term plans. This is true for needs in both building and vehicle electrification.
In this modelling, do we consider the system strength or stability of the grid?	Grid strength and stability are not often considered in the building electrification discussions, but they should be. Heat pumps include power electronics, and may change the characteristics of load over time. One thing we did mention in the report is the impact of switching to resistive heating mode on the power factor and potential implications for distribution planning.
Do distribution operators see demand response and coordinated load shifting a primary solution or will this increased load be resolved by network upgrades?	Every DSO thinks about this a little differently, but the increased load can be addressed through both load shifting and network upgrades. Importantly, because of the nature of high stress events, the load shifting will need to be designed to actually alleviate long-duration events. As such, some jurisdictions may identify EE as a key enabler. Moreover, in summer peaking areas today, there is lots of headroom during winter to accommodate load growth, but perhaps not full electrification.
Do you have an opinion on Seattle's approach: identifying circuits that CAN handle electrification IF demand response and/or on-circuit storage is used?	I would need to learn more about Seattle's approach to comment directly, but I like the framing mentioned in the question. There are opportunities for demand response, but grid upgrades will likely still be needed long-term. Understanding where to target DR or storage is an important near-term need.