

## Response to Questions from the Task Force

Task Force members have raised questions with respect to the modelling approach. The response of the modelling team to each of the questions or comments is detailed in the following table.

Comment/ question from the Task Force	Adjustment to the modelling approach	Details
<p>What is the definition of "plug load"?</p> <p>How will the reductions be accomplished?</p>	<p>No change</p>	<p>Plug loads are energy used by equipment that is usually plugged into an outlet. These sources would include equipment such as appliances, computer equipment and AV equipment. Plug loads are not related to general building lighting, heating, ventilation, cooling, and water heating, and typically do not provide comfort to the occupants.</p> <p>Modern technology usually incorporates a variety of power modes with most electronic devices (computers, stereos, tvs) drawing power even when they are turned off.</p> <p>Some strategies involved in reducing plug load include</p> <ul style="list-style-type: none"> <li>• Upgrading equipment</li> <li>• Turning equipment off when not in use</li> <li>• Employing plug-load automation and controls</li> <li>• Promoting beneficial occupant behaviour</li> </ul> <p>The following source is a good resource for commercial buildings but many of these strategies can be applied to residential buildings as well.  <a href="#">Plug Load Frequently Asked Questions (FAQ)   GSA</a></p>
<p>The use of the AVERT tool</p>	<p>No change</p>	<p><a href="#">EPA's AVERT</a> tool calculates the change in air pollutants as a result of electricity generation on an hourly basis. The change in outputs is calculated within the model used by the modelling team. While AVERT has a higher temporal resolution, it does not include the full energy system. Additionally, the AVERT tool doesn't project future emissions as the generation mix changes.</p>
<p>The inclusion of Renewable Natural Gas (RNG)</p>	<p>RNG is included in Policy 1</p>	<p>RNG is included in Policy 1. Policy 1 is a Building Performance Standard that applies GHG targets, but does not specify how those GHG targets will be achieved.</p> <p>The amount of RNG available to Oregon is based on the current state of the RNG supply for the US. The total RNG supply in 2040 in the US is assumed to be 3,750 trillion BTUs. Power to gas/Methanation was excluded from this total. This total was shared out to Oregon according to the population of Oregon relative to the total US population, resulting in a total of 47.5 trillion BTUs of RNG available to Oregon by 2040.</p> <p>RNG was distributed to the residential building sector based on the share of natural gas left in this sector after the policy mechanism was implemented. "Best use"</p>

		<p>scenarios may direct RNG to sectors that are harder to decarbonize and these results may change.</p> <p>Policy 1c and policy 1d consume 7.5 trillion BTUs of RNG by 2040.</p>
The inclusion of CPP	A figure illustrating the impact of CPP has been added to the scorecard (Figure 3)	<p>The impact of CPP is represented in a figure for each policy (Figure 3). Because the analysis applied only to residential and commercial sectors while CPP applies to all natural gas consumption, the assumption was made that CPP GHG reduction requirements apply directly to the residential and commercial sectors to generate the CPP curve in the figure. In this figure, the reductions from the policy are subtracted from CPP, illustrating the additional emissions beyond the impact of the policy that must be reduced in order to achieve the CPP requirements.</p> <p>CPP was not illustrated for policy 5, because policy 5 does not apply to the energy system.</p> <p>The remaining CPP wedge varies in size according to the size of the policy wedge evaluated. No determination was made with respect to how the CPP GHG emissions reductions will be achieved.</p>
The inclusion of hot water heaters	Heat pumps for hot water heaters have been added	Hot water heat pumps were added to policy 1 and policy 4.
GHG targets	A line representing the GHG target has been added to Figure 2	A line has been applied to Figure 2 to illustrate a proportional application of Oregon's GHG target of 80% below 1990 levels by 2050. The target is proportional in that the percent reduction has been applied to the residential and commercial building sectors.
The inclusion of indoor air quality	Not assessed	S&S explored strategies to assess indoor air quality changes as a result of the policies, including meeting with OHA. Given the complexity of factors influencing indoor air quality, such as access to and rate of ventilation, exposure to new materials within the building envelope, combustion within the building envelope and other factors, there was insufficient time to develop a substantive approach.
The inclusion of peak demand	Peak demand will be modelled for the integrated scenarios	Peak demand is generally reduced by policies which increase energy efficiency, and may be increased by fuel switching. Impacts on peak demand will be evaluated in the analysis of the integrated scenarios.
The inclusion of climate resilience	An indicator of resilience is included in the scorecards.	The indicator of climate resilience is the number of homes retrofitted, where a retrofit is assumed to increase the resilience of the building against extreme heat or cold for a longer duration, known as passive survivability. The benefit of access to cooling for dwellings which have heat pumps installed was not assessed.
Method for assessing embodied	The modelling approach is aligned with DEQ's	S&S worked with data provided by DEQ to model this policy, ensuring alignment with their work.

carbon policy	approach	
Inclusion of Inflation Reduction Act Tax Incentives and Rebates	The financial benefits of the IRA have not been quantified. We <u>may</u> include this benefit in the analysis of the integrated scenarios	IRA will reduce the capital cost of applicable actions, increasing the financial benefit.
Inclusion of avoided costs/stranded investments	Not assessed	Stranded investments are investments in fossil fuel assets that could be lost if climate policies limit emissions in line with climate targets. SSG believes a more detailed representation of gas infrastructure would be required to evaluate this impact.
Inclusion of future price volatility	Not assessed	SSG uses the <a href="#">future price projections</a> from the EIA for the Pacific Region.
Analysis of energy burden	Energy burden will be assessed for the integrated scenarios	If a home's energy costs exceed 6 percent of income it is considered energy burdened. If a household spends more than 10 percent of its income on energy, it is considered extremely energy burdened.
Range of policies	Both a less and more stringent policy implementation has been modelled	
Data from Oregon	Datasets from Oregon are applied.	The model uses data from Oregon wherever possible; in some cases national sources are used which report on data for Oregon (i.e. EIA). A complete set of data sources will be included in the Data, Methods and Assumptions Manual
Full costs to homeowners and businesses	No change	Capital, maintenance and operating costs are evaluated for each policy over the lifetime of the investment.