

Northwest Deep Decarbonization Pathways Study Questions

The Clean Energy Transition Institute convened a work group from February to November 2017 to determine whether to conduct a pathways study and a Technical Advisory Group to develop the scope and assumptions that defined the cases:

Prior to commissioning *Meeting the Challenge of Our Time: Achieving a Low-Carbon Future in the Northwest*, the Clean Energy Transition Institute convened a Deep Decarbonization Pathways Working Group ([see list of participants](#)) and conducted numerous interviews with Northwest stakeholders about the value of conducting an economy-wide pathways study.

This stakeholder process revealed a clear need for a common set of facts about the decarbonization pathways for the Northwest that legislators and the advocacy community could agree to. Stakeholders' questions are summarized as follows:

1) What is the likely trajectory by which we will clean the electricity grid in the Northwest by 2030, 2040, and 2050?

- When looking at economy-wide decarbonization in the Northwest, how close to 100% clean does the electricity sector have to be, by when?
- How quickly can we remove coal from the Northwest grid?
- How realistic is it that we will not replace coal with natural gas to power the grid?

2) How will electrification of the transportation and buildings sectors contribute to deep decarbonization in the Northwest?

- How will energy efficiency help in decreasing load and therefore contribute to decarbonization?
- How much decarbonization can we achieve through electrifying the transport sector with a nearly 100% clean electricity grid?
- How does demand management contribute to peak load reduction and decarbonization?
- How does transportation electrification impact load in Washington and Oregon?

3) What is the cross-sector role of biomass?

- What are the highest value allocations of biomass among fuels, electricity, and gas?
- What is the role of renewable natural gas derived from biomass and used for power generation or transportation?

4) What is the role of natural gas for power generation and other end uses, including transportation?

- How do trade-offs in natural gas infrastructure impact emission reductions? From a carbon emissions reduction point of view, should we replace old natural gas plants with peakers if storage prices are high?
- Absent policy changes, how soon do we expect storage to directly compete with natural gas for peaking?
- What is the role of compressed natural gas/liquefied natural gas in reducing emissions in the transport sector over the next 20–30 years? Are there transportation subsectors (maritime, freight) where the role may be more prominent, given technology trajectories? How would knowing the answer to this question inform our policy choices and our approach to this sector and to natural gas?

5) How would greater integration between the Northwest and California contribute to deep decarbonization?

- How much could Northwest-California integration reduce energy infrastructure needs and costs?