

Summary: Washington State Workshop on Decarbonization Pathways of Natural Gas Systems

On September 24, 2025, GTI Energy held its second Reliable Affordable Infrastructure for Secure Energy (RAISE) Workshop on *Decarbonization Pathways of Natural Gas Systems* for non-utility stakeholders at the Washington Utilities and Transportation Commission (UTC) headquarters in Lacey, Washington. The RAISE team presenting was Jarrod Bullen, May Kwan, and Esther Goita. This memo summarizes the workshop and key discussion points.



Stakeholders

The RAISE team was invited to present by UTC Commissioner Milt Doumit through GTI Energy's Public Interest Advisory Committee. The hybrid workshop was well attended with 15 in-person participants including the commission chair, two commissioners, and members from across UTC divisions including Legal, Economic Regulation, and Pipeline Safety. The workshop also welcomed members of the newly formed Energy Transformation team. The session was conversational and exploratory, with a focus on infrastructure constraints, emissions monitoring, and alternative fuels integration.



Key Topics of Engagement

- Infrastructure constraints and regional supply challenges
 - The beginning of the workshop focused on highlighting the regional geographic and energy landscape unique to Washington state compared to other areas of the country; in particular, the discussion emphasized infrastructure and gas supply constraints.
 - With the state's natural gas supply primarily sourced from Canada and the state's pipeline transmission infrastructure operating at full capacity, stakeholders expressed concern about the potential impacts from tariffs and geopolitical shifts.
 - The state and region's geography also limit infrastructure expansion possibilities with the East-West orientation of the Cascade Mountain range and lack of in-state underground gas storage (UGS) facilities. Stakeholders pointed to Southern Oregon having the option of receiving gas from California's UGS network.
 - The regional context and needs were critical data points for the RAISE team, which expects to begin work on the West Coast regional case study in 2026 that will model the feasibility and value of gas infrastructure in projected energy scenarios for the region.
- Emissions Monitoring and Satellite Technology Emissions Detection Capabilities
 - Stakeholders queried the accuracy and reliability of satellite-based methane emissions data and resolved to address discrepancies between satellite estimates and operator-reported data.

- The RAISE team shared their experience assessing methane emissions technologies performance and the ongoing research that is working to reconcile the differences in approaches to methane emissions (i.e., bottom-up vs. top-down). The discussion highlighted key factors in the current limitations of satellite detection thresholds (100 - 250 kg/h, though the technology is improving rapidly), the importance of uncertainty in detection and quantification methods, and the applicability of bottom-up emission factors.
- There was significant interest in exploring how satellite technologies could complement regulatory frameworks such as independent verification of emissions data and in understanding possible implications of the potential suspension of greenhouse gas emissions reporting through the [recent presidential executive order](#).
- Lifecycle and Techno-Economic Analysis (LCA/TEA)
 - Stakeholders discussed the use of LCA and TEA results in regulatory and operator applications, particularly in informing permitting boundaries and broader system assessments.
 - The team emphasized the importance of transparency of data sources, and considerations in comparing and using levelized estimates (i.e., levelized cost of power generation by fuel type) especially in methodology differences (i.e., cradle-to-gate vs. cradle-to-grave boundary) and end-use scenario (i.e., LNG exports vs. domestic power generation).
- Research Considerations and Potential for Emerging Fuels
 - Synthetic Natural Gas was discussed as a viable option in regions with limited conventional fuel access (e.g., Hawaii, Denmark) and whether **plastic waste** is a feasible feedstock. A [DOE resource](#) was shared post-workshop for further exploration.
 - For RNG, stakeholders expressed concerns about the formation of dithiazines during amine-based H₂S scrubbing in RNG production as dithiazines can lead to deposits that can block pipelines and equipment. The team discussed H₂S removal methods that would avoid this concern; and noted the interest in safer and more efficient scrubbing technologies.
- Carbon Capture, Utilization, and Storage (CCUS)
 - The feasibility of basalt formations in the Pacific Northwest for CO₂ storage was discussed, with interest in ongoing regional assessments.
 - Permitting timelines for CO₂ pipelines and storage sites were reviewed, noting that EPA-led processes can take 2-3 years, while states with primacy can expedite approvals.

Feedback and Additional Notes

The presentation was recorded for internal UTC distribution. Following the workshop, UTC stakeholders expressed interest in how GTI Energy can continue to be a resource for research material. Specifically, the Energy Transformation Team expressed interest in hydrogen integration and detection technologies projects. One example is a PHMSA-sponsored project that GTI Energy is working on: [Advancing Hydrogen Leak Detection and Quantification Technologies Compatible with Hydrogen Blends](#). The Transformation Team is reviewing potential pathways for hydrogen detection in both blended and pure stages as production pathways expand.