

WASHINGTON ENERGY STRATEGY ADVISORY COMMITTEE

Meeting Summary

November 6, 2020, 9:00 am to 4:30 pm
Virtual meeting via Zoom

Meeting Participants¹

Advisory Committee Members

George Caan, Executive Director, Washington Public Utility Districts Association
Reuven Carlyle, Senator, Washington State Legislature
Co-Chair: Reeves Clippard, Chair, Executive Committee, CleanTech Alliance and Chief Executive Officer, A&R Solar
Dave Danner, Chair, Washington Utilities and Transportation Commission
Kathleen Drew, Chair, Energy Facility Site Evaluation Council
Sandi Edgemon, City of Richland
Will Einstein, Director of Product Development and Growth, Puget Sound Energy
Martin Gibbins, Climate and Energy Issues Chair, League of Women Voters
Deric Gruen, Program Director, Front and Centered
Matt Harris, Director of Government Affairs and Assistant Executive Director, Washington State Potato Commission
Co-Chair: Nancy Hirsh, Executive Director, NW Energy Coalition
Nicole Hughes, Executive Director, Renewable Northwest
Paul Jewell, Policy Director, Washington State Association of Counties
Dan Kirschner, Executive Director, Northwest Gas Association
Kent Lopez, General Manager, Washington Rural Electric Cooperative Association
Bruce Martin, Energy Resource Manager, WestRock Tacoma
Clay Norris, Power Management Manager, Tacoma Power
Patrick Oshie, Member, Northwest Power and Conservation Council
Rebecca Ponzio, Climate & Fossil Fuel Program Director, Washington Environmental Council
Alex Ramel, Representative, Washington State Legislature
Chris Roe, Senior Manager, Amazon
John Rothlin, Manager of Washington Government Relations, Avista Corporation
Tim Sheldon, Senator, Washington State Legislature
Jessica Spiegel, Director Northwest Region, Western States Petroleum Association
Dan Wilson, President, Local 338 United Steelworkers
Alex Ybarra, Representative, Washington State Legislature

State of Washington Participants

Glenn Blackmon, Washington State Department of Commerce

¹ Note: Not all meeting participants were available for the entire meeting.

Michael Breish, Washington State Department of Commerce
Michael Furze, Washington State Department of Commerce
Kate Kelly, Washington State Department of Commerce
Lauren McCloy, Office of Governor Jay Inslee
Peter Moulton, Washington State Department of Commerce
Emily Salzberg, Washington State Department of Commerce
Sarah Vorpahl, Washington State Department of Commerce

Consultant Team Participants

Tom Beierle, Ross Strategic
Aditi Bansal, Clean Energy Transition Institute
Andy Chinn, Ross Strategic
Heather Christopher, Ross Strategic
Marc Daudon, Clean Energy Transition Institute
Betony Jones, Inclusive Economics
Scott Nystrom, FTI Consulting
David Paoella, Clean Energy Transition Institute
Eileen V. Quigley, Clean Energy Transition Institute
Bill Ross, Ross Strategic
Poppy Storm, 2050 Institute

Welcome and Agenda Overview

Michael Furze, Washington State Department of Commerce, welcomed Advisory Committee members to the meeting. He thanked Advisory Committee members for their participation and contributions to development of a data-driven roadmap to meeting the state's climate goals. Mr. Furze also thanked Advisory Committee Co-Chairs Nancy Hirsh and Reeves Clippard, the facilitation team from Ross Strategic, the Clean Energy Transition Institute, and Department of Commerce's Energy Policy Office.

Mr. Furze described the 2021 State Energy Strategy as offering a path forward to transform Washington's economy, emphasizing that there is significant work to do to meet greenhouse gas reduction goals by 2030 and 2050. This work will be difficult, must be just and equitable, and will require innovation such as more efficient buildings, smarter appliances, and a better grid.

Mr. Furze acknowledged that the State Energy Strategy development process is moving quickly toward the December 31st deadline. He noted that the strategy is still in draft, and further comments from the Advisory Committee and the public will inform strategy revisions between now and the deadline.

Tom Beierle, facilitator from Ross Strategic, reviewed meeting objectives and the day's [agenda](#).

Advisory Committee Co-Chairs Nancy Hirsch and Reeves Clippard described the proposed approach to the Advisory Committee's report, to be submitted to the Governor and appropriate legislative committees along with the strategy. The proposed report will be brief, including a summary of the Advisory Committee process (together with challenges related to COVID-19) and reference to Advisory Committee input in meeting discussions and written comments. It will outline the complexity of deep

decarbonization and, to the extent possible, articulate high-level themes from Advisory Committee feedback—both opportunities and challenges. The report will not attempt to summarize all members' input on the strategy or capture convergent or divergent views. Rather, it will reference individual members' verbal and written comments. The Co-Chairs and facilitation team will develop an initial draft report and share it with Advisory Committee members for review in November.

Advisory Committee members provided the following comments on the proposed approach to the Advisory Committee report:

- One of the benefits of the Advisory Committee is its diversity of views, and it would be helpful for the Advisory Committee's summary memo to describe not only areas of convergence but also areas of divergence.
- It will be important to note in the Advisory Committee report that not all members agree on all elements of the strategy.

In addition, several Advisory Committee members noted that they will not be able to provide written comments on the draft strategy by the November 12th deadline.

[Summary of 2021 Washington State Energy Strategy \(First Draft\)](#)

Lauren McCloy, Office of Governor Jay Inslee, and Glenn Blackmon, Department of Commerce, [presented a summary](#) of the first draft of the [2021 Washington State Energy Strategy](#). The presentation began with the legislative direction for the strategy, cross-sector considerations, the role of the Advisory Committee, and the primary inputs to the strategy. The presentation also briefly described the challenge of meeting emissions reduction targets and [results of the Deep Decarbonization Pathways \(DDP\)](#) analysis, which pointed toward electrification and efficiency as key pathways for lowering total energy demand. Ms. McCloy and Mr. Blackmon reviewed the sectoral strategies contained in the draft strategy:

- Ensuring an equitable transition for communities through universal broadband access, application of equity principles, funding transformative investments, and supporting workers in transition.
- Transitioning the transportation sector by reducing the need for travel, shifting to cleaner modes and fuels, improving fuel economy, and adopting a low carbon fuel standard.
- Transitioning the buildings sector by shifting away from fossil fuels to heat pumps, accelerating the path to zero energy buildings, reforming efficiency programs and standards, and retrofitting existing building stock.
- Transitioning the industry sector through hydrogen production and clean fuels, accelerated research and development, regulatory coordination with other jurisdictions, and clean energy industrial policy development.
- Transitioning the electricity sector through acceleration of new renewables and transmission, deploying flexible loads and smart devices, developing market mechanisms for clean power, and protecting and enhancing resource adequacy.

The presentation concluded with next steps for development of the strategy, including priorities for progress. This included near-term actions for 2030 outcomes, identifying needs and responsibilities, outreach and collaboration for implementation, potential infrastructure or recovery funding opportunities, and recognizing limitations due to the pandemic.

Advisory Committee Comments and Clarifying Questions on the Draft 2021 Washington State Energy Strategy (and responses from presenters, in italics):

- From the initial read of the strategy it seems like some aspects of nuclear energy are not included, and there are some issues with energy transmission.
- What does it mean to “align utility programs with state policy”? (referencing buildings sector strategies)
 - *This refers to ensuring that utility incentives are aligned toward decarbonization, a broader criterion than just energy efficiency. For example, when looking at upgrades to building heating sources, it would mean making incentives work toward decarbonization rather than simply improving the efficiency of existing equipment.*
- Were the equity comments around buildings articulated in the draft strategy in greater detail?
 - *Advisory Committee members should review the draft strategy and provide feedback on whether they think equity issues related to buildings are adequately addressed.*
- The draft strategy seemed to imply that costs may go up for future benefit, but we need to mitigate community impact of these rising costs.
- The strategy should be more technology-neutral—for example, allowing for renewable hydrogen and new nuclear power. There seems to be an assumption of no new hydropower in the state, which is not a foregone conclusion; there could be smaller-scale hydropower projects or more efficient use of existing hydropower resources.
- The draft strategy should include a more detailed look at support for a single balancing area, and expansion of wholesale Western power markets. California markets 20 years ago were not in good shape, and what happened recently with rolling blackouts was likewise not a good situation. It cannot be assumed that markets alone will help energy diversification needs. If California dominates the Western regional power market it will continue to dictate market terms.
 - *The draft strategy does not recommend a single balancing area for the electricity system. In the modeling summary, the draft strategy notes the assumption of an electric system that finds efficiency opportunities between different resources; the strategy authors recognize that this assumption is for the purpose of modeling only and does not fully reflect the reality of existing markets.*
- Accelerating flexible non-emitting generation is also needed, in addition to demand-side flexibility.
 - *The strategy is neutral around non-emitting generation; this question should carry forward into electricity-specific planning through organizations such as the Northwest Power and Conservation Council, and integrated resource plans at individual utilities.*
- Will the assessment/mapping for clean energy generation also include transmission siting?
 - *The assumption is that transmission siting will be included. At some level, transmission must be included because it determines whether energy can be delivered to the market. A transmission workgroup established under the Clean Energy Transition Act (CETA) is scheduled to begin work on this in 2021.*
- Does the strategy address the need for enhancements by the state for permitting new generation and transmission resources?
 - *The siting assessment might result in the ability to identify preferred sites that could then be treated as projects of state-wide significance. The state does not want to harm critical values in any way as it promotes energy resource development.*

Scott Nystrom, FTI Consulting, presented a summary of the economic analysis of deep decarbonization pathways. Mr. Nystrom's [presentation](#) covered the phases of the economic impact analysis, the economy-wide net costs of decarbonization, changes in demand and supply (and associated costs/benefits), an overview of the economic modeling software, and population and demographic trends in Washington. The presentation also covered the long-term employment forecast and impacts to employment and GDP under the electrification and constrained resources scenarios. The presentation concluded with a discussion of implications for transport fuels, gas in buildings, and key takeaways within the results for electrification, behavior change, and constrained resources scenarios.

Advisory Committee Comments and Clarifying Questions on the Economic Impact Analysis Presentation (and responses from presenter, in italics):

- Are incentive costs to develop new technologies part of the early costs?
 - *Evolved Energy Research provided the following information after the meeting: The Investment Tax Credit (ITC) is included (26% in 2020; 10% in 2025; while the policy has no expiry date, Evolved Energy rolled it off in 2030 assuming that investments in solar will not be supported by federal tax credits in perpetuity. There are no local incentives as those would transfer payments from one party to another party in Washington and do not lower total costs.*
- The analysis assumes lower future retail electricity prices. Is this relative to the increases that would happen in the reference case? Does it ignore the cost of providing adequate resources?
 - *There are two factors at work: spreading out the electricity load over more customers would lower costs per customer, but the cost to provide service would increase.*
 - *Evolved Energy Research provided the following information after the meeting: Significant investment in electricity generation, transmission, and distribution is required to meet Washington's clean energy goals. However, load grow at the same time because customers switch to electric vehicles and appliances. Electricity investments are spread over a much larger number of kilowatt-hours when determining rates. It is not a foregone conclusion that per kWh electricity rates will increase. Customer annual spending on electricity will increase substantially, however, as more of their total energy comes from electricity, while spending on fuels such as gasoline will decrease in the decarbonization scenarios.*
- Wind energy is around ten times more expensive to produce than hydropower, and solar is around seven times more expensive. If solar and wind resources increase, how is it possible that rates will decline?
 - *The comparison is not between solar, wind, and hydropower but between electricity and fossil fuels, specifically petroleum for transportation and natural gas for heating. The model forecasts that the expanded load base would reduce overall costs.*
- Lazard's most recent Levelized Cost of Energy (LCOE) analysis, published October 2020, shows unsubsidized costs of all forms of generation: <https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf>.
- How does the model account for increased costs to remaining natural gas customers as fewer and fewer consumers support the same pipeline/distribution rate base?
 - *As consumers convert to electricity, per unit cost estimates go up. This is accounted for in the DDP analysis (which includes a line item for pipeline costs). The same scenario is true in the transportation sector.*

- From an equity perspective, those that can least afford cost increases bear the brunt of the transformation.
- To assess equity and distributional issues, can the model move beyond aggregate levels to income quintiles/deciles or geographic distribution of costs/savings?
 - *Evolved Energy Research provided the following information after the meeting: No, if you are talking about geographic distribution within the state of Washington. The DDP model only looks at the State of Washington as a whole. There are studies on a more disaggregated level to determine resource potential, but the DDP model does not describe the region of the state where resources will be built.*
 - *FTI consulting provided the following clarification after the meeting: The REMI modeling cannot address the distribution of the net costs from Evolved Energy. However, it can address some of the distributional aspects of the economic impact (such as the economic impacts in Washington's counties and between different economic sectors). The economic impacts use inputs from the DDP model, though it is a distinct result set and has somewhat different considerations included in its results.*
- Do the model results only include direct jobs related to the industry categories or do results include induced or indirect job growth (such as jobs in infrastructure and technology to support these industries)?
 - *In general, the assumed infrastructure investments would show up in the model as direct, indirect, and induced benefits.*
- Does the model predict losing a small amount of manufacturing jobs by 2030?
 - *Yes, although it is small. Manufacturing is a large, complex sector in Washington. It includes petroleum refining, and that sector is likely contributing to that small job loss in the results.*
- Is the projected job loss around 2030 in household and business services reflecting that businesses cannot shoulder the burden of increased costs so they will move out of the state?
 - *A lot of investments are made in 2020s. Because the benefits take several years to realize, the economic impact on households and business services is negative until costs are recouped. Although businesses do seek out the least-cost locations, this does not occur quickly because it takes time and resources to relocate, transportation costs are a factor, etc. The model reflects the strength of businesses' response to the competitive environment based on historical elasticity. In 2030, some sectors (agriculture and natural resources) are coming out positively in the model; other sectors (manufacturing, services, other household dependent sectors) drop because of a combination of higher costs (electricity rates, fuel consumption) and also from lower real incomes for households. These changes are small, however, compared to the total scope and scale of the Washington economy.*
- Is the data on employment by industry over time available in a chart format, with absolute values for each sector?
 - *This is available and will be provided to the Advisory Committee.*
- Why are electricity price assumptions not built into the reference case? Given that the strategy assumes electrification will double the electric load, combined with aggressive use of distributed energy, more infrastructure investment is needed.
 - *One of the DDP inputs was the "electricity grid cost" category which includes both transmission and distribution as a cost and a benefit. This was an important input category to the economic model.*
- Does the economic modeling indicate how many acres of land and or land use would be needed to meet the in-state renewable energy generation needs, and the economic impact of that change (for example in the tourism industry)?

- *There is no specific category for the tourism sector. It is spread across several sectors, and there is no specific factor that considers that impact.*

Advisory Committee Member Breakout Sessions and Discussions

Following the plenary sessions and lunch, Advisory Committee members divided into three small groups for further discussion. Participation in each group is listed for each session in the summary, below. Each group addressed four topics and questions:

- **Energy Goals:** The Legislature has directed that the strategy balance a set of goals and consider a set of principles to reach those goals. *Does the draft strategy strike the right balance? Are there areas where you think the balance could be adjusted?*
- **Near term priorities:** We have learned that meeting 2030 greenhouse gas reductions will require aggressive short-term action and comprehensive, statewide coordination of policies and programs across the energy sector. *What are 1-2 areas in the strategy with the most urgency to move forward in the next 1-2 years? To what extent do you see this reflected in the draft strategy?*
- **Investment costs and benefits:** A deeply decarbonized energy economy requires more spending on technology, such as capital investments in low-carbon equipment and infrastructure, and less spending on fossil fuel. Implementing the strategy will result in job creation, economic development, environmental quality, and health benefits, while requiring significant public and private investment. *As Washington begins implementing the strategy, where will it be most important to further assess costs and benefits of these investments and the financing mechanisms that will enable them?*
- **Equity:** The strategy recognizes that intentional change is necessary to ensure that the costs and benefits of the energy transition are shared equally--and that social, racial, geographic and economic disparities are factored into our actions. *In what ways do you see the strategy contributing to the goal of a just and sustainable future for all, with a particular emphasis on meeting the needs of low-income and vulnerable populations? Where could it do more or do it differently?*

Breakout Group 1

Participants

Advisory Committee Members

- **Co-Chair:** Reeves Clippard, Chair, CleanTech Alliance and Chief Executive Officer, A&R Solar
- Will Einstein, Director of Product Development and Growth, Puget Sound Energy
- Deric Gruen, Program Director, Front and Centered
- Nicole Hughes, Executive Director, Renewable Northwest
- Dan Kirschner, Executive Director, Northwest Gas Association
- Clay Norris, Power Management Manager, Tacoma Power
- Pat Oshie, Washington Council Member, Northwest Power and Conservation Council
- John Rothlin, Manager of Washington Government Relations, Avista Corporation

Commerce, Governor's Office, and Consultant Team

- Tom Beierle, Ross Strategic (facilitation support)
- Glenn Blackmon, Washington State Department of Commerce
- Eileen V. Quigley, Clean Energy Transition Institute (technical support)

Energy Goals

The Legislature has directed that the strategy balance a set of goals and consider a set of principles to reach those goals. ***Does the draft strategy strike the right balance? Are there areas where you think the balance could be adjusted?***

- The strategy points to significant new investments and near-term costs. There are economic risks associated with those investments. My utility customers have high energy needs and many are below median income. I would have liked to see the economic modeling much sooner.
- I am glad to see equity highlighted in the strategy as part of the balance.
- To maintain balance over time, we will need the ability to course correct by shifting emphasis as the strategy is implemented.
- To understand how economic factors are balanced, it would be valuable to have more detailed information on the economic analysis, especially jobs by sector. The result about a net loss of jobs (albeit small) in industry is surprising. It is not clear how growth in the clean energy or clean manufacturing sectors fit in.
- It isn't clear where the distribution system and distributed resources come into play in the strategy. Are distributed resources helping meet energy demand or are they mainly providing equity or jobs benefits? If we need distributed resources late in the strategy (e.g., 2040), we need to remember that industry and construction jobs don't just "turn on" with a switch.
- Lots of investments will be required for rapid build-out. These generally involve high up-front costs even as operating costs are smaller over time. Utilities will accumulate a lot of capital costs early on, which builds up the rate base and requires recovery in a short period of time. These dynamics improve the environment for investments in conservation, demand-response, and other tools to offset load. We are seeing similar issues throughout the West.
- It is important to understand when benefits will emerge to outweigh the costs and how this fits with economic recovery from COVID.
- The strategy seems to assume that costs are spread only over Washington, but we may have opportunities to share the burden through regional investments.
- The economic analysis should forecast the costs of doing nothing (e.g., increased costs of wildfires, health impacts, inefficient power generation) and the additional cost of proceeding sector-by-sector rather than comprehensively.
- The idea of "balance" is misleading. Since the limits on greenhouse gases are in legislation, the strategy should be more about how to achieve them with the least adverse impacts. The strategy is doing a good job of that.
- The strategy does what it was asked to do: march towards meeting the GHG emission targets. It has a solid set of goals and concrete steps.
- It is important to understand who will pay the costs of new investment and how. Different sources of revenues (e.g., taxes, utility rates, etc.) distribute costs in different ways, some of which put more burden on those least able to pay or on those not receiving much benefit.
- Realizing some benefits depends on behavior change, which can be uncertain. It is also difficult to analyze the costs of investing in behavior change.

- It is important to ensure that utilities and others making investments have the ability to pay for them. Many actions to implement the strategy will not be made by the state but rather by a diverse group of utilities and others. (This is on top of investments already being made due to CETA.) Utilities will need the ability to recover costs quickly to balance the needs of ratepayers and shareholders. The strategy assumes that the timing of investments and the ability to recover costs will align, but it is a complex process involving many utilities.
- The goals for the energy strategy are fine, but how we execute on them will be the big challenge.
- The goals are fine if you accept the deep decarbonization modeling. I'm concerned that inputs and assumptions in the gas in buildings scenario are driving results. It seems like a foregone conclusion to emphasize electrification. Decommissioning the gas system will disadvantage those least able to afford it. There is too much emphasis on emissions reduction and not on other legislative objectives.
- If we are looking to increase electricity load on the system, how do we ensure adequate reliability and resource adequacy?

Near-term Priorities

We have learned that meeting 2030 greenhouse gas reductions will require aggressive short-term action and comprehensive, statewide coordination of policies and programs across the energy sector. ***What are 1-2 areas in the strategy with the most urgency to move forward in the next 1-2 years? To what extent do you see this reflected in the draft strategy?***

- It will be important to identify soon how the state is going to get going on transforming the transportation sector, including medium-duty and heavy-duty. Vehicles and infrastructure are long-lived assets, and fleet rollover will take time. We will need incentives for customers to make the shift.
- To move quickly, we will need a robust plan and clear actions. We need to know what investments will be required and by who.
- Utility regulators will need the authority to ensure adequate investment and reasonable rates. For utilities, we need to understand whether the costs of implementing CETA will slow us down in meeting goals.
- Rates will need to be equitable, taking into account ability to pay. We should front-load attention to equity so that the transition pathway is just.
- To enable rapid investment, we will need new financing institutions and mechanisms (e.g., PACE financing)
- Rapid transitions will require some mandates and clear deadlines (e.g., for phasing out fossil fuels).
- Putting new incentives in place will be important. The state may need to step in and replace lapsing federal incentives. For buildings, we will need to address split incentives between renters and owners.
- We should alter our current regulatory structure to encourage more rapid investment and do it less expensively by allowing utilities to earn a return on a broader set of investments. A lot of the rate impact could be absorbed by creating markets for things that don't have good market signals, like demand-response. More demand-response and distributed energy resources will allow us to meet goals more easily.
- We should really focus on transportation, including a low-carbon fuel standard. It is difficult politically and we will likely not get the stock roll-over needed in the next 10 years.

- We should jump-start electrofuels in the state (renewable liquid fuels and hydrogen). They are critical for balancing the grid and for meeting long term goals. The state should consider production incentives and consumption incentives.
- Transportation is the hardest nut to crack. It is where there are the toughest battles but the biggest potential gains. It is comparatively easy to go after electricity and buildings, which are more homogenous.
- We should focus on ensuring resource adequacy as a short-term action.
- Washington should adopt a low carbon fuel standard. However, the most recent bill language was too protectionist and should instead focus on regional solutions. Banning gasoline vehicles in 2030 puts an undue burden on rural areas.

Investment Costs and Benefits

A deeply decarbonized energy economy requires more spending on technology, such as capital investments in low-carbon equipment and infrastructure, and less spending on fossil fuel. Implementing the strategy will result in job creation, economic development, environmental quality, and health benefits, while requiring significant public and private investment. ***As Washington begins implementing the strategy, where will it be most important to further assess costs and benefits of these investments and the financing mechanisms that will enable them?***

- The longer we wait to invest, the larger the investments will need to be. We should focus on investing now while interest rates are low, and money is available and when investment can contribute to economic recovery from COVID and create a more sustainable future. This includes investments in storage, regional transmission, and distributed energy resources.
- We should assess ways to use system assets differently. For example, we may be able to use the distribution system more effectively for balancing or connecting distributed energy resources, but we don't understand it very well and have challenges like power quality with small renewable systems.
- Universal distribution of advanced metering infrastructure is a ripe area to invest. It would increase our understanding of what is happening behind the meter, including use patterns and deficiencies in the system.
- Utilities are not opposed to investing in the future envisioned in the energy strategy. Utilities can be great vehicles for managing costs over time, if it's done right. It will require a more holistic conversation about ratemaking, including how we make investments before the economy is ready to pay for them.
- We will need to align the authorities and RCW 80 (which regulates the UTC) with the new world. The UTC is bound by the historic limitations on what can be passed through in rates. There is the possibility of new legislation to allow for rates that do not bring an immediate return.
- The strategy focuses a lot on investments in technology, but we will also need investments in systems that are not technical, such as land use and housing, that influence behavior and reduce demand.
- More work should be done on fully understanding the cost of abandoning infrastructure like the natural gas system and who will bear those costs.

Equity

The strategy recognizes that intentional change is necessary to ensure that the costs and benefits of the energy transition are shared equally--and that social, racial, geographic and economic disparities are factored into our actions. ***In what ways do you see the strategy contributing to the goal of a just and***

sustainable future for all, with a particular emphasis on meeting the needs of low-income and vulnerable populations? Where could it do more or do it differently?

- Electrifying vehicles and appliances involves large investments from many households, some of the most expensive items that people purchase. Current options, like gas for heating, are reliable and cost-effective. If electrification is a core element of the strategy, we will need to figure out how to enable new household expenditures in an equitable way. We will also need to figure out how to avoid saddling customers that can least afford higher energy bills with an increasing share of the costs of systems that are being phased out.
- It's worth taking a look at whether there is an alternative path to electrification of buildings. For example, using the existing pipeline for renewable natural gas or synthetic gas made with renewable energy. Heat pump technology is awesome but isn't appropriate in all cases. Abandoning the gas system entirely might be premature.
- For electricity generation, natural gas can support reliability. We should assess its role on a regional basis.
- For natural gas, the concern is not abandoning the big pipes to generating facilities but rather the distribution system to all of the households that use gas for heating. Natural gas provides 46% of end use energy in this region, not including transportation.
- The strategy has strong principles on procedural, structural, and distributional equity. However, we need more examination of recommendations for their equity implications, including an analysis to understand implications by race, demographics, etc.
- Procedural equity is not reflected in the Advisory Committee. There is a lot of work to be done to involve communities. It is not enough to engage them on implementation of the strategy; they should be engaged as part of strategy development as well.
- The strategy frames equity issues well. There are many conversations now on equity, including those about CETA implementation. We heard today that addressing climate change is an equity action, but mitigating costs is also an equity action.
- The strategy establishes equity principles, but it is difficult to consider equity at the high level of a strategy. Considering equity in implementation will be very situational—for example what costs get passed down and to whom if we retire assets.
- Equity issues are challenging for small utilities. The state needs to tackle equity issues and provide small utilities with guidance.
- Electric utilities can't solve the transportation system. Consumer owned utilities are not in the best place to be instruments of the state for this work.
- Utilities need to be responsible for the investments required for electrification.

Breakout Group 2

Participants

Advisory Committee Members

- Kathleen Drew, Chair, Energy Facility Site Evaluation Council
- Sandi Edgemon, City of Richland
- Martin Gibbins, Climate and Energy Issues Chair, League of Women Voters
- Kent Lopez, General Manager, Washington Rural Electric Cooperative Association
- Bruce Martin, Energy Resource Manager, WestRock Tacoma

- Chris Roe, Senior Manager, Amazon
- Dan Wilson, President, Local 338 United Steelworkers
- Rep. Alex Ybarra, Washington State Legislature

Commerce, Governor's Office, and Consultant Team

- Aditi Bansal, Clean Energy Transition Institute (technical support)
- Andy Chinn, Ross Strategic (facilitation Support)
- Marc Daudon, Clean Energy Transition Institute (technical support)
- Michael Furze, Washington State Department of Commerce
- Kate Kelly, Washington State Department of Commerce

Energy Goals

The Legislature has directed that the strategy balance a set of goals and consider a set of principles to reach those goals. ***Does the draft strategy strike the right balance? Are there areas where you think the balance could be adjusted?***

- Regarding resource adequacy, there is too much reliance on Western-scale markets. I do not trust that wide-scale markets such as those envisioned for the entire West coast are mature enough to provide adequate resources. People are not considering the issues that resulted in rolling blackouts in California. During those blackouts, the Northwest-California intertie was at its capacity. There is a market study group that Department of Commerce is forming to look at some of these questions and it will be some eye-opening information coming out of that.
- It is necessary for our resource goals for future needs to be technology neutral, not just on the generation side but also on distributed energy resources and demand-response. There is a lot of emphasis in the strategy on new renewables, but we will need significant power and capacity from clean non-renewable sources. We will also need more hydropower and nuclear power. One of the great aspects of CETA is that it is technology neutral, but when additional demands from the built environment and transportation are layered on, the state will need a lot more energy resources than what is currently planned.
- Solar and wind power are relatively low risk, technologically. New nuclear has more technical risks, especially with siting, but it is a possible source for additional energy. Additional hydropower also has challenges because of concerns about fish passage. It might be helpful to add technology risk factors into the report because some technologies are less risky than others.
- There are externalities associated with electrification, such as the need for additional lithium mining to support battery production.
- A technology roadmap would help point the state toward its goals.
- The draft strategy should include, as a starting point, a description of the current status: How much energy capability exists under the current system? That would inform readers of the amount of energy needed to meet the goals.
- It would help if industrial manufacturing were more prominent in the discussion. At first it seemed like the strategy was laying the groundwork for certain industrial sectors to simply be "let go." Any economic development expert will say that it is better to protect what you have than let things go. The economic modeling does not ring true in the sense that if one sector drops off, another will take its place.
- Costs seem to be described in relative terms, but the manufacturing sector needs actual costs for planning purposes.
- Resource adequacy should be the starting point for the strategy.
- System reliability is important.

- The Enbridge Pipeline rupture illustrates how a disruption can bring an entire system to the brink of collapse; when all energy resources are concentrated in a single sector, the low diversity increases risk.
- The tone of the strategy is important, as companies that invest in Washington will consider the business environment against alternatives.
- Land use and siting are important to consider over the long term as wind and solar resources are developed.
- The importance of a technology neutral strategy is important; the current draft mentions wind energy 16 times, solar 11 times, nuclear once, and battery storage 6.
- It is unclear from the draft where the State of Washington wants to lead; we should identify what we do well and double or triple-down on that.
- The design of the energy system is the key consideration; in other words, think about what you want the energy system to achieve and then design the system to make that happen.
- The actionability of the draft strategy is important to ensure that the work that has gone into it is used and does not have to be repeated in two years.
- Equity means putting solar and wind farms in Western Washington, not just Eastern Washington. That could mean wind farms on the coast, on Vashon Island, and at Friday Harbor.
- Grant County is committed to providing low cost, reliable power. In certain areas the poverty rate is as high as 87%. If energy costs go up, it will have a significant impact on households.
- If transportation electrification continues, we should put more emphasis on renewable hydrogen to ease the load burden and help with resource adequacy.
- The Mid-Columbia hydropower generating stations have increased their energy output, yet the federal dams are not planning any changes for at least 10 years, when their generators need to be replaced. Utilities are going to meet their goals by buying energy from BPA so they need to be in a partnership to make sure we are able to supply the hydropower to make the system reliable.
- The draft strategy is relying on projections for 30 years from now that might miss the mark. There is a lot of industry in the state, including energy-intensive trade exposed, and the economy thrives on building, growing, and mining. We use a lot of energy, and what we use is probably cleaner than most places. Cost will be a huge determining factor in whether we see jobs come in or leave, and whether we can maintain the standard of living we all want. The modeling predicts new jobs will be created, but we also want to preserve the existing jobs.
- It is difficult to have a lot of confidence that we're going to be able to do what we say we want to do.
- Investment in workforce development is important, including workforce pathways outside of 4-year colleges and universities.

Near-term Priorities

We have learned that meeting 2030 greenhouse gas reductions will require aggressive short-term action and comprehensive, statewide coordination of policies and programs across the energy sector. ***What are 1-2 areas in the strategy with the most urgency to move forward in the next 1-2 years? To what extent do you see this reflected in the draft strategy?***

- Nuclear power is necessary for long-term reliability. Since it won't be possible to electrify every car, we need to prioritize renewable hydrogen.
- Building retrofits are something that can be started immediately, especially given current low interest rates.

- Research and development for new technologies must start immediately if they are going to reach a scale that meets demand.
- Douglas County PUD is developing electrolyzers that split water into hydrogen and oxygen. Every hydro project has too much power in the spring, so this is a potential way to use that power.
- The infrastructure plan must appreciate the costs and constraints of moving to a completely electrified system. Amazon has committed to using electric vehicles in its fleet; we learned from European experience that there is a long lead time for utility planning, engineering, and infrastructure.
- We need to understand how the market will address reliability constraints.
- We should start immediately on some big, bold bets such as green hydrogen.
- Siting and permitting for new nuclear must begin now, given the amount of lead time required.
- Pump storage can be scaled up.
- Investment in energy efficiency should be prioritized because we already know how to do it.
- The state must look at how its siting process lines up with its goals. Without addressing siting processes, new resources or more transmission infrastructure will not be possible.

Investment Costs and Benefits

A deeply decarbonized energy economy requires more spending on technology, such as capital investments in low-carbon equipment and infrastructure, and less spending on fossil fuel. Implementing the strategy will result in job creation, economic development, environmental quality, and health benefits, while requiring significant public and private investment. ***As Washington begins implementing the strategy, where will it be most important to further assess costs and benefits of these investments and the financing mechanisms that will enable them?***

- The assumption that retail energy rates will drop as load increases reflects a misunderstanding of the electric utility industry. The same principles that apply to prices for consumer products do not apply to the electricity sector because of the physics of the distribution system. Not enough kilowatts will move over the wires to drive lower costs.
- It is important for risks and opportunities to be shared among those that stand to benefit the most. Amazon is committed to powering its operations with 100% renewable energy by 2025 and the company is looking for projects to invest in. Public-private partnerships are a more efficient way of getting things done through pilot projects demonstrating proof of concept.
- Investing in energy efficiency is an opportunity to advance the strategy.
- There is a huge opportunity for energy efficiency in commercial buildings. However, encouraging working from home and reducing vehicle miles traveled will affect building owners' income and therefore their interest in energy efficiency investments.

Equity

The strategy recognizes that intentional change is necessary to ensure that the costs and benefits of the energy transition are shared equally--and that social, racial, geographic and economic disparities are factored into our actions. ***In what ways do you see the strategy contributing to the goal of a just and sustainable future for all, with a particular emphasis on meeting the needs of low-income and vulnerable populations? Where could it do more or do it differently?***

- It will be important to define where the greatest needs are and the percentage of the population likely to be affected. In other words, we should have a common understanding of the problem that we are trying to address.

- Seattle area electricity rates are probably five times as much as those in rural Eastern Washington. As the strategy moves forward, currently low rates will likely go up and currently high rates will go down. We need to ensure that utilities can offer different rates based on household income.
- Conservation can help, such as putting more resources into communities to pay for better insulation and windows.
- Western Washington is creating 80% of the carbon pollution we're talking about, and all the solar and wind energy plants are in Eastern Washington. Siting is another equity issue.
- If equity between Eastern and Western Washington is a factor in siting and permitting, then it will take even longer to build infrastructure. Western Washington has most of the state's oil refineries and the products from those refineries are shipped to Eastern Washington.
- The strategy should appreciate which industries and current jobs are at risk of being disrupted. Amazon is now the largest employer in the Kentuck, where previously it was coal mining, and the company learned several lessons in that transition. Much planning must happen to make sure we're not caught flat-footed. A diverse workforce is also something to consider, such as focusing on marginalized communities during workforce development.
- CETA rulemaking has a comprehensive equity section, and one of the biggest problems is the definition.
- The strategy should include an equity statement as a starting point, then use that as the lens for decision-making.

Breakout Group 3

Participants

Advisory Committee Members

- George Caan, Executive Director, Washington Public Utility Districts Association
- Dave Danner, Chair, Washington Utilities and Transportation Commission
- Matt Harris, Director of Government Affairs and Assistant Executive Director, Washington State Potato Commission
- **Co-Chair:** Nancy Hirsh, Executive Director, NW Energy Coalition
- Paul Jewell, Policy Director, Washington State Association of Counties
- Rebecca Ponzio, Climate & Fossil Fuel Program Director, Washington Environmental Council
- Alex Ramel, Representative, Washington State Legislature
- Jessica Spiegel, Director Northwest Region, Western States Petroleum Association

Commerce, Governor's Office, and Consultant Team

- Heather Martin, Ross Strategic (facilitation support)
- Lauren McCloy, Washington Governor's Office
- Bill Ross, Ross Strategic (facilitator)

Energy Goals

The Legislature has directed that the strategy balance a set of goals and consider a set of principles to reach those goals. ***Does the draft strategy strike the right balance? Are there areas where you think the balance could be adjusted?***

- It will be difficult to achieve greenhouse gas targets. We are spending a lot of time on electrification of the economy. It worries me that we are only focusing on this. Decarbonization was not explicit in the legislative direction for the energy strategy; it was implied. There needs to be a more balanced approach and more technology neutrality. There are a lot of challenges to electrifying our economy, such as transmission, the amount of intermittent resources that will need to be matched with baseload resources, and challenges in infrastructure and demand-side resources.
- The draft strategy has tried to balance all the pieces and make connections across sectors, which is appreciated. There is an ongoing tension between reliance on technology versus behavior change. The strategy should put more emphasis on behavior change and systemic elements that are needed, with an emphasis on people that will be hardest hit by this transition and tribal populations.
- The economic analysis could provide more detail, specifically on the equity components. The comments that were made about the gas system have a real ring of truth to them. If it costs less for some and more for others, it negatively impacts those for whom costs go up, especially if they are low-income. We need to make sure we are cognizant of where those pitfalls are so we can craft policies that avoid them. Similarly, when we lose jobs in one construction trade but lose jobs in another, that might look great for the economy as a whole, but it's not great for the people who lost their jobs.
- We should be technology neutral, although it isn't clear how that would work. If we don't talk about the "how" and the "what," then it's not a plan.
- The strategy was intended by legislature to be "aspirational."
- The draft strategy strikes a balance. We have an imperative to decarbonize, and the longer we wait the less achievable that will be. Don't let the perfect be the enemy of the good. We should work on improvements when there are disruptions. We need to think about what we will do for people who will lose their jobs.
- There are four states looking at how to get people off of natural gas. Massachusetts should be wrapping up a study this year. Colorado just started a study. New York is also working on one. There is a lot we can learn from these studies. Washington's strategy has to be a work in progress; we can't get all the answers ahead of time. The imperatives of decarbonization are too time critical.
- The draft strategy leans heavily on electricity. Some analysis indicates that this is not the primary way to decarbonize. It seems a bit premature. We need to understand the economic ramifications more deeply. For some things, as you transition away, the use is still there. For example, if you reduce access to petroleum products and people still use them, they will get them from other places. Shifting the burden to other areas is not the goal of this strategy, so this is something we should understand a bit better.
- The balance is mostly right. The sectors are evolving. The 2030 timeline is tough. We can't say exactly what the technologies and right strategies will be for later years because the system is going to evolve. Our process of developing different resources and fuels will also evolve. It will become clearer in ten years what the strategy for 2050 needs to be. The discussion of transformational and cross-sector issues should include the idea of optimizing and integrating systems across those sectors. For example, how do we use the transportation sector to help balance the electricity sector? How do we use the buildings sector to help balance the electricity sector and provide resources adequacy and reliability?

Near-term Priorities

We have learned that meeting 2030 greenhouse gas reductions will require aggressive short-term action and comprehensive, statewide coordination of policies and programs across the energy sector. ***What are 1-2 areas in the strategy with the most urgency to move forward in the next 1-2 years? To what extent do you see this reflected in the draft strategy?***

- From the point of view of counties, the easiest one for us is universal broadband access. This has emerged in many ways that weren't foreseen because of the pandemic. This has contributed significantly to reducing vehicle miles traveled and reducing greenhouse gas emissions. This is also important to us because it provides many other benefits that are necessary for a robust and healthy economy, including helping to bridge equity gaps across different communities. The other near-term priority is providing funding for clean energy transformation to local and state governments; they are heavy users for different fuels and energy in buildings. Governments are probably the most responsive early adopters if funding is provided
- First on the list is universal access to broadband. Second on the list is the low-carbon fuel standard; it will drive the critical innovation in clean fuels. Third, we should not expand the gas system. In the next 1-2 years, we should not dig the hole any deeper in terms of adding gas infrastructure. We can revisit this if we get more renewable natural gas and hydrogen resources, but for now we should not expand the system.
- With regard to broadband, the problem that it's not easy because it takes money. Ultimately there's no profit to be made in a lot of these underserved areas because the population density isn't there. Finding the resources for broadband has got to be a priority.
- We have to focus on our transportation practices and expanding access to tele-work. We need to have more infrastructure for alternatives like bicycles and pedestrians. We need to expand our EV charging infrastructure to bring more deployment of electric vehicles.
- Regarding new natural gas infrastructure, there are things we need to do to have people who incur the costs pay the costs.
- We need to do more with buildings. The strategy is correct to focus on buildings.
- A California study of natural gas showed the price per therm going from under \$2 a therm to over \$18 per therm if the customer base is reduced to zero by 2045. We have to figure out how to make that transition equitable for those last customers. We should anticipate these impacts and act now. If work is not done now, there will be no way to catch up 20 years from now.
- We need utilities to get clear guidance from the state on what to be planning for in terms of vehicle electrification. We owe it to partners who will be setting up charging infrastructure. All of those partners need to get a clear picture from the state about vehicle electrification goals and the state's plans.
- Upfront investments should focus first on the hardest hit communities and be done in a way that builds our workforce. These communities should immediately see the economic and investment benefits.
- In terms of buildings, the most immediate upfront investment should be to weatherize existing buildings and make them healthy and safe for all people.
- On broadband, one of the challenges is serving low-density communities where broadband investments are not profitable. We had the same issue with electricity one-hundred years ago, which we managed to solve. It is achievable. The legislature will be seeing proposals for broadband, including funding, increased authority, and dealing with equity.

- Regarding investment in research and development, there are number of opportunities to put some funding into areas that the strategy has identified as not yet ready. This could use more analysis.
- Broadband and R&D are two things that are achievable in the legislative session.

Investment Costs and Benefits

A deeply decarbonized energy economy requires more spending on technology, such as capital investments in low-carbon equipment and infrastructure, and less spending on fossil fuel. Implementing the strategy will result in job creation, economic development, environmental quality, and health benefits, while requiring significant public and private investment. ***As Washington begins implementing the strategy, where will it be most important to further assess costs and benefits of these investments and the financing mechanisms that will enable them?***

- When I see questions about whether benefits are greater than the costs, I think it's important to look big picture: what are the costs if we do nothing in terms of carbon emissions increasing? What will we spend on forest fires? Where are we going to get the water to drink, etc. We have to think about what the cost is of inaction. This is going to be an iterative process. We are going to find out more cost-effective ways as we move forward. The strategy has to be viewed as a work in progress where we try things and learn from mistakes.
- The upfront costs highlighted by the economic analysis are worth it in the long term. We save money the more we invest in an equitable system—for example, on healthcare and many other things. We should invest up front in the hardest hit communities. It's also important that we invest in systemic changes and not just technological fixes.
- There will be real costs to housing for the policies envisioned by the strategy. We already have a housing problem in Washington State that continues to get worse; market and construction costs are a big driver of that. The argument is that the long-term benefits of these investments will provide greater savings, but initial investments or increased rent will be a barrier to some. We should look at performance-based financing that pays for initial investments with savings over time.
- For transportation infrastructure, financing relies on fossil fuel sales in Washington. If we electrify the system, we will have to find a whole new way of financing transportation. It isn't clear transportation infrastructure needs are going to go down even if we increase broadband and reduce VMT. We will still need to replace bridges, maintain roads, and expand freight. With a growing population, even with VMT reductions, you will still see increased infrastructure needs.
- The joint transportation committee in the state legislature is discussing how transportation infrastructure and funding needs are changing. We have to reexamine our existing funding sources to figure out how to better utilize them (e.g., using the gas tax to prioritize maintenance and preservation). We need a price on carbon as a funding source.
- There will be a lot of competition for using price on carbon revenue.
- We need to make it clear that investments today will pay off tomorrow. People need to understand that the goal today for reducing carbon and improving health is important for the future, but we need to make investments today.
- Public and ratepayer investments should be targeted first at communities that have already been hardest hit by pollution and are going to have the hardest time transitioning. We should look for places where capital is already mobilized such as the PACE program being tested right

now in commercial buildings as well as on-bill financing. The low-carbon fuel standard does a really elegant job of connecting the cost of the existing system with investments in the future.

- There was mention of performance-based energy savings, and Lauren shared a [link](#) that performance contracting is already part of our government lexicon. Utilities need an orientation to performance-based investments that align with the state energy goals. Investor-owned utilities should be incentivized to invest in the things that will help meet state energy goals. We need to look at income tax, capital gains, wealth taxes, etc. to fund the critical things like broadband.
- We should acknowledge avoided costs when they exist. If you can avoid building new gas infrastructure because you have a robust energy efficiency program, those are avoided costs.
- The low-carbon fuel standard is an expensive route.
- I think we have to be very sensitive about how we impact people in rural communities who cannot afford to transition to low carbon energy. It will be difficult for utilities to recover costs of investment when they have low-income ratepayers.
- If we are going to build new infrastructure, we need a plan for how to get it permitted in a timely way. We don't want to do anything that sidesteps environmental review, but there is a conversation to be had about identifying a process and timeline for getting through environmental review. There will be communities who want new infrastructure and communities who do not. The processes we have in Washington state for locating these facilities are controversial. One thing we need to think about is making sure there are benefits to communities in which infrastructure is located. Wind and solar farms use up a lot of land while not generating a lot of jobs. We need to make sure that communities are getting benefits right now (not long-term benefits) for living near these facilities.

Equity

The strategy recognizes that intentional change is necessary to ensure that the costs and benefits of the energy transition are shared equally--and that social, racial, geographic and economic disparities are factored into our actions. ***In what ways do you see the strategy contributing to the goal of a just and sustainable future for all, with a particular emphasis on meeting the needs of low-income and vulnerable populations? Where could it do more or do it differently?***

- We need to think about how we value intergenerational impacts and how we convince people that it's okay to make investments now even if there is a net loss in the near term.
- The strategy should note that what we are experiencing now is not that great. People across Washington are experiencing dire costs because of our inaction. Whether it's more intense fires, floods, and other hardships, these will only get worse if we don't act. We can take action; it's not that hard. There are a lot of options in the strategy and we need to begin.
- The strategy's commitment on equity is good. It lays out a useful frame for all of the sectors.
- We have to build some quick wins so that people can see actual benefits, like broadband. Because of the pandemic we have businesses that are going to fail, people that can't afford to pay rent, commercial buildings that are no longer occupied, and people who can't pay their utility bills. We need to demonstrate how we're going to help people pay their bills and survive the crisis. We need to think about what we're going to do in the short term to help people through the pandemic and give them confidence to build a clean economy.
- We should use federal economic recovery funding for economic recovery that meets the state energy strategy goals.

- Clean energy should not be considered elite; it should be integrated into all our economic decisions.
- It's not that the state doesn't have enough financial resources, but they are distributed inequitably.

Report Out of Breakout Group Themes

After the small group sessions, Advisory Committee members reconvened as a group to share and discuss summaries of the themes from breakout sessions.

Group 1 Report Out

Energy Goals:

- The strategy is less about balancing across the three goals than how to achieve the state's greenhouse gas targets with the least adverse impacts related to the other goals.
- There are many moving parts in the energy system that will be influenced by the strategy; keeping energy goals in balance as we move forward will require the ability to course-correct over time.
- The strategy points to significant near-term investment and costs. There is risk in making rapid investments in anticipation of uncertain future benefits (both whether and when they will be realized). If the forecasted benefits don't materialize, utilities and others making the investments risk being left caught in the middle.
- Anticipated investments could increase utilities' rate base rapidly. Utilities will need the ability to recover costs quickly to balance the needs of ratepayers and shareholders. The strategy assumes that the timing of investments and the ability to recover costs will align, but it is a complex process involving many utilities.
- It is important to understand who will pay the costs of new investment and how. Different sources of revenues (e.g., taxes, utility rates, etc.) distribute costs in different ways, some of which put more burden on those least able to pay or on those not receiving much benefit.
- The strategy's approach to natural gas is highly dependent on model inputs and initial analytical assumptions.

Near-Term Priorities:

- Moving quickly on transportation is a near-term priority because it is such a big contributor to Washington emissions, and so much will need to change by 2030. Work on transportation should include converting to electric vehicles as well as use of low-carbon and zero-carbon fuels.
- Given how rapidly new investments in infrastructure are needed, we should enable utility investment through rules that enable adequate and equitable rates as well as new financing institutions and mechanisms.
- We will need strong incentives in the near-term to quickly accelerate consumer demand for low and zero-carbon technologies and systems.
- Once the strategy is in place, it will be important to do detailed planning of investments and actions needed to provide a roadmap for implementation.

Investment Costs and Benefits:

- We should not just be thinking about investments in technology but also in systems like land use and housing that influence behavior and can reduce energy demand.

- We should focus on investments that contribute to economic recovery from COVID and create a more sustainable future. This includes investments in storage, regional transmission, and distributed energy resources.
- We should do more to understand and rethink the assets and system we have. For example, we may be able to use the distribution system differently, but we don't understand it very well. Advanced metering can help us better understand how the system is (and can) be used.

Equity:

- The strategy has strong principles on procedural, structural, and distributional equity. However, we will need more examination of recommendations for their equity implications.
- When considering equity, the strategy should seek to avoid undue burden for shouldering the costs of the transition.
- Smaller utilities have difficulty implementing equity measures; they benefit from guidance and assistance from the state.
- Procedural equity is important and not reflected in the work of the Advisory Committee. It is not enough to engage communities on implementation of the strategy; they should be engaged as part of strategy development as well.

Group 2 Report Out

Energy Goals:

- Reliability and resource adequacy are key recurring themes that the energy strategy must address, and there is some skepticism about the current ability of markets to sufficiently provide reliability and adequacy.
- The strategy should be more “actionable”, rather than simply aspirational.
- The strategy should be technology neutral and not predetermine which technology is best for achieving its goals.
- The strategy should acknowledge externalities associated with achieving the state’s energy goals.
- The strategy should describe current conditions in enough detail so readers can understand the existing situation in relation to the goals.

Near-Term Priorities:

- Renewable hydrogen is a priority, especially around low-carbon transportation.
- The role of nuclear is not clear and if nuclear is to have a significant role then siting and permitting must start immediately given the required lead time.

Investment Costs and Benefits:

- Energy efficiency investment is a low cost, high benefit, and proven approach.
- Public-private investment partnerships have the opportunity to deliver fast results.

Equity:

- A common definition and/or equity statement is needed.
- There are siting issues for new infrastructure associated with equity in Eastern Washington relative to Western Washington.
- There are equity issues associated with workforce transition and where jobs will be lost and gained.

Group 3 Report Out

Energy Goals:

- The strategy places a large emphasis on electrification.
- The strategy should be technology-neutral, given that new technologies will be developed within the next thirty years.
- The strategy should acknowledge the behavioral aspects that will be critical for the energy transition.
- The strategy strikes the right balance between “aspirational” and “achievable.”
- Washington should look at examples in other states (such as Massachusetts, Colorado, and New York) for how to transition people out of natural gas.

Near-Term Priorities:

- Expanding broadband access should be a near-term priority. However, the state will need to address the challenge of how to make it profitable in low-density rural areas.
- The state should not expand natural gas infrastructure at this point. The strategy should revisit this if the state gets more access to renewable natural gas and hydrogen resources, but for now we should not expand the system.
- The strategy should focus on transportation practices and expanding access to tele-work, in addition to expanding infrastructure for alternatives like bicycles and pedestrians.
- The strategy adequately focuses on the near-term needs for buildings, especially starting with existing buildings.
- The strategy should ensure clear guidance for utilities to plan for things like vehicle electrification.
- Upfront investments should focus first on the hardest hit communities and be done in a way that builds the state’s workforce.

Investment Costs and Benefits:

- It’s important to think about the costs that are happening right now from inaction or insufficient action. Analyses should be done on avoided cost to balance out the investment needed to make the transition happen.
- The strategy should plan for the permitting necessary to make infrastructure investments in the future.

Equity:

- The strategy should communicate effectively how to value intergenerational impacts, and demonstrate that investment now will lead to long-term benefits.
- The strategy should address the Covid-19 crisis appropriately and build a sense of faith in people that the state can deal with current economic problems while still investing for the future.
- The strategy should focus initial investments in the communities hardest hit by climate change and other inequities.
- There are enough financial resources in the state to pay for these investments, but they are not being distributed in such a way that are easy to access. The strategy should look at more aggressive wealth taxes to help pay for investments.
- In terms of citing, the strategy should ensure that communities where facilities are located are seeing benefits from these facilities.

Wrap Up and Next Steps

Co-Chair Reeves Clippard noted that many of the Advisory Committee members are accustomed to problem solving and the strategy is now at the point where actionable steps begin to form. This leads to several questions such as: Where do you apply force? How is force applied? What are the specifics? We are struggling with staying at a high level because we are ready to move things forward.

Department of Commerce staff noted that details on the economic analysis, as well as answers to some specific questions, will be provided to the Advisory Committee. The DDP and economic impact analysis scenarios will inform the strategy, and Commerce recognizes the risk of taking one pathway and excluding others. Page 32 of the draft strategy begins a description of how Commerce is considering moving from the scenarios to actions. There are still many questions remaining, but what happens beyond 2030 will depend on what happens during the next ten years.

Commerce appreciates the thinking about how to convey the transformational nature of the strategy. Currently there are many great ideas that are packaged and siloed, and the next step will be how to move them into actions and implementation. Commerce is also interested in early thinking around workforce development and invites suggestions about who to reach out to on that part of the strategy.

Commerce will follow up with Advisory Committee members on questions about the DDP and economic impact analysis. Advisory Committee members are invited to provide comments on the draft strategy by November 12th and can contact Commerce staff if they need additional time to comment.

Final Thoughts from Advisory Committee Members

- By 2030 we want our energy system as clean as possible but also resource adequacy and reliability are key. If natural gas plants are decommissioned, where will the state get its firm energy
- Putting action callouts in the document is appreciated; a helpful appendix would be a table that summarizes these actions by category, and owners.
- During a recent BPA meeting, the biggest concern was transmission. BPA has a lot of debt and it is increasing rapidly and it will be a tremendous challenge to provide transmission capacity.

Public Comment

Members of the public were provided an opportunity to address meeting participants. Comments are summarized below:

- The biggest piece missing from the day's discussion is the technology disruption that has begun in electric vehicles. The fuel cost is about one-third that of a gasoline vehicle, maintenance costs are much lower, and battery cost reductions are much faster than any liquid fuels. Mid-market electric vehicles will be cheaper to purchase than gasoline or diesel vehicles by 2025, and electric pickups will be cheaper by 2030. In my opinion, the analysis grossly underestimates EV growth because cost numbers are outdated. I expect that business-as-usual market forces will likely see 90% EV sales globally by 2030. Transportation fuel is the big rock in the emissions box but also in the cost box. Of the \$26 billion that Washington spent on energy in 2018, about \$15 billion was for transportation fuels, a large majority of which was on light-duty vehicles. Electrifying all of these vehicles would cut that \$15 billion versus \$5 billion for increased electricity; the oil companies' lost

revenue will fund our grid buildout. Norway is the only country currently on track to reduce vehicle emissions by 45% by 2030 using incentives and penalties to equalize the cost of electric versus fossil fuel vehicles. A buyer that brings a new emitting vehicle into the fleet is the party responsible for the lifetime emissions of that vehicle. When there are zero-emission options in that vehicle class, the buyer should be charged for the lifetime emissions of the vehicle. EVs should be featured more prominently in the report.

- There has been a lot of discussion about rates. There is a lot of focus on macroeconomics in the strategy and not enough on the microeconomic modeling for individual consumers. We could see a situation in 2050 where even with higher electricity rates we could have lower household energy costs, whether from improved insulation, baseboard heating, or adoption of electric vehicles. This is not embodied in the current report, and it would be helpful for policy makers to have all the information on how this affects household income and household energy expenditures. I suggest incorporating that type of information into the energy strategies; this would also help with equity issues.