

WASHINGTON ENERGY STRATEGY ADVISORY COMMITTEE

Meeting 2 Summary

March 31, 2020, 9:00 am to 4:15 pm
Virtual meeting via Zoom

Meeting Participants

Advisory Committee Members

George Caan, Executive Director, Washington Public Utility Districts Association
Jason Campbell, Spokane Tribe and Chief Executive Officer, Sovereign Power
Reuven Carlyle, Senator, Washington State Legislature
Co-Chair: Reeves Clippard, Chair, CleanTech Alliance and Chief Executive Officer, A&R Solar
Dave Danner, Chair, Washington Utilities and Transportation Commission
Beth Doglio, Representative, Washington State Legislature
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, Water 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
Patrick Oshie, Member, Northwest Power and Conservation Council
Clay Norris, Power Management Manager, Tacoma Power
Rebecca Ponzio, Climate & Fossil Fuel Program Director, Washington Environmental Council
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

Other Meeting Participants

Tom Beierle, Ross Strategic (facilitation support)

04/14/2020

Glenn Blackmon, Washington State Department of Commerce
Andy Chinn, Ross Strategic (facilitation support)
Chris Davis, Office of Governor Jay Inslee
Marc Daudon, Caspian Group (technical support)
Roel Hammerschlag, Hammerschlag LLC (technical support)
Jeremy Hargreaves, Evolved Energy Research (technical support)
Michael Furze, Washington State Department of Commerce
Kate Kelly, Washington State Department of Commerce
Nicole Larson, Clean Energy Transition Institute (technical support)
Michael Lazarus, Stockholm Environment Institute (technical support)
Heather Martin, Ross Strategic (facilitation support)
Lauren McCloy, Office of Governor Jay Inslee
Eileen V. Quigley, Clean Energy Transition Institute (technical support)
Bill Ross, Ross Strategic (facilitation support)

Welcome and Agenda Overview

Washington State Energy Strategy Advisory Committee Co-Chair Nancy Hirsh welcomed meeting participants. Ms. Hirsh thanked Committee members for their continued participation during uncertain times and their commitment to creating a low-carbon economy that meets the needs of Washingtonians.

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

Advisory Committee Charter

The Advisory Committee reviewed proposed changes to its charter, as suggested by Committee members during the first meeting. A summary of these changes is available on slide 9 of the meeting presentation [here](#).

Advisory Committee members provided the following feedback on the draft revised Advisory Committee charter:

- The proposed changes accurately reflect the Committee's feedback; however, the world today is very different from when the Committee first reviewed the charter in that a major public health crisis has occurred and is ongoing. It seems important to acknowledge that the economy is different and will be for an unknown time. During the next few years, high unemployment will be a factor to address while simultaneously trying to achieve state GHG emissions reduction targets. In that sense, the charter should emphasize the charges to the Committee to maintain fair and reasonable energy prices and increase competitiveness by fostering a clean energy economy.
- Utilities have responded to the COVID-19 outbreak by suspending service disconnects and waiving late fees for customers. This relates to the state energy goal of maintaining fair and reasonable energy prices for consumers and should be reflected in the charter.
- It may be appropriate to recognize in the charter that the State Energy Strategy should include reliability and adequacy of supply, not just for electricity but for other sources as well.

04/14/2020

- Given the current situation, the type of innovation that will be required to decarbonize the energy sector is even more important. There are things that can be put in place today that will make Washington's workforce and communities more resilient and able to meet future challenges. The State Energy Strategy should connect workers, equity, and clean energy.

Action Item: The project team will revise the charter to reflect Advisory Committee members' comments about how COVID-19 influences the context for strategy development and circulate the updated version.

Introduction to Technical Analysis Team

Michael Furze, Washington State Department of Commerce, introduced the technical team which will operate under the leadership of the Clean Energy Transition Institute (CETI). The CETI team is responsible for informing the technical analysis and review of the State Energy Strategy.

CETI Founder and Executive Director Eileen V. Quigley described the mission and roles of the technical team, the operating context for the State Energy Strategy, the scope of the technical analysis work, and a high-level workplan with timing and anticipated milestones.

The complete technical team presentation is available [here](#).

Advisory Committee Comments and Questions (and responses):

- Since the decarbonization pathways have not been identified, will Committee members (and others) have an opportunity to provide input on what those might look like?
 - *Yes, the technical team process will provide this opportunity.*
- Will the Committee have the opportunity to look at the assumptions in the deep decarbonization analysis?
 - *Yes, the assumptions will be provided.*
- What is involved in an "equity implications analysis"?
 - *The equity implications analysis examines who bears the burden of the transition to a clean energy economy, and workforce opportunities.*

Deep Decarbonization Modeling Framework

Jeremy Hargreaves, Evolved Energy Research, provided an overview of key questions for Advisory Committee members to consider, followed by a summary of the Northwest Deep Decarbonization Study (NWDDP) that the Clean Energy Transition Institute released in June of 2019. Mr. Hargreaves's presentation on the NWDDP included:

- Rationale, scope, and approach
- Study questions
- Differences from prior studies
- State CO₂e reduction targets
- Modeling approach
- Central case study results
- Alternative pathway results

04/14/2020

- Key findings

The NWDDP and supporting materials are available here: [Meeting the Challenge: Pathways to a Low-Carbon Future for the Northwest](#). Materials include:

- [Full Report](#)
- [Executive Summary](#)
- [Key Findings](#)
- [Technical Report](#)
- Three infographics: [Key Decarbonization Strategies](#), [Change in Energy Supply](#), and [Illustration of Power-to-X](#)

Mr. Hargreaves discussed how decarbonization modeling will inform the State Energy Strategy through a tailored analytical approach that will be distinct from the 2019 NWDDP model.

Advisory Committee Comments and Questions (and responses):

- Will the technical team consider demand strategies beyond technology changes, to include behavioral change and land use for example?
 - *The team will base the demand forecast on the U.S. Energy Information Administration Annual Energy Outlook (AEO). Demand strategies that include behavior change or land use that impact load can then be investigated through scenarios where loads are adjusted to reflect implementation of particular strategies; for example, lower vehicle miles traveled (VMT) due to increased public transportation or other mode shifts. The technical team will develop the set of scenarios that best informs the State Energy Strategy in collaboration with the advisory committee and Washington State staff.*
- Will there be a prospective examination of carbon, as compared to the current situation?
 - *Yes, the technical team will model a Reference Case of what will happen in the absence of long-term decarbonization targets.*
- Will the technical team incorporate flexible end use demand from responsive customer-side technologies?
 - *The model can dispatch flexible load technologies based on an assumed potential to shift load by technology. The Washington State Energy Strategy will incorporate this functionality, representing the potential flexible load response from new demand side technologies.*
- Are the assumptions underpinning the NWDDP included in the report?
 - *Yes, the technical appendices for the NWDDP include the assumptions. (See: [Technical Report](#))*
- Does the model look at the economic feasibility of electro-fuels?
 - *Yes, the model will build electric fuel supply chain infrastructure (electrolyzers, hydrogen storage, transport, etc.) if it is part of a least cost solution based on forecasted technology costs. Electric fuels include hydrogen, power to gas, and power to liquid processes.*
- Does the electro-fuels modeling include potential ways to accelerate cost-effectiveness?
 - *The modeling can incorporate scenarios that investigate the impact of accelerated cost effectiveness by accelerating projected price declines on electric fuels technologies.*
- How does the NWDDP estimate future electricity demand at 55% of the energy sector?
 - *The expansion of electricity from 23% to 55% of energy demand is a function of electrifying transportation, buildings, and other end-uses.*
- What assumptions does the NWDDP make about natural gas use?

- *The NWDDP assumes a certain emissions budget based on an 86% below 1990 levels by 2050 target for energy-sector emissions. The lowest cost approach was to retain some gas capacity to maintain reliability in the energy sector. To meet the emissions budget, gas usage shifted from an energy resource in early years, operating at high capacity factors, to a capacity resource in later years, operating at low capacity factors and burning very little gas. Natural gas can also be displaced in gas generation with clean biogas, synthetic gas, or hydrogen in the model.*
- What does the model say about climate change impacts?
 - *The model can incorporate assumptions that reflect climate impacts over time. For example, the frequency of low water years, or the impact of temperature on loads. Frequency of low water years and impacts on the energy system are scenario options the technical team can examine in development of the State Energy Strategy.*
- Will the technical analysis assume that the Energy Independence Act and the Clean Energy Transformation Act are baseline components of energy policy?
 - *Yes, CETA and Washington State GHG reduction targets are the baseline components of this work.*

Meta-Analysis Framework

Roel Hammerschlag, Hammerschlag LLC, provided an overview of the meta-analysis to be carried out by the technical team. This includes a compendium of lessons learned from other states, an inventory of Washington State clean energy policies since 2008, and an overview of decarbonization studies, to set overall context. Mr. Hammerschlag noted that the 2012 State Energy Strategy was developed by Department of Commerce and delivered to the Legislature without specific assignment of responsibilities; for the current iteration it will be helpful to clearly state which entity is responsible for which policy or action.

Advisory Committee Comments and Questions (and responses):

- Is there a list of the national entities that are included in the decarbonization studies? Can the Advisory Committee suggest others?
 - *The technical team will provide the list of studies and reports we are consulting and welcomes suggestions from Advisory Committee members.*
- Is there capacity to add tax breaks or other incentives in the inventory?
 - *Yes, any suggestions can be sent to Andy Chinn at Ross Strategic or Kate Kelly at Commerce.*

Technical Analysis and Facilitation

Marc Daudon, Caspian Group, and Michael Lazarus, Stockholm Environment Institute, discussed the proposed process and approach for future technical analysis that would inform the State Energy Strategy and how Advisory Committee members can be engaged. They also reviewed a set of potential technical focus areas for Advisory Committee feedback (in subsequent breakout sessions). Finally, they reviewed a set of example issues that may be addressed in the energy strategy related to electricity, transport, buildings, and gas and liquid fuels, as well as cross-cutting issues such as the needs of low-income and vulnerable populations and workforce development.

Advisory Committee Co-Chair Reeves Clippard emphasized that Committee members are expected to act as a liaison with the constituencies they represent and asked Committee members to encourage their peers to sign up for updates from Commerce on the State Energy Strategy [website](#).

Advisory Committee Comments and Questions (and responses):

- Is there a more holistic way to develop potential focus areas?
 - *There is an interest in avoiding silos but when thinking about solutions they tend to be categorized by sector.*
- If there is interest in participating in more than one technical working group, is that possible?
 - *Yes; convenings will likely not occur at the same time, and Advisory Committee members are also invited to add others from their organizations or constituencies to participate.*
- How is political feasibility factored into the analysis?
 - *The technical team is interested in Advisory Committee feedback on political feasibility and will be looking at how the process can build support for policies that move Washington on the path to meet energy and greenhouse gas emissions goals.*
- What sort of levers are built into the economic impacts modeling in the technical analysis?
 - *The deep decarbonization pathways modeling considers economics in terms of minimizing total cost to the system but does not make any statements about how costs are distributed within an investment strategy. Throughout the process, the technical team will use this and other economic modeling tools to assess economic impacts and guide suggestions about the best policies and actions to recommend.*
- How will nature-based solutions be incorporated into the analysis?
 - *This is part of ongoing discussions with Commerce since the nature-based work is significant and will contribute to GHG reduction targets. However, it involves a broader scope than the energy strategy and additional stakeholders than are represented on the Advisory Committee.*

Breakout Sessions

The Advisory Committee reviewed an initial list of topics and issues that may be considered in the State Energy Strategy, as illustrated in the slide below:

Topics and Issues to Address (Initial List)

Achieving emission reduction targets

- Reduce & manage demand
 - Energy efficiency and conservation
 - Fuel switching (e.g. transportation & building electrification)
 - Behavior change (e.g. telework)
- Decarbonize supply
 - Clean electricity (achieving 100%)
 - Clean liquid and gas fuels
- Carbon sequestration
 - Direct air capture
 - *Lands management*

While promoting competitiveness, affordability, and equity

- Maintaining reliability & affordability (fair & reasonable prices)
- Enhancing economic competitiveness
 - Clean energy economy
 - Industrial and agricultural sectors
 - Workforce & business development
 - Innovation
- Benefiting all Washingtonians – achieving equity goals, addressing rural and urban needs
- Accounting for uncertainty

Advisory Committee members then then split into four breakout groups to discuss the following key questions:

- Given the transitions needed to achieve state targets, what should be added to the list of key topics and issues?
- In light of these key topics and issues, what are the primary opportunities and challenges for Washington’s energy future?
- What do you think is the most important consideration the technical analysis should address?

Breakout group discussions are summarized below.

Breakout Group 1

Participants:

- Advisory Committee: Matt Harris, Dave Danner, Jason Campbell, Nicole Hughes
- Commerce: Glenn Blackmon
- Technical Team: Jeremy Hargreaves
- Facilitation: Tom Beierle

Key Themes:

Just transition and equity: Energy system transformation will create a new distribution of costs/benefits and challenges/opportunities for various economic sectors and population segments. These should be addressed so that opportunities are broadly shared, and transitions eased for those that bear new costs. The ability of economic sectors or segments of the population to adapt will influence the speed at which the state energy system can transition. Specific issues include:

- Impacts to fossil-fuel dependent workers and communities
- Competitiveness concerns if energy costs rise (e.g., agriculture economy, energy-intensive industries)
- Access and affordability to new technologies for low-income and/or underserved communities

Regional inter-connectivity: More inter-connected markets can help improve reliability. Decisions in California (and elsewhere outside of Washington) are critical for broader regional interconnectivity, but the State Energy Strategy can help advocate for increased inter-connectivity and avoid creating new barriers.

Carbon sequestration: The Advisory Committee should look to create new economic opportunities (e.g., in rural areas) through sequestration strategies.

Regulation: Achieving state climate and energy goals may require more authority and flexibility for regulatory agencies to consider a broader set of considerations. Current work on social cost of carbon and performance-based regulation are examples. Future needs may include low-income ratemaking and expanded opportunities for rate recovery (e.g., for EV charging, demand-response investments, etc.) Regulators are likely to need new state legislation for increased authority/flexibility.

Implications of COVID-19 for technical analysis: The technical analysis may need to consider the current economic impacts of COVID-19, including:

- A new baseline or reference case reflecting reduced economic activity.
- Assumptions about the timing of near-term impacts/recovery as well as how longer-term structural changes.
- Whether assumptions about fuel costs, etc. that rely on historical (pre-COVID) trends should be revisited.
- The relevance and value of uncertainty/sensitivity analysis, including analysis of worst-case scenarios.

Other key issues/topics discussed:

- The state should consider the appropriate role and balance between economic incentives (voluntary) and requirements (mandatory--e.g., via codes) for energy efficient and/or low carbon products/equipment.
- Where there are increased costs for fuel, products, etc., the state should consider the impacts on economic competitiveness and equity/affordability. These issues are particularly important given the economic downturn, unemployment, etc. from COVID-19.
- Demand-response will become increasingly important as the energy system shifts from load responding to demand, to energy demand responding to load.

Breakout Group 2

Participants:

- Advisory Committee: Reeves Clippard, Kathleen Drew, Will Einstein, Deric Gruen, Paul Jewell, Dan Kirschner
- Technical Team: Michael Lazarus
- Facilitation: Andy Chinn

Key Themes:

Information access: With the proper information people can make better choices; transparency and access to information are important and the current energy distribution system is currently lacking in this area.

Developing energy infrastructure: Considering the differences between peak demand, “normal” operating conditions, and outlying circumstances, should the energy system be built to meet peak demand or developed with demand responses? What is the cost of the transformation of the energy system to certain populations? How can new infrastructure be developed and sited as the region continues to grow?

Role of transportation: Given that transportation as a sector is a major source of GHG emissions, is vehicle electrification feasible on the scale required to decarbonize? There are also potentially large benefits to converting medium and heavy-duty diesel trucks to natural gas.

Definitions: It will be important to define concepts like competitiveness and equity, as well as what is meant by “urban needs” and “rural needs.”

Market signals: A regulatory approach alone is not optimal; price signals are important to move businesses and markets.

Technology: Scenarios should not anticipate future technologies will solve the decarbonization problem. This includes carbon capture and sequestration technology, in particular how close the technology is to being able to significantly affect carbon. Scenarios should also include new technologies that continue to use natural gas but more efficiently than current practices. Electrifying the energy sector should not be the assumed end-state. Technology cost is also a primary constraint to moving toward renewable natural gas.

Infrastructure location: If there is greater interest in producing energy closer to where it is consumed, it will require a serious public policy reform to streamline permitting and address the move of energy infrastructure out of rural areas (with associated tax and job implications).

Energy security: Energy security is generally connected to reliability but can also be defined as ensuring energy supply lines are secure from hacking or other illegal acts.

Lands management: Washington has some of the productive agricultural and forest lands and it would be helpful for the technical analysis to start to quantify and integrate it into the GHG analysis.

Breakout Group 3

Participants:

- Advisory Committee: Martin Gibbins, Nancy Hirsh, Kent Lopez, Bruce Martin, Pat Oshie, Tim Sheldon, Dan Wilson
- Governor’s Office: Lauren McCloy
- Technical Team: Eileen Quigley
- Facilitation: Bill Ross, Heather Martin

Key Themes:

Demand management: Utility-based demand response programs can reduce system-wide loads if infrastructure is upgraded.

04/14/2020

Sector differentiation: Residential, large commercial, and industrial energy users require different programs and different implementation to achieve improvements.

Optimizing existing system: The Energy Independence Act and CETA are already focusing on the electricity sector; the Advisory Committee should consider other economic sectors, including acknowledging that although they are outside of the Committee's purview, they are nonetheless large GHG emitters.

Infrastructure: What type of infrastructure will need to be developed to meet future low-carbon energy needs? This could include regional or micro-grids, and transformers that can charge multiple electric vehicles.

Research and development: There may be significant R&D required to move from the current status to the 2050 goal.

Technology: It is important to consider what has historically triggered technology deployment, whether it is supervisory control and data acquisition (SCADA) for utilities or artificial intelligence (AI). CETA included specific mandates and pathways to achieve those mandates with existing technologies while also providing an opening for emerging technologies to emerge. The same can be done with decarbonization. Proper economic incentives are important for technology adoption by utilities, and also for customers to support technology adoption.

Economic competitiveness: Apprenticeship programs, future workforce training, new job creation, and job preservation are all important considerations.

Carbon sequestration: Carbon sequestration should include forest practice; managed forest lands from sequestration should replace forest thinning and forest cutting. Biomass for energy generation is connected to this concept.

Definitions: Equity, rural needs, and urban needs all need to be defined before developing a strategy.

Burden: If fossil fuels are phased out, total energy burden and future affordability will be important. If the strategy leads to an overbuilding of renewables, how do we make sure that the costs are shared across the economy?

Leakage: It is important to make sure that jobs and carbon emissions are not simply shifted to other sectors or states.

Breakout Group 4

Participants:

- Advisory Committee: Sandi Edgemon, Clay Norris, Rebecca Ponzio, Chris Roe, John Rothlin, Alex Ybarra
- Technical Team: Roel Hammerschlag
- Facilitation: Marc Daudon

Key Themes:

Energy Efficiency: Energy efficiency and conservation are usually associated with electricity, but these concepts should also be used for natural gas, especially in oil-heated homes that cannot take advantage of utility programs. Transportation efficiency, including marine and rail, can also be included in this conversation, with fuel switching. To expand its viability, consider viewing the benefits of energy efficiency through a carbon lens, in place of, or in addition to the cost lens. Energy efficiency and conservation are probably exceeding the cost-effectiveness test of I-937 at this point. If the federal dams in the Pacific Northwest could upgrade to 95% efficiency it would add to the available energy supply.

Demand response: is a key component to include, as interruptible electric loads for consuming electric power and producing electric fuels can be used as system balancing tool.

Carbon sequestration: Carbon capture and storage, direct air capture, and land management should be differentiated; lumping them together ignores the important differences in how they occur. Also, HB2311 makes it clear that biological sequestration is additive to energy and industrial decarbonization.

Reliability: What strategies can the Advisory Committee deliver to utilities to meet their reliability needs? How will we keep the lights on without fossil fuels? For 125 years the system has been moving dispatchable generation to match loads, and now the reverse is necessary. We will need to pursue new opportunities and make sure we have adequate firm power. Storage should be included in the solution set. The reason solar and wind are feasible is because of firm hydro supply. Rising electricity demand is a concern, especially with EVs coming on-line.

Affordability: What strategies can the Advisory Committee deliver to utilities to meet their affordability needs? How can utilities take care of ratepayers without being restricted to the old least-cost model?

Financial Markets and Risk: Financial markets are slow-moving, so need to address how these markets can be developed. Cities are also risk-averse and interested in certainty.

Sector Integration: Decarbonizing the energy supply overlaps with carbon sequestration and electrofuels; electric fuels and renewable fuels are all partial solutions to electric sector challenges and to transportation – and natural gas. Decarbonized supply needs to include dispatchable generation with clean fuels.

Terminology: I-937 included mandates for conservation. It is important to start using the terms already outlined in the utilities' glossary so that everyone is on the same page when working together; utilities have specific standards. HB1257 created additional conservation requirements for gas. Definitions of reliability and cost-effectiveness are important and should be standardized based on NERC, etc.

Innovation: Hydrolysis is where wind power was 25 years ago; there is opportunity for the state to provide incentives for production and consumption, however utilities need support to provide a different rate structure so that loads that can be interrupted quickly. A lot of the solutions are to electrify everything. That's challenging but exciting for electric sector personnel. Technology breakthroughs will be important.

Human behavior and customer-centric: As we work to develop the strategy we need to listen and not put up barriers because we don't understand or may be initially threatened. We also should look holistically at the problem and take a customer-centric view to solutions.

Breakout Session Wrap-Up

Bill Ross, Ross Strategic, summarized common themes from the breakout sessions. In particular, the importance of clear, precise definitions; the demand-supply relationship; innovation and technology (and how to encourage, embrace, and use it); and regulatory authority (what needs to happen, and what rules are needed to make it happen).

Advisory Committee Comments and Questions (and responses):

- There should be an emphasis on examining economic impacts of decarbonization strategies that are already in place – existing policies set forth in the legislature and also COVID-19 impacts. For example, decarbonizing the transportation sector with a low-carbon fuel standard has an impact on many rural communities. How can the impact be addressed creatively? Through existing legislation there are good policies in place but how are economic impacts and equity addressed?

Closing Comments

The Co-Chairs thanked Advisory Committee members for participating. Based on the outcome from the breakout groups, the Co-Chairs suggested thinking about optimizing systems and linking sectors; the SES should look at how the state moves forward in decarbonizing the energy system while maintaining reliability and equity.

The technical team noted that it will be working to synthesize the various tools at their disposal to address the questions raised by the Advisory Committee. The technical team will also discuss how its approach and focus areas can cover the systems integration and systems view.

Public Comments

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

- The Committee should be bold and look at transformative activities related to carbon and the energy system. Washington State has a good record of evolutionary change, but not revolutionary change; for example, the creation of the Northwest Power and Planning Council, and even further back the New Deal and focus on hydropower and transmission.

Next Steps and Action Items

- The project team will circulate the June 2019 Northwest Deep Decarbonization Pathways Study and associated documentation.

04/14/2020

- The project team will follow up with the Advisory Committee on the proposed structure for scoping technical analysis and how members can be involved.