

**Washington Clean Energy Transformation Act  
Carbon and Markets Workgroup  
Issues & Alternatives List**

**April 7, 2021**

**I. Introduction**

Section 13 of the Washington Clean Energy Transformation Act (CETA) requires the Department of Commerce (Commerce) and the Utilities and Transportation Commission (Commission) to convene a stakeholder workgroup to examine energy and carbon market issues related to implementation of CETA.

On November 19, 2019, Commerce and the Commission announced a 20-member<sup>1</sup> markets workgroup (MWG) representing a broad set of stakeholders including environmental and public interest organizations, public and privately owned electric utilities, wholesale generators and electricity market participants, labor groups, and residential and business customers. Since the original announcement, a number of changes were made to the list of participants based on organizational or changes in workload priorities. The updated list of individuals includes:

- Charles J. Black, on behalf of Invenergy
- Ryan Bracken, Northwest Natural Gas
- Clare Breidenich, Western Power Trading Forum
- Alisa Kaseweter, Bonneville Power Administration
- Bill Drumheller, Washington Department of Ecology
- Lisa Gafken, Sarah Laycock Office of the Washington State Attorney General's Public Counsel Unit
- Joni Bosh, NW Energy Coalition
- Rex Habner, International Brotherhood of Electrical Workers
- Kelly Hall/Vlad Gutman-Britten, Climate Solutions
- Therese Hampton, Public Generating Pool
- Nicole Hughes, Renewable Northwest
- Scott Kinney, Avista Corporation
- Melissa Lyons, Chelan County Public Utility District
- Kate Maracas, Western Grid Group
- Tyler Pepple, Alliance of Western Energy Consumers
- Josh Walter, Seattle City Light
- Paul Wetherbee, Puget Sound Energy
- Mary Wiencke, Pacific Power
- Cameron Yourkowski, EDP Renewables

Under section 13 of CETA, the MWG must examine: a) efficient and consistent integration of CETA and transactions with carbon and electricity markets outside of the state; and b) compatibility of the requirements under CETA relative to a linked cap-and-trade program. Commerce and the Commission are then tasked with the development of specification, verification, and reporting requirements for: a) retail

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<sup>1</sup> Deric Gruen, Front and Centered, was initially assigned to the workgroup, but was unable to continue to participate.

electric load met with market purchases in the EIM or other centralized market; and b) addressing prohibitions on double-counting. Commerce and the Commission are expected to commence a rulemaking to address these Phase II CETA implementation issues in May 2021.

On March 6, 2020, the MWG published a Scoping Document describing the intent and purpose of the MWG as well as setting forth a work plan and schedule for the MWG's examination of issues.

## **II. Intent of the Markets Work Group**

The MWG further developed an additional statement of intent, included in the Scoping Document, that the MWG's purpose is to help ensure that Washington receives benefits from both a lower-cost, more efficient wholesale energy market as well as a decarbonized energy supply by examining how energy and carbon markets interface with the implementation of CETA and the transformation of Washington's energy supply. The ultimate goal of the MWG, as stated in the Scoping Document, was to develop an issues list and identify areas where certain approaches for compliance with CETA may impact wholesale market operation. While the goal of the workgroup was not to come to consensus or provide recommendations for CETA rulemaking, there was a concerted effort to identify the issues and themes that will drive the rulemaking process and to provide context for the differing viewpoints.

To this end, the MWG hosted four workshops on energy markets, greenhouse gas (GHG) policies, and other related topics to set a base of understanding among MWG members that will inform its examination of the issues. The workshops provided relevant information on a range of topics including transmission and system operations, existing bilateral energy markets, centralized markets such as the energy imbalance market, and GHG policy implementation. Following this series of workshops, which concluded on August 28, 2020, the MWG developed an issues list for consideration in the CETA rulemaking process as it relates to energy and carbon markets. The group then held three public work sessions between October and December 2020 to discuss the issues list as well as a set of potential alternative approaches for resolving the issues. This document sets forth those issues and potential alternatives.

## **III. Wholesale Energy Market Context**

The wholesale electricity market in the Northwest is still predominantly a bilateral market, where transactions between a single buyer and seller occur, including electricity that is anonymously transacted on the Intercontinental Exchange (ICE) at the Mid-C trading hub. These transactions are governed by standard WSPP Schedule C contracts. Renewable Energy Credits (RECs) have been the tool used for accounting for the clean energy attributes of resources purchased through bilateral markets since Washington's Energy Independence Act was passed in 2006. Organized markets are expanding rapidly as more entities join the Western Energy Imbalance Market (EIM) which is a real time market that automatically finds low-cost energy to serve real time customer demand. Renewable electricity bid into the EIM does not currently include a REC, and electricity purchased from the market is considered unspecified. Further, the clean energy attributes of electricity from EIM purchases made by Washington utilities cannot currently be tracked to load. Beyond the EIM, there is also serious consideration underway in multiple forums about the possibility of one or more regional transmission organizations (RTO) forming in the west.

There is general acceptance that organized markets, such as an RTO, can help achieve low carbon energy goals, primarily because organized markets maximize efficient use of transmission and provide access to a broad geographic footprint with diverse generation and load. The access to this diversity ensures the greatest use of non-emitting resources and allows for a more rapid response to changes in grid conditions than bilateral markets. These benefits enable integration of more renewable resources and reduces

curtailment. Accounting for greenhouse gas emissions is a key component of current discussions and acknowledged as an important principle to address to allow utility participation in wholesale electricity markets while ensuring compliance with states' 100 percent clean energy standards. Existing RTOs that operate in states where renewable portfolio standards require accounting for clean energy attributes typically rely on RECs as the primary accounting tool, though they have not yet addressed state requirements within a wholesale market for a 100 percent clean standard.

#### **IV. Key Market Workgroup Themes**

Over the course of 2020, through the workshops and public work sessions, MWG members developed an issues list and identified key themes regarding the intersections between CETA implementation and the operation of wholesale electricity markets. A set of key themes emerged in areas where CETA and wholesale electricity markets interact and where MWG members have differing opinions regarding the implications of those interactions. These themes can be summarized as follows:

- **Accounting for Energy Used to Serve Customers.** There is disagreement among MWG members with respect to how utilities should be required to demonstrate compliance with CETA. Some MWG members did not feel all the options considered in the discussions were adequate for compliance under their interpretation of the law. Other members disagreed on what is required under the law. It was generally agreed that how utilities are required to demonstrate compliance may impact wholesale electricity market participation.
- **Treatment of Unspecified Market Purchases.** Washington is a single state that is part of a larger regional integrated bulk electric system and wholesale electricity market in which balancing authority areas cross state boundaries. Utilities can and do enter into bilateral specified source purchases, however, many bilateral and organized market transactions rely on a pool of resources, historically undifferentiated (unspecified) by resource and fuel type. Unspecified market purchases are not linked to a specific generation source, therefore assignment of clean energy attributes to these purchases is not possible under the current market and accounting structure. Some MWG members were concerned that continued reliance on unspecified purchases would not support accounting for a 100% clean electricity requirement. This led to the discussion of whether CETA allows for unspecified purchases in 2045. While some MWG members contend that all purchases by 2045 must be specified, others argue that this will limit the development of wholesale markets by forcing continued reliance on bilateral contracts.
- **CETA Interaction with Current and Future Markets.** While there was an understanding that CETA compliance rules could impact utility participation in organized electricity markets, MWG members were not aligned on the issue of whether CETA rules should ensure efficient interaction with existing wholesale electricity markets or whether CETA should set clear guidelines for how future markets need to evolve in order for Washington utilities to participate. There was concern from some MWG members that Washington state is limited in its ability to drive regional market development to meet the needs of CETA. Those members expressed concerns that some options proposed could limit the benefits of those markets and could prevent participation in current and future markets. Other MWG members were confident that the policy flexibility in the 2030 Greenhouse Gas Standard and the time horizon for meeting the 2045 100 percent clean standard allows time to develop regional accounting systems which can address this concern and support benefits from an expanded regional market.

With these broad themes in mind, the summaries below provide details of how each of these themes plays out in the discussion around the 4 issues the MWG identified as relevant.

## V. Issues List – Efficient & Consistent Integration of CETA & Electricity Market Transactions

### Issue #1: Accounting for Market Purchases

#### Issue Summary

This issue is specific to the treatment of unspecified market purchases as articulated above.

- Under RCW 19.405.040(1)(a) (Greenhouse Gas Neutral Standard) and 19.405.050 (100% Clean Standard), an electric utility must “demonstrate its compliance with this standard using a combination of non-emitting electric generation and electricity from renewable resources.”
- Under RCW 19.405.040(1)(c), “electricity used to meet this standard must be verified by the retirement of renewable energy credits (RECs).”
- Under subsection (f) of the same section, non-emitting electric generation used to meet this standard “must be verified by documentation that the electric utility owns the non-power attributes of the electricity generated.”

#### Discussion

The MWG discussed this issue with respect to its impact on markets as well as implications for CETA compliance but reached no consensus. There is concern from some group members that requiring renewable or non-emitting resources dispatched within an organized market to be assigned to Washington or specific utility load or otherwise be considered unspecified could preclude utilities’ ability to rely on market transactions for CETA compliance. Other members believe that additional tracking systems and markets will evolve to provide additional information about generation sources used to meet load.

With that assumption, some members noted that, given utilities’ current participation in markets and ability to comply with the Greenhouse Gas Neutral Standard by using up to 20% alternative compliance options, of which unbundled RECs are an option, there is ample buffer to continue to engage in unspecified market purchases until tracking systems and markets evolve. Other members noted that the 20% alternative compliance option may not be sufficient if a western RTO develops, and all electricity transacted in that market is considered unspecified.

Some members believe CETA provides an opportunity to have Washington and its utilities push for improved specification and market mechanisms that enable necessary tracking and compliance with state requirements. Other members believe that requiring a different mechanism to enable specification of resources within organized markets would likely result in continued reliance on bilateral transactions instead and would dilute the benefits of a centrally dispatched market.

#### Potential Approaches Discussed

The MWG discussed potential approaches to compliance for organized market purchases where the utility demonstrating compliance does not own the original source of energy and associated RECs. MWG members discussed several frameworks, listed below, for how utilities might demonstrate compliance with CETA for market purchases. The list below summarizes the discussions around this issue; however, the MWG does not endorse these options as MWG members did not agree on whether all frameworks were required or were consistent with the law.

- 1) Purchase of a specified resource bundled with associated RECs. RECs are resource-specific so purchases would be on a resource-specific basis. For RECs representing market purchases, additional criteria is likely required to show that the underlying resource is capable of delivery to an identified geographic location (i.e., to demonstrate that the REC is not unbundled represents energy that may count toward the 2030 standard).

- 2) REC plus transactional documentation demonstrating the underlying energy purchase from the resource associated with the REC. Transactional documentation could come in various forms including contracts, transaction confirmations, or electronic tags; REC and associated energy purchase would be on a resource-specific basis. MWG members agree that this requirement would need to be accompanied by a demonstration that the energy associated with the REC was not double counted, an issue that is more fully explored in Issue #3 below.
- 3) Allow purchases from a cluster or set of resources that may be demonstrated as renewable or non-emitting supported by RECs and transactional documentation. Some MWG members argue that this requirement would need to be accompanied by a demonstration that the energy purchase was not re-sold.

A number of MWG members suggest that option #1 is not adequate for demonstrating compliance with CETA and a version of option #2 with the ability to demonstrate that the underlying energy was not resold into the market is preferable. It was further noted that that option #2 and #3 would force the market to evolve to use only specified transactions which may have unintended consequences on markets. Some MWG members have concerns about the reduced efficiency and effectiveness of markets and the impact that may have on maintaining reliability and supporting decarbonization. The third option may be challenging because not all transactions are resource specific and therefore may not be associated with RECs. Further, there is no generally agreed upon way under current market structure to demonstrate that energy purchased was not “used” within a geographic region and re-sold in a different market transaction.

The MWG also generally acknowledged that, under current market design, only the first option, or some iteration of it, is likely to work for energy imbalance market (EIM) transactions or any expansion of the EIM market. This is because the EIM, and all centralized markets, use locational marginal pricing and security-constrained dispatch to settle the entire market without bilateral transactions between individual entities. Currently, there is no ability for EIM participants to select a particular resource or fuel type for which it would solely transact. And finally, as mentioned previously, RECs are not currently part of EIM market transactions.

## **Issue #2: CETA Resource Eligibility Criteria**

### Issue Summary

This issue is specific to the theme noted above regarding demonstration of use of electricity from renewable resources and non-emitting generation for Washington retail electric load but also relates to the above discussion regarding accounting for market purchases. While seeking to avoid discussion or debate on how CETA should be interpreted, the MWG discussed different potential frameworks for documenting generation sources of electricity under CETA—each of which may represent a potential interpretation of CETA language—and the relative impacts on efficient and consistent integration of CETA with electricity markets. The potential for any individual framework to meet the requirements of the law will be determined in rule making.

### Discussion

MWG members discussed benefits and limitations of the following frameworks for establishing compliance with CETA:

- Delivery to load
- Demonstration of final ownership of energy and retirement of nonpower attributes
- Attribute-based compliance with eligibility criteria
  - vintage, geographic location, and/or system interconnection point; or
  - demonstration that renewable or non-emitting energy was acquired with attribute and was not resold as specified

- Evolution of a regional generation attribute tracking system.

***Delivery to load:***

A delivery to load standard would require a demonstration that renewable or non-emitting energy was delivered to Washington customers on a real time basis and that an associated REC or non-power attribute was retired to verify use. It was generally agreed among MWG members that tracking electricity on a real time basis presents challenges under current market operations. Accordingly, the group focused more on other options for developing methodologies that employ other available information or data to support or verify delivery of renewable and non-emitting energy to Washington customers.

***Demonstration of Final Ownership of Energy:***

This standard would require a demonstration that renewable or non-emitting energy was generated or acquired by a utility, that RECs or non-power attributes associated with that energy were retired, and that the underlying energy was not subsequently re-sold or transferred. Proponents of this standard believe that energy that is subsequently re-sold or transferred in the wholesale electricity market cannot form the basis for supplying CETA compliant electricity to a Washington utility's customers. As articulated by some MWG members, even if the REC is retained, if the underlying energy is re-sold or transferred, the REC is rendered usable only for the 20% alternative compliance option to meet the Greenhouse Gas Neutral Standard. Proponents of this proposal argued that without these requirements or a similar construct, utilities would be able to continue to rely on fossil fuels, while pairing this non-compliant generation with attributes unbundled from compliant resources.

Some MWG members believe demonstration of final ownership of energy will be difficult to implement while preserving the benefits of market participation because, outside of narrow circumstances (discussed in more detail in Issue #2 on double-counting below), energy is often re-sold on a system-to-system basis, and not associated with specific resources.

***Attribute Based Compliance with Eligibility Criteria:***

This standard would require a demonstration that each REC or non-power attribute used for compliance with CETA met certain specified criteria such as vintage, geographic location, and/or system interconnection point. Under this framework, demonstration would be required that each REC or non-power attribute used for CETA compliance is associated with underlying energy that met certain criteria ensuring that it is part of that portfolio of resources used to serve Washington customers. Some MWG members believe this approach would have minimal impact on electricity markets because it would not require a resource-specific reconciliation between energy procured by the utility and subsequent shorter-term energy transactions. Other MWG members argue that while the above approach maintains market efficiency, it would also allow continued reliance on fossil resources and is inconsistent with the requirements of CETA. Those members were concerned it does not go far enough to ensure utilities procure more renewables. All MWG members agreed this approach would also require demonstration that the underlying energy was not claimed as a specified source elsewhere (see Issue #3 below).

***Requirement for market purchases which assumes some pro-rata share of fossil generation for each transaction:***

Under this approach, a fuel mix factor or pro rata share of fossil generation would be applied to market purchases. Some group members noted that this could be challenging because RECs are required for compliance, and there is no mechanism for assigning a percentage of a transaction to a REC. There was also general agreement that a carbon cap or tax system could get at this issue.

However it is not clear how a cap or tax system would interface with CETA. This topic was not thoroughly contemplated as it was ultimately beyond the scope of the MWG.

### Potential Approaches Discussed

Similar to Issue #1, the foundational disagreement among MWG members is to what extent the implementation of CETA should assume: 1) that in order for market purchases qualify as CETA compliant resources, markets must evolve to recognize and allow for state clean energy requirements that have more granular resource-specific and fuel-type accounting based on electricity market transactions; or 2) that there are certain fundamentals of market and utility operations that cannot be essentially modified without undermining the purpose and benefits of the market.

The group discussed the potential to develop a regional tracking system such as a generation attribute tracking system (GATS). GATS tracks all energy attributes, and is used in other regional markets across the country, including in the PJM regional transmission organization (RTO). A GATS system would track the attributes of all energy, emitting and non-emitting, produced within an identified geographic area, which typically represents an RTO footprint. The GATS system tracks actual generation and provides for the entity with ownership rights to claim the attributes, which ensures no attributes are double-counted and provides more transparency in the procurement of resources through market transactions. Notably, however, PJM GATS does not attempt to tie the allocation of attributes to physical load service or underlying energy transactions. While most group members are supportive of exploring such an accounting system, there were concerns that the current GATS tracking system may not meet all of the compliance needs for CETA and is unlikely to be in place in the short-term.

### **Issue #3: Double-Counting and Sales of Electricity**

#### Issue Summary

Under the Greenhouse Gas Neutral Standard, electric utilities may satisfy up to twenty percent of their compliance obligation using alternative compliance options that may include using unbundled RECs. The use of unbundled RECs is allowed for up to 20% of a utility's compliance obligation, provided that there is no double-counting of any nonpower attributes associated with RECs within Washington or programs in other jurisdictions. Unbundled renewable energy credit is defined in RCW 19.405.020(38) as a REC that is sold, delivered, or purchased separately from electricity. These requirements potentially intersect with the integration of CETA and transactions with electricity markets outside of the state with respect to utility purchases from bilateral and organized markets. These requirements may also have potential intersections with a linked cap-and-trade program in a different jurisdiction. The issue is determining under what circumstances energy purchases or sales may result in double-counting of nonpower attributes associated with RECs within Washington programs.

#### Discussion

There was disagreement among group members regarding a number of core questions related to double-counting and the types of electricity market activities that may implicate double-counting. While again avoiding focus on interpreting the requirements of CETA, it became clear that foundational questions exist regarding: 1) what constitutes double-counting and what problem is the prohibition on double-counting in CETA intended to address; 2) whether double-counting is limited to the REC itself, or whether there are other types of double-counting based on the attributes encompassed within a REC (e.g., emissions and/or energy); 3) what is included in the definition of non-power attribute (e.g., emissions).

There are a range of perspectives on these issues, as well as when and how wholesale electricity markets or carbon markets are implicated. Much of the discussion around this issue revolves around the interaction of CETA and use of RECs for compliance that are associated with specified sales of electricity to California. For example, under California's cap-and-trade program, specified imports of zero-emitting

energy may be sold into California without a corresponding requirement to retire the REC associated with that import. Some MWG members believe that it would constitute double-counting of the non-power attributes if a REC associated with a specified sale of a renewable resource to California was used for CETA compliance. These members emphasize that the definition of nonpower attributes includes environmentally related characteristics, which include their zero-emissions characteristics. Other MWG members believe that this is not double-counting because their assumption is that RECs are not designed for GHG emissions accounting and the REC does not carry the actual emissions of the resource, but rather the avoided emissions attribute.

While interpretive clarification is needed in this area, the MWG members do largely agree that if RECs associated with specified sales to California cannot be used for CETA compliance, it will not cause large wholesale electricity market disruption. This is because utilities have the ability to control whether owned or contracted energy is sold as specified to California as well as the ability to retire RECs associated with those sales separately and prevent their use for CETA compliance.<sup>2</sup> However, some group members do argue that there are fundamental incompatibilities between how accounting works in emissions programs versus renewable portfolio standard or clean energy standard programs and that these differences could become disruptive. In particular, as more and more states adopt diverging programs, impacts to market efficiency could occur.

#### Potential Approaches Discussed

The MWG did not attempt to discuss different approaches to this issue for two reasons; 1) there is still a fundamental difference in opinion on whether or not RECs provide emissions reduction or emissions avoidance characteristics, and 2) in the context of CETA, resolution to this issue begins with a clear articulation of what the law requires with respect to double-counting, which is left by statute up to the Commission and Commerce.

#### **Issue #4: Market Characteristics**

##### Issue Summary

Following robust discussion on the first three topics articulated above, the MWG met for a final working session to discuss core areas of intersection between wholesale electricity markets and CETA implementation and to consider a set of market characteristics to guide decision-makers and stakeholders on these challenging issues.

##### Discussion

There are fundamentally different views among MWG members with respect to how CETA should be implemented, and whether utility participation in wholesale electricity markets should depend on whether they evolve to reflect CETA. During a discussion of all participants, the group developed the following characteristics for consideration as Commerce and the Commission move forward with rulemakings. These characteristics do not necessarily reflect consensus of the group and are not ranked in any priority order.

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<sup>2</sup> Unlike other utilities that can make resource-specific sales, Bonneville Power Administration currently sells from a system of resources and does not make resource-specific sales. BPA specified sales to California are system sales (known as “asset controlling supplier” or ACS sales). The disposition of RECs that the federal system generates is contractually locked-down until 2028. All RECs generated by the federal system are given to BPA’s preference customers on a pro rata basis, commensurate with the amount of power the customer purchases from Bonneville, and to IOUs through the Residential Exchange Settlement Agreement. After conveying the RECs to its customers, Bonneville does not control the disposition of the RECs.

- 1) Meet the requirement of CETA to transition the state's electricity supply to 100% clean energy
- 2) Create clear and accurate accounting for compliance
- 3) Maintain system reliability
- 4) Ensure no double counting
- 5) Minimize administrative burden
- 6) Maximize value of investment in renewable and clean energy
- 7) Support use of the flexibility and efficiency of wholesale electricity markets including transparent and clear price signals for resources that comply with statute.
- 8) Coordinate with other states to align market principles where possible: price signals, transparency, consistent accounting mandates, and pricing
- 9) Support cost-effective renewable energy development and integration; limiting overbuild and curtailment for resources that are used to comply with the statute.
- 10) Support the most efficient use of existing transmission and optimize new build to consider clean energy policies, economics, and reliability needs

### Potential Pathways to Resolution

Members of the MWG are not in agreement upon the appropriate path forward but the discussion among members trends between two bookends of approaches: 1) approach CETA compliance on a procurement basis with the use of RECs to ensure sufficient quantities of renewable and non-emitting energy is procured while establishing REC eligibility criteria to ensure required nexus to Washington retail sales; or 2) require modifications to existing and future wholesale electricity markets in order for market purchases to qualify as eligible resources under CETA.

The second statutory obligation of the MWG was to examine the compatibility of the requirements under CETA relative to a linked cap-and-trade program. The following section summarizes the MWG discussion around this issue.

## **VI. Issues List – Compatibility of CETA Relative to a Linked Cap-and-Trade Program**

### **Issue: Elements of Compatibility of CETA and a Linked Cap-and-Trade Program**

#### Issue Summary

Under section 13 of CETA, the MWG must also examine the compatibility of the requirements under CETA relative to a linked cap-and-trade program. For discussion purposes, the MWG assumed a scenario where Washington implements CETA and joins a linked cap-and-trade program that includes other Western jurisdictions (e.g., California). The MWG reviewed and discussed key topics that potentially affect the compatibility of the CETA requirements with a multi-state GHG cap-and-trade program that includes Washington State. The MWG focused on how CETA and a linked GHG cap-and-trade program may interact, including ways that CETA and a linked GHG cap-and-trade program could potentially reinforce or complement each other or conflict.

#### Discussion

First, there is a potential for GHG emissions to be subject to both CETA alternate compliance payments and cap-and-trade GHG emissions allowance costs (including opportunity value). This involves a situation where a utility finds it necessary to use GHG-emitting resources during 2030-2045 and make alternate compliance payments under CETA. If the utility is also required to use GHG emissions allowances under the GHG cap-and-trade program, it would be subject to two separate compliance costs for its GHG emissions.

Second, there may be an issue related to CETA alternate compliance options (vis-à-vis cap-and-trade GHG emissions allowances). This issue involves the type and amount of alternate compliance mechanisms that are allowed and the accounting treatment under both CETA and a GHG cap-and-trade program (e.g., for power imports and exports with other states).

Another area to consider is double-counting of non-power attributes. If Washington implements a GHG cap-and-trade program in addition to CETA, it would be important to consider compatibility of attribute accounting and generation source documentation under both. This includes how the GHG content of wholesale power transactions is reported. If a state has a clean energy program such as CETA and participates in a GHG cap-and-trade program, it does create a need to think about and address double counting (e.g., the role of RECs under cap and trade).

## **VII. Conclusion**

As noted throughout this document, individual MWG members disagree as to how CETA should be interpreted and whether and how CETA compliance should reflect and recognize market fundamentals or whether markets must be modified to reflect CETA. However, the members do agree that this choice is not necessarily binary. To achieve the statutory requirements of CETA, while ensuring the benefits of an efficient wholesale energy market, CETA implementation and markets should harmonize to the extent possible. Due to its regional nature and complexity, any evolution of markets will take time to explore and will require coordination with neighboring states.

## WA MWG Reference List

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### Workshop #1

Date: April 30, 2020

Host: BPA

- **Link, R.** (2020). Role of Energy Markets in Resource Planning & Utility Operations (presented 30 April 2020 at the Washington Markets Work Group workshop #1)
- **Aggarwal, R.** (2020). Transmission Landscape Long Term Transmission Planning (presented 30 April 2020 at the Washington Markets Work Group workshop #1)
- **Edmonds, S.** (2020). Clean Energy Transformation Act Market Workgroup: Presentation on how transmission service works (presented 30 April 2020 at the Washington Markets Work Group workshop #1)
- **Spires, J.** (2020) Thoughts on Pacific Northwest Market Structure (presented 30 April 2020 at the Washington Markets Work Group workshop #1)
- **Belden, T.** (2020) Comparing Bilateral and RTO Markets (presented 30 April 2020 at the Washington Markets Work Group workshop #1)

### Workshop #2

Date: June 10, 2020

Host: BPA

- **Blackmon, G.** Clean Energy Transformation Act Overview (presented 10 June 2020 at the Washington Markets Work Group workshop #2)
- **Wiencke, M.** Renewable Portfolio Standards Overview (presented 10 June 2020 at the Washington Markets Work Group workshop #2)
- **Gruen, D.** Equity in CETA & Energy Markets (presented 10 June 2020 at the Washington Markets Work Group workshop #2)
- **Wara, M.** Equity in Energy Markets: Reflecting on the CA Experience with a Focus on CETA (presented 10 June 2020 at the Washington Markets Work Group workshop #2)
- **Sahota, R.** Overview of CA Cap-and-Trade Program (presented 10 June 2020 at the Washington Markets Work Group workshop #2)

- **Cullenward, D.** Electricity and Carbon Markets in California (presented 10 June 2020 at the Washington Markets Work Group workshop #2)

### **Workshop #3**

Date: July 15, 2020

Host: PacifiCorp

Webinar Link:

<https://pacificorp.zoom.us/rec/share/xJNwD4HI7mNIWqvP7HzaXakBB7vpT6a8gHRPrKYJzB7zqu9M1pKdYCO91e5pxlJp>

Access Password: 7O?!4^wq

- **Coon, A.** (2020) WREGIS Basics (presented 15 July 2020 at the Washington Markets Work Group workshop #3)
- **Schuyler, K.** PJM EIS Generation Attribute Tracking System (GATS)
- **Schauland, R. & Singh, A.** (2020) Imported Electricity in California's Cap-and-Trade Program (presented 15 July 2020 at the Washington Markets Work Group workshop #3)
- **Nothstein, G.** (2020) Washington State Fuel Mix Disclosure (presented 15 July 2020 at the Washington Markets Work Group workshop #3)
- **Scavo, J.** (2020) Overview of Power Source Disclosure (presented 15 July 2020 at the Washington Markets Work Group workshop #3)
- **Rothleder, M.** (2020) GHG Accounting (presented 15 July 2020 at the Washington Markets Work Group workshop #3)

### **Workshop #4**

Date: August 28, 2020

Host: PacifiCorp

Webinar Link:

[https://pacificorp.zoom.us/rec/play/Et4CjIDJGiDEqipal2yUAE4W9sbGJI87E9iY47xNHJGwei7y8A5CXHZGRKxDwGFUHoc7yEFfrzSXc5ys.2fzG1ina\\_yoWTACU?continueMode=true](https://pacificorp.zoom.us/rec/play/Et4CjIDJGiDEqipal2yUAE4W9sbGJI87E9iY47xNHJGwei7y8A5CXHZGRKxDwGFUHoc7yEFfrzSXc5ys.2fzG1ina_yoWTACU?continueMode=true)

- **Jones, T.** (2020). Load Based Accounting for Clean Energy in the West: How Thoughtful and Consistent State Program and Market Design Can Support Regional Market Expansion and Decarbonization (presented August 28 2020 at the Washington Markets Work Group workshop #4)
- **Moyer, K.** (2020). Western Flexibility Assessment and Implications for the Northwest (presented August 28 2020 at the Washington Markets Work Group workshop #4)

- **Trolese, L.** (May 2020). EIM GHG Market Design (presented August 28 2020 at the Washington Markets Work Group workshop #4)
  - **Breidenich, C.** (2020). Interaction of Carbon and Clean Energy Accounting (presented August 28 2020 at the Washington Markets Work Group workshop #4)
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### **Discussion #1**

Date: October 21, 2020

Host: Renewable NW

Webinar Link:

<https://transcripts.gotomeeting.com/#/s/ba6daf018223554eaf9d87c88b4e321ca83467dd6b45a199c983b2906902af8c>

### **Discussion #2**

Date: November 18, 2020

Host: Renewable NW

Webinar Link:

<https://transcripts.gotomeeting.com/#/s/d562d22c88c573fedb5c475896b8b62bfd7a520dcc34038d2fe81e3bfd6606b>

### **Discussion #3**

Date: December 18, 2020

Host: Renewable NW

Webinar Link:

<https://transcripts.gotomeeting.com/#/s/5a0cf0ec8bf93e745f8fcc8cea3ffe9a0673f9b812df95e00ec8e6c2efae23ed>