

**MINUTES OF THE SPECIAL  
MEETING OF THE COMMISSION**

**July 21, 2020**

❖ **Call to Order**

The special meeting of the Board of Commissioners of Public Utility District No. 1 of Whatcom County was called to order at 8:35 a.m. by Commissioner Jeff McClure. Said meeting was open to the public and notice thereof had been given as required by law. Those present via Zoom teleconference included Commissioner Mike Murphy, Commissioner Jeff McClure, Commissioner Atul Deshmane, and Legal Counsel Jon Sitkin. Staff attending via teleconference: Steve Jilk, General Manager, Brian Walters, Assistant General Manager; Ann Grimm, Administrative Assistant; Duane Holden, Director of Utility Operations; Annette Smith, Director of Finance; Rebecca Schlotterback, Manager of Contracts and Regulatory Compliance; Jon Littlefield, Electric System Supervisor; Paul Siegmund, Manager of Automation and Technology; Mike Macomber, IT/SCADA Technician; and Traci Irvine, Accountant I.

**Public** attending via teleconference:

Christine Grant, Hannah Stone, Max Perry, Matt Perry, Rick Maricle, Tim Johnson, Brooke Davis, Quinn Thomas; Ramsey Cox; Chris Elder; Dave Warren; Todd Barnreiter; Lauren Turner, Phillips66; Eddy Ury, RE-Sources; Joe Beaulaurier, My Ferndale News; Scott France, Mynd Global.

**Presenters** attending via teleconference:

Gina Stark, Port of Bellingham; Andrew Entrikin, Port of Skagit; Mark Handzlik, Brian Henshaw and Sam Shipp, Skagit PUD; Eric Johnston, Renee LaCroix, Seth Vidana, City of Bellingham; Stephen King, Mynd Global; Jon Humphrey; Carryn Vande Griend, Ben Farrow, Puget Sound Energy; Eric Powell, Regenix; Pam Brady, BP Refinery; and Ed Neibauer, Catalyst Midstream.

❖ **Meeting Opening**

Commissioner McClure welcomed all to today's meeting. The meeting is intended as a workshop for the Commission. Commissioners will be able to ask questions/comment with the presenters and at the end of each session, a wrap-up is scheduled. At this time, the public will be able to comment or ask questions via the Q & A features via the Zoom format. The Commission Clerk will then read the public comments aloud to the Commission for response. Jilk noted that today's meeting is being recorded and will be available for viewing from the District's website in the near future.

❖ **Broadband**

Whatcom Public Utility District

General Manager Steve Jilk presented on:

- RCW 54.16.330 regarding public utility districts telecommunications authority.
- What other P.U.D.s in Washington are doing (wholesale)
- One P.U.D. providing limited retail
- Overview of Whatcom's past history into broadband
- Lessons learned

Port of Skagit/Skagit PUD/SkagitNet

Andrew Entrikin (Port), Mark Handzlik and Brian Henshaw (Skagit PUD) presented an overview of the partnership between the three agencies to form SkagitNet, along with lessons learned.

Port of Bellingham

Gina Start provided an overview of where the Port is at in their broadband/county fiber project.

Highlights included:

- Feasibility Study
- Countywide plan for fiber layout
- Status of the first segment implementations and construction costs
- Funding updates
- Second and third segment construction costs
- Port of Bellingham and PUD Partnership current roles

City of Bellingham

Eric Johnston, Public Works Director, provided an overview of the City's fiber optic system.

Highlights included:

- Partnerships
- What type of model to use (i.e. full retail, dark fiber/conduit, open access)
- Process – evaluating access/cost issues, inventory, partnerships, impact on economic development, estimates of likely trajectory of costs and revenues
- Plan development to mitigate business risks
- Next steps

### Mynd Global

Stephen King presented an overview of investment in broadband infrastructure (public/private partnership)

Highlights included:

- Broadband and fiber should be affordable; They focus on the last mile
- They work with multiple public/nonprofit agencies to provide connectivity with a “Capital to Community” model, which would ensure the entirety of the connectivity and digital assets would be ultimately owned and controlled locally.
- When owned and controlled by local users, economic, social and political power is transferred from outside corporate interests to municipal and community residents and businesses.

### Jon Humphrey

A Bellingham advocate, who is concerned about the lack of connectivity for broadband and fiber at both the city and county level, provided his suggestions.

Highlights included:

- The PUD should push for retail authority with the state
- Join Port, City of Bellingham and county for a countywide fiber effort.
- Fiber and the pandemic response
- Fiber and the environment
- Costs and Dig Once Policy

### Port of Bellingham/Whatcom P.U.D. Agreement Concept

The two agencies have been working on a partnership agreement along with Legal Counsel Sitkin. Sitkin has reviewed the SkagitNet LLC agreement and commented that more discussion is needed depending on the model structure. Jilk reiterated Stark’s presentation slide of the *Benefits of a Partnership*:

- Leveraging of resources
  - Strength in partnership
- Future funding opportunities
- Technical assistance
- Joint development of future segments
- Risk sharing
- Shared responsibilities/ownership
  - Operations and Maintenance

There are many things to consider, such as what assets that both entities bring to the table, including if the PUD interested in collaborating – if so – what are the issues that are identified as priorities and decisions around management, operations, etc. The Commissioners are interested in moving forward with a plan. Taking a look at Skagit Net’s business plan, Legal Counsel will consider all the options and present his suggestions at an upcoming meeting.

❖ **Broadband Wrap Up** – No comments made.

❖ **Lunch Break**

❖ **Energy**

#### Whatcom Public Utility District

Assistant General Manager Brian Walters provided an update on the electrical system of PUD #1:

Then:

- 1952 – Electric system energized to serve a new oil refinery
- Power supplied by Pend Oreille PUD, then BPA, transported over BPA transmission network;
- Facilities consisted of one substation and 12.7 miles of 11kV radial line

Now:

- Electric system serves three industrial loads, 1 refinery and 2 PUD water treatment plants
- BPA supplies 100% of PUD’s power supply requirements
- Electric system has two interconnections with other utilities’ systems (PSE and BPA)
- Facilities now consist of 3 substations and 13.5 miles of 115kV radial line.

Small Electric Footprint vs. Expansive Statutory Authorities

- Power supply - authority to purchase and sell electric energy from all sources
- Generation and Transmission Facilities: Authority to finance, build, own and operate electric system facilities
- Clean Fuel Technologies – Authority to support and participate in hydrogen and bio fuels projects
- Financing of projects: Authority to issue municipal bonds and to levy taxes
- Joint Action: Authority to pursue the above solely or with other entities with Joint Operating Agencies, mutual non-profit corporations; Interlocal agreements and Public-Private partnerships.

Unique Attributes of Electric Utility that Foster Opportunities

- Historical relationship with BPA as a preferred customer

- PUD has no bundled electric rate tariffs
- Local governance – locally elected Commissioners
- Not regulated by the WUTC
- No embedded and owned generation in its power supply portfolio
- Historical focus of utility operations has been on Cherry Point Industrial zone.

#### Future Opportunities

- Support/participate in development of clean fuel industries (Renewable Diesel Plant, Hydrogen Plant);
- Bio gas projects
- Locally sited renewable energy projects (large scale and community scale solar, wind and energy storage projects).
- Support and participate in public/private partnerships to develop clean fuel and renewable energy projects and provide supply to customers.

#### City of Bellingham – Climate Plan Action Goals

Renee LaCroix presented an update/overview of the City’s Climate Action Goals. Updates included:

- Milestones from 2005 to Current
- Implementing the Plan; Emissions reduction targets
- Six Core Strategies
  - Energy Efficiency and Conservation
  - Transportation
  - Renewable Energy
  - Green Building
  - Waste Reduction
  - Land use
- Overview of Climate Task Force and Work Schedule
  - 50 Task Force Recommendations
- Climate Policy Process
- Climate Policy Process Goals
- Climate Policy Approval Process
- Potential Partnerships - Renewable power – the City is working with PSE, the PUD and other utilities; more information is needed before undertaking a feasibility study.

#### Puget Sound Energy

Carryn Vande Griend and Ben Farrow presented an overview of PSE Commitment to Clean Energy. The highlights provided:

- Safety Moment – How to wear a facemask
- PSE’s Response to the COVID-19 pandemic
- Local, clean energy solutions for nearly 150 years
  - Clean hydroelectricity: Snoqualmie Falls and Baker River
  - Developed 13 large wind farms in the PNW: Wildhorse, Hopkins Ridge and Lower Snake River
  - Ground breaking customer renewable energy programs, supporting dairy digesters, small hydro facilities, wind and solar;
  - Together, with customers, saved 67 billion electric kWh.
  - Provided support to those in need with more than \$127 million in bill payment assistance and \$33 million in home weatherization grants.
- Clean Energy Transformation Act (CETA)
  - Moving further and faster toward a clean energy future.
  - CETA Milestones: 2025 – Elimination of coal-fire resources from electric power supply; 2030 – Carbon neutral energy supply; 2045 – 100% non-emitting electrical supply
  - Transformation energy supply to meet CETA milestones:
    - Procuring clean resources through proactive resource development and acquisition planning
    - Expanding markets to provide access to regional resources and to manage oversupply
    - Optimizing existing transmission and acquiring or building new transmission
    - Accelerating energy efficiency, distributed energy resources, and customer programs.
    - PSE cannot do this alone – partnerships with customers is critical to building our region’s clean energy future.
- Investing in clean energy
  - Sierra Pacific Industries to provide PSE with renewable energy
  - PSE to purchase zero carbon energy for next 15 years
  - PSE to buy renewable natural gas from KPUD Roosevelt
  - Montana has the clean energy Washington needs
  - PSE renewable energy program turns manure into power

- PSE's battery storage could help clean the energy
- Investing in forest carbon offset projects to reduce emissions and preserve local environments
- Investing in energy efficiency (\$100 million each year)
- Energy Savings in Whatcom County
- Current Clean Energy Options for Customers
  - Renewables: Green Power, Green Direct, Solar Choice, Community Solar
  - Customer Generation: Net Metering, Small Power Producers
  - Electric Vehicle Pilots: Home Charging, Multi-family/Workspace, Public Charging
- Customer Renewable Programs in Whatcom County
- Green Direct Next Phase Development (draft)
- Investing in Solar Energy Projects – PSE granted four solar arrays to Whatcom County organizations; an additional \$1,000,000 in Green Power Community Support Grants now open for applications.
- Installing EV charging stations: (residential/multi-family/low-income/workplace and fleet/public charging/EV Ride and Drive Event
- How to Partner with PSE
  - Customers: Energy Efficiency Programs, choose Green Power or Solar; consider net metering;
  - Communities: Apply for PSE Up and Go Electric Multi-Family and Workplace charging stations, Apply for Green Power Community Support Grants, PSE's COVID-19 emergency response.

#### Eric Powell, Regenis - Renewable Natural Gas

Powell is the Director of Business Development for Regenis; the PUD has been working with Regenis on a membrane digester that can produce clean water and renewable natural gas.

- How Anaerobic Digestion works
- What is pipeline quality renewable natural gas?
  - Biogas is product of the anaerobic decomposition of organic material
  - Renewable natural gas is biogas that is upgrade to natural gas pipeline quality standards so it may blend with, or substitute for, geologic natural gas 90%+ Methane.
- Credits Available: Beyond value from its BTUs RNG fuel can receive two important credits:
  - Federal Renewable Fuel Standard (RFS)
  - California Low Carbon Fuel Standard
- Two Types of Projects (which benefit from the credits):
  - Pipeline injection
  - CHP and Wheeling of Electricity to California/Oregon for EV-Fueling
- Lifecycle Analysis and Carbon Index
- Renewable Natural Gas – The Value Proposition  
Revenue sources can be determined by commodity price, Federal RFS standards and the California LCFS credit.
- Why not switch to RNG?
  - High capital cost for gas scrubbing equipment
  - High cost of utility connection
  - Gas specification variability
  - Revenue uncertainty
- Local Digester Projects
  - Five digesters in Whatcom County
  - Expiring power purchase agreements
  - Largest produces approximately 250 SCFM biogas
    - Too small for stand-alone RNG project
  - Potential eLCFS projects
- Potential PUD Role
  - RNG Projects
    - Assistance with pipelines
    - Connecting projects to each other
    - Connecting upgraded gas to the pipeline
  - Assisting with offtakes
    - Is there an opportunity to sell locally produced RNG to local refineries to get mutual benefit?
  - eLCFS Projects
    - Wheeling gas out of Whatcom County to Oregon/California

#### Pam Brady – BP Cherry Point Refinery

*BP Net Zero – Reimagining energy, reinventing BP*

- Reimagining energy
- Reinventing BP (new CEO this year)
- Performing while transforming

- Ambition is to become a net zero company by 2050 or sooner.  
Aims:
  - 1 Net Zero Operations
  - 2 Net Zero Oil and Gas (upstream production)
  - 3 Halving Intensity (50% reduction in carbon intensity)
  - 4 Reducing Methane (50% reduction)
  - 5 More Money for New Energies (increase proportion of investment into non-oil & gas)
  - 6 Advocating (for policies that support net zero)
  - 7 Incentivizing Employees (to deliver aims and advocate for net zero in annual bonus)
  - 8 Aligning Associations (set new expectations for /analyze relationships with trade associations to reach alignment)
  - 9 Transparency Leader (become a recognized leader in transparency for their sector)
  - 10 Clean Cities (launch a new team to create integrated clean energy and mobility solutions, to help countries, cities and corporations around the world decarbonize).
  
- Not starting from scratch: BP owns the biggest EV-charging network in the UK; Equal partner in world's 2<sup>nd</sup> largest sustainable sugarcane bioethanol producer in Brazil; Created bio power by burning bagasse, the fiber that remains after crushing sugar cane.
- This is a big moment in BP's history:
  - aiming to earn back the trust of society, to be wanted, not just needed;
  - to be valued by shareholders as a force for good as well as a provider of competitive returns;
  - to be a motivating, inspiring place to work for all the exceptional people at BP, and the generations that come after them.

Many energy companies are thinking about how they are going to reduce their carbon footprints, and these are bold goals. BP is uniquely qualified, significant investments in Europe, and Brady feels there is a lot of opportunity in the US, because BP is a European company, they are advocating for carbon policies that incentivizes transitions. A national carbon policy would be good, even if states had their own regulatory approach and had similar programs that could work together, would be a more fruitful transition. BP is always looking for innovative ways to reduce their carbon footprint. When more detailed plans become available in September, Pam would like to come back to the PUD to share this information.

#### Washington Clean Energy Co. LLC

Ed Neibauer, CEO and President presented an overview of a proposed hydrogen and Methanation facility at Cherry Point. Currently, over 4 million tons of carbon is being released from Cherry Point industries.

#### *State of Washington GHG Facts and Legislative Response*

- 2015 total GHG emissions were 97.4 million metric tons (MMT)
- 2015 GHG emissions were 7.4 MMT higher than 1990 baseline of 90MMT
- GHG emissions increased 6.1% from 2012 – 2015

#### *In 2015 Washington's largest contributors of GHG were the following:*

- Transportation sector 42.5% not addressed yet – expected in 2021
- Residential, commercial and industrial sectors – 21.3% Partially addressed (buildings), remaining addressed in 2021
- Electricity Sector – 19.5% addressed with 2019 Clean Energy Transformation Act that also added renewable hydrogen and energy storage

#### *Washington GHG 2017 Sources*

- Transportation 44.6%
- Residential/Commercial/Industrial Heating – 23.7%
- Electricity – 16.7%
- AG/Industry/Landfills/Fossil Fuel Production – 15%

#### *The Clean Project*

- Electrolytic (clean) Hydrogen Production (H<sub>2</sub>)
- Carbon Capture (CO<sub>2</sub>)
- Methanation (Production of Renewable Natural Gas (RNG))
- Pure Oxygen Production (O<sub>2</sub>) for lakes, reservoirs and shallow coastal waterways, Hypoxia rehabilitation

Hydrogen Generation will be produced by the *Siemens Silyzer 300 Electolyzer*

#### *Current Hydrogen Uses*

##### Major uses of SMR Hydrogen

- 98% of all hydrogen used in the US is produced using steam reformation of conventional (fossil) methane through a process called Steam Methane Reformation (SMR)
- Fertilizer (ammonia production)

- Petroleum refining
- Food processing

*Future Uses*

- Transportation – fuel cell electric vehicles and synthetic gas
- Displacement of methane used by natural gas utilities and power generation
- Grid storage and reliability – for integrating increased variable renewable generation

*Hydrogen Drivers*

- Hydrogen production in Whatcom County will be a strategic enabler for growing hydrogen and fuel cell deployments.
- There are currently no electrolytic hydrogen production sites in Washington. Douglas PUD is developing the first 5MW facility expected to be online late 2021/early 202
- Majority of hydrogen used in the State and the US, is produced by SMR from fossil methane.
- Proposed 300 MW electrolysis plant would be the largest hydrogen plant in the world - but not for long!
- The marketplace for the hydrogen is the west coast of the USA and Western Canada

*Transportation – Hydrogen Fuel Cell Electric Vehicles*

- Hydrogen fuel cells convert compressed hydrogen into electricity powering the vehicle’s motor while only producing heat and water vapor. This means no harmful GHG emissions are emitted from the exhaust pipe.
- Proposed hydrogen fueling stations along major interstates (NREL) map demonstrates hydrogen fueling stations following major pipeline routes, using existing facilities, blending hydrogen with natural gas
- All American Marine (Bellingham) is making the first fuel cell vessel
- Marine fuel market areas (entire US west and east coastlines and Northern European markets)

*Hydrogen Plant Concept*

Key site requirements:

- Source of stable, renewable power, grid capacity 300 MW
- Source of fresh water – 480,000 gallons/day
- Access to market for hydrogen – proximity to transportation networks, highways, rail and port
- Need: Nearby demand for Hydrogen and Oxygen

*GHG Methanation Cycle and Methanation Flow Chart*

The conceptual design of Carbon Capture Membrane Facility (has been perfected over the years)

*Addressing High Levels Hypoxia in the US – focused on the PNW*

- 15 tons per day of pure oxygen (example shown of a Lake Whatcom Diffuser Design Layout) and how an oxygen diffuser system works

*Initial Estimated Costs – Phase 1*

Hydrogen Plant (300MW Plant)	\$75,500,000
Methanation Plant	\$30,000,000
15 MW Power Plant	\$22,500,000
Site Property Acquisition	\$60,000,000
Utilities	\$25,000,000
Misc.	\$5,000,000
<u>Contingency (15%)</u>	<u>\$70,200,000</u>
<b>Total Estimate Capital Costs</b>	<b>\$538,200,000</b>

*Current Project Status* – Contractors have been selected:

<u>Subject</u>	<u>Contractor</u>
Environmental Permitting	Ramboll US Corp
EPC Contractor	The Zachry Group
Electrolyzer Tech/Equip	Siemens Energy
Methanation Tech/Equip	MAN Energy Solutions
Carbon-Capture Tech/Equip	Siemens Energy
Waste Heat Capture Tech/Equip	Siemens Energy
NOx Reduction Tech/Equip	Praxair, Inc.
SOx Reduction Tech/Equip	Solvay Chemicals, Inc.
Capital Raise	Chapin Davis
Engineering Companies	Wood (Geotech)

*Project Finances:*

- 40% private equity, 60% long term debt
- The concept behind capturing the carbon is to reduce the CO2 emissions and converting it to create revenues off the RNG (final product) and feed stock with the emitters. The plant will produce 24/7 – there won't be any storage. It can be stored in the pipeline; incentives (such as 45 Q tax credit for carbon from EPA) and others are still being drafted.

*Timeline*

A bit unsure due to the COVID-19 pandemic, however the number of estimated jobs supported by the facility: 150 long term; during construction – up to 700 jobs

*What's Next*

- Feasibility Study
- Permitting – approx. 9 months
- Environmental assessment has already been done for the SSA Property
- Discussions with BP/Phillips66 are ongoing
- Jilk has been communicating with Neibauer for a number of months, establishing next steps, in terms of what he will need from the PUD to start developing a secure source of energy and cost estimates for tapping BPA transmission lines, or possible a substation to service the project.

❖ **Energy Wrap Up**

Time for questions from participants or attendees. There were no public comments made; however, there were a few questions during the PSE presentation which were forwarded to Carryn and Benjamin. Grimm has asked for responses.

Jilk suggested that for the first or second meeting in August to discuss the topics/presentations today, begin prioritizing actions for 2021 budget. McClure would like to have more discussion at a future meeting. For the July 28 meeting, Jilk asked each commissioner be prepared to discuss their takeaways from today, so it will lead to an opportunity for staff to follow up specifically on the topics and issues. The presentations will be gathered from today and forwarded to the Commissioners, in preparation for next Tuesday.

McClure thanked all for their assistance and participation, Jilk will send notes of thanks to the presenters as well.

❖ **Adjourn**

There being no further business for the meeting, the Commissioners adjourned the Special Meeting at 5:15 p.m.

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Jeffrey McClure, President

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Michael Murphy, Vice President

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Atul Deshmane, Secretary

**Presentation Attachments:**

- Attachment A – PUD No. 1 of Whatcom County/Broadband ~ Fiber
- Attachment B – Port of Skagit /Skagit PUD/Skagit Net
- Attachment C – Port of Bellingham
- Attachment D – City of Bellingham ~ Fiber
- Attachment E – Mynd Global
- Attachment F – Jon Humphrey
- Attachment G – Port of Bellingham/PUD Concept Agreement
- Attachment H – PUD No. 1 of Whatcom County ~ Energy
- Attachment I – City of Bellingham ~ Climate Project
- Attachment J – Puget Sound Energy
- Attachment K – Regenis
- Attachment L – Washington Clean Energy, LLC

APPROVED – AUGUST 11, 2020