CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

Policy Session Worksheet

Presentation Date: 4/28/20 **Approximate Start Time:** 1:30 pm **Approximate Length:** 45 min.

Presentation Title: Renewable Electricity for County Operations

Department: Transportation & Development – Sustainability & Solid Waste Program

Presenters: Eben Polk, Sustainability Supervisor; Cheryl Bell, DTD Assistant Director; Sarah Allison, Sustainability Analyst

Other Invitees: Dan Johnson, *DTD Director*, Greg Geist, *WES Director*, Elizabeth Comfort, Finance Director, Jeff Jorgensen, *Facilities Division Director*, Steve Hill, *Facilities*, Greg Eyerly, *WES*, Richard Malloy, *Housing Authority*, Ron Wierenga, *WES*

WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

- Direction to pursue a portfolio of strategies to reduce the County's electricity-based carbon footprint

EXECUTIVE SUMMARY:

Background

In response to the Board's direction to identify and pursue near-term actions to reduce the County's carbon footprint, this session lays out a strategy to increase the County's use of renewable energy and to eliminate the portion of our carbon footprint from electricity use. This strategy also fulfills one element of the County's Energy Policy (adopted 2016) which called for targets for renewable energy use.

With multiple options available, renewable electricity is one of the simplest technical opportunities to reduce greenhouse gas emissions. According to the County's greenhouse gas inventory, electricity is responsible for 18% of the County's emissions (including special districts the Board oversees). As of 2020, 50% of the electricity provided by PGE as their standard mix comes from fossil fuels, with the remainder coming from hydro (30%) and renewable sources (20%) as defined by state statute. To lower the County's footprint related to electricity use, the 50% of power generated from fossil fuels needs to be transitioned to renewable sources. This is becoming increasingly easier as Oregon's Renewable Portfolio Standard (RPS) requires large electricity providers to gradually increase their renewable energy sources to 50% by 2040, which provides more options for the County as a large energy purchaser.

Current Year

In FY 19/20, as part of Facilities' approved budget, the County allocated $51,000 for renewable energy certificates (RECs). Purchasing a REC allows an electricity consumer to claim credit for clean electricity on the grid, and is one strategy to reduce our carbon footprint.

This year, RECs through PGE's Clean Wind program will cover 17,000 MWh of electricity, equivalent to 100% of the fossil fuel electricity associated with electricity use by all County facilities and the larger districts, including WES, the Housing Authority, and NCPRD. The Clean Wind program effectively offers carbon neutral electricity at a cost premium of $3/MWh on top of our current cost of approximately $110/MWh (averaged across multiple rates).

Future Opportunities

In the next year or so, two significant new opportunities for renewable electricity are expected – community solar and PGE's 'Green Futures' program. These would allow the County to lower its electricity-based carbon footprint in a more meaningful and less expensive way than has been available in the past. Both result in new renewable energy facilities in our region, further decreasing fossil fuels in the mix of electricity on our grid.

Community Solar: The state legislature authorized community solar projects allowing customers, including potentially Clackamas County, to purchase solar electricity at no additional cost through long-term contracts (e.g. 10 years), from projects in their utility's territory. This program also requires some electricity to go to low-income residents at a 20% discount.

At least three community solar installations are planned in Clackamas County. A private solar developer, Oregon Shines, received land use approval for three projects totaling 7.6 mega-watts of capacity. Under limits set by program rules, the County could potentially subscribe to a share of these projects that would meet approximately 20% of the County's annual operational electricity use (not including special districts). Further, 200 to 300 low-income households could enroll and receive a 20% reduction in their electricity costs—an opportunity that Sustainability staff have shared with the Housing Authority. Developers expect to open up subscriptions in the next six months, with projects being built and coming on-line near the beginning of 2021.

Green Futures is a PGE program that gathers 10-15 year contracts from institutions and then builds a single large renewable energy facility in the Pacific Northwest to meet the needs of those contracts. In the first round of this program, subscribers were able to purchase renewable energy for an additional $1 per MWh with a 15-year contract, or $1.50 per MWh with a 10-year contract. Because the facility is built to match the capacity in the contracts, the County could meet 100% of its energy needs through such a project. However, since the facility will only be built after capacity is determined by contracts, renewable electricity from this program would not be available until approximately 2 years after subscription (2022/23 if the next round is filled in 2020). Until such time, RECs or community solar could fill the gap to maintain carbon neutral electricity.

FINANCIAL IMPLICATIONS (current year and ongoing):

Is this item in your current budget? ☒ YES ☐ NO

What is the cost? –

- Community Solar: no additional cost
- Green Futures: For 50% of our electricity use (the maximum required to reach 100% carbon-free energy), assuming our electricity use remains stable, a 10-year contract would result in an annual increase of $12,750 for electricity use, and a 15-year contract would result in an additional $8,500.
- RECs: Maintaining our current level of REC purchases to achieve 100% renewable electricity without including special districts would cost approximately $25,500 annually. This would be the only approach available for the first year or two as other programs come fully online.
- Recommended strategy: A portfolio approach of meeting ~20% of our electricity needs with community solar and 30% with Green Futures (with a 15-year contract) would have

an annual cost of $5,100 once both programs are producing energy. Compared to status quo of purchasing RECs only, this recommended approach significantly reduces the General Fund cost of maintaining 100% carbon free electricity.

What is the funding source? – Allocated costs for electricity assigned to departments, based on energy use.

STRATEGIC PLAN ALIGNMENT:

- **How does this item align with your Department's Strategic Business Plan goals?**

The purchase of renewable electricity is a County-wide action that helps all departments better meet the Board's goal of carbon neutrality by 2050.

- **How does this item align with the County's Performance Clackamas goals?**

This action is a specific recommendation to move towards the goal of being carbon neutral by 2050 that can be implemented in advance of the climate action plan.

LEGAL/POLICY REQUIREMENTS:

In the 2017 resolution on climate the Board of Commissioners resolved to "renew its commitment to policies and practices, both within county government and throughout the community, that respond to the need to combat and adapt to climate change, for the sake of the future of our residents and our economy." A number of other policies and plans speak to climate issues and would benefit from this action.

PUBLIC/GOVERNMENTAL PARTICIPATION:

This action is in alignment with the 2008 Action Plan for a Sustainable Clackamas County, which relied on community member participation. It is also responsive to community member testimony requesting that the County take decisive climate action.

OPTIONS:

1. **Direct staff to pre-enroll in and develop a contract with PGE for Green Futures up to $12,750 / year, and bring a proposal to the Board for approval.**

    - This action would provide a specific proposal to replace all fossil fuel-based electricity for County departments, not including special districts.
    - The Board would be able to make an informed decision based on current circumstances when the option to enroll in this program becomes available.

2. **Direct staff to pursue a non-binding letter of intent and due diligence to participate in community solar projects within Clackamas County up to 8,500 MWh annually.**

    - This action would identify the amount of community solar that the County could subscribe to for no additional cost, reducing the use of Green Futures and RECs.
    - The Board may direct staff to look beyond Clackamas County for additional community solar projects to increase options to subscribe regional solar electricity.

- Staff would return to the Board with a specific proposal once subscription to this program becomes available.

3. **Direct staff to reduce the 20/21 budget request for REC purchases to $25,500 to maintain the County at 100% carbon-free electricity in the near term, and use RECs as a gap-filler in out years as other sources of renewables come on line.**

   - This action would authorize Facilities staff to include REC purchases in the annual budget proposal up to $25,500 to cover electricity still generated using fossil fuels.
   - The maximum amount allowed in this action is $25,500 less than that budgeted in FY 19/20.
   - Such budget proposals would be subject to standard review and approval processes.

4. **Take no further action on this item at this time.**

RECOMMENDATION:

Staff respectfully recommends Options 1, 2, and 3 – Direct staff to reduce the 20/21 budget request for REC purchases to $25,500, while pursuing a non-binding letter of intent and due diligence to participate in community solar projects within Clackamas County, and to pre-enroll in and develop a contract with PGE for Green Futures up to $12,750 / year.

ATTACHMENTS:
Attachment A. Renewable Electricity Options for Clackamas County Operations Presentation

SUBMITTED BY:
Division Director/Head Approval _____

Department Director/Head Approval Dan Johnson Digitally signed by Dan Johnson DN: cn=Dan Johnson, o=DTD, ou=Admin, email=danjoh@clackamas.us, c=US Date: 2020.04.22 12:28:23 -07'00'

County Administrator Approval _____

For information on this issue or copies of attachments, please contact Sarah Allison @ 503-742-4462

Attachment A

Renewable Electricity Options for Clackamas County Operations

Preliminary Research

Sustainability & Solid Waste Program

February 13, 2020

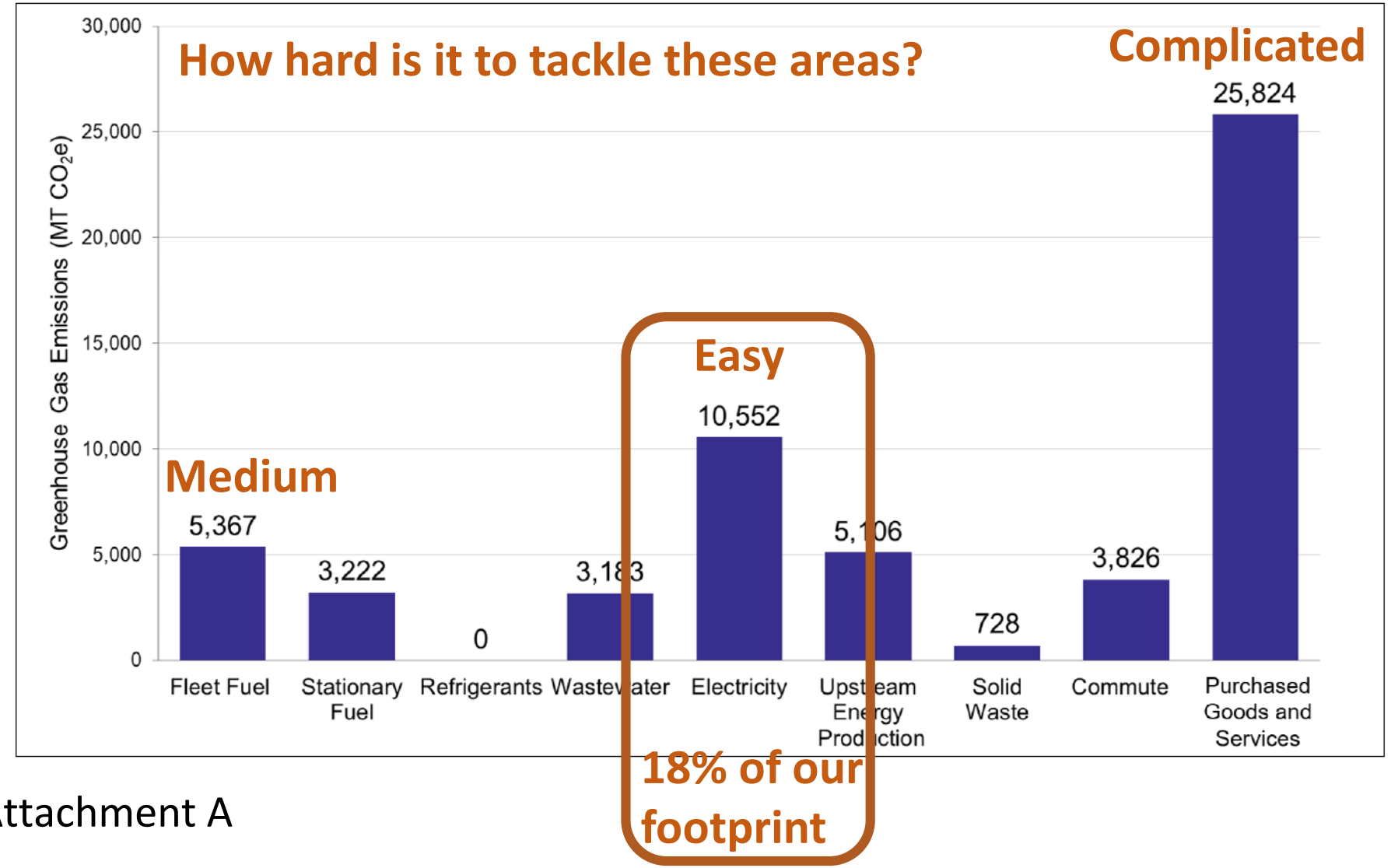
Previous Board Direction

- 2018 - Develop a climate action plan while also pursuing near-term climate actions
  - Develop Operational Greenhouse Gas Inventory (2017 calendar year)
  - Identify options to reduce GHG footprint

- 2016 Energy Policy – Set a goal for increasing use of renewable energy through purchasing or on-site generation

Attachment A

Operational Greenhouse Gas Inventory - 2017



Why is tackling the carbon footprint of electricity 'Easy'?

- Not highly technical
- Electricity is just one product
- Simple, high-level decisions
- PGE offers choices
- Energy Trust supports our Strategic Energy Management program

Attachment A

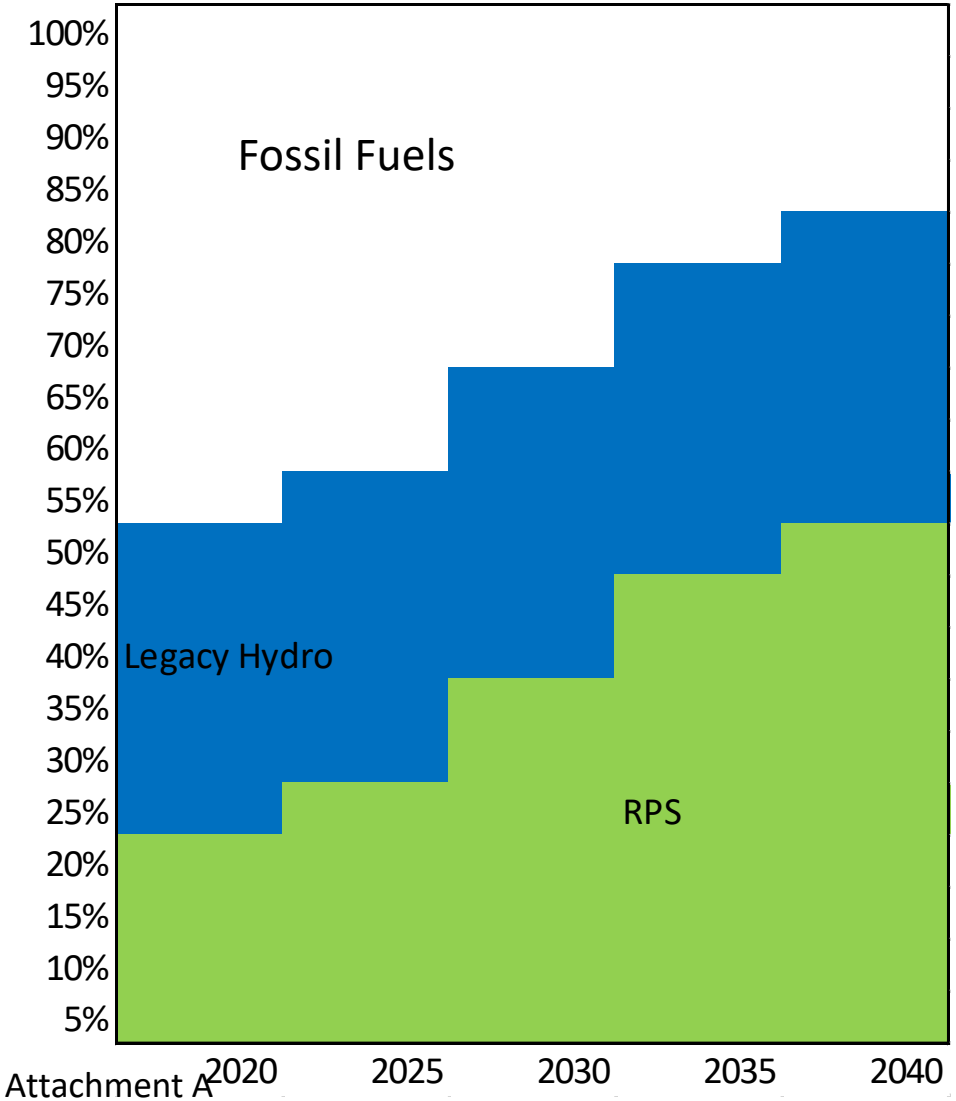
Benefits of Renewable Energy

- Cleaner air (health outcomes)
- Grid security / resiliency (if spread around the grid)
- Energy security
- Living wage jobs
- Predictable long-term electricity costs (hedge value)
- Climate change

Attachment A

Baseline Scenario:

Oregon's Renewable Portfolio Standard is making our electricity cleaner



"Carbon-free"

"Renewable":
Wind
Solar
Wave / Ocean
Geothermal
Biomass
Biogas

Summary

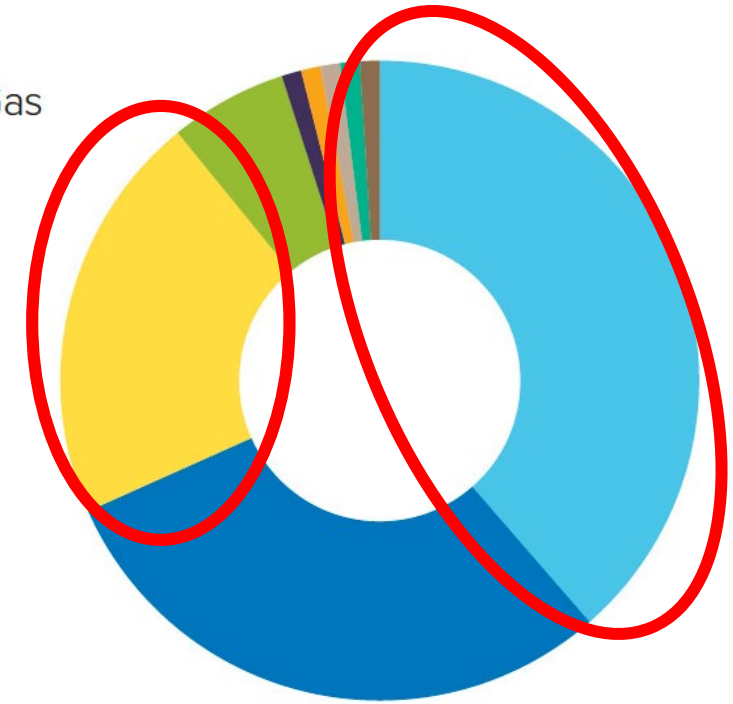
County spends approximately $3,600,000 annually on electricity, including special districts.

The state-enacted Renewable Portfolio Standard requires that as of 2020, 20% of Oregon's electricity is from renewable energy. By 2040, renewable energy will increase to 50%. Approx. 30% of today's electricity is from legacy hydro power. Hydro is expected to remain consistent, but is not regulated by the Renewable Portfolio Standard, and may vary based on various factors.

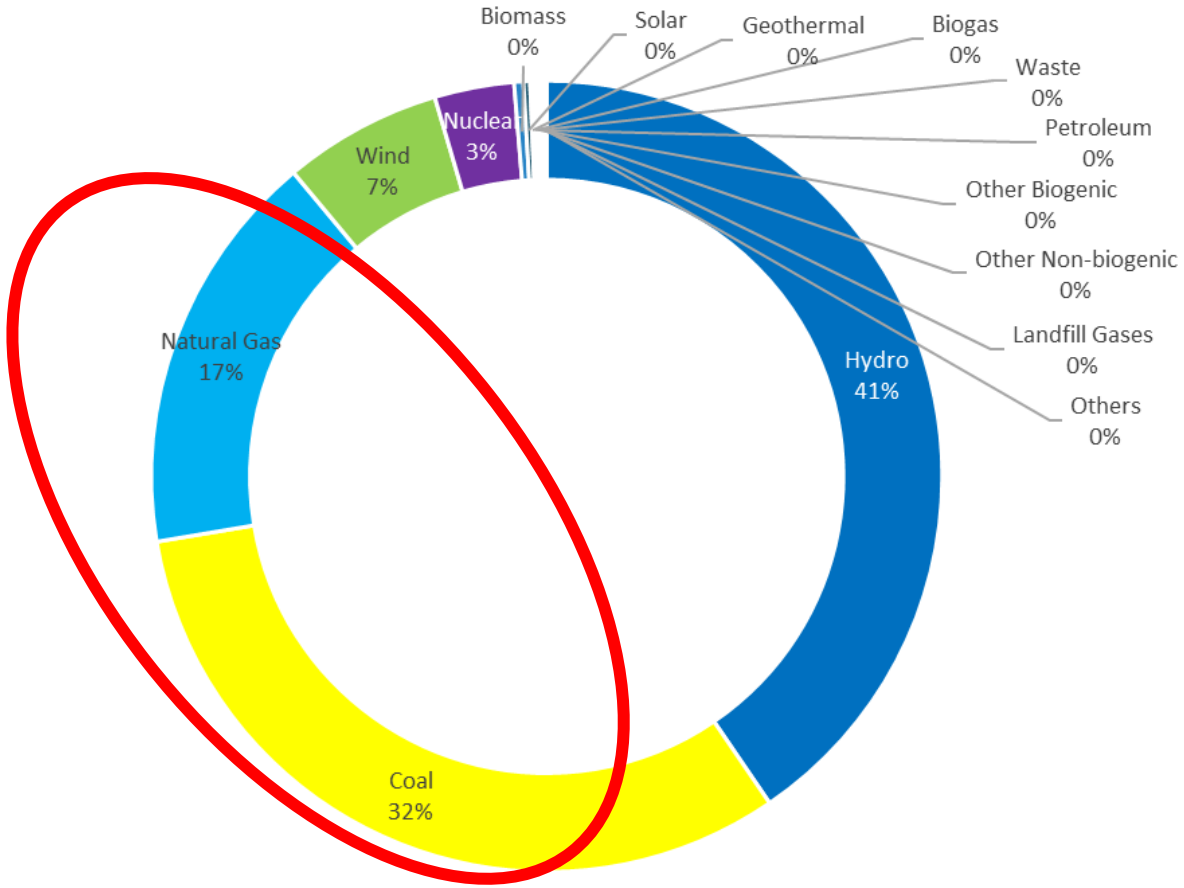
Our Electricity Mix

PGE (2017)
60% Fossil Fuels

- **39%** Natural Gas
- **30%** Hydro
- **21%** Coal
- **6%** Wind
- **<1%** Nuclear
- **<1%** Solar
- **<1%** Other
- **<1%** Biomass
- **<1%** Waste



Oregon (3 yr Avg)
50% Fossil Fuels



Attachment A

Our Current Situation

- Since 2012, the County has had solar panels on the Brooks Building and DSB. These panels produce between 1-3% of the electricity used by each building.

- In FY19-20 for the first time the County is:
  - Purchasing renewable energy certificates for electricity through PGE ($51,000) – this would offset all our electricity emissions for a year
  - Partially offsetting natural gas through NW Natural ($40,000)

- So, what about coming years?

Attachment A

New Options are on the Horizon

Looking forward, new options for renewable electricity are both **less expensive** and **more beneficial** in shifting the electrical grid to renewable sources.

Options for Renewable Electricity

Portland General Electric offers several options for renewable energy attached to standard electricity bills:

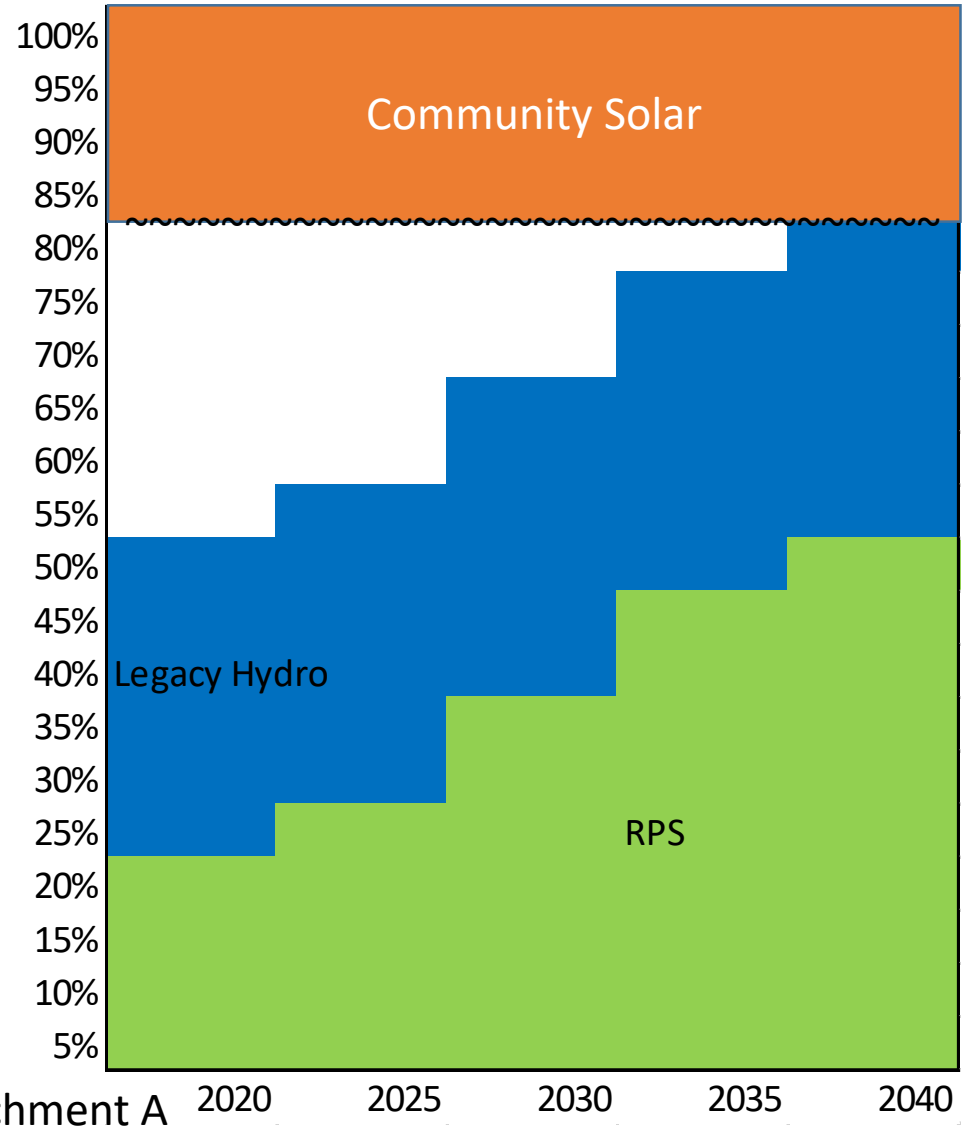
- Community Solar (10-20 year commitment)
- Green Futures (10-15 year commitment)
- Renewable energy certificates – Clean Wind (monthly program)

<u>Also, not discussed in detail today:</u>

- On-site solar installations (something to plan for)
- 3rd Party Electricity Providers. Staff also reviewed opportunities to purchase grid renewable electricity from a third-party instead of PGE, but found these options would require a high level of ongoing staff time to administer.

Attachment A

Community Solar –
solar power generated locally or in PGE territory



Evaluation

No Additional Cost
Paid on existing electricity bills

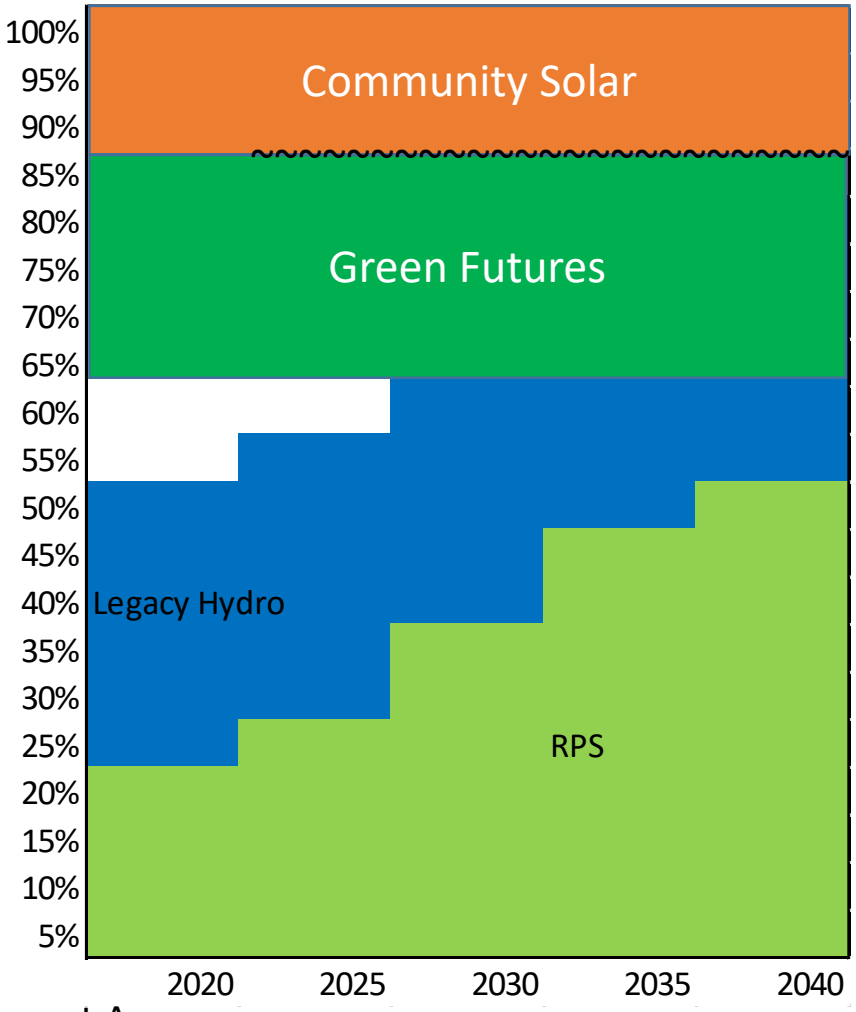
Limited number of projects and capacity

Benefits/Attributes – enabling new local renewable energy, firm commitment to percent of project output

TIME SENSITIVE OPPORTUNITY

Attachment A

Green Futures – PGE's new solar power offering



Evaluation

Additional Cost – $1/mWh for 15, $1.50/mWh for 10

Maximum Additional Cost (100% of current use)
10-year contract – $50k/year [1.4% increase]
15-year contract – $33k/year [0.9% increase]

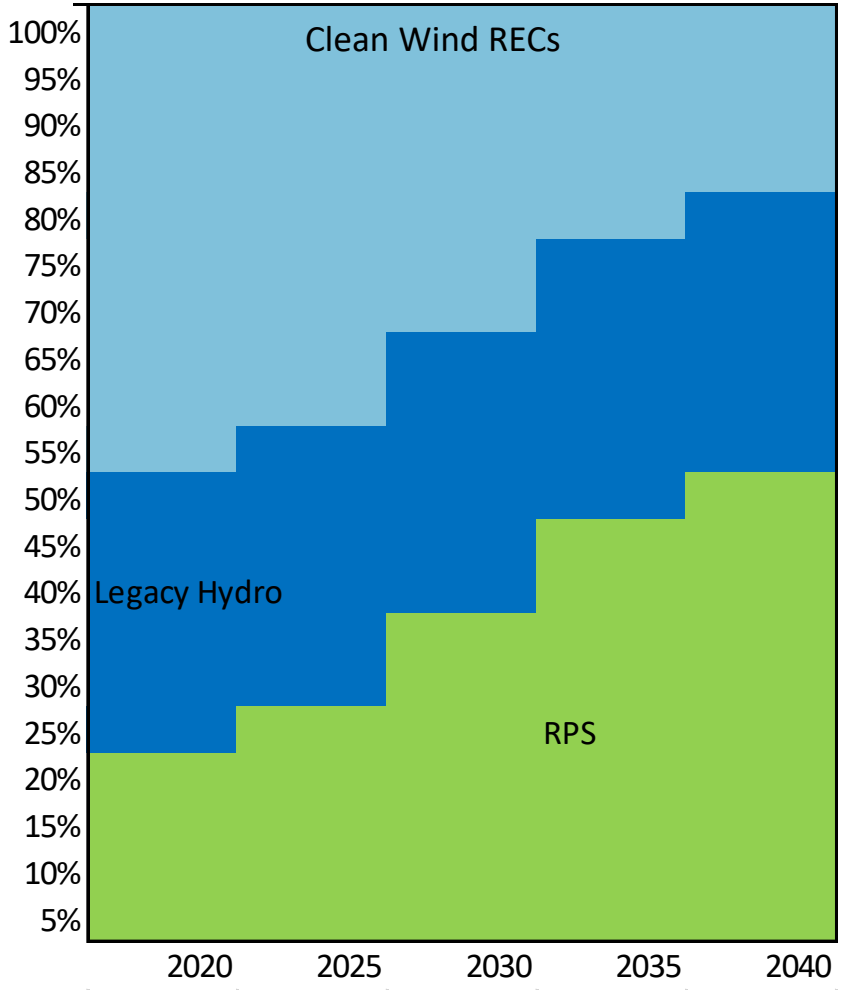
Administrative Burden – modest: single 10- or 15-year contract, two monthly bills

Benefits/Attributes – low cost per mWh, enabling new regional renewable energy, firm commitment to set kWh amount, regardless of changes in consumption

Attachment A

Renewable Energy Certificates

buying the renewable attributes associated with a renewable resource (e.g. PGE's "Clean Wind" program)



Evaluation

Cost – 100% carbon free - $3/mWh
2020-2025 – (50%) $49k [1.4% increase]
2025-2030 – (43%) $43k [1.2% increase]
2030-3035 – (35%) $35k [1% increase]
3035-3040 – (25%) $25k [0.7% increase]
3040 on – (20%) $20k [0.6% increase]

Administrative Burden – minimal: payment of bills

Benefits/Attributes – highly flexible, no long-term commitment, no additionality, supports distant renewable facilities

Attachment A

Is There a Role for More On-Site Solar?

- Yes, for new and existing buildings
- How much remains to be seen
- Creates net savings over life of a solar array—up front capital is the challenge
- Opportunities for battery backup, emergency operations
- County in the ‘project developer’ seat
  - cost, payback period, engineering and operations / maintenance
- Hypothetical: The $230M courthouse project must earmark 1.5% for ‘green energy technology’. If that $3.45M were spent on a single solar array, it could generate 1.2 million kWh/year (3% of our annual operational electricity needs). (Assuming a capacity of capacity of 1,150 kW at $3/w cost.)

Attachment A

Summary of Options for Renewable Electricity

Program	Evaluation
Community Solar	No additional cost. Time sensitive. Solar power produced in Clackamas County and immediate region.
Green Futures	$1-1.50/mWh (approximately $7k-11k for 30%). Limited power available, but sufficient to meet 100% of usage. Facility built after commitment. Power produced in region.
Clean Wind	$3/mWh (approximately $40k for 50%). No limits on availability. Flexibility with monthly contract. Power produced nationally.
County-owned Solar	TBD.

Attachment A

Outstanding Questions

- Precise costs and available amounts
- Precise timelines
- Should decisions about renewable electricity for WES, NCPRD, Housing Authority be handled separately?

Potential Recommendation

If the County is motivated to…

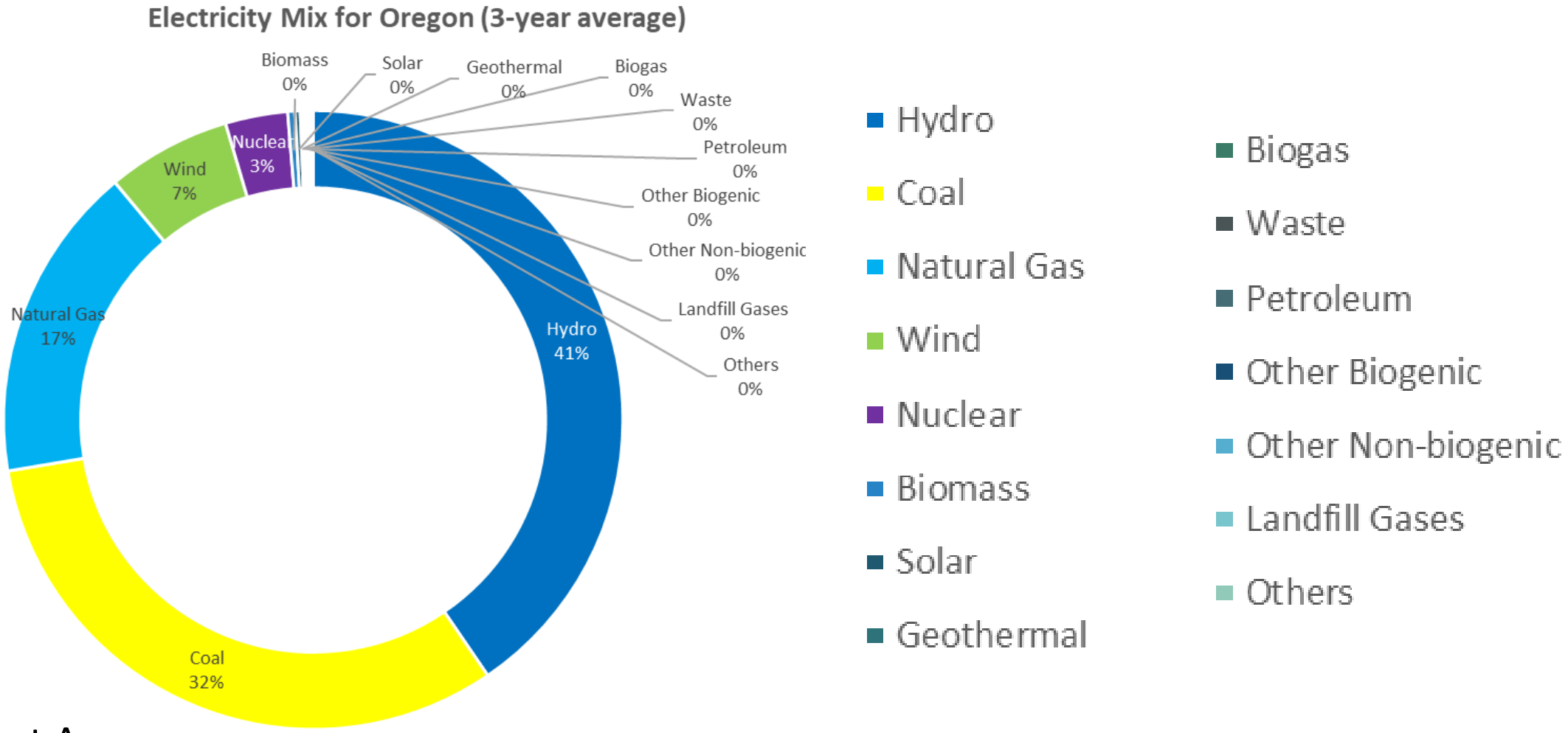
(a) shift towards carbon neutral operations,
(b) support more clean energy on the grid in the County or in Oregon, and
(c) make a durable renewable commitment

Then… pursue a multi-faceted approach:

- Subscribe to as much local Community Solar as possible
- Identify the amount of Green Futures solar that will bring us to 100% renewable energy by 10 or 15 years out
- Fill remaining gap over next 10-15 years with Renewable Energy Certificates
- Maintain space for cost-effective county-owned solar, while managing consumption through Strategic Energy Management.

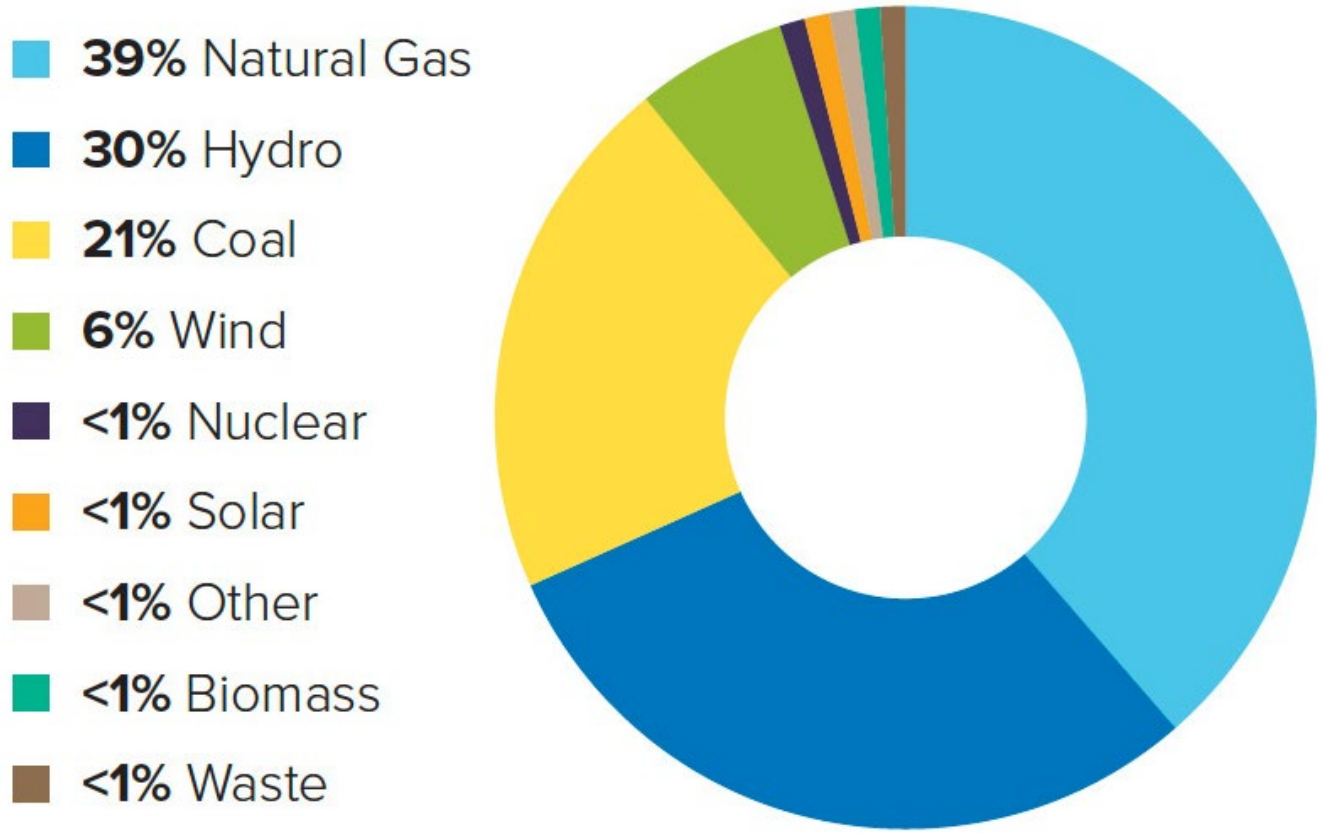
Attachment A

Fuels Used to Generate Electricity Consumed in Oregon (3-year average)



Attachment A

Electricity Consumption by PGE Customers (2017)



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