

Electricity and Climate Resilience Part 1

Resiliencia Climática Y Electricidad Parte 1



Today's focus:
Introduction to
Electricity and
Natural Disasters

Enfoque de hoy:
Introducción a la
Electricidad y
Desastres
Naturales

INTERPRETATION

Para escuchar un canal de interpretación, haz clic en el ícono de globo y escoge el canal de tu preferencia. Si seleccionas "Apagado" escucharás el lenguaje original.


To listen to the interpreter, please select the globe icon and choose the language of your preference. If you choose "Off" you'll hear the original language.

Presenter: Manjeet


You can keep this slide up for the first few minutes as people enter.

“To listen to the interpreter, please select the globe icon and choose the language of your preference. If you choose ‘off’ you’ll hear the original language.”


Welcome! | Bienvenidos!




Microphone: Auto-muted for background noise. Unmute yourself as needed.
Micrófono: Silenciado automáticamente para ruido de fondo. Actívelo según sea necesario.




Chatbox: Ask questions and make comments in chat
Ventana de Chat: Haga preguntas y comentarios en el chat.



Video: You can choose whether or not to be on video
Video: Usted puede escoger si quiere o no quiere estar en video



Raise Hand: You can also raise your hand to ask a question
Levante la Mano: También puede alzar la mano para preguntar



Captions: created by Zoom
Subtítulos: Creados por Zoom

Presenter: Manjeet

A couple of additional notes:

- Once the presentation is over, please feel free to unmute yourselves and you will be able to verbally ask questions. During the presentation, all questions will need to be directed to the chatbox. You can open the chatbox by clicking the chat icon at the bottom of the page.
- If you would like to stop video, simply click stop video. We'd love to see your faces, we understand if you'd prefer to leave it off. One additional note, is that you can change the layout of the presentation by clicking a button in the upper right of your screen to either speaker view (you will only see my webcam) or gridview where you will see a panel of all participants. You can also adjust what you see based on clicking the area between the box showing my face and the presentation to make one side bigger or smaller.

Introduce yourself in the chat / Preséntate en el chat

- Name
 - Pronouns
 - What do you hope to learn today?
-
- Nombre
 - Pronombres
 - ¿Qué esperas aprender hoy?

Presenter: Manjeet

Before we get started, please feel free to introduce yourself in the chat with your name, pronouns, and what you hope to learn today.

Pronouns are words we use to refer to other people, like he, she or they.

The reason we ask everyone to share the pronouns they use is because we know that one way gender oppression and transphobia happens is when we assume the pronouns someone uses based on how they look, dress or act, rather than letting them self-identify. We want this virtual workshop weekend to be a welcoming space for everyone, which means allowing people to share how they'd like to be addressed and respecting that language.

Welcome

Bienvenidos

Screen Name: Make sure it reflects the name you want to be called in this space and include your pronouns

Nombre en la Pantalla: Asegure que refleje el nombre que quiere que le llamen e incluya sus pronombres. Si quiere estar en grupito con hispanohablantes, pon ESP en frente de su nombre

Community Agreements

Acuerdos Comunitarios

Take Space
Tome espacio

Share your thoughts and experiences

Make Space
Haga espacio

Actively listen and ask questions

Confidentiality
Confidencialidad

Keep personal details confidential but share lessons learned

Be present
Este presente

Your presence is your present

Make room for JOY
Haga espacio para la alegría

Joy = connection

Accept & Expect non-closure
Aceptar y esperar una falta de conclusión

Presenter: Manjeet

Take Space/Make Space: Be mindful of speaking time. If you're someone who tends to not speak a lot, please move up into a role of speaking more. If you tend to speak a lot, please move up into a role of listening more.

Stay Present: Avoid multitasking and distractions if possible

Make room for joy

Expect non-closure: conversations may not be finished in the amount of time allotted.

LAND ACKNOWLEDGEMENT | Reconocimiento de Tierras

Present day Portland is located on the traditional village sites of the Multnomah, Wasco (Wass-co), Cowlitz (Cow-litz), Kathlamet (Cath-la-mitt), Clackamas, Bands of Chinook (Cha-nook), Tualatin Kalapuya (Cal-ya-poo-ya), Molalla, and many other tribes who made their homes along the Columbia and Willamette Rivers. Let us also acknowledge the robust Native community made up of tribal diversity that originates from around the country, and whose journeys have brought them to Portland by ways of forced displacement or seeking opportunities. Today, these same communities celebrate their heritage, showing resilience and tenacity that would be greatly admired by their ancestors.

Ahora Portland se encuentra en los sitios tradicionales de la aldea de Multnomah, Wasco, Cowlitz, Kathlamet, Clackamas, Bandas de Chinook, Tualatin Kalapuya, Molalla, y muchas otras tribus que hicieron sus hogares a lo largo de los ríos Columbia y Willamette. Reconozcamos también a la robusta comunidad nativa formada por la diversidad tribal originaria de todo el país, y cuyos viajes los han traído a Portland por formas de desplazamiento forzado o búsqueda de oportunidades. Hoy en día, estas mismas comunidades celebran su herencia, mostrando resiliencia y tenacidad que serían muy admiradas por sus antepasados.

Presenter: Manjeet

Script: today we want to first start with a land acknowledgement - we want to center the fact that our discussion today is premised on the displacement and dispossession of Indigenous communities from their land.

Other Notes -

Questions we need to address:

What do we know demographically about who is making decisions, benefiting most, harmed the most, and who's not at the table in energy companies, policies, strategies, and implementation. The majority of these slides do not talk about the who in these areas. Equity must be considered throughout the presentation, not just mentioned in certain sections. I will try to add some points throughout the presentation that speak to this.

Unite Oregon

We work across Oregon to build a unified intercultural movement for justice.

We work to build collective community power through **community organizing, leadership development, civic engagement** and **political advocacy**.

Nosotros trabajamos por todo Oregón para crear un movimiento intercultural unificado.

Nosotros trabajamos para crear poder colectivo comunitario por **organización comunitaria, desarrollo de liderazgo, compromiso civil y abogamiento político**.



Presenter: Manjeet

Unite Oregon is a social justice non-profit organization, and our mission is: led by people of color, immigrants and refugees, rural communities, tenants, and people experiencing poverty, we work across Oregon to build a unified intercultural movement for justice - and we do this through community organizing, leadership development, civic engagement, and political advocacy.

Our current established community organizing chapters includes Multnomah County, Washington County, Rogue Valley, and now Clackamas County. We have various programs in all of these chapters including organizing parents of color, youth leadership programs, civic engagement leadership programs for immigrants and much more. In Clackamas County we work on environmental, housing, and climate justice issues by conducting listening sessions and focus groups. We represent over 13,000 supporters and members, including a growing base in Clackamas County. We work to remove all barriers to participation, providing simultaneous translation and interpretation, and stipends for participation, and we also ensure spaces are accessible by responding to requests for accommodations.

Community Energy Project

We believe everyone deserves a safe, healthy, and efficient home, regardless of income

Creemos que todos merecen un hogar seguro, sano, eficiente sin importar su ingreso.



Presenter: Sherrie

Coalition for Communities of Color

Mission

To address the socioeconomic disparities, institutional racism, and inequity of services experienced by our families, children and communities
To organize our communities for collective action resulting in social change to obtain self-determination, wellness, justice and prosperity.

Mision

Para abordar las disparidades socioeconómicas, el racismo institucional y la desigualdad de servicios por las que pasan nuestras familias, niños y comunidad.

Organizar nuestras comunidades para la acción colectiva que resulta en un cambio social para obtener la autodeterminación, el bienestar, la justicia y prosperidad.

Presenter: Mira/Andres

We are a coalition of 19 culturally specific organizations that represent and work with Black/African, Latinx, Native American, Asian, Pacific Islander, and Slavic communities.

We work in three main areas: advocacy, environmental justice, and research justice. All of our work centers the experiences, knowledge, and expertise of communities of color across Oregon.

We are working with PGE, Unite, and Community Energy Project to develop recommendations for a community engagement plan that will be based on the feedback you provide about the content in this weekend's workshops.

Agenda Agenda	
<ul style="list-style-type: none"> ● Introductions ● Goals ● Electricity Production <ul style="list-style-type: none"> ○ How? ○ Where? ● The Grid and Peak Load ● Natural Disasters 	<ul style="list-style-type: none"> ● Introducciones ● Metas ● Producción de Electricidad <ul style="list-style-type: none"> ○ Como? ○ Donde? ● La red y la carga máxima ● Desastres Naturales

Presenter: Nuhamin

Script: the purpose of this workshop is to introduce you all to issues around climate resiliency and environmental justice and ultimately receive feedback about this workshop. This morning's session is to specifically discuss electricity production, the grid, and natural disasters. We have coordinated this workshop with our partners because we know our communities are excluded from these issues, conversations, and decision making processes. We want to receive feedback, learn about your visions, your stories, and how these issues may be relevant to you and your family, friends, and neighbors.

This is the agenda for today: we started with introductions, we will elaborate on our goals, discuss electricity production, the grid and peak load, and then talk about natural disasters. We will then wrap up with an online survey to receive feedback on how the workshop went.

Now I will pass it to PGE to share more about the purpose of the morning workshop series.

Notes from Sherrie:

*It may be useful to frame agenda at a very high-level as:
why - are they here?*

who - is traditionally excluded?

how - is this relevant to YOU?

where - does it come from?

when - is the peak load and disaster?

Today's Goals | Metas de Hoy

We want to

- Learn more about how energy shapes our lives and planet
- To hear your stories, thoughts, and ideas



Queremos

- Conocer más sobre cómo la energía afecta nuestras vidas y el planeta.
- Oír sus historias, pensamientos, y ideas

Why now? | ¿Porqué ahora?

Electric systems change as needs change.

PGE is working with others to determine how to invest in systems that are best for everyone.

And for that, they need community input.

Los sistemas eléctricos cambian a medida que cambian las necesidades. PGE está trabajando con otros para determinar cómo invertir en los mejores sistemas para todos. Y para eso, necesitan la opinión de la comunidad.

Presenter: PGE

"Electric systems change as needs and technology change. PGE is working with others (OPUC, CBO's, the public) to determine how to invest in what's best for everyone. And for that, we need community input."

Questions for PGE

Preguntas para PGE

Time for PGE to answer questions.

What are the stated policy goals?

- Empower all customers with authentic choices, including access to diverse providers.
- Create inclusive, nondiscriminatory, equitable access to opportunities across customer types, with particular attention to those that reduce energy burden.
- Engage customers in an approachable, fully-accessible manner.
- Provide access to detailed, real-time information on electricity use and costs to help customers manage use and costs and understand how to save.
- Create procedural inclusion for new stakeholders traditionally not represented.
- Promote collaboration between utilities and community-based organizations to broaden perspectives and representation in planning process and outcomes.

Ice-breaker activity / Dinámica

mapping activity

- click the link in the chat
- click the circle in the upper right corner
- type in the name of your city
- inside the box that appears, share:
 - 1) your name
 - 2) the name of communities to which you feel accountable
 - 3) your inspiration for participating in this workshop

actividad de mapeo

- Haga clic en el enlace
- Haga clic en el círculo en la esquina superior derecha
- Escriba el nombre de su ciudad
- Dentro del cuadro que aparece, comparta:
 - 1) Tu nombre
 - 2) El nombre del (los) comunidad(s) con los que se siente responsable
 - 3) Su inspiración para participar en esta serie de talleres

Before we start with the training, we want to give you a chance to share a little bit about yourself and get to know others who are attending and participating today.

For our ice-breaker activity today we will be interacting with an online map. On this map you will share where you are calling in from, the city, your name, the name of communities in which you feel connected and accountable and lastly what your inspiration for participating in this workshop.

I will now walk through this activity to show you how it will be done.

If you are unable to access the map you can type this information in the chat as well.

We will take a few minutes to do this.

Jairaj walks through an example:

<https://padlet.com/jairaj/3hfkv0obfv6exrsx>

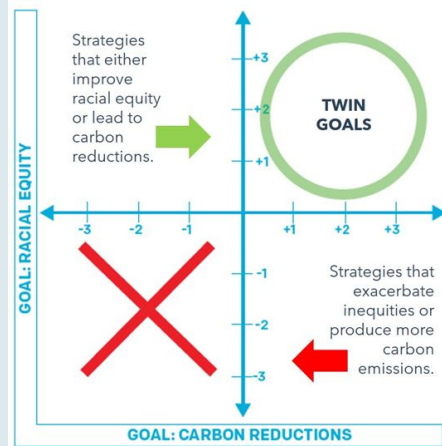
In Stage 1 your feedback will be incorporated into the development of the Community Engagement Plan as we seek to understand these key areas:

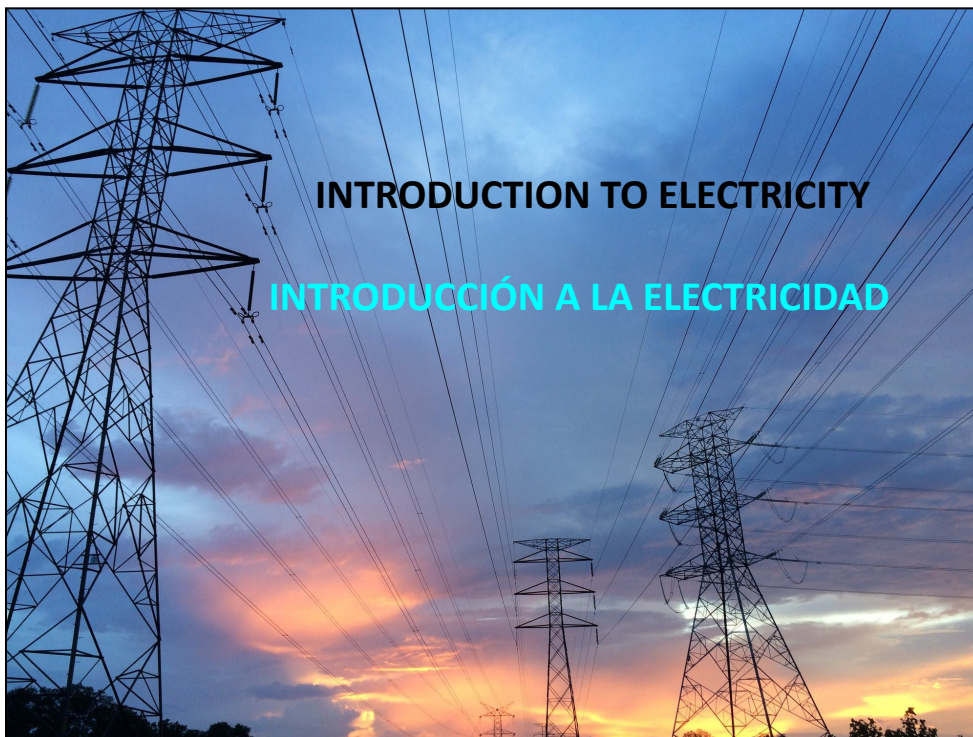
- Community interest in clean energy planning and projects
- Community energy needs and desires
- Community barriers to clean energy needs, desires, and opportunities
- Energy burden within the community
- Community demographics

Community Engagement	
Stage 3	Utilities collaborate with CBOs and environmental justice communities so that community needs inform DSP project identification and implementation. "Community needs" could address energy burden, customer choice and resiliency.
Stage 2	<p>Reflecting UM 2005 outreach requirements, utility holds ongoing community stakeholder meetings during grid needs assessment, solution identification, and action planning.</p> <p>Utilities and OPUC agree on community goals, project tracking and coordination activities.</p> <p>Conduct baseline study to increase detailed knowledge of service territory communities. Engage CBO experts to inform co-created community pilot(s).</p> <p>Consult with communities to understand identified needs and opportunities, then seek to co-develop solution options, documenting longer-term needs.</p>
Stage 1	<p>Hold four public pre-filing workshops with stakeholders on Plan development.</p> <p>Utilities create a collaborative environment among all interested partners and stakeholders. Utilities document community feedback and utility's responses.</p> <p>OPUC prepares accessible educational materials on DSP with consultation from CBOs and utilities.</p> <p>Prepare a draft community engagement plan as part of Plan.</p> <p>Utilities conduct focused community engagement for planned distribution projects.</p> <p>OPUC to host quarterly public workshop and technical forums after Plan filings.</p>
	2021-2022 2023 and beyond

What are the intended equitable outcomes?

- Acknowledge structural and systemic inequities
- Integrate an explicit consideration of racial equity in decisions
- Foster procedural equity by ensuring community has a seat at the table
- Promote transparency and candor





Thank you all! I'm Sherrie with community Energy Project and I'll be your guide on this introduction to electricity.

Climate is hugely impacted by electricity use, so how we use electricity matters, and how utilities handle electricity has a big impact. What we will be talking about is how we can be a part of bigger utility scale changes. 25% of United States carbon emissions comes from electricity.

Distribution System Planning

Needs change, and intensive planning has to be done to keep the grid up to date. Changes made to energy systems must be fair and informed by community.



Las necesidades cambian y se debe realizar una planificación intensiva para mantener la red actualizada. Los cambios realizados en los sistemas de energía deben ser justos y la comunidad debe estar informada.

It was created as a one-way flow of power, but now with distributed resources, the grid has to be planned in a different way. Also context that we are submitting plans for DSP to the PUC - this group is a part of that. why is it important for communities to interact with this planning process, and why it's different. Having grid control based out of somebody's home rather than through the traditional system. It changes the relationship of the individual to the utility system, you may be a producer of energy and not just a consumer. Because it's changing, that's what increases relevancy.

Be careful with individualizing vs. community power. The individual can be lost
New DSP regulatory structure that came about in 2020

Where Does Our Energy Come From? ↔

De Donde Viene Nuestra Energía?



Let's talk about two parts to this - what actually **CREATES** our energy and what physical locations is most of it produced?

Poll: Where do **YOU** think our energy comes from?

Renewable Energy

Energía Renovable

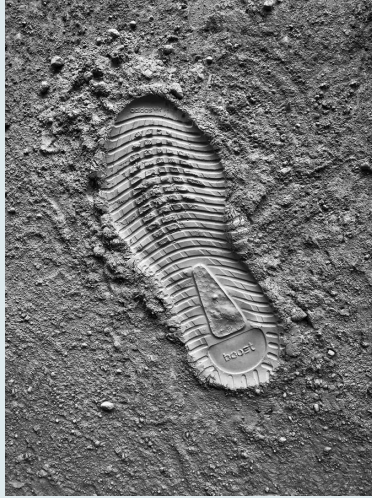
Energy from a source that is not depleted when used

Energía de una fuente que no se agota cuando se usa.



I'm going to give some definitions at a few points in the class so we can all be on the same page.

Carbon Footprint | Huella Ecológica





How much carbon dioxide is emitted due to using fossil fuels.

Carbon is a greenhouse gas - meaning it contributes to the climate crisis.



Cuanto dióxido de carbono es emitido a causa del de combustibles fósiles. El carbono es una gas de efecto invernadero, lo que significa que contribuye a la crisis climática.

Let's make sure everybody has the same exact definition

 <h3>Fossil Fuels</h3>	 <h3>Combustibles Fosiles</h3>
<p><i>Benefits:</i></p> <ul style="list-style-type: none"> • Systems currently in place • Fires up on-demand • Storage <p><i>Consequences:</i></p> <ul style="list-style-type: none"> • Finite • Public health impacts • Employee health impacts • Environmental harm • Each type has its own consequences 	<p><i>Beneficios:</i></p> <ul style="list-style-type: none"> • Sistemas actualmente en su lugar • Se enciende a pedido • Depósito <p><i>Consecuencias:</i></p> <ul style="list-style-type: none"> • Finito • Impactos a la salud pública • Impactos a la salud del empleado • Dano ambiental • Cada tipo tiene sus propias consecuencias

there are benefits and consequences to everything, far beyond what's in this small chart. Now we are, as a society, re-evaluating where our values lie, and the reality is, not all of these points are equal.

Potential discussion question for participants: Where or how are you currently using fossil fuels in your life? How do you feel about this?

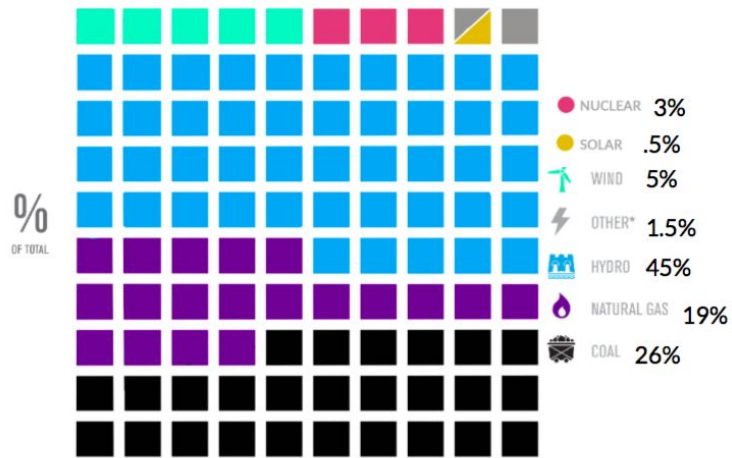
 <h2>Renewable Energy</h2>	 <h2>Energia Renovable</h2>
<p><i>Benefits:</i></p> <ul style="list-style-type: none"> • Inexhaustible supply • Low carbon emissions • Multiple-uses for project areas • Residential opportunities <p><i>Consequences:</i></p> <ul style="list-style-type: none"> • Natural fluctuations in availability • Each type has its own consequences 	<p><i>Beneficios:</i></p> <ul style="list-style-type: none"> • Suministro inagotable • Bajas emisiones de carbono • Usos multiples para areas de proyecto • Oportunidades Residenciales <p><i>Consecuencias:</i></p> <ul style="list-style-type: none"> • Disponibilidad de fluctuaciones • Cada tipo tiene sus propias consecuencias

there are benefits and consequences to everything, far beyond what's in this small chart. Now we are, as a society, re-evaluating where our values lie, and the reality is, not all of these points are equal.

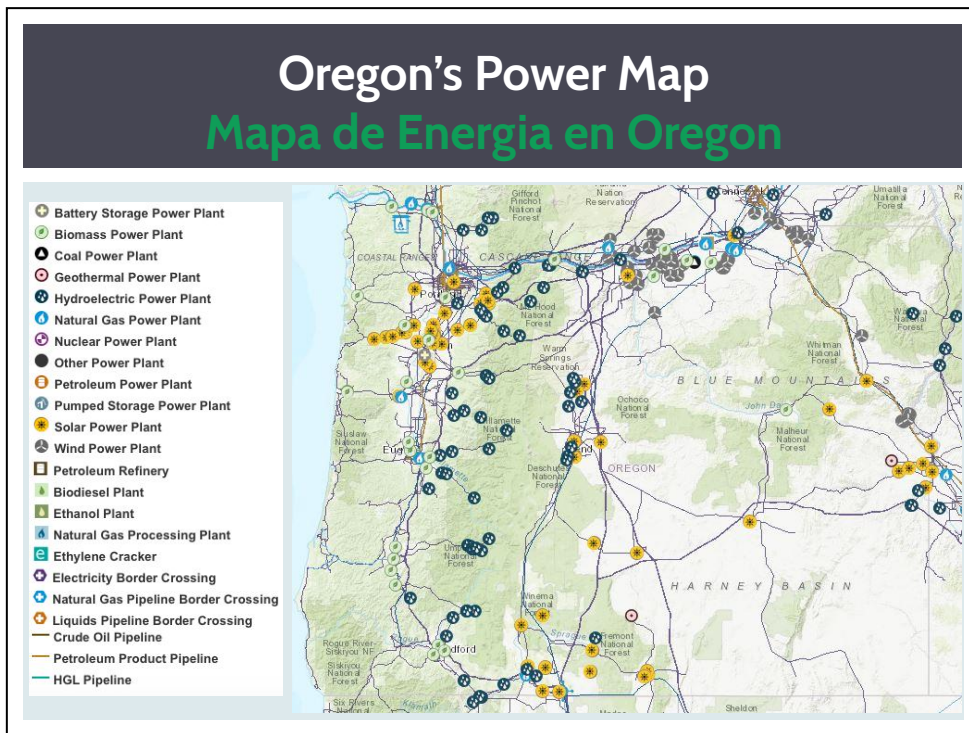
Oregon's Current Power Mix

Mezcla de Energia Actual en Oregon

2017 Oregon Energy Consumption



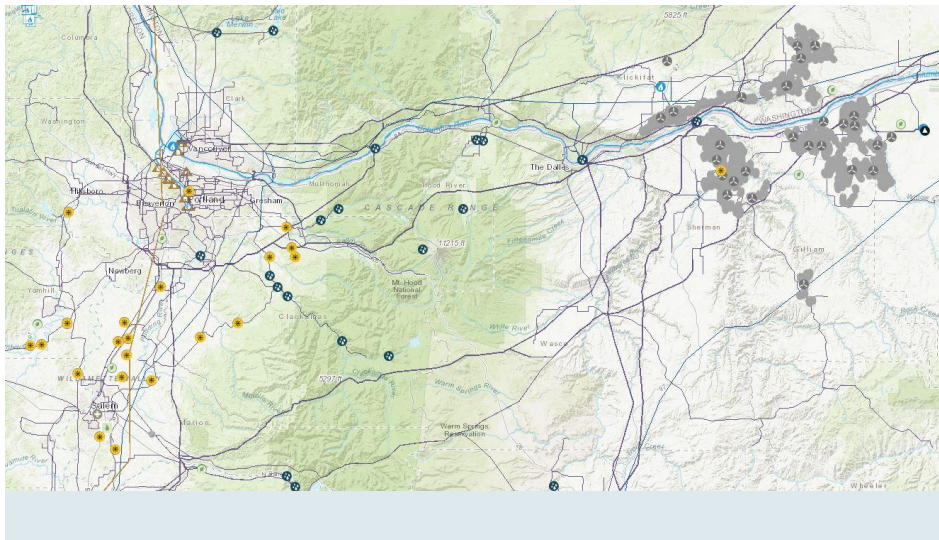
Almost half of Oregon's power still comes from fossil fuels, and a whole lot of hydroelectric



<https://www.eia.gov/state/?sid=OR>

Taking the chart we just saw of Oregon's power mix, we can see how that translates to real, physical locations in our state. There are many dams here now, though there are movements by indigenous people and environmental groups to have some of them removed. You can see the lines are crude oil, or petroleum, or liquid gas pipelines. We've seen examples in the news of different groups pushing back against oil lines going through their communities, sacred lands, and sensitive ecosystems. We've seen examples of when things go wrong - when lines break, or even this last weekend - when hackers stopped the flow of oil for a single day and gas stations went dry in the ensuing panic. This map may be VERY different in the next 20 years. Imagine if we were 100% renewable power - what would disappear and what would stay?

A Closer Look | Una Mirada de Cerca



Has anybody seen any of these big power producing arrays? If we follow along the river here, and enter the gorge we'll see big wind farms here. And following along the freeway to Salem - big solar arrays. There are also dams in the picture. (give space for people to share what they've seen or noticed)

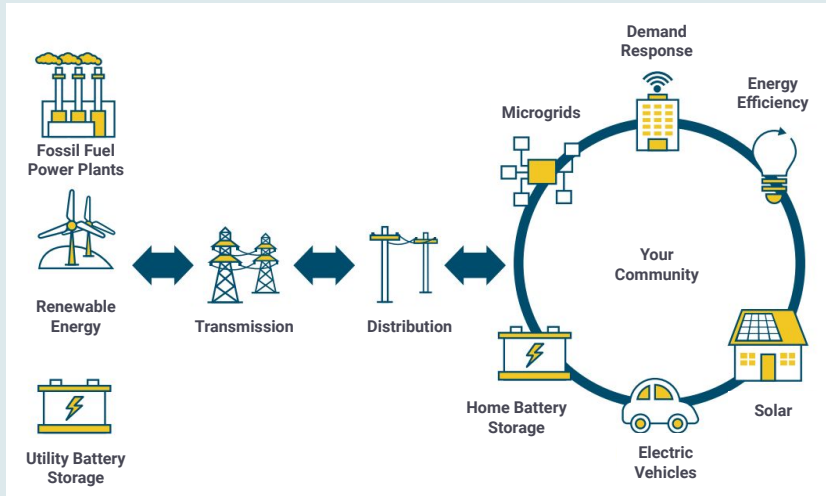
The Old Grid | La Vieja Red



Traditional “one-way” power flows from the source to homes and businesses.

Tradicional “una- dirección” la energía fluye desde la fuente a los hogares y negocios.

The Modern Grid | La Red Moderna



- Today the modern grid has more than just traditional fossil fuel power plants, it includes renewable energy like wind and solar and large battery storage as well
- In a modern grid, the power doesn't just flow one way any more, solar systems installed on homes in the community generate clean electricity that can be used in your home and if there is extra it flows onto the grid and can be used by your neighbors
- In a modern grid, the water heater or thermostat in your home isn't just saving you money on your monthly bill it could be helping the grid to stay in balance

Renewables and the Grid

Renovables y la Red

The grid must be perfectly balanced. Solar and wind can change suddenly, complicating this balance.

La red debe ser perfectamente balanceada. Solar y el viento pueden cambiar de repente, complicando este balance.



So since there is virtually no storage, and the electricity is constantly entering and leaving the grid, the grid needs to maintain a strict balance. It does this in part by sourcing its electricity from several centrally located gas-fired power plants that they control directly and can turn up or turn down as the demand changes.

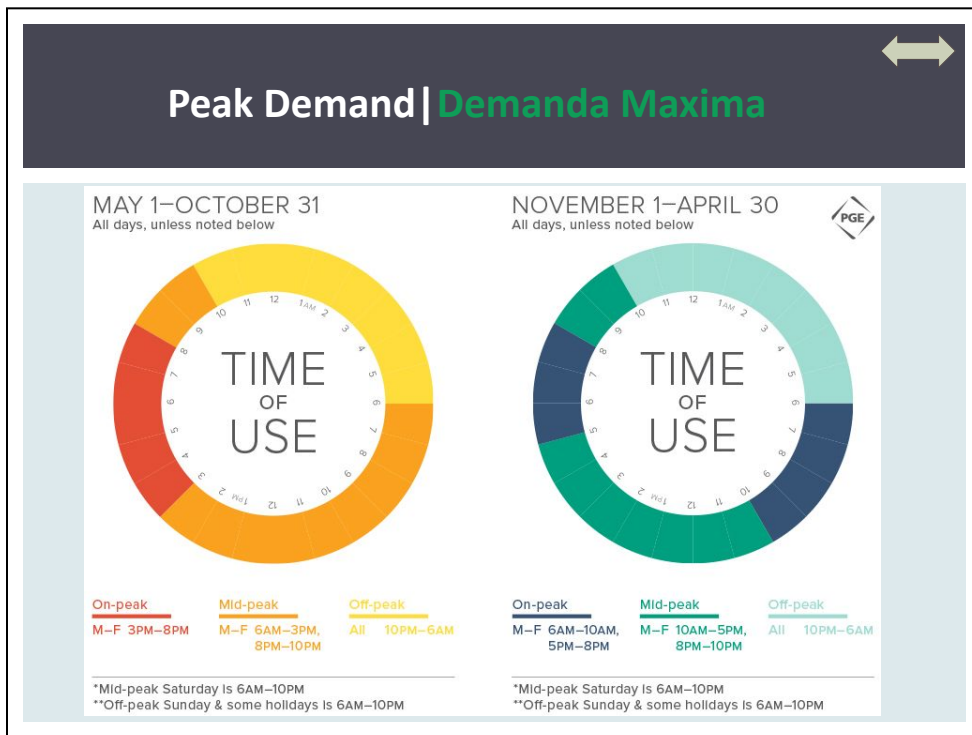
As more renewable energy is added to the grid it is not controllable in the same way. The utility can't control when the wind is blowing or how much sun is shining. Which makes renewable energy less predictable.

When solar panels on someone's home are producing more electricity than is being used in that home, the excess is fed onto the grid, decreasing the amount of electricity that you and your neighbors need. Unfortunately, times when solar panels produce the most tend to occur at times when less electricity is needed: during the middle of the day, when many aren't home, don't need lights, aren't showering, etc. and in the summer when heat isn't needed.

The wind is often strongest at night and the windmills in the Columbia Gorge are blowing while everyone is sleeping.

(total load for all electric consumers does peak during the day - stops overlapping at evening hours - peak at evening hours is solar is going off the system at the same time loads peak...)

The grid has to manage variable energy sources every day already -



Discussion question: What time of day do you think you use the most energy in a day?

So - how big is the grid? Imagine non-COVID times. It's winter, and in the morning people wake up at these varied times - some people getting going at 6am, other people like nonprofit workers who give presentations on electricity use wake up at 9am, so it's still dark. We are making coffee, making breakfast, turning on lights, taking showers, watching or listening to the news, etc. Then we go to work, and our homes power down, but many people use electricity at work. In many settings there we are sharing electricity with dozens or even hundreds of others. Then we come home between 5 and 7pm, making dinner, taking showers, turning on a show, turning up the heat, etc. Your neighbors the whole community, the city, the state - all doing the same thing at the same time.

And power has to be produced RIGHT NOW in order to accommodate all of these homes acting both independently and in unison.

The entire electrical grid, essentially, has to be built to accommodate the time when the most energy will be used - this peak time of use, or "peak demand." If we were to ask for more electricity than can be produced, we would have blackouts and brown-outs. As the population grows or needs grow (say we have a deep freeze and everybody turns on their heat at once) utilities have to build more plants to accommodate.

Why does it matter? | Por Qué Es Importante?

Building a new plant to produce energy for a small amount of time raises electricity rates. And it tends to be dirtier so it can turn on quickly.

La construcción de una nueva planta para producir energía durante un breve periodo de tiempo eleva tarifas eléctricas. Y acostumbra estar más sucio, por lo que puede encenderse rápidamente.



peak load matters - building a whole new plant to deal with a small amount of time the plant is needed. And it's dirtier because it has to ramp up quickly using fossil fuels.

What about you? | What about you?



Have you ever thought about using power at different times of the day to save money, or help the environment, or other reasons?

Have you signed up for a “peak time” incentive program?

How does your power use change in summer vs winter?

Alguna vez has pensado usar energía a diferentes horas del día para ahorrar dinero, o ayudar al medio ambiente, otras razones?

Estas inscrito en el programa de incentivo “tiempo máximo” ?

Como cambia tu energía en el verano vs invierno?



Participant questions

Hydroelectricity (Dams)

Hidroelectricidad (Presas)

Displacement of
Indigenous People

- lack of compensation
- impacts to subsistence lifestyles

Desplazamiento de gente
indígena

- falta de compensación
- impactos en los estilos de vida de subsistencia



New infrastructure has to be powered. Even renewable energy has consequences. For example When a new dam is put in, it has massive impact on major bodies of water. The land behind a dam is flooded, sometimes taking with it land that is culturally significant to the People who have always lived there. And it has huge impact on those who live on the river functioning in its natural way. Every source of power generation has a price. But who pays it? Who benefits from new infrastructure?

Coal Plants | Plantas de Carbon



Boardman Plant

- 5.5 tons of coal/minute to power 500,000 homes
- 1.5-2 million tons of carbon/year
- Shipped from Wyoming and Montana

Planta de Boardman

- 1.5-2 millones de toneladas de carbono / año
- 5.5 toneladas de carbón / minuto para alimentar 500,000 hogares
- Enviado desde Wyoming y Montana

Oregon's coal plant in Eastern Oregon has closed. 110 employees worked at the plant, with about 10 years notice that the plant was closing.

1.5-2 million metric tons of CO₂ per year - the single biggest source of greenhouse gas in Oregon.

5.5 tons of coal were burned per minute when it was running, enough to run half a million homes.

It was fed with coal trains 100 cars long brought all the way from Montana and Wyoming.

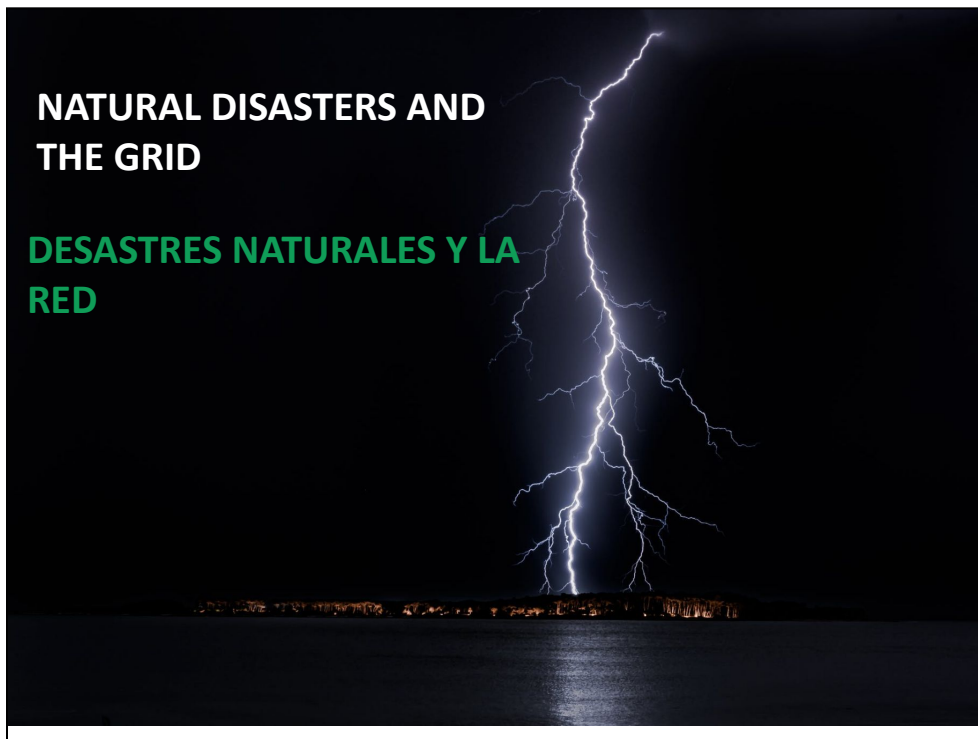
Impacts



- What other impacts of dams are there?
- What about coal plants?
- How does shutting down the plant or dam change things?
- ¿Qué otros impactos de las represas hay?
- ¿Qué pasa con las plantas de carbón?
- ¿Cómo cambia las cosas el cierre de la planta o la presa?

Some pretty heavy stuff between the dams and the coal plants. See if the group has anything to unpack about it.

Maybe something to prompt discussion about things like... transporting open coal trains through communities, who breathes that pollution, who will suffer the consequences of that carbon footprint. What will replace the energy that served half a million homes?



We're going to wrap up this section by talking about some of the challenges that our power infrastructure is facing right now, and how we're all impacted.

Wildfires | Incendios Forestales

Power systems themselves can catch fire, along with homes, businesses, and forests.

Los propios sistemas de energía pueden incendiarse, junto con hogares, negocios, y bosques.

Smoke inhalation can be serious or even deadly.

La inhalación de humo puede ser grave o incluso mortal.



Photo: Willamette week

Our electricity is also impacted by wildfires. Old power systems can spark fires in prime conditions, and last summer many communities in California went without power as the companies shut down parts of the grid to avoid starting new fires. Power stations themselves can catch fire along with everything else, causing outages.

Wildfires | Incendios Forestales



- Who is most impacted?
- How were you affected last summer?
- What could have helped you and others?

- Quien fue más impactado?
- Cómo le afectó este último verano?
- Que le pudo haber ayudado a usted y a otros?



Photo: Willamette week



Who do we think was most impacted by wildfires? Fire itself, and smoke inhalation?

(Prompts if necessary - migrant workers were still picking food in the smoke, usually without proper protective gear; inefficient homes had smoke invade their space even with everything closed in the heat).

A lot of warning systems were lost in translation

Winter Storms | Tormentas De Invierno

Ice storms put weight on power lines. Snow and wind can push down trees or break branches. Then the power can go out in freezing temperatures.

Las tormentas de hielo ponen peso sobre las líneas eléctricas. La nieve y el viento pueden derribar árboles o romper ramas. Entonces, la energía puede cortarse en temperaturas bajo cero.



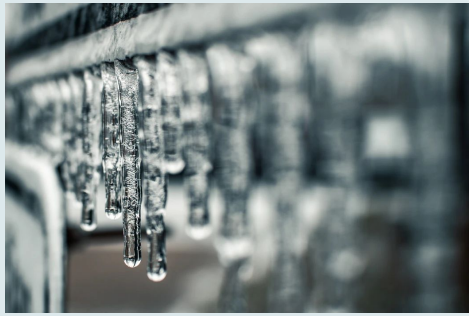
Photo: OPB



Ice storms can put 500 lbs of weight on electrical lines and storms can cause trees to break apart, taking lines down with them. When everybody turns up their electricity use, it can overtax the system and bring it down, like we saw in Texas.

Winter Storms | Tormentas De Invierno

- Who was most impacted?
 - How were you affected by the winter storms?
 - What could have helped?
- Quien fue más impactado?
 - Cómo fue afectado por las tormentas de invierno?
 - Que pudo haber ayudado?



Ice storms can put 500 lbs of weight on electrical lines and storms can cause trees to break apart, taking lines down with them. When everybody turns up their electricity use, it can overtax the system and bring it down, like we saw in Texas. And the power goes out right when we need it the most.

Drought | Sequía

What are impacts of drought and extreme temperatures?

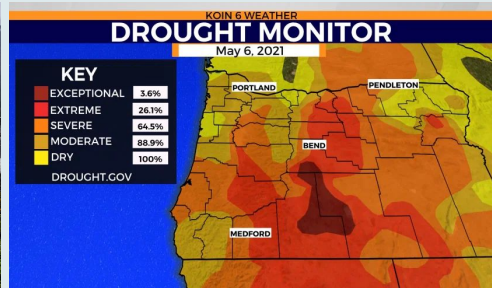
- Increases energy needs
- Dangerous conditions

What else?

Cuales son los impactos de la sequía y las temperaturas extremas?

- Necesidades energéticas elevadas
- Condiciones peligrosas

Que mas?

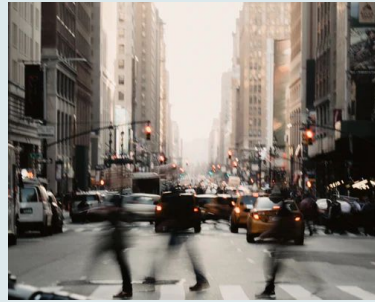


When water levels get too low, and water too hot, it impacts hydroelectric power options as well. Almost half of Oregon's power comes from hydroelectric.

Increasing Need | Mayor Necesidad

- Population growth
- Retiring fossil fuel plants
- Push for electrification
 - In the home and at the utility level

- Crecimiento de la población
- Retirada de plantas de combustibles fósiles
- Empuje por la electrificación
 - En el hogar y a nivel de servicios públicos



Additionally, we likely need more electricity in future years. Our population is growing at the national and state level, meaning more people will need more electricity, and households may grow.

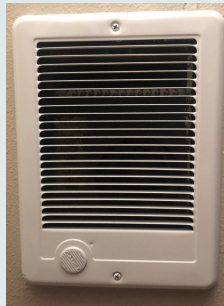
PGE and other utilities have strict mandates to increase their renewable energy as well, and so will not only need to expand how much electricity goes out, but it will need to be cleaner energy.

Environmentalists would like to see more things become electric, like transportation. Also as the grid has more and more renewable energy, many groups are looking to phase out gas water heaters, gas and oil furnaces, gas stoves, etc. and moving them into cleaner electric options. All of this is with the goal of reducing our carbon footprint to protect the environment and people.

Increasing Need | Necesidad Creciente

- What happens for people who can't afford to go electric?
- Low-Income households often have inefficient electrical heating
- Renters have little control over efficiency and appliances

- ¿Qué sucede con las personas que no pueden permitirse el lujo de usar electricidad?
- Los hogares de bajos ingresos a menudo tienen calefacción eléctrica ineficiente
- Los inquilinos tienen poco control sobre la eficiencia y los electrodomésticos



A concern low-income advocates have is that as people switch back to electricity, who will be left with the existing infrastructure?

All utilities have baseline needs in order to run. If there are fewer people using a resource, that resource can be more expensive.

For example - right now natural gas is cheap. For people who have gas furnaces because it's more affordable - they will be tied into a system that could become very expensive very quickly, as the gas companies have fewer customers to pay for the basic operations of a gas company - things like repairing lines, managing billing, reading meters, etc.

Advocates are fighting to ensure that as these changes happen, vulnerable customers are protected from the negative impacts of what should be positive changes for us all.

LI households often have terrible heating systems that are far more expensive - baseboard heaters and electric furnaces are expensive to operate, vs more expensive to BUY heat pumps (which also provide air conditioning - further keeping people safe from the heat!)

In Conclusion | In Conclusion



- Where we produce and interact with electricity
 - How the climate crisis impacts energy use, and how that impacts us
- Where we produce and interact with electricity
 - How the climate crisis impacts energy use, and how that impacts us



What did you find valuable or interesting? Emphasize your thoughts in the evaluation as well if you need a little more time to think about it.

Tomorrow | **Mañana**

9am-12pm

- Review
- Distributed Energy Resources
 - Renewables & Storage
 - Energy Efficiency
 - Smart Technology
- Evaluation
- Revision
- Recursos energeticos distribuidos
 - Renovables y almacenamiento
 - Eficiencia energetica
 - Tecnología inteligente
- Evaluacion

That wraps up today's session - this is what we can look forward to tomorrow. A lot of the elements we talked about today will be very valuable to know in tomorrow's workshop.

Thank you! | Gracias!

<https://www.surveymonkey.com/r/UniteDSP>

DANKE!
THANK YOU!
MERCI!
GRAZIE!
GRACIAS!
DANK JE WEL!
.....

QR CODE FOR SURVEY



Thank you so much for your time and sharing your thoughts and stories with us!
CCC has an evaluation to gather your feedback.

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Rural Electrification Act 1935



- Electricity as a right
- Publicly funded regional infrastructure
- 90% of farms had no electricity, by 1950 that number dropped to 20%
- Regional groups formed electricity cooperatives

In 1936, nearly 90 percent of farms lacked electric power because the costs to get electricity to rural areas were prohibitive, by 1950 close to 80 percent of U.S. farms had electric service. Electricity as a right, as a way to level of the playing field. Groups formed electricity cooperatives - not where electric companies came from.

Public Utility Commission

Investor Owned Utilities (IOUs) are monopolies, and the PUC regulates them. This has a big impact on our bills, how energy is produced, and all kinds of other things I don't know about yet.



IOU's formed in larger metropolitan areas with a large use base where electricity could be distributed at a lower cost. The PUC is tasked with regulating those monopolies, to keep bills lower, to think about where our energy comes from with the input of stakeholders, and to enforce laws.