

Senate Bill 978

SECTION 1. (1) The Public Utility Commission shall establish a public process for the purpose of investigating how developing industry trends, technologies and policy drivers in the electricity sector might impact the existing regulatory system and incentives currently employed by the commission. If warranted, the commission may consider changes to the existing regulatory system and incentives.



OPUC CHAIR

BRING CONSTRUCTIVE THOUGHTS. LET'S HAYE SOMETHING MEANINGFUL TO REPORT TO THE LEGISLATURE.



Engage with optimism.

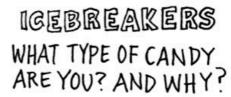
We want you to be engaged both orally and in writing.

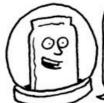
Megan Decker

Finally- I expect a roadmap.

Environmentalists \(\D New Participants Utilities Industry Advocates I Energy Agencies Rate Payer Advocates

DEADLINE for the Commission Report





I'M A MARS
BAR because
I'm out of
this world!

I'M NOTA SUCKER.

JUST CHEWY IN THE MIDDLE.





Bowls on tables.

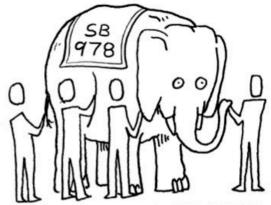
BREAK OUT FROM ENTRENCHMENT



INDEPENDENT POWER
Producers

ELECTRIC

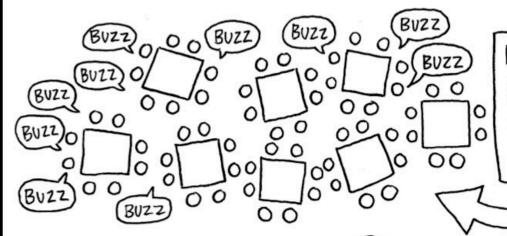
RATE PAYER ADVOCATES



SHARING PERSPECTIVE

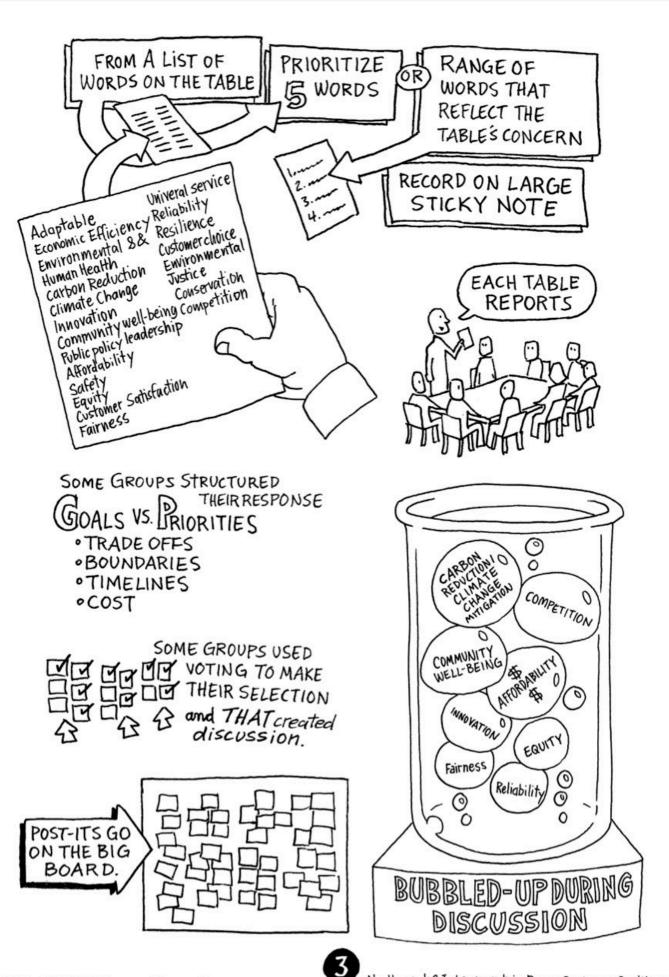
TALK IN THE SAME
LANGUAGE. SAME THEMS
WHAT DO YOU MEAN BY CUSTOMER?





DISCOMBOBULATE
ATTENDEES WITH
JUMBLED SEATING
MIXING ENTRENCHED
WITH NEW
PARTICIPANTS

2





Howto integrate OPUC'S work with OR goal of carbonfree power?

BROAD CONSENSUS OCCURS IF DISCUSSED IN BROADTERMS. BUI DIGGING DOWN INTO WORD MEANING BRINGS NEW CONSIDERATIONS TO THE DISCUSSION.

Meredith Connolly Climate Solutions

We need to take hold and manage and adapt with changes.

And, SB978 Fits into national trends. We must scope for Oregon and maintain core values while maximizing gains.



EVERYBODY HAS A DIFFERENT WAYS TO PROCESS INFORMATION AND TO ASSIGN DIFFERENT MEANINGS TO THE SAME WORDS.

Angus Duncan

National Resources Defense Council

LET'S BRING BACK BLANK SLATE THINKING.



Megan Decker commissioner

What can regulated monopolies only do and what do we want them to do?

Irion Sanger NIPPC

Alan Hickenbottom consultant



POOR PEOPLE SHOULDN'T BE PAYING FOR THE CARBON FOOTPRINT -Bob Jenks, CUB

What do customers want?

This process will evolve with a professional facilitatar and Regulatory Assistance Project.



Julie Peacock OPUC STAFF

WORDS MATTER

IOUs' don't have customers They have captive customers instead.

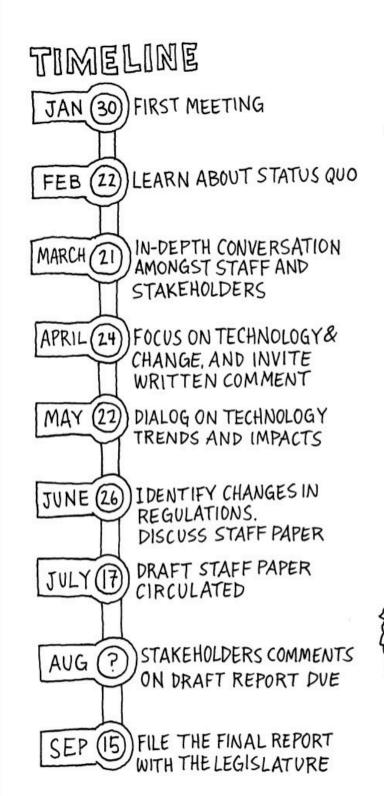


Bob Kahn

Innovation = Thought Leadership.



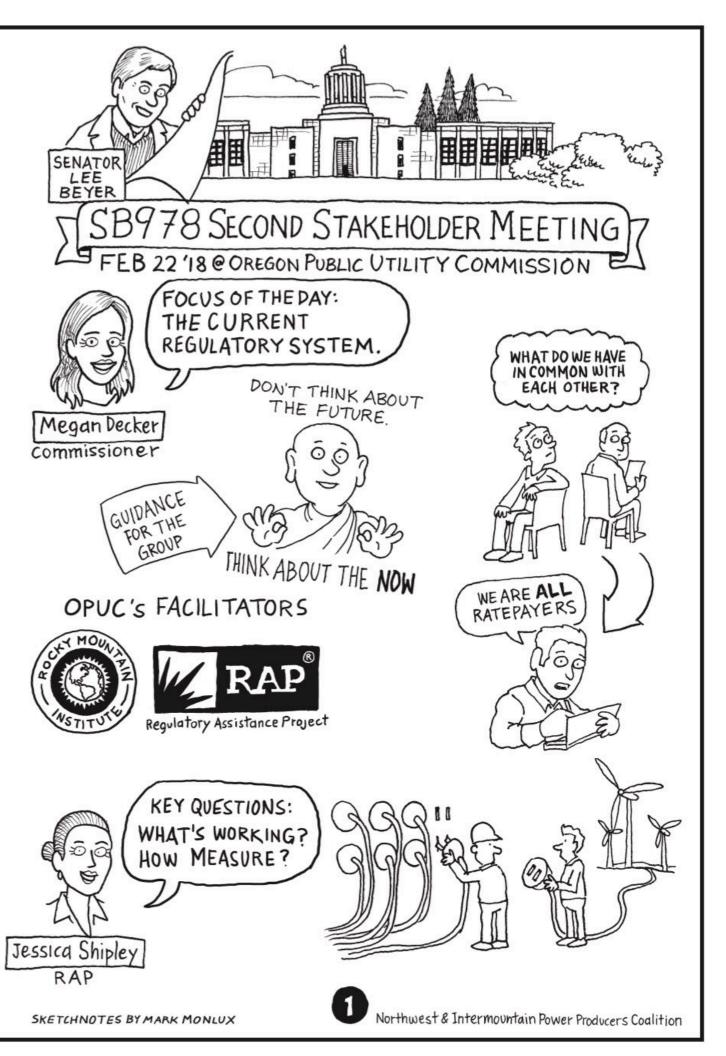
Northwest & Intermountain Power Producers Coalition





No, Ma'am. The Private Prison System is the next building over.

Who is responsible for meeting customer values?
-Franco Albi,
Portland General Electric



OREGON REGULATION ASSUMES UTILITIES ARE NATURAL MONOPOLIES



UTILITY

OBLIGATION TO SERVE ELECTRICITY TO ALL

GOVERNMENT

REIMBURSE FOR PRUDENTLY INCURRED

- COSTS

UTILITIES MUSTMEET

THE BASIC REVENUE REQUIREMENT FORMULA

Rate Based Investment + Rate of Return + Operating Expenses = Revenue Requirement

REGULATORS SET

JUST & REASONABLE RATES FOR UTILITIES

Including Rates of Return



CAPITAL ASSETS





Nothina Nefarious

UTILITIES' TENDENCY TO OVER-INVEST IN CAPITAL ASSETS TO INCREASE PROFITS FOR SHAREHOLDERS

- AVERCH-JOHNSON EFFECT

Environmentalists \(\Delta \) Utilities Industry Advocates L Rate Payer Advocates

REGULATORS' OBJECTIVES

- NO EXCESSIVE RETURNS ON UTILITY INVESTMENT.
- NO DISCRIMINATION BETWEEN RATE PAYER OR CLASSES.



REGULATORS' TOOLS



- . INTEGRATED RESOURCE PLANS BEFORE FACT
- · COMPETITIVE BIDDING
- · DECOUPLING & PERFORMANCE-BASED REGULATION



UTILITIES ARE MASSIVELY INVOLVED IN INFLUENCING RULES THAT REGULATE THEM.

DAVID BROWN

Obsidian Renewables

Where are the conflict of interest statues that apply to OPUC?

TOOLBOX



OREGON STORY

SB1149 DIRECT ACCESS AUTHORIZATION ENERGY TRUST CREATION

SB838 RENEWABLE PORTFOLIO STANDARD SET 25% by 2025

SB1547 ELIMINATE COAL USE by 2030 50% RPS by 2040 - COMMUNITY SOLAR

- ELECTRIC VEHICLES

IS THE SYSTEM
DESIGNED TO INTEGRATE
TECH INNOVATIONS?

My career has spanned punch cards to the cloud. We have many options in front of us.



INNOVATIVE INDUSTRY.

B JENKS RE
ELECTORS

CUB

MASS

RE
ELECTORS

SERVING THE MASSES WITH RELIABLE ELECTRICITY DOESN'T INVITE RISKTAKING.



Alan Hickenbottom Consultant

AS THE SYSTEM IS DESIGNED TODAY, DOES IT ALLOW FOR CONSUMER CHOICE?

What choices that do exist are in spite of the system **not** because of it.

It comes down to those who can pay... It would be ideal not to depend on any utility.





Irion Sanger



As an economic regulator the OPUC can't regulate CO2.



Brett Sims
Portland General Electric





WE ARE STILL GOING SIDEWAYS AND ONLY POSTPONING THE DAY OF RECONING.

Angus Duncan

Natural Resources Defense Council



DOES THE SYSTEM ADDRESS EQUITY CONCERNS?

PEOPLE MOST AFFECTED ARE NOT AT THE TABLE.



Scott Bolton Pacifi Corp

YES, WE UNDERSTAND NEEDS. WE DO THINGS THAT LOOK A LOT LIKE A SOCIAL SERVICE AGENCY.

> DOES THE CURRENT SYSTEM ALLOW UTILITIES TO EXPAND ELECTRIFICATION?

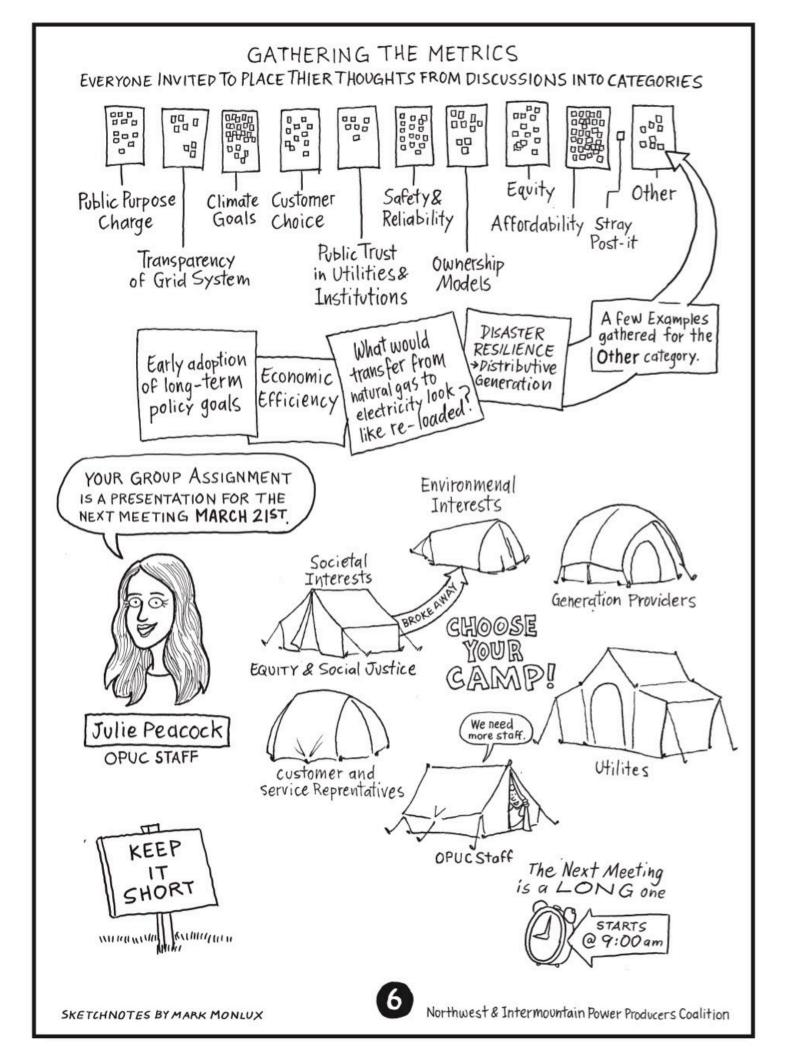


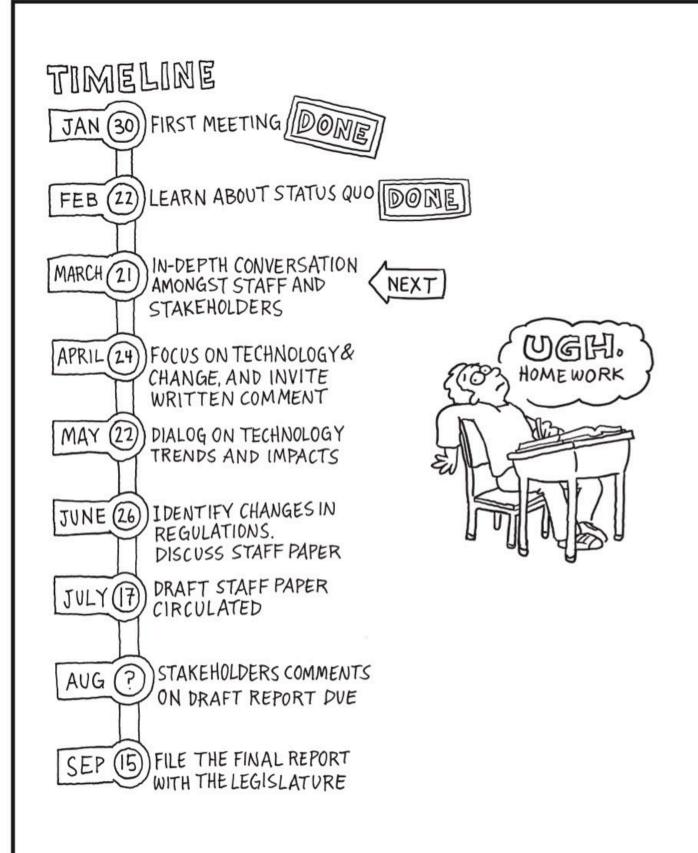
WE'RE NOT MOVING FAST ENOUGH AS LONG AS OPUC DEFINES ITSELF AS AN ECONOMIC REGULATOR.

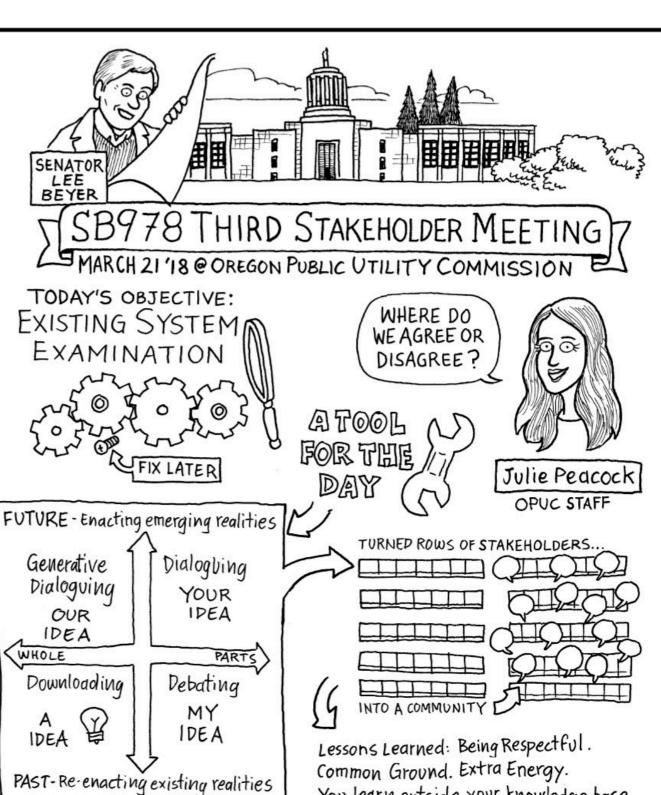


Sidney Villanueva NIPPC









Common Ground. Extra Energy. You learn outside your knowledge base.



Video of Meeting: bit.ly/2E2EN44

SKETCHNOTES BY MARK MONLUX

Loretta Mabinton PGE

Northwest & Intermountain Power Producers Coalition

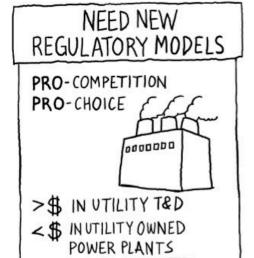
I expect more balance when people understand all this.



CUSTOMER & CUSTOMER REPRESENTATIVES

Citizens' Utility Board of Oregon
Portland General Electric, Small Business Utility Advocates
Northwest & Intermountain Power Producers Coalition
Democratic Socialists of America
Alliance of Western Energy Consumers





& FREEDOM TO CHOOSE





LONG-TERM INVESTMENTS RISKY WITH RAPID TECHNOLOGY CHANGE.



Industrial Customers



EQUITY & ENVIRONMENTAL JUSTICE

Coalitions of Communities of Color Northwest Energy Coalition, Portland General Electric Democratic Socialists of America, Stop B2H Community Action, Partners of Oregon Oregon Physicians for Social Responsibility Oregon Department of Energy, Multnomah County Opal Environmental Justice, Verde

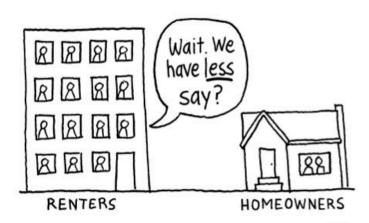


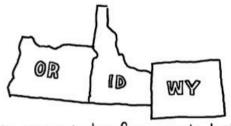
There's a power imbalance here.
Who's going to be heard?



Carolina Irahetta Gonzalez VERDE







Wyoming is too far away to build wind farms when building them here helps rural Oregon.



UTILITIES

Portland General Electric
Oregon Municipal Electric Utilities Association
NW Natural, Pacificorp
Bonneville Power Administration
Umatilla Electric Cooperative
Idaho Power Company
Ann Fisher Legal and Consulting Service

SB 978 Should preserve basic model and lead to more flexible, enhanced regulation.



A LONG-TERM STEWARD



We're not chasing Shiny new things for more capital assets.

Amongst the lowest prices for cleanest Power in the U.S.A.

MULTIPLE POINTS OF ACCOUNTABILITY

ACCOUNTABILITY

ACCOUNTABILITY

POWER

SYSTEM

ACCOUNTABILITY

POWER

SYSTEM

ACCOUNTABILITY

FOR ACCOUNTABILITY

FOR ACCOUNTABILITY

FOR ACCOUNTABILITY

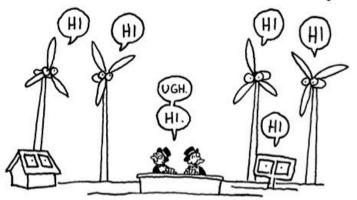
ACCOUNTABILITY

FOR ACCOUNTABILIT



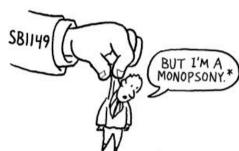
SERVICE GENERATORS & PROVIDERS

Community Renewable Energy Association, Obsidian Renewables Northwest & Intermountain Power Producers Coalition Green Energy Institute, Lewis and Clark Law School Ken Kaufmann Law, Oregon Department of Energy, National Grid Lattitude 45 Associates, Renewable Northwest Renewable Energy Coalition



NO LONGER A NATURAL MONOPOLY





WHAT ABOUT

PUBLIC UTILITY REGULATORY POLICIES ACT

IOU SHAREHOLDERS DON'T BENEFIT BUT RATEPAYERS DO.



GET RID OF THE MIDDLEMAN

Incentives embedded in current

CCAs can get Oregon to 100% renewable soon

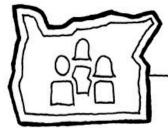
system need updating.

BRIAN SKEAHAN CREA

SILVIA TANNER RNW

*MONOPSONY = SOLE BUYER IN MARKET, SKETCHNOTES BY MARK MONLUX

Northwest & Intermountain Power Producers Coalition



PUBLIC UTILITY STAFF COMMISSION Public Utility Commission of Oregon



Our goal is to simulate competition. Can we do it effectively?

OPUC IS PRIMARILY AN ECONOMIC REGULATOR



Lisa Hardie

Efficient Process

+Investment Environment

Choice of New Services

Technology & Policy Change

Full Partipation & Record

Fair Treatment of Captive Customers

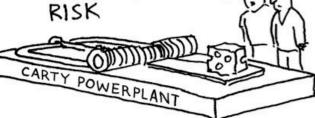
Equal Access

Affordable Rates Utility self-generation
> Risky than Purchasing
Power.



BALANCING OBJECTIVES

NEW UTILITY
INVESTMENT
RISK

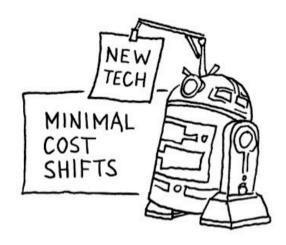


Lance Kaufman



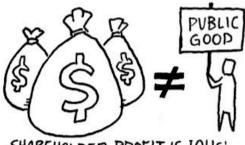
ENVIRONMENTAL CONCERNS

Natural Resource Defense Council, City of Portland Power Oregon, Oregon Department of Energy Center for Sustainable Economy, Stop B2H Climate Solutions, Northwest Energy Coalition Oregon Environmental Council, Sierra Club





System needs to adapt to rapidly changing needs and technology in order to provide promised benefits to the public.



SHAREHOLDER PROFIT IS 10US PRIMARY MOTIVATION

JESSENTIAL FEATURES:

Rate Payer Advocacy coupled with knowledgeable, prudent

& independent OPUC

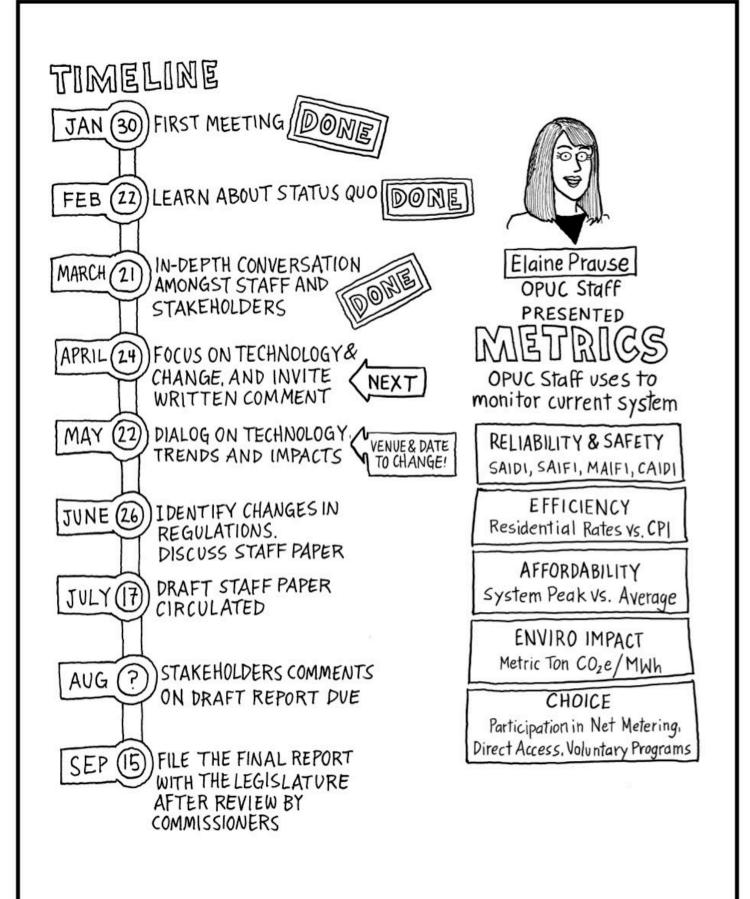


Wendy Gerlitz

Northwest Energy

Coalition





SKETCHNOTES BY MARK MONLUX

THE CURRENT SYSTEM ...

①Obligates utilities to offer reliable, safe service to all customers; in exchange, requires customers to pay rates that allow utilities an opportunity to recover their cost to serve plus an authorized rate of return.



Yes, but we do our homework for what regulators would approve.

	AGREE	DISAGREE
Customers Customers	6	0
Equity & EJ	5	0
Generation & Service	10	0
Environ	5	0
Utilities Utilities	10	0

THE CURRENT SYSTEM ...

② Gives utilities incentives to favor utility-owned capital investments over other potential solutions due to the ability to earn a return on those investments.



AVERCH-JOHNSON EFFECT

	AGREE	DISAGREE
@ Customers	5	1
Equity & EJ	5	0
Generation & Service	10	0
Environ	5	0
Utilities Utilities	0	8

THE CURRENT SYSTEM ...

3 Authorizes the commission to act as economic regulator, but not as an environmental regulator.

	AGREE	DISAGREE
@ Customers	6	0
Equity & EJ	5	0
Generation & Service	3	6
Environ	3	2
Utilities	0	9

THE CURRENT SYSTEM ...

4) Makes energy choices accessible to all customers while minimizing cost shifting.



	AGREE	DISAGREE
@ Customers	0	6
Equity & EJ	0	4
Generation & Service	0	8
Environ	0	4
Utilities	10	0

THE CURRENT SYSTEM ...

⑤ Utilize competition as a tool to make the system more affordable.

	AGREE	DISAGREE
@ Customers	6	0
Equity & EJ	0	4
Generation & Service	0	7
Environ	2	1
Utilities Utilities	5	4

THE CURRENT SYSTEM ...

6 Balances risks associated with pursuing new versus embedded technologies and services.

	AGREE	DISAGREE
@ Customers	0	6
Equity & EJ	2	1
Generation & Service	1	6
(Environ	0	3
Utilities Utilities	0	9

AGREE DISAGREE

THE CURRENT SYSTEM ...

7 Promotes environmental, social, and economic justice.

Utility models need to change. Nobody is to blame. Stakeholders are aligned.



The process is important.

Customers

Equity & EJ

Generation & Service

Environ

Utilities

We haven't yet talked about all the changes coming.

A lot is going on.

DAVID BROWN Obsidian Renewables

4



8 FOURTH STAKEHOLDER MEETING APRIL 24'18 @ OREGON PUBLIC UTILITY COMMISSION

WELCOME BACK TO OUR FOURTH SESSION! FOCUS ON FUTURE TRENDS



Julie Peacock OPUC STAFF



HOMEWORK SHARE IMAGES SHOWING TRENDS

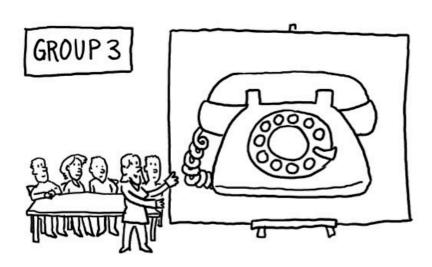
GROUP 1



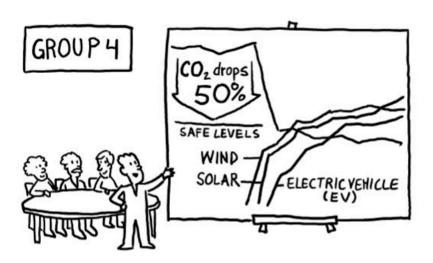
CO-OP RENEWABLES HELPED BY SB1520. INNOVATIVE POLICY SPURS INNOVATIVE TECHNOLOGY AND COMMUNITY DEVELOPMENT.



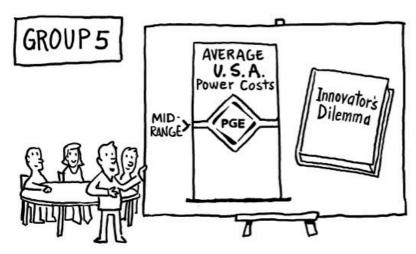
DECISIONS HERE
MATTER TO OUR
EMPLOYEES
AND THEIR
COMMUNITIES
IN WYOMING.



OLD REGULATORY
MODEL OFFERS
DIFFERENT COLOR
PHONES BUT NOT
TRUE CHOICE.ALL
CONSUMERS RISK
PAYING FOR COSTLY
STRANDED UTILITY
ASSETS.



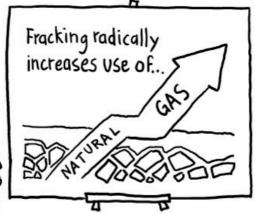
STEEP CARBON REDUCTIONS WILL OCCUR WHEN LOW-EMITTING TECHNOLOGIES COST LESS THAN INCUMBENT TECHNOLOGIES.



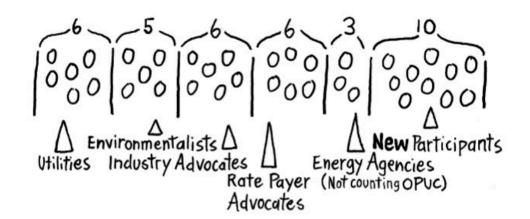
HOMETOWN
UTILITY'S COSTS
ARE ATTRACTIVE—
MUCH CHEAPER
THAN CA OR NY.
CHANGE CAN COME
SUDDENLY AND CRUSH
THE STATUS QUO.







BILLIONS OF DOLLARS
IN CLIMATE CHANGE
IMPACTS IN 2017 NOT COUNTING
WILD FIRES. (MANY)





Panels to explore emerging trends.
What do these trends mean for Oregon?
What are Oregon's policy options in response?

Rachael Gold

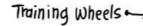
REGIONAL ENERGY TRENDS &

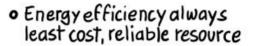


Power Division Director Northwest Power & Conservation Council Northwest Power and Conservation Council

> "Big Ten" Federal dams on Columbia

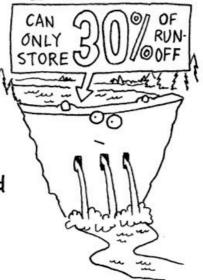
- Very complex power system with variable, renewable energy
- · Carbon emissions: "not nice" future projection
- · Flat load growth even with robust economy
- ·Over 50 parties responsible for managing western grid
- Way behind USA in consolidation of transmission grid

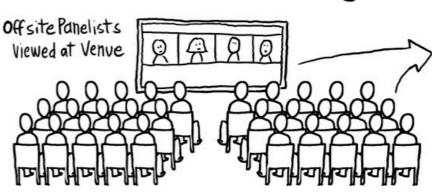


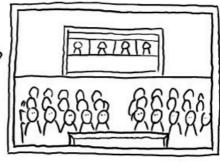


· PNW super unique

5四% Hydro but







Remote viewing via Website



PACE OF TECHNOLOGICAL ACCELERATION



CHANDU VISWESWARIAH, Ph.D. President and CEO

Three Big "Ds" are driving change:

- **正**>**Digitization**
- Decarbonization
- Decentralization
- Need digital intelligence to drive renewable development
- · Use flexibility in loads
- Manage uncertainty to create a symphony



 Would not design regulation we have today to do what's needed

- 397 months in a row hotter than 20TH Century average
- Clear urgency to decarbonize
- · Is future coming at us faster?

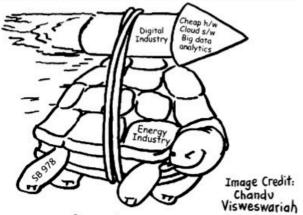
Google searches	2.4 M/minute	19 years
E-mail	150 M/ minute	25 years
Snapchat	1.8 M/minute	6years



EE+BE=FE→RE↑ Energy Efficiency + Beneficial Electrification = Flexible Energy which enables higher Renewable Energy DIGITIZATION integration with Digitization

Energy Efficieny plus Beneficial Energy equals Flexibility in load, Integrated Renewables

Time to hitch a ride on the digital bandwagon!



The pace of Technological Change

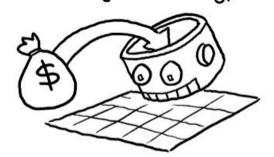




Rebecca O'Neil

Program Manager Pacific Northwest National Laboratory

· Next: investment of billions in smart grid technology





 Technological acceleration in energy technology: time vs. pace

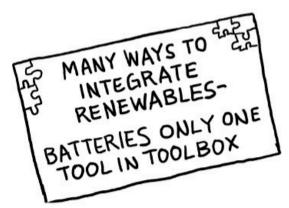
→ Hawaii PUC dealing with rapid pace of change



→ Oregon PUC at point of inflection



- · Wind and Solar mature: grid parity now question of capability
- · Storage
- → Battery costs per kWh dropping dramatically
- → Long way to go need other solutions too







CUSTOMERS WANT CHOICE BUT A RANGE OF CHOICES - Introduces next Panel via video

CUSTOMER DIFFERENTIATION [

Julie Peacock OPUC STAFF

DAVID RUBIN

Director of Service Analysis Pacific Gas & Electric

· Decoupled regulation: PG&E incentivized to sell less electrity

 Utility Funds customers to manage energy use

· Community Choice Aggregation (CCAs) advancing customer options

· How much choice do customers really want?

· Must adjust rate design to account for changes

· PG&E offers choice programs tailored to low-income 20% discount

energysage 🚯

Vikram Aggarwal Founder and CEO

SKETCHNOTES BY MARK MONLUX

- Consumers wantchoice and transparency to make informed choices
- They look for data and trustworthy information re: technology
 - → Equipment and installation costs matter
 - → Quality conscious and will pay more
- · Shop for best financing options



wee.green Toni Bouchard

Co-founder & President

Communities can cometogether and create change

- · Marketers for energy efficiency and solar
- → Smart Power (Massachusetts)
- → Solarize ((onnecticut)
- · Took longview reached 169 CT towns
- · Offer online evaluation functionality like Turbo Tax
- · Promote regulations to offer customers more access to marketplace

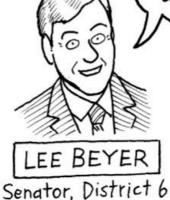
REVOLVING PUBLIC POLICY OBJECTIVES IN OREGON

Whydo you think this SB978 process is needed or helpful for you in your job?

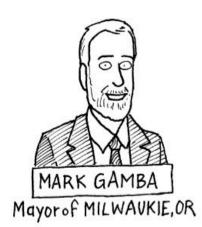
Reason I wrote SB 978: regulatory paradigm doesn't work into future. Legislature focused - how do we adapt to climate change?



RUCHI SADHIR OR Dept. of Energy



- OPUC and utilities will play a major role in reducing emissions
- · Must wheel electricity from wherever it's generated - utilities do that
- · I drank the Kool-Aid but later found deregulation wasn't the answer
- · Did I think cell phones would replace landlines? No. LOL
- · OPUC's job itself shouldn't change much
- · Utilities in best position to implement climategoals
- o"Cap& Invest" legislation is one way to make transition fair



- · Committed to hard target: net zero carbon city by 2040
- Experiencing costs of climate change now
 Must include externalities as true "least cost"
- · Very interested in Community Choice Aggregation (CCA)
- Community solar rulemaking—sadly not a lot of opportunity there
- Inherently unfair rates between residential and industrial users
- SB 978 must lead to doing much more COz reductions
- · Future of utilities: T&D/balancing, not generation
- Speaking in FAFLAs = four and five letter acronyms
- · Trend: electric system needs to be more than it is now
- · Consumers seek greater control
- Transform transportation system away from fossil fuels
- · Must think beyond reasonable rates and reliable paradigm
- · SB 978 asks how to integrate benefits we want into energy policy
- · Increase size of policy toolbox including CCAs
- · Lots of confidence in OPUC people and structure



Representative, District 34



Electricy Policy Manager Energy Innovation

- Decarbonize grid by reforming utility regulation and business models
- Information asymmetry between regulators and regulated

CONTEXT: POWER SECTOR EVOLUTION

Old Goals:

- Meet growing demand
- · Build new infrastructure
- Build to deliver universal service
- Affordability, Reliability, Safety Options:
- · Centralized power plants
- · Transmission lines
- · Distribution system

New Goals:

- · Build Maintain
- · Reliability > Resilience
- · Clean power
- · Customer satisfaction
- · Affordability, Safety

New Options:

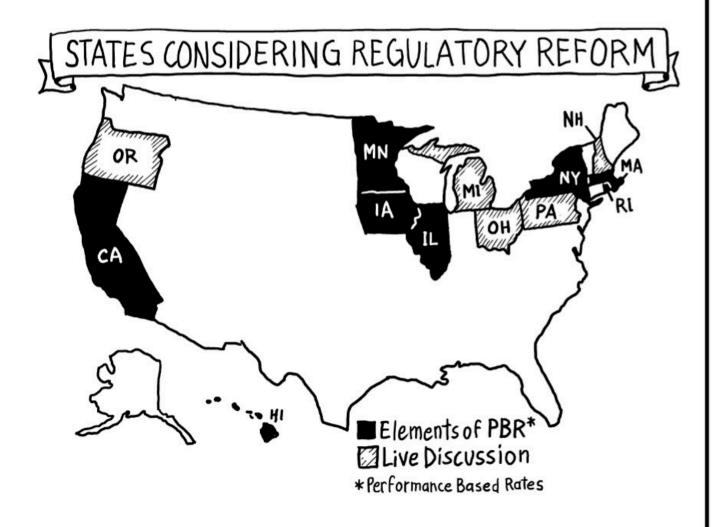
- · Least-cost variable resources
- Innovative distributed energy resources (EE, DR, PV, EVs, etc.)
- · Advanced IT & big data

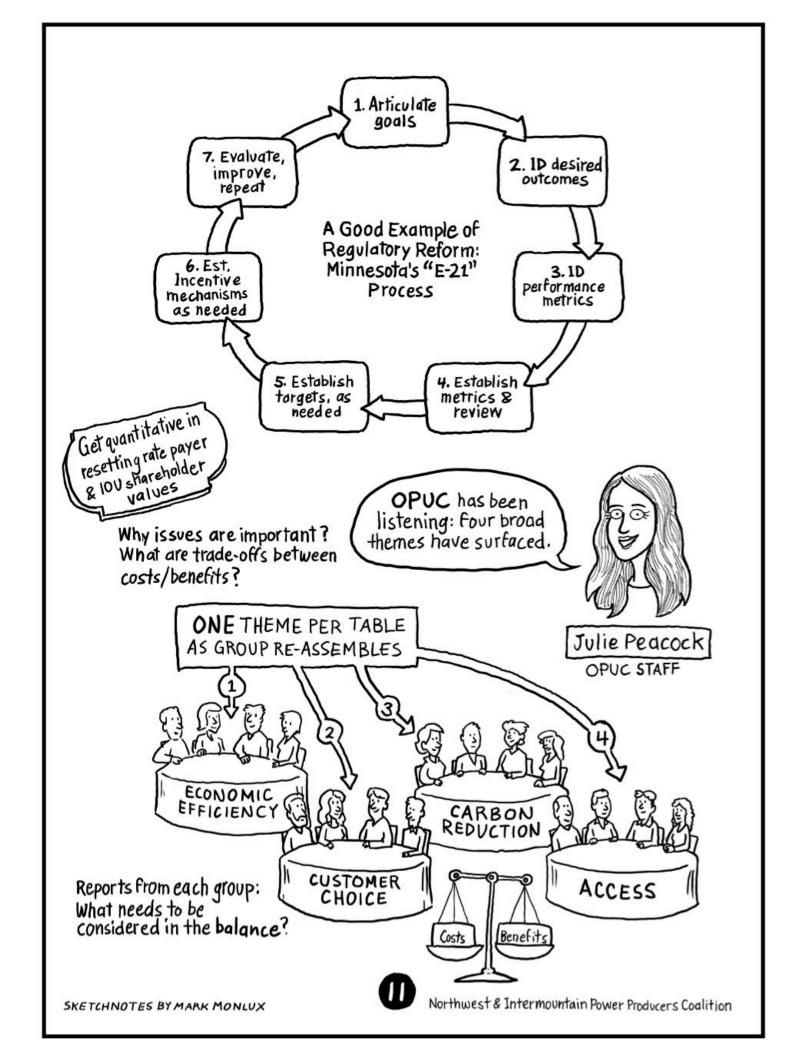
3 reforms to utility regulation - reexamine incentives

- 1 Lower ratepayers' costs/raise revenues
- z-Reward performance
- 3 Shift off cost-based incentives

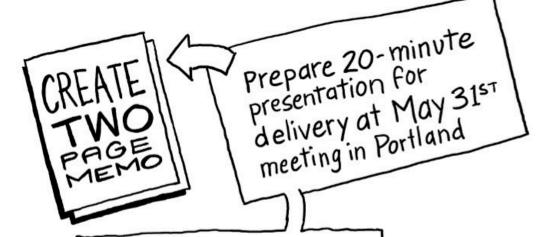


Revenue Adjustment Mechanisms	Performance Mechanisms
Revenue decoupling	Shared savings mechanisms
Revenue or rate caps	Benchmarking
Multi-year rate plans	Performance incentive mechanisms
Investment trackers	Performance standards (e.g. RPS)





GROUP ASSIGNMENT



Address these questions for OPUC commissioners to take away:

- 1) What is the nature of policy tension/question? What's happening?
- To what extent does this policy tension exist in Oregon? Why is it relevant to the state?
- 3 What policy or regulatory actions are needed to address the issues?
- How are others responding? Are those responses feasible in Oregon?
- (5) How should Oregon respond?



