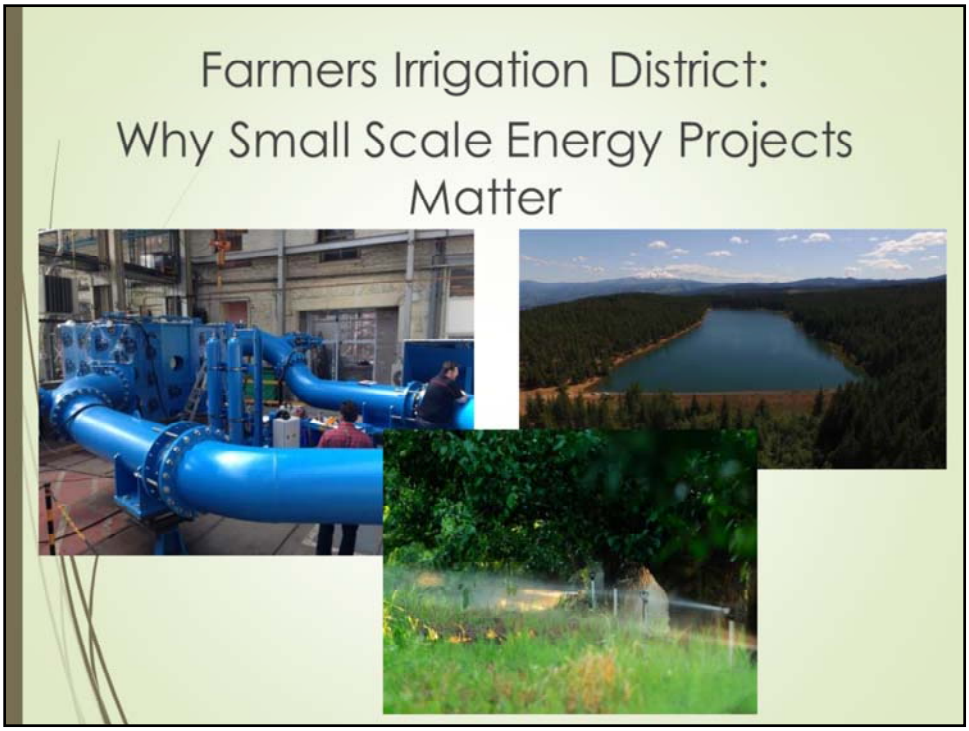
Oregon's Small Scale Renewables

'An Essential Element of Oregon's Energy Future'

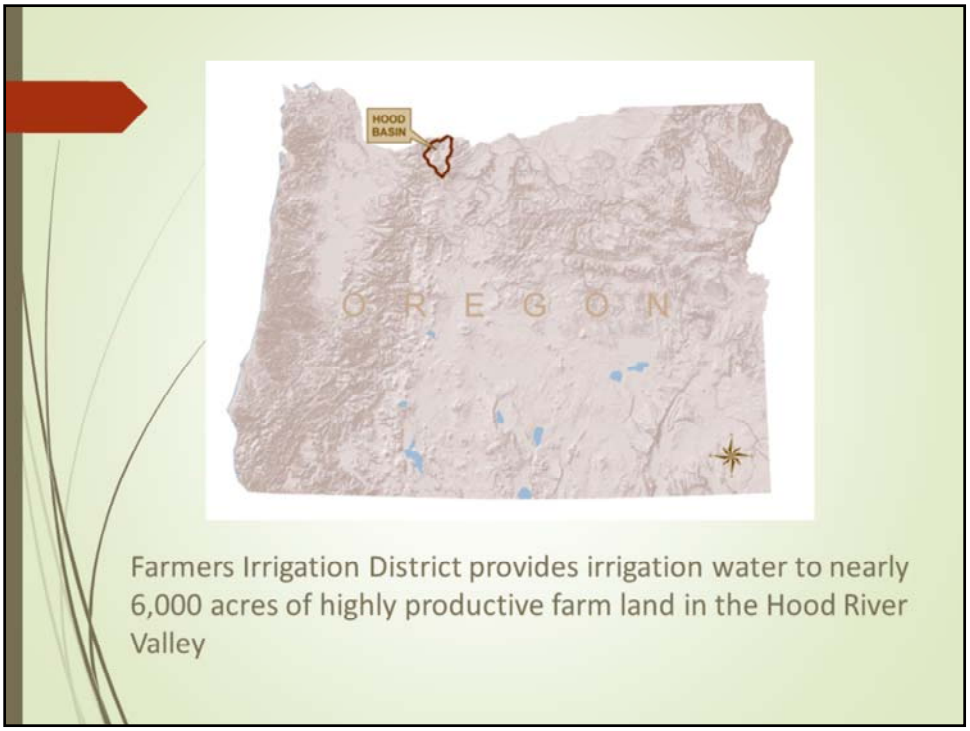
Presentation to House Energy & Environment Committee
Chair, Rep. Ken Helm

February 6, 2017

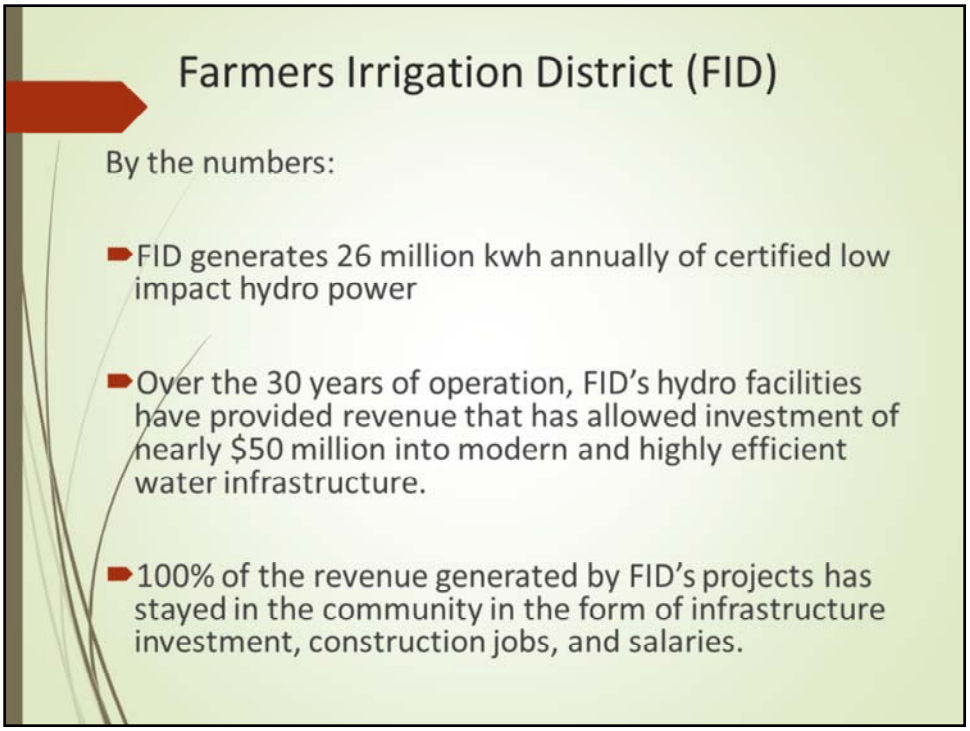

Today's Panelists:
Judge Steve Shaffer, Gilliam County
Commissioner Les Perkins, Hood River County; Manager, Farmers Irrigation District
Marc Thalacker, Three Sisters Irrigation District
Brian Skeahan, Community Renewable Energy Association



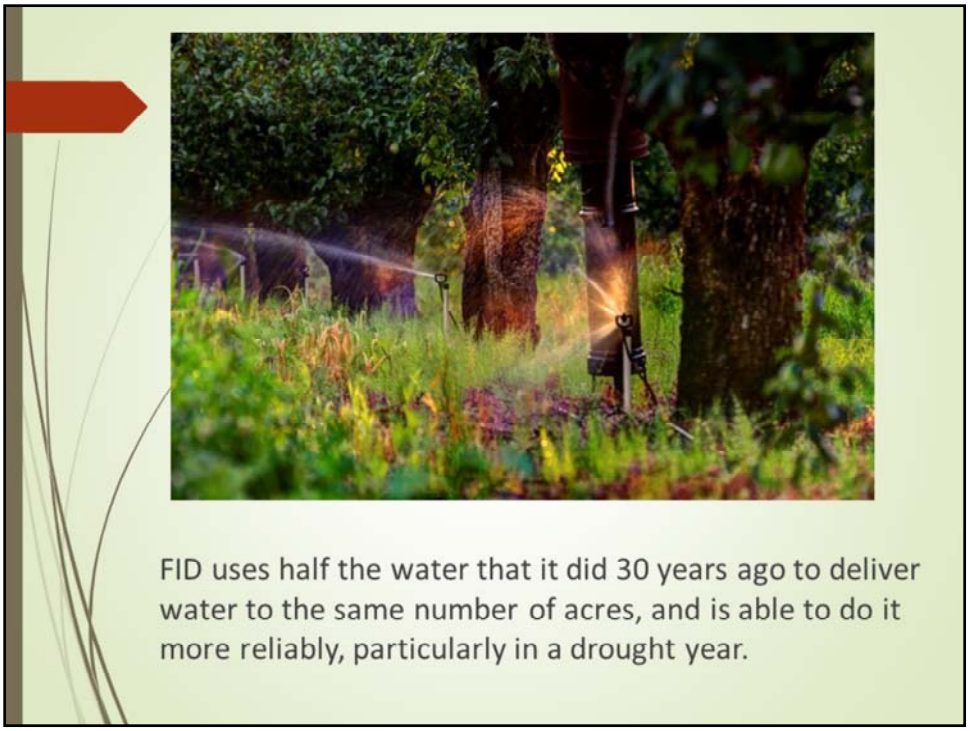
My name is Les Perkins. I'm the Manager of Farmers Irrigation District located in Hood River County. I've also served as a Hood River County Commissioner for the past 15 years focusing on energy, water, and natural resource issues and concerns.



Farmers Irrigation District provides irrigation water to nearly 6,000 acres of highly productive farm land in the Hood River Valley. Like much of Oregon, agriculture is the backbone of the economy in Hood River. The reliable delivery of irrigation water is crucial to the success of farmers in Hood River County.



What many don't know is that small scale, community renewable energy projects are a big part of what has helped to keep farmers in Hood River competitive globally. FID generates 26 million kwh annually of certified low impact hydro power. Over the 30 years of operation, FID's hydro facilities have provided revenue that has allowed investment of nearly $50 million into modern and highly efficient water infrastructure. 100% of the revenue generated by FID's projects has stayed in the community in the form of infrastructure investment, construction jobs, and salaries.



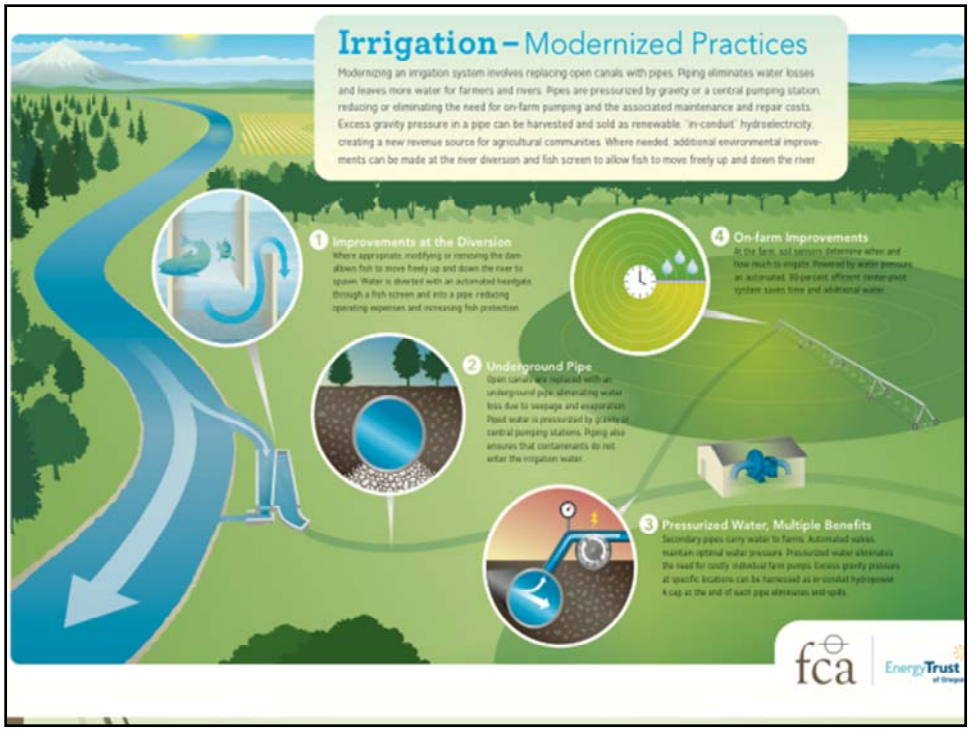
The result of the continual re-investment of power generation revenue is an irrigation system that is one of the most efficient in the state of Oregon. FID uses half the water that it did 30 years ago to deliver water to the same number of acres, and is able to do it more reliably, particularly in a drought year. Furthermore, FID now delivers pressurized and filtered water to its farmers which facilitates the use of state of the art application methods such as micro emitters, improving crop quality, reducing inputs, and minimizing water and energy use.

FID's small scale hydro project made it possible for FID to continually invest in system improvements that ultimately lead to improving long term water security and greater resiliency for farmers in the face of climate variability. Maintaining a highly efficient system requires on-going maintenance such as this pipe replacement project completed in late 2016. Constant re-investment in the local community means a secure future for farmers and residents in the Hood River Valley.

Small scale renewable energy projects like FID's are hidden gems within small, often rural communities. Projects like FID's help create and support a resilient and self-reliant community and local economy.

Three Sisters Irrigation District


Three Sisters Irrigation District: New Hydropower Project Improves Water Management and Quality
Working in several project phases, the district has:
Piped 55 of its 64 miles of open canals, eliminating seepage and evaporation.
Delivered pressurized water to 110 farms, eliminating irrigation pumps and saving about 5 million kilowatt hours of electricity annually.
Increased water delivery to farms by 25%
Permanently conserved more than 31 cubic feet per second of in-stream water in Whychus Creek, the district's water source.
Restored stream channels to improve habitat.
Provided upstream and downstream fish passage and installed a Farmers Screen to keep fish out of irrigation water.

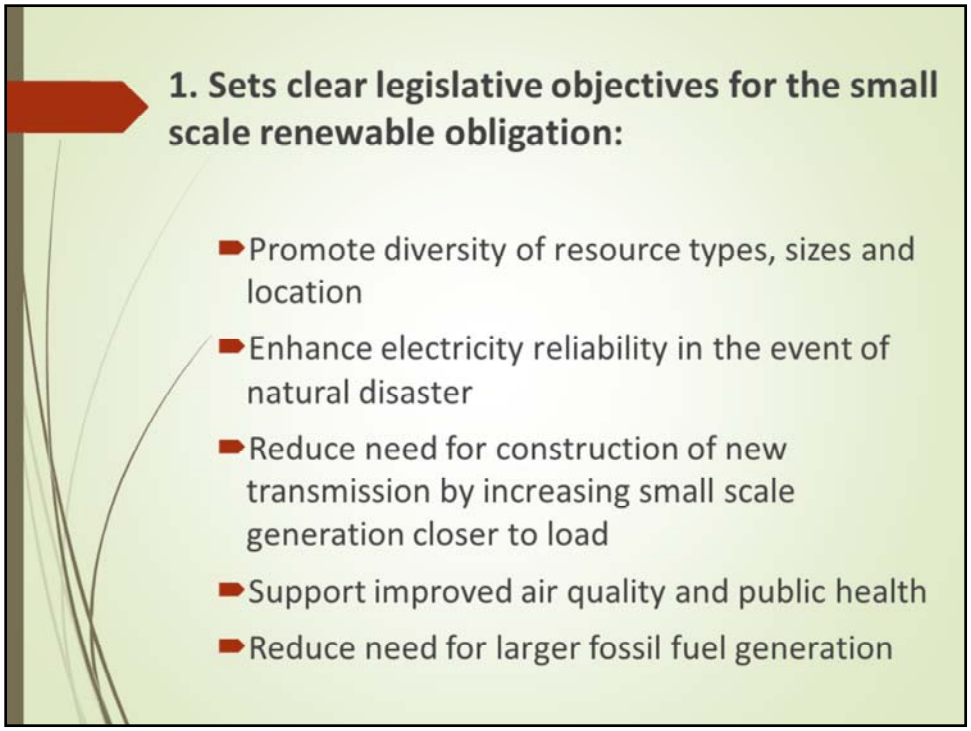

Irrigation – Modernized Practices
Modernizing an irrigation system involves replacing open canals with pipes. Piping eliminates water losses and leaves more water for farmers and rivers. Pipes are pressurized by gravity or a central pumping station, reducing or eliminating the need for on-farm pumping and the associated maintenance and repair costs. Excess gravity pressure in a pipe can be harvested and sold as renewable "in-conduit" hydroelectricity, creating a new revenue source for agricultural communities. Where needed, additional environmental improvements can be made at the river diversion and fish screen to allow fish to move freely up and down the river.
1 Improvements at the Diversion
Where appropriate, modifying or removing the dam allows fish to move freely up and down the river to spawn. Water is diverted with an automated headgate, through a fish screen and into a pipe, reducing operating expenses and increasing fish protection.
2 Underground Pipe
Open canals are replaced with an underground pipe, eliminating water loss due to seepage and evaporation. Piped water is pressurized by gravity or central pumping stations. Piping also ensures that contaminants do not enter the irrigation water.
3 Pressurized Water, Multiple Benefits
Secondary pipes carry water to farms. Automated valves maintain optimal water pressure. Pressurized water eliminates the need for costly individual farm pumps. Excess gravity pressure at specific locations can be harnessed as in-conduit hydropower. A cap at the end of each pipe eliminates end-spills.
4 On-farm Improvements
At the farm, soil sensors determine when and how much to irrigate. Powered by water pressure, an automated, 80-percent efficient center-pivot system saves time and additional water.
fca
EnergyTrust

CREA is an ORS 190 intergovernmental association. Members include counties, irrigation districts, councils of government, project developers, for-profit businesses and non-profit organizations. CREA supports policies that encourage the development of small-scale renewable energy projects under 20MW built in Oregon to serve Oregon load.

These projects operating in almost every county of Oregon.

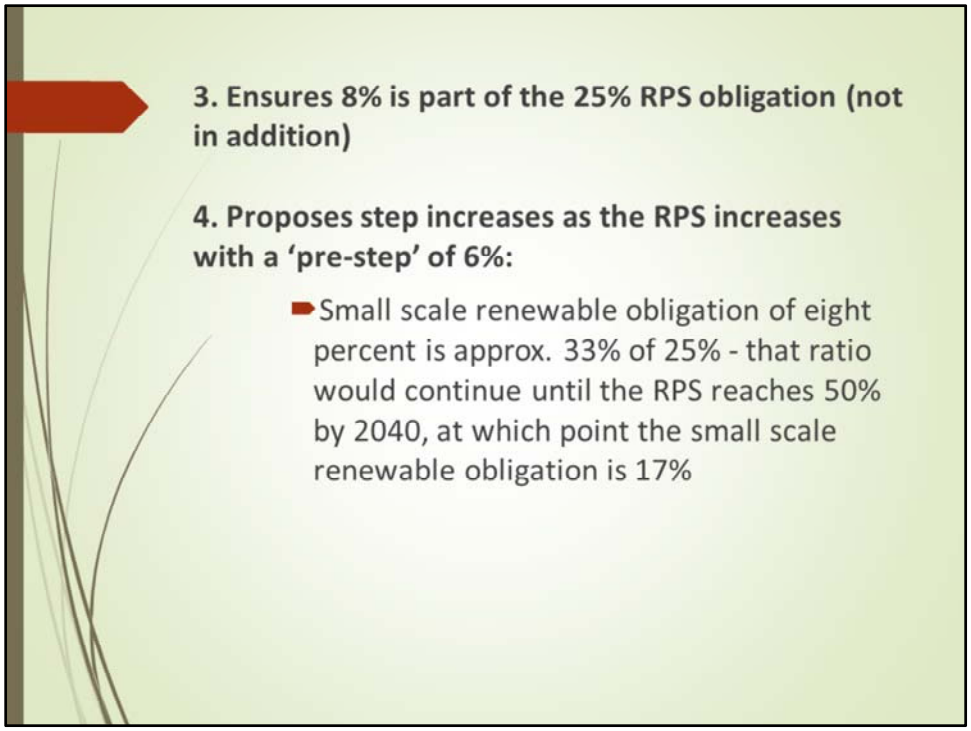
The diversity in project types (biomass, hydro, solar, wind) assures a diversity in geographic locations in Oregon as certain areas are somewhat uniquely suited to specific types of projects

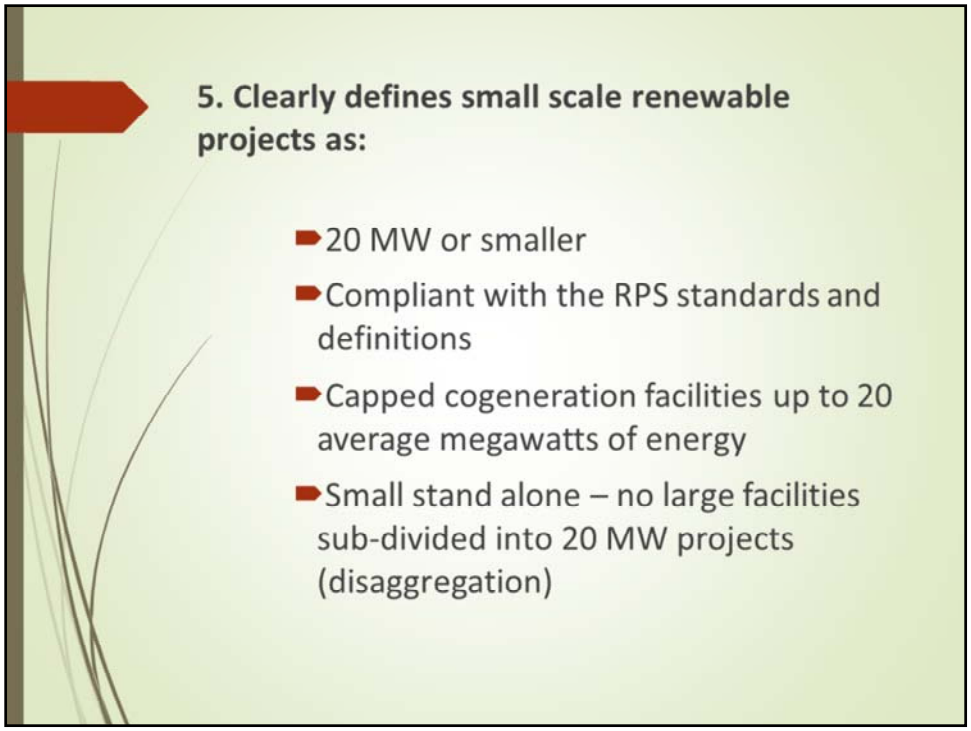

HB 2136: Key Provisions


1. Sets clear legislative objectives for the small scale renewable obligation:
Promote diversity of resource types, sizes and location
Enhance electricity reliability in the event of natural disaster
Reduce need for construction of new transmission by increasing small scale generation closer to load
Support improved air quality and public health
Reduce need for larger fossil fuel generation

2. Changes the compliance calculation from aggregated capacity to a retail energy sales calculation (mirrors RPS calculations)

- Mirrors the RPS math formula:
  8 percent of the electricity sold by an electric company to retail consumers in each of the calendar years must be composed of electricity generated by small-scale renewable energy projects


3. Ensures 8% is part of the 25% RPS obligation (not in addition)
4. Proposes step increases as the RPS increases with a 'pre-step' of 6%:
Small scale renewable obligation of eight percent is approx. 33% of 25% - that ratio would continue until the RPS reaches 50% by 2040, at which point the small scale renewable obligation is 17%


5. Clearly defines small scale renewable projects as:
20 MW or smaller
Compliant with the RPS standards and definitions
Capped cogeneration facilities up to 20 average megawatts of energy
Small stand alone – no large facilities sub-divided into 20 MW projects (disaggregation)

6. Encourages diverse, local ownership and development of projects by prohibiting IOU ownership

7. Includes a bundled delivery requirement

8. Encourages a diversity of outcomes where diversity means a range of facilities and resources types available throughout the state

9. Includes a delivery requirement, ensuring customers of the state's utilities are purchasing a significant portion of their electric energy from nearby small renewable energy projects

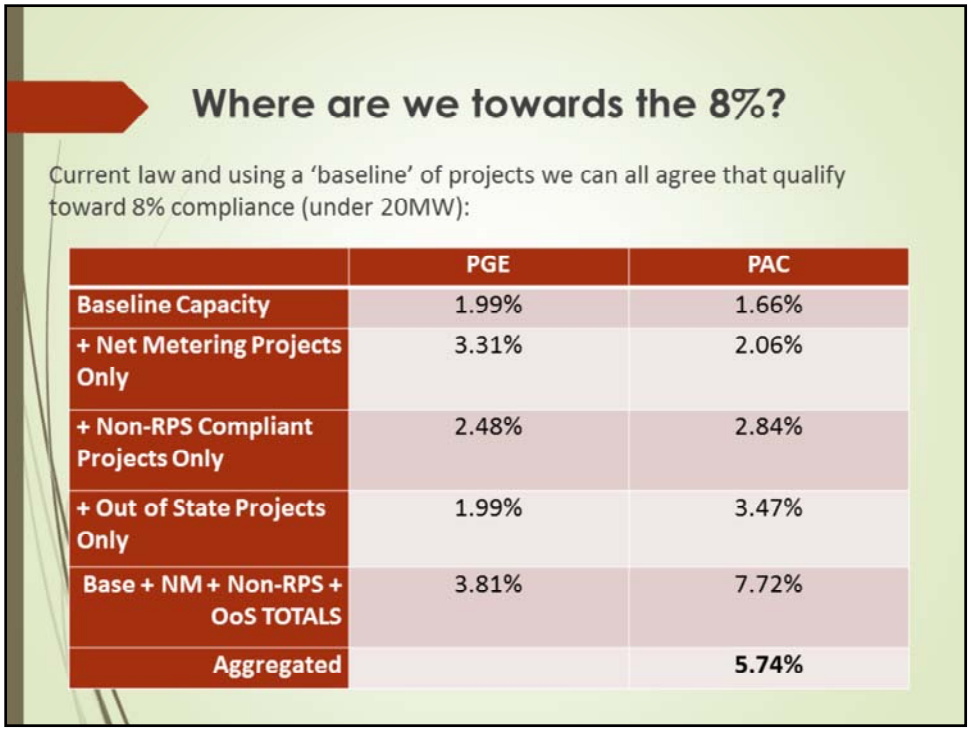
Western Interconnection Balancing Authorities (38)

AESO - Alberta Electric System Operator
AVA - Avista Corporation
AZPS - Arizona Public Service Company
BANC - Balancing Authority of Northern California
BCHA - British Columbia Hydro Authority
BPAT - Bonneville Power Administration - Transmission
CFE - Comision Federal de Electricidad
CHPD - PUD No. 1 of Chelan County
CISO - California Independent System Operator
DEAA - Arlington Valley, LLC
DOPD - PUD No. 1 of Douglas County
EPE - El Paso Electric Company
GCPD - PUD No. 2 of Grant County
GRID - Gridforce
GRIF - Griffith Energy, LLC
GRMA - Sun Devil Power Holdings, LLC
GWA - NaturEner Power Watch, LLC
HGMA - New Harquahala Generating Company, LLC
IID - Imperial Irrigation District
IPCO - Idaho Power Company
LDWP - Los Angeles Department of Water and Power
NEVP - Nevada Power Company
NWMT - NorthWestern Energy
PACE - PacifiCorp East
PACW - PacifiCorp West
PGE - Portland General Electric Company
PNM - Public Service Company of New Mexico
PSCO - Public Service Company of Colorado
PSEI - Puget Sound Energy
SCL - Seattle City Light
SRP - Salt River Project
TEPC - Tucson Electric Power Company
TIDC - Turlock Irrigation District
TPWR - City of Tacoma, Department of Public Utilities
WACM - Western Area Power Administration, Colorado-Missouri Region
WALC - Western Area Power Administration, Lower Colorado Region
WAUW - Western Area Power Administration, Upper Great Plains West
WWA - NaturEner Wind Watch, LLC

Source: Western Electricity Coordinating Council https://www.wecc.biz/Administrative/WECC_BAMap.pdf

10. Directs utilities to comply with the provisions of this law as soon as practicable

11. Emergency Clause – necessary because of OPUC implementation rulemaking this fall



Where are we towards the 8%?

Current law and using a 'baseline' of projects we can all agree that qualify toward 8% compliance (under 20MW):

	PGE	PAC
Baseline Capacity	1.99%	1.66%
+ Net Metering Projects Only	3.31%	2.06%
+ Non-RPS Compliant Projects Only	2.48%	2.84%
+ Out of State Projects Only	1.99%	3.47%
Base + NM + Non-RPS + OoS TOTALS	3.81%	7.72%
Aggregated		**5.74%**

Note: These numbers are not additive due to "overlap." For example, net metered projects in Utah show up as both net metered and out of state. Numbers show attainment status of baseline plus specific category.

Today, based on retail electric sales (not additive):

	PGE	PAC
Baseline	1.96%	.76%
+ Net Metering Projects	2.36%	1.18%
+ Non-RPS Compliant Projects	2.67%	2.13%
+ Out of State Projects	1.96%	2.75%

Under HB 2136:

	PGE	PAC
Baseline	1.96%	.76%
+ Net Metering Projects	If RPS Eligible	If RPS Eligible
+ Non-RPS Compliant Projects	Not Eligible	Not Eligible
+ Out of State Projects	Within Specified Balance Authorities	Within Specified Balance Authorities
TOTALS	TBD	TBD
Aggregated	Not Applicable	Not Applicable


Questions?