



OREP

Democratize the Grid

www.OregonRenewables.com

Oregonians for Renewable Energy Policy

– *presents* –

Feed-In Tariffs for Renewable Energy



Climate Risk

James Hanson, NASA (350.org)

Reduce atmospheric CO2 to below 350 ppm to avoid runaway climate change

Lester Brown (author, Plan B)

To prevent the collapse of civilization, reduce fossil fuel use **80% by 2020** (!!!)

Oregon Energy Policy out of synch

Despite shrinking snowpack Oregon's RPS requires only 25% new renewables by 2025



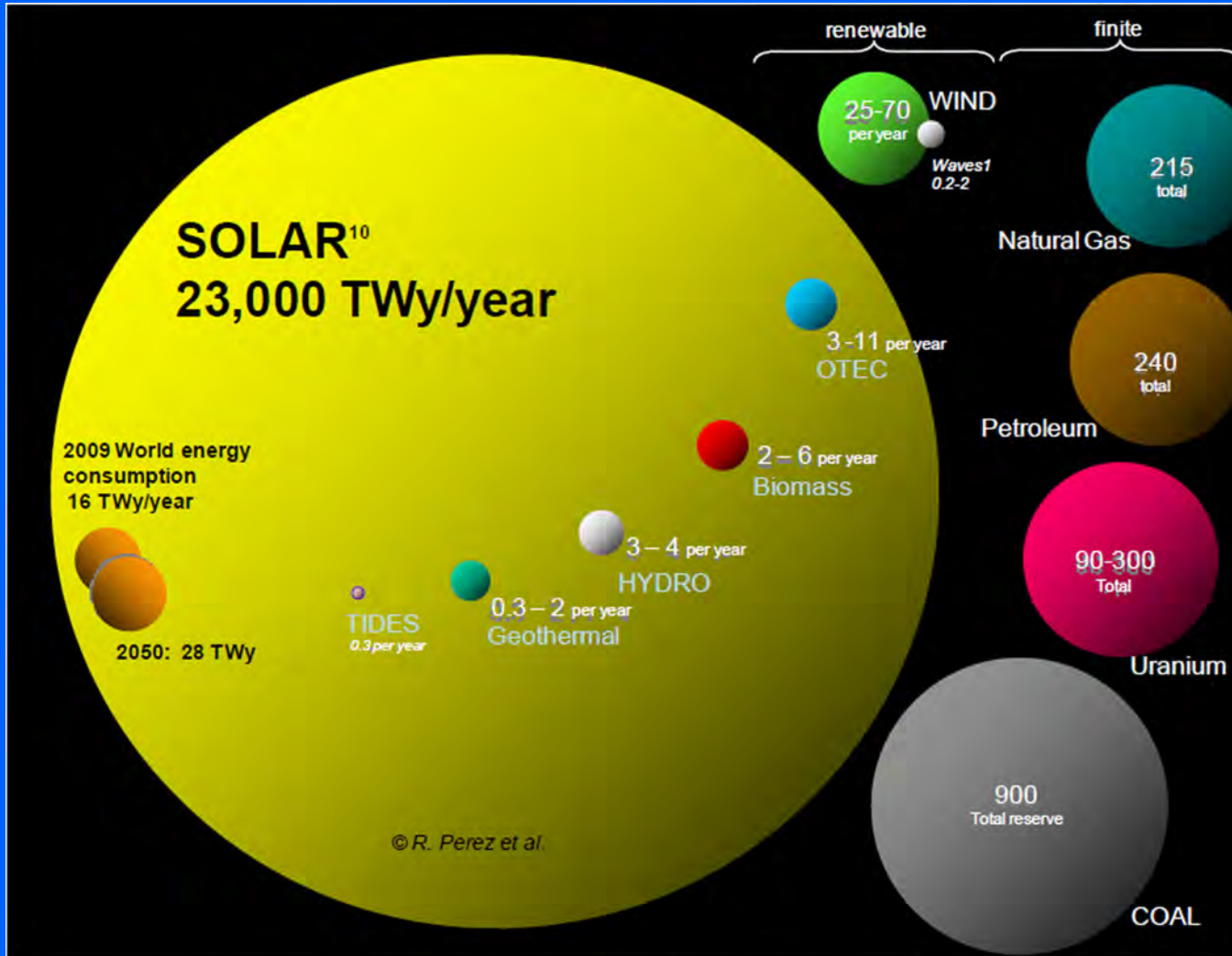


Figure 1: Comparing finite and renewable planetary energy reserves (Terawatt-years). Total recoverable reserves are shown for the finite resources. Yearly potential is shown for the renewables (source: Perez & Perez, A fundamental look at energy reserves for the planet. The IEA SHC Solar Update, Volume 50, pp. 2-3, April 2009)

We, the people, have choices to make:

For finite resources on right, the **entire remaining fuel stock** is shown.

For renewable resources on left, the **ANNUAL** available fuel resource is shown.

Where should Oregon invest?



“Humans are the only species
that won’t save themselves
because it isn’t cost-effective.”

~ *Kurt Vonnegut*

... or is it cost effective ???



\$\$ Invest Now or Pay Later \$\$

- Energy prices and environmental costs will escalate as fossil fuels become scarce and more costly to extract
- Adapting to climate change will be expensive:
 - Upgrades for air-conditioning that was previously not needed (schools, etc), rebuilding of bridges to account for higher flood stages, reduction of summer hydro-power . . .
 - Dealing with devastation from storms, droughts, fire . . .
 - Climate change refugees
 - Etc, etc, etc. . . .



Oregonians for Renewable Energy Policy

focusing on the energy component of a sustainable economy

- A Green Economy addresses climate change and creates jobs
- A sustainable energy future requires us to:
 - Reduce energy *demand* through Conservation and Energy Efficiency
 - Increase the *supply* of clean, Renewable Energy

Feed-in Tariffs are the most effective policy to rapidly increase the supply of renewable energy



OREP is a project of
The Alliance for Democracy

**Feed-in tariffs offer an
egalitarian alternative to the
production monopoly of
large utilities**



What is a Feed-in Tariff (FIT) for Renewable Energy (RE)?

- A Feed-in Tariff Payment is a fixed price that a utility pays to its customers for each kWh of electricity generated from a renewable resource. The costs of electricity generation from renewables are passed on to rate payers, just as are the costs of electricity generation from fossil fuels.



- **A FIT Law requires an electric utility to:**
 - connect a customer to the grid
 - buy all the RE produced by the customer
 - pay a fixed price that covers costs
 - pay that price for a specific length of time



Benefits of Feed-In Tariffs

- Attracts private investment in renewable energy
- Rapidly increases RE production and RE jobs
- Drives down RE costs over time
- Simplifies financing - facilitates local, community owned power



The Value of Local Generation

- Uses existing infrastructure of built environment (solar on rooftops of homes, businesses, schools, houses of worship, libraries, fire stations, etc)
- Close to end user – reduces energy loss from long-distance transmission
- Eliminates costs and environmental impacts of new transmission lines
- Increases reliability of intermittent resources (ie wind and solar)
- Creates jobs and keeps money circulating in the local community



Community Power

Who will benefit from energy projects in your community?

- **Big global investors?**
- **You & your neighbors?**

TECHNOLOGY HAS CHANGED

There was a time when the only way to produce energy was to build a large coal-fired, gas-fired or nuclear power plant . . .

. . . That is no longer true



Renewable technologies

supported by

feed-in tariff policies

provide an alternative to large, centralized production
financed by Wall Street



First United Methodist Church

Congregational Solar LLC
Eugene, OR



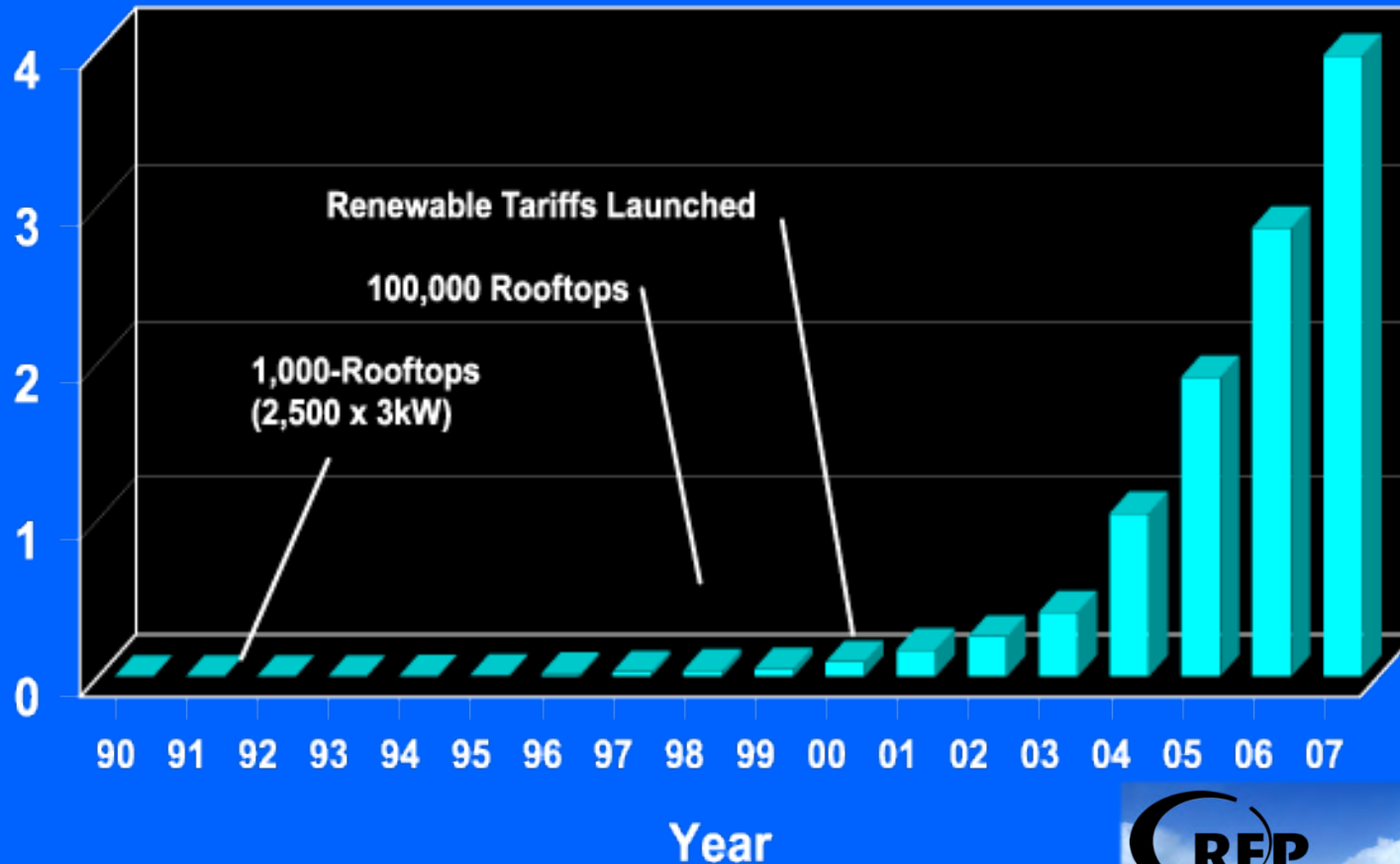
Germany

Since 2001, FIT policies have produced dramatic environmental and economic effects



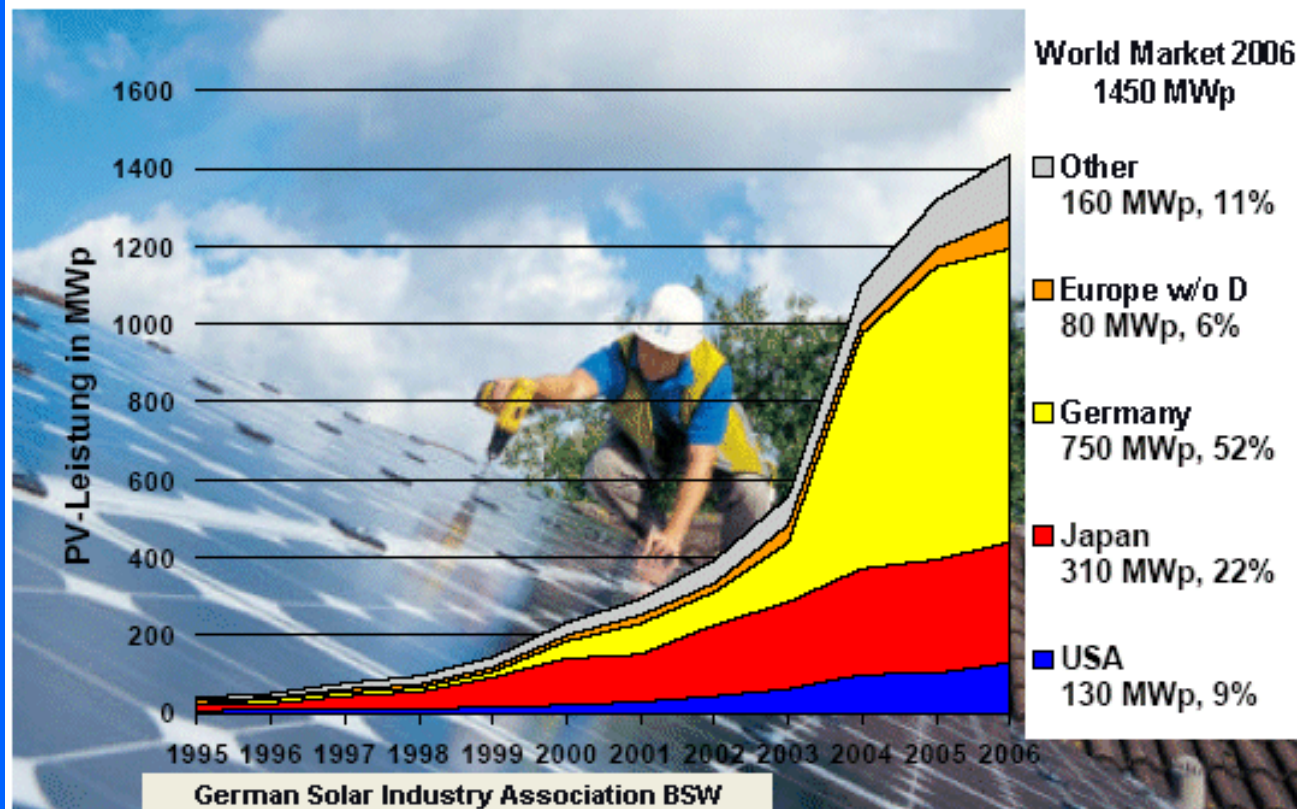
Renewable Tariffs and Solar Photovoltaics in Germany

MW Total (Thousands)



Feed-in Tariffs Have Made Germany the World Leader in Solar Power

Global Photovoltaic Sales



54% of all solar power capacity worldwide is located in Germany

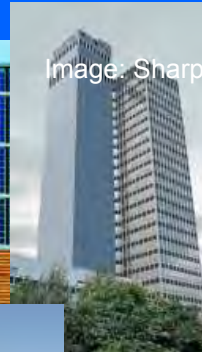
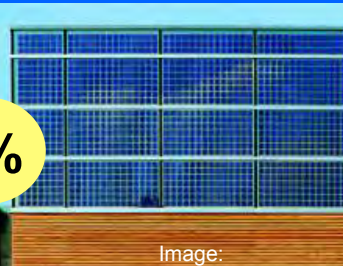
Germany's Solar is Mostly Small and Local

BIPV

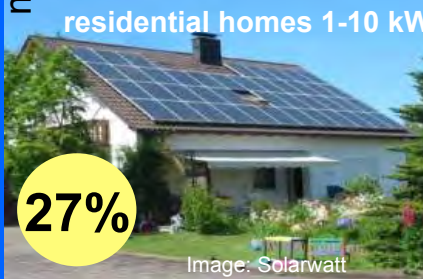
Effort of mounting



1%



Roof top



Ground mounted

Market share in 2006



10%



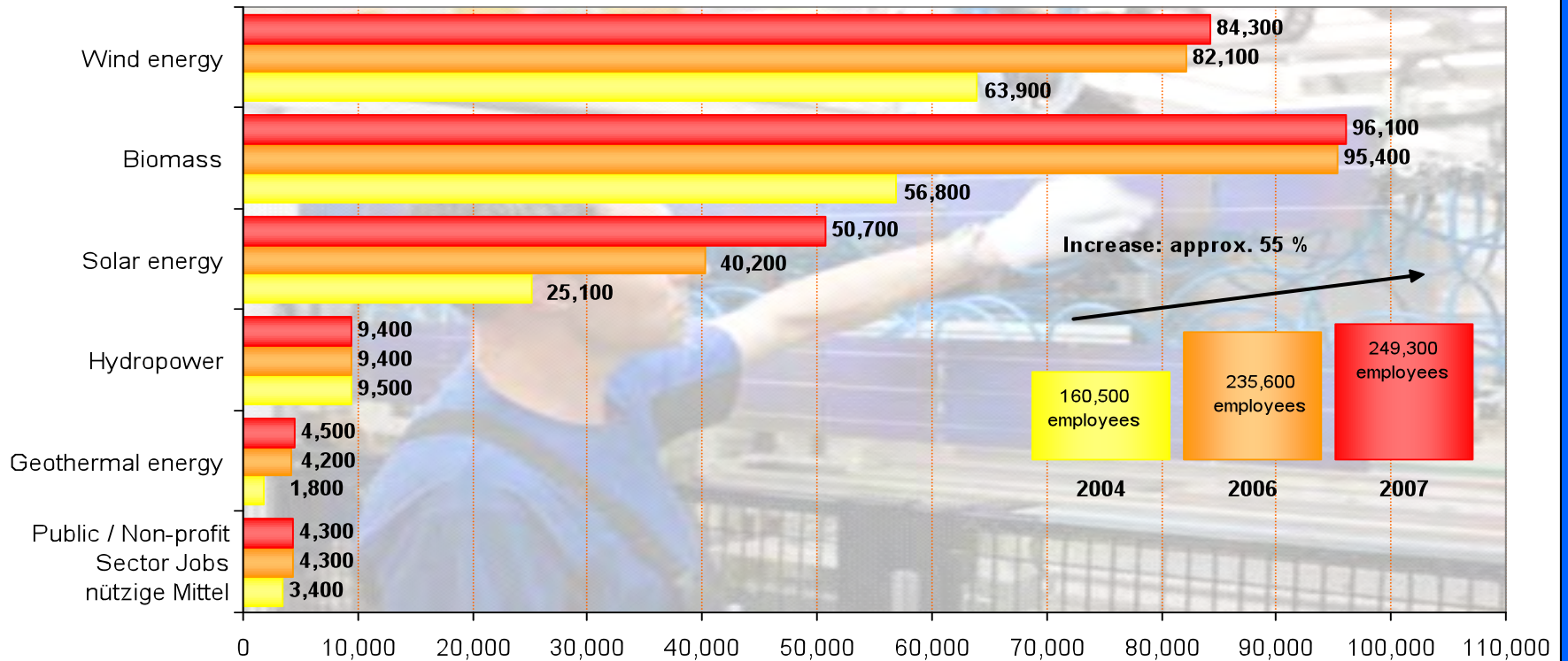
Size of the system

Source: BSW Solar



Growth in German RE Jobs

Employees in the German renewable energy sector
2004, 2006 and 2007



Figures for 2006 and 2007 are provisional estimate

Source: BMU Projekt "Kurz- und langfristige Auswirkungen des Ausbaus der erneuerbaren Energien auf den deutschen Arbeitsmarkt", KI III 1; interim report March 2008

Cost of German Solar down 50% in 5 years



Ontario

Green Energy and Green Economy Act of 2009
created North America's first comprehensive
guaranteed pricing structure for renewable
electricity production

Ontario's Feed-in Tariff Program will:

- help Ontario phase out all its coal plants by 2014
- boost economic activity and develop RE technologies
- create new green industries and jobs



Results from First Year of Ontario's Feed-In Tariff for All Renewables

- Applications accepted for 22,000 projects
- Contracts signed for 5,000 MW of Renewable Energy
- Creating 43,000 jobs to complete those contracts
- Attracted \$9B in private capital investment
- Ontario's 60% domestic content rule is creating a renewable energy manufacturing industry



Feed-In Tariff Prices for Renewable Energy Projects in Ontario; August 13, 2010

Renewable Fuel	Size tranches	Contract Price ¢/kWh	Contract Price US¢	Escalation Percentage	Maximum Aboriginal Price Adder (¢/kWh)	Maximum Community Price Adder (¢/kWh)
Biomass					0.6	0.4
	≤ 10 MW	13.8	14.5	20%		
	> 10 MW	13.0	13.7	20%		
Biogas					0.6	0.4
On-Farm	≤ 100 kW	19.5	20.5	20%		
On-Farm	> 100 kW ≤ 250kW	18.5	19.4	20%		
Biogas	≤ 500 kW	16.0	16.8	20%		
Biogas	> 500kW ≤ 10 MW	14.7	15.4	20%		
Biogas	> 10 MW	10.4	10.9	20%		
Waterpower					0.9	0.6
	≤ 10 MW	13.1	13.8	20%		
	> 10 MW ≤ 50 MW	12.2	12.8	20%		
Landfill gas					0.6	0.4
	≤ 10 MW	11.1	11.7	20%		
	> 10 MW	10.3	10.8	20%		
Solar PV					1.5	1.0
Rooftop	≤ 10 kW	80.2	84.2	0%	NA	NA
Rooftop	> 10 ≤ 250 kW	71.3	74.9	0%	NA	NA
Rooftop	> 250 ≤ 500 kW	63.5	66.7	0%	NA	NA
Rooftop	> 500 kW	53.9	56.6	0%	NA	NA
Ground Mounted	≤ 10 kW	64.2	67.4	0%		
Ground Mounted	> 10 kW ≤ 10 MW	44.3	46.5	0%		
Wind					1.5	1.0
Onshore	Any Size	13.5	10.8	20%		
Offshore	Any Size	19.0	10.8	20%		

Oregon

House Bill 3039 Creates Solar Pilot Program to test cost-effectiveness of fixed-price payments

Pilot Program Features:

- Customer paid fixed price for 15 years
- FIT Rates vary by size and solar intensity at project site
- No state tax liability required

Pilot Program Results: (July 2010 - April 2011)

- Contracts for nearly 9 MW solar PV
- Sold out in minutes at each enrollment
- 568 systems since July 2010 (Energy Trust incentive from 2005-Q3 2009 = 986 systems)



Oregon's Price Schedule

Zone	Counties		VIRS for Small Scale				VIRs for Medium Scale		
			(<10kW)				(>10kW and <100kW)		
			1-Oct-10	1-Apr-11	1-Oct-11		1-Oct-10	1-Apr-11	1-Oct-11
		Original	last *0.9	last *0.8	last *0.8	Original	last *0.9	last *0.8	last *0.8
1	Benton, Clackamas, Clatsop, Columbia, Lane, Lincoln, Linn, Marion, Multnomah, Polk, Tillamook, Washington, and Yamhill	\$0.65	\$0.59	\$0.47	\$0.37	\$0.55	\$0.50	\$0.40	\$0.32
2	Coos, Douglas, and Hood River	\$0.60	\$0.54	\$0.43	\$0.35	\$0.55	\$0.50	\$0.40	\$0.32
3	Gilliam, Jackson, Josephine, Klamath, Morrow, Sherman, Umatilla, Wallowa, and Wasco	\$0.60	\$0.54	\$0.43	\$0.35	\$0.55	\$0.50	\$0.40	\$0.32
4	Baker, Crook, Deschutes, Jefferson, Lake, Malheur, and Harney	\$0.55	\$0.50	\$0.40	\$0.32	\$0.55	\$0.50	\$0.40	\$0.32
	Ontario Green Energy and Green Economy Act (US \$); rooftop PV 8.13.2010				\$0.842	Note: > 10 and <= 250 kW			\$0.749

The Oregon Solar Pilot Program is a flawed attempt at a Feed-in Tariff

- Only 25 MW, just solar PV, ends in 2014
- Customer not paid for surplus power
- Prices do not cover costs plus Return-On-Investment (ROI)
- Unpredictable prices for new applicants discourage investment of private capital
- Fixed prices do not apply to larger project sizes
- Limited to customers of PGE, Pacific, and Idaho Power
- Federal tax liability or grant required for 30% of system costs



OREP and its Allies are actively working for a comprehensive feed-in tariff for all renewables and all Oregonians.

Alliance members include: environmental and climate justice advocates, homeowners, farmers, ranchers, Native Americans, small businesses, schools, libraries, faith communities, health professionals, green job advocates, labor organizations, consumer-owned utilities, local lenders and small investors.



What Can You or Your Organization Do to Build Oregon's Clean Energy Future?

- A. Talk to your friends, neighbors, and elected officials about the urgent need for more renewable energy. Point out that there is a solution - a Feed-in-tariff law.
- B. Offer input to Governor Kitzhaber's 10-year energy plan.
- C. Join and help build an Alliance for a comprehensive Feed-in-Tariff for all renewables and all Oregonians.
- D. Sign up to receive information and action alerts from OREP.





CLIMATE SUMMIT

WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.

OREP
Oregonians for
Renewable Energy Policy

Κεντρική Γραμμή Πολιτικής
Οικολογίας και
ΚΕΠ

Presented by
Judith Barnes and Kathleen Newman

Oregonians for Renewable Energy Policy

www.oregonrenewables.com

