

A photograph of a white wind turbine standing on a green, rolling hill. The sky is blue with large, white, fluffy clouds. The foreground is filled with dark, leafless bushes. The text is overlaid in white, bold, sans-serif font.

Real Tariffs--Real Targets ... A Real Program for California by Paul Gipe Clean Power III

AB 1990: The Good

- **Targeted Specifically at the Poor**
First in North America
- **All “Eligible” Technologies**
- **375 MW--More than Tokenism**
LABC 10 MW!
- **Pays “Prevailing Wages”**
- **Uses Feed-in Tariffs**
- **Broad NGO Support**
70 Groups (Including Vote Solar!)

AB 1990: The Bad

- **Technologies Reduced to Solar PV**
 “Solar for All”
- **Size Cap: 500 kW**
- **375 MW--Still Limited Target**
- **Tariffs: Time-of-Day**
 Not “Cost of Generation plus Reasonable Profit”
- **More Piecemeal Policy**

Challenges in North America

- **Piecemeal Policy Approach**
Too Slow
RPS for Wind, Subsidies for Solar
- **“Cheap Energy Contract”**
Cheap Today--Expensive Tomorrow
Burdens the Poor and All Consumers
... in the Future



Challenges in North America

- **Low Program Caps**

California: 33%?

LABC-Los Angeles: <3%!!

- **Solar Only or Wind Only**

- **Timidity & Lack of Vision**

Do We Want Renewables or Don't We?



AB 1990 & Gainesville, Florida

- **2011 Actual**

7.3 MW solar PV Installed; 9.7 million kWh (2 years)

32 MW Planned

Population: 200,000; 1/200th size of California

- **1,400 MW Equivalent Installed**

California: 1,500 MW (20 years)

- **6,400 MW Planned**

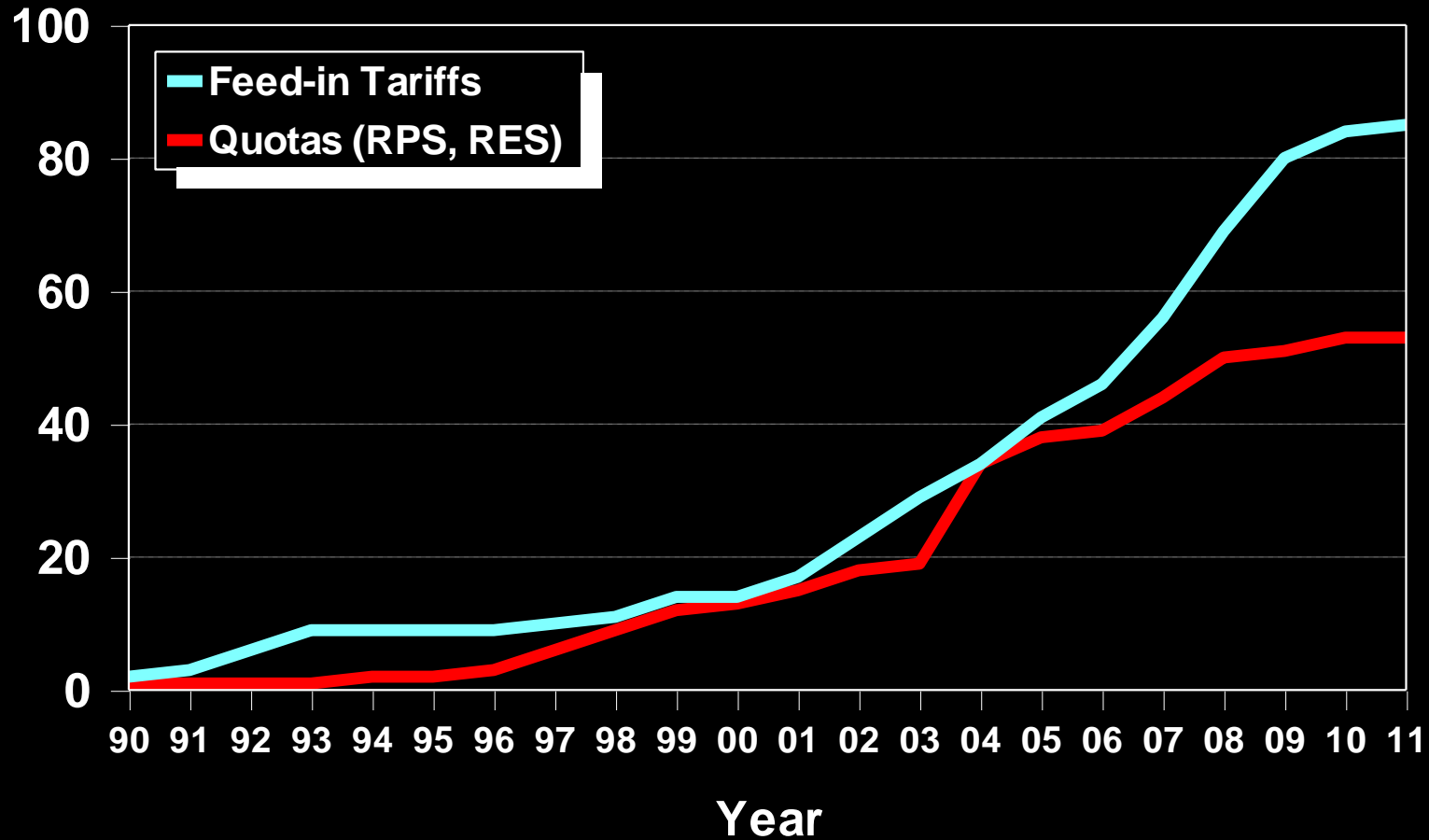
**Gainesville Regional Utilities Solar PV
Size Distribution 2009-2011**

Size	MW		Units	
<10 kW	0.44	6%	68	46%
10-25	0.55	8%	31	21%
25-100	1.70	23%	38	26%
100-250	0.23	3%	2	1%
250-500	0.77	11%	3	2%
500-1000	1.57	22%	3	2%
>1000	2.01	28%	2	1%
Total	7.27		147	

Auctions & Bidding Fail to Deliver Renewables Equitably

- **Fail to Bring on Renewables**
at the Pace & Price Bid
Typically 50% of Contracted Capacity
Lumpy Development
- **Limits Participation**
Undemocratic & Exclusionary
- **Europe Has Moved to FITs**
Germany's Jeffersonian Rebels

Cumulative Feed-in Tariff Programs Worldwide



REN 21: Renewables 2011 Global Status Report, pages 84-85.

Paul Gipe, wind-works.org

European Renewable Policy

- 23/27 States Use FITs
- Since 1997
 - 85% of all Wind from FITs
 - ~100% of all Solar PV from FITs
 - ~70% of all Biogas from FITs
- FITs Most Cost-Effective Policy
- FITs Principal Way to Meet Targets

Great Britain

- **Feed-in Tariffs for “MicroGeneration”**

All Technologies <5 MW

1,300 MW Solar PV <2 years!

- **Abandoning RPS**

Queen's Speech 9 May 2012

- **Moving Program to FITs**

Contract for Differences

Can It Save Nuclear?

Great Britain Small Wind

- **50% Growth Since Feed-in Tariffs**
2010: 40 MW
2011: ~60 MW; 20 MW New
- **1,500 New Installations**
- **For Comparison**
2011 US: 20 MW, 200 MW Total

Feed-in Tariffs for Renewable Heat

- **Germany, France,
with CHP**
- **Slovenia
without CHP**
- **Great Britain**

Vorupør Kraftvarmeværk, Denmark



British Solar Thermal (DHW) Tariff

	Years	€/kWh	CAD/kWh	USD/kWh
<200 kW	20	0.097	0.136	0.134

November 2011.

Paul Gipe, wind-works.org

British Methane Biomethane Gas Injection Tariffs

	Years	€/kWh	CAD/kWh	USD/kWh
<200 kW	20	0.074	0.104	0.102

British Ground-Source Heat Pump Tariffs

	Years	€/kWh	CAD/kWh	USD/kWh
<100 kW	20	0.049	0.069	0.068
>100 kW	20	0.034	0.048	0.047

November, 2011

“Geothermal” in Canadian English.

Paul Gipe, wind-works.org

Renewable Tariff Design

- Simple, Comprehensible, & Transparent
- Priority Access & Purchase
- Lengths Sufficient for Profitability
- Prices Sufficient to Pay for Generation

Fair But Not Undue Profit
Through Price Differentiation

Grading North American FITs

10 Criteria

- **Program Caps**
- **Project Size Caps**
- **Contract Term**
- **Technologies Included**
- **Tariffs Based on Cost of Generation**
- **Tariffs Differentiated by Technology**
- **Tariffs Differentiated within Technology**
- **Wind Tariffs Differentiated by Resource**
- **Inflation Indexing**
- **Bonus Payments or Adders**

Grading North American FITs

The Gold Standard

	Score	Grade
Germany	90	A
France	90	A
Spain (Fixed Tariff)	80	A-

Grading North American FITs

Existing FITs

	Score	Grade
Ontario (2009)	84	A-
Vermont	54	D
Maine	43	F
Wisconsin IOUs	36	F
California	28	F
Oregon	16	F

Proposed Japanese FITs

- Tariffs Differentiated by Technology
- Undifferentiated by Size
- Tariffs

Highest in the World--But Are They too High?
Crash Renewables Program?



Renewable Policy--Best Practice

- **Bold Targets**

That Can Excite the Imagination

33% is not “Bold”

- **Advanced Renewable Tariffs**

. . . An Equitable System of Feed-in Tariffs

Landau, Rheinland-Pfalz, Germany

Revolutionary: 100% Renewable

- **Dardesheim Today--Electricity**
- **Schleswig-Holstein 2020--Electricity**
- **Rheinland-Pfalz 2030--Electricity**
- **Scotland 2020--Electricity**
- **Denmark 2035--Energy!**

Feed-in Tariff Best Practice

- Policies Must be Comprehensive
and Inclusive . . . Open to All for All
Not Solar for All--Renewables for All



Comprehensive & Inclusive

- Wind & Solar
- Biomass & Geothermal
- Renewable Heat



Wörstadt, Rheinland-Pfalz, Germany

Paul Gipe, wind-works.org

Danger of Solar Myopia

- **Renewable Energy**
= Solar & Wind & Biomass & Geothermal
- **Must Balance the Cost of Solar PV**
with Less Costly Resources
- **Only Diversity Brings Stability**
We Need it All
- **Policies for Only One Technology**
Are Doomed to Fail

Feed-in Tariffs Best Practice for North America

- **Differentiated Wind Tariffs**
Long Recommended--Time Now to Act
- **Radical Revision of Solar PV Tariffs**
Breaking the Grip of US Tax Subsidies
on Solar PV Prices
- **Renewable Heat Tariffs**
- **Tariffs for Storage**

Feed-in Tariff Best Practice

Criteria	Best Practice
Program Caps	None or >20%
Project Size Caps	None or 20 MW
Contract Term	>20 years
Multiple Technologies	Wind, Solar PV, Solar DHW, Geothermal, CSP
Cost-Based Tariffs	For All Classes
Technology Differentiation	Tariffs for Each Class
Technology Banding	By Application & Size
Resource Differentiation	Wind & Solar PV

Feed-in Tariff Best Practice

- **Open to All for All**

**Homeowners, Farmers, Business & Industry,
Communities, Native Americans**

Regardless of Tax Status

Tariffs with & without Tax Credits

**"Americans can always be
counted on to do the right
thing . . .**

**. . . after they have
exhausted all other
possibilities."**

--Winston Churchill



Time for North Americans to Take the Road to the Future



Freiburg, Germany

Paul Gipe, wind-works.org

No Time for Half-Measures

No Time to Lose



Matane, Quebec

We Need A Lot More Wind . . .



... A Lot More Geothermal

Paul Gipe, wind-works.org

Geothermal, Collina Metalifera, Tuscany, Italy

Hinesburg, Vermont

... A Lot More Solar



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Renewable Energy

Join the Revolution

www.wind-works.org

Manawatu Gorge, New Zealand

