



# Clean Local Energy Accessible Now

## Making CLEAN Happen in the United States

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## Mission

**To implement policies and programs that transition the world to cost-effective clean energy while delivering unparalleled economic benefits**

## Board of Advisors

### Jeff Anderson

*Co-founder and Former ED, Clean Economy Network*

### Josh Becker

*General Partner and Co-founder, New Cycle Capital*

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### L. Hunter Lovins

*President, Natural Capitalism Solutions*

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*Director of the Renewable and Appropriate Energy Laboratory at UC Berkeley; Former Chief Technical Specialist for Renewable Energy and Energy Efficiency, World Bank*

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### Felix Kramer

*Founder, California Cars Initiative*

### Governor Bill Ritter

*Director, Colorado State University's Center for the New Energy Economy, and Former Colorado Governor*

### Terry Tamminen

*Former Secretary of the California EPA and Special Advisor to CA Governor Arnold Schwarzenegger*

### Jim Weldon

*CEO, Solar Junction*

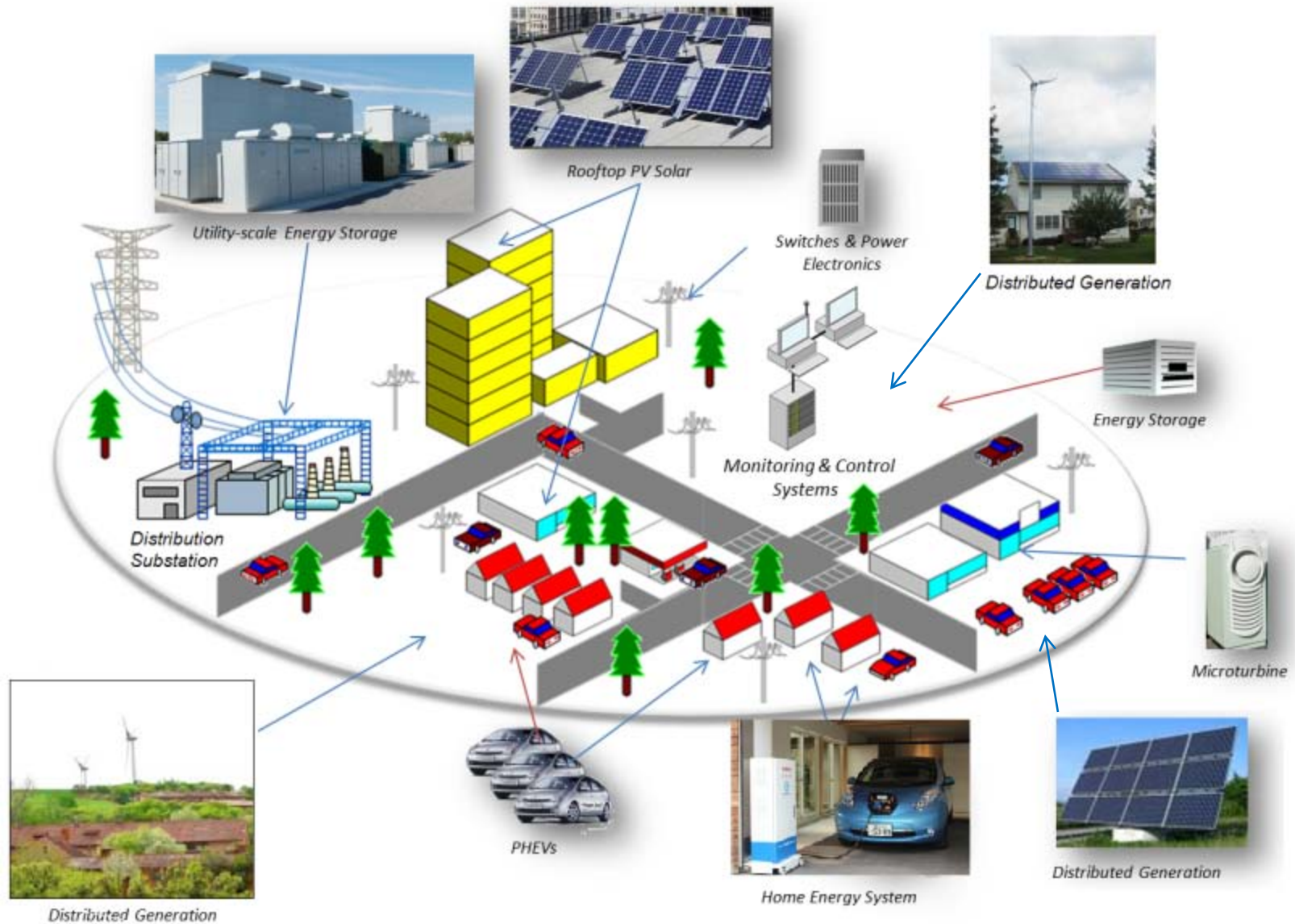
### R. James Woolsey

*Chairman, Woolsey Partners, and Venture Partner, Lux Capital;  
Former Director of Central Intelligence*

### Kurt Yeager

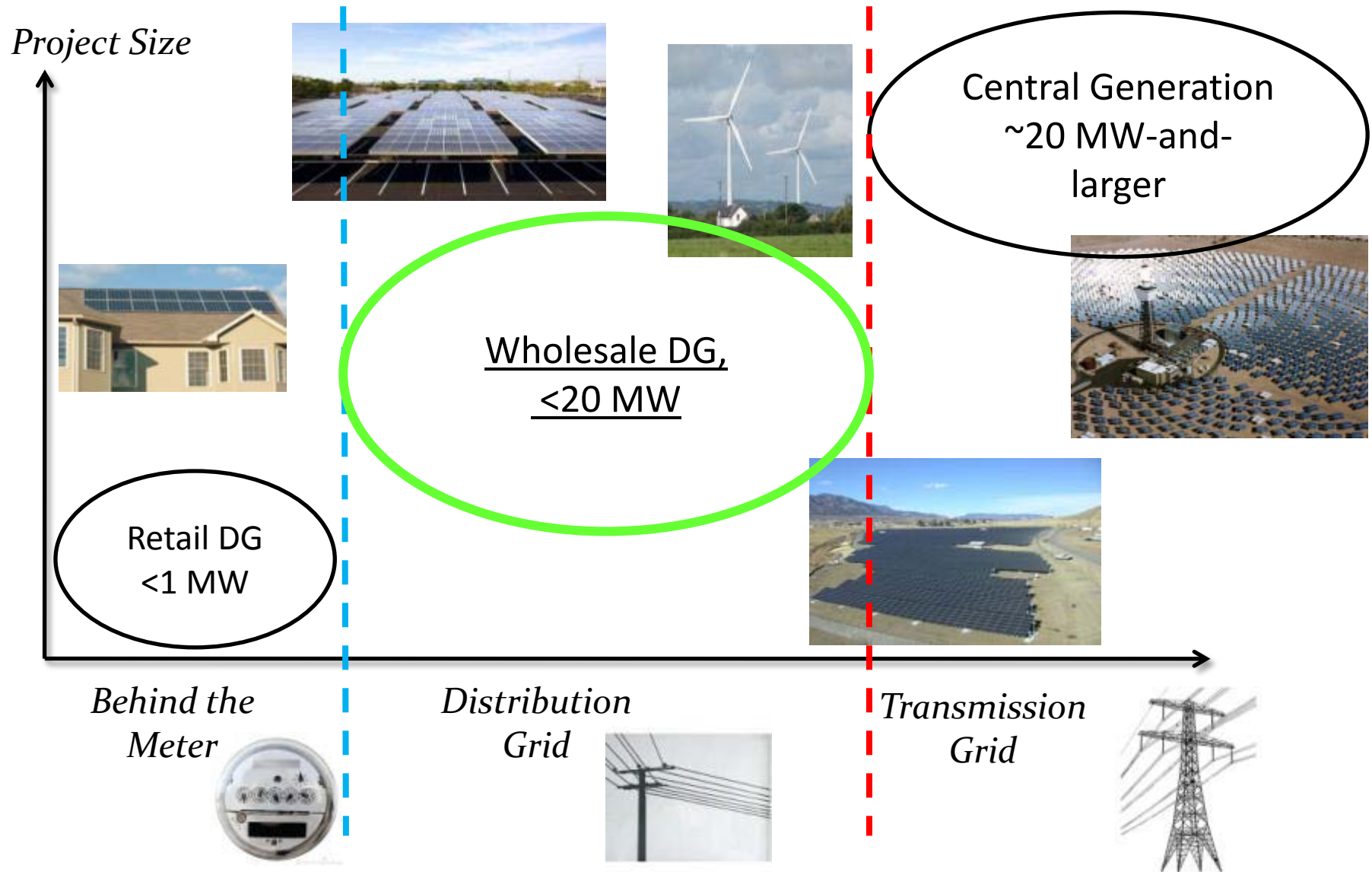
*Vice Chairman, Galvin Electricity Initiative; Former CEO, Electric Power Research Institute*

# Clean Coalition Vision = DG+DR+ES+EV+MC2



- **CLEAN = Clean Local Energy Accessible Now**
- **CLEAN Features:**
  - Procurement: Standard and guaranteed contract between the utility and a renewable energy facility owner
  - Interconnection: Predictable and streamlined distribution grid access
  - Financing: Predefined and financeable fixed rates for long durations
- **CLEAN Benefits:**
  - Removes the top three barriers to renewable energy
  - The vast majority of renewable energy deployed in the world has been driven by CLEAN Programs
  - Allows any party to become a clean energy entrepreneur
  - Attracts private capital, including vital new sources of equity
  - Drives local employment and generates tax revenue at no cost to government

# Wholesale DG is the Critical & Missing Segment



## Total Ratepayer Cost of Solar

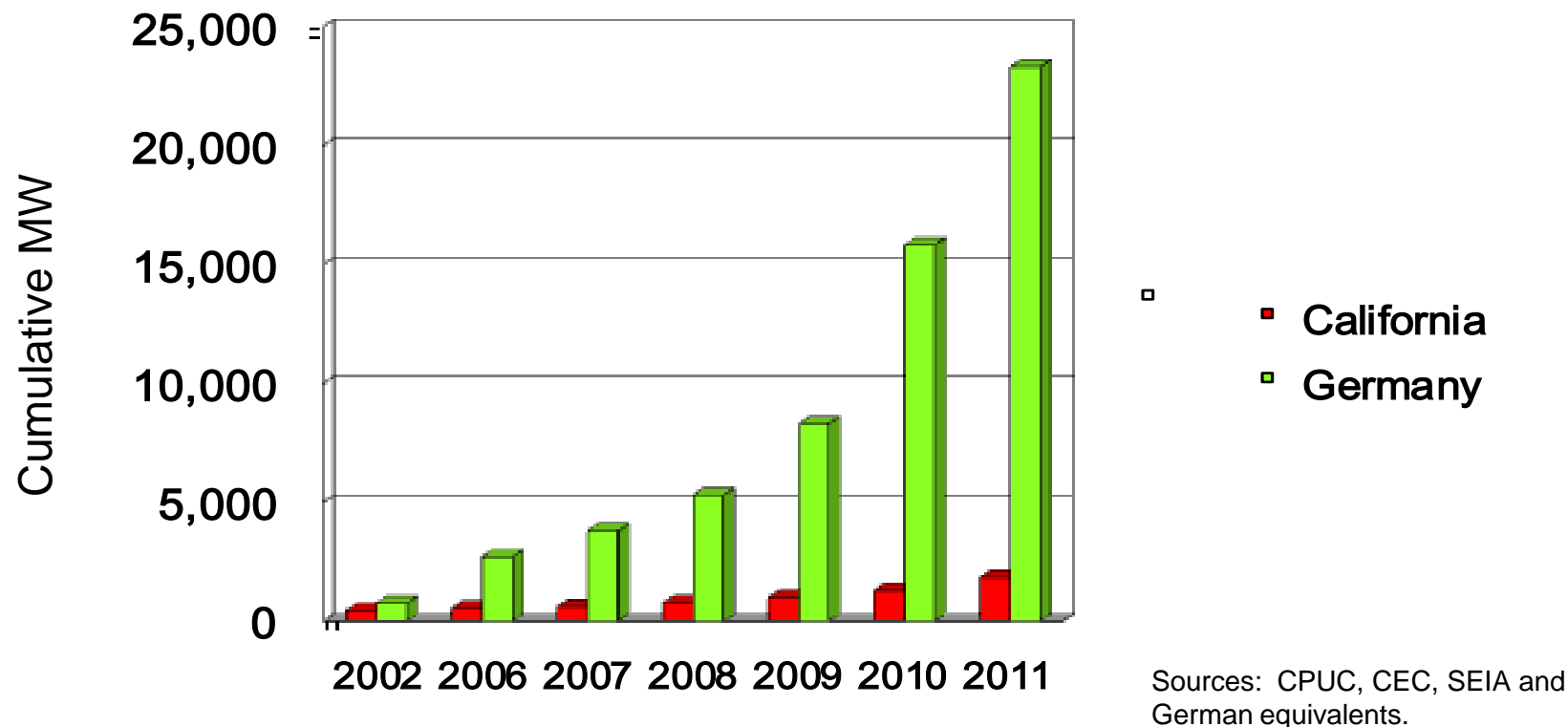
	Distribution Grid					T-Grid
PV Project size and type	100kW roof	500kW roof	1 MW roof	1 MW ground	5 MW ground	50 MW ground
Required PPA Rate	15¢	14¢	13¢	12¢	11¢	10¢
T&D costs	0¢	0-1¢	1¢	1¢	1-2¢	2-4¢
Ratepayer cost per kWh	15¢	14-15¢	14¢	13¢	12-13¢	12-14¢

Sources: CAISO, CEC, and Clean Coalition, July 2011; see full analysis at [www.clean-coalition.org/studies](http://www.clean-coalition.org/studies)

The most cost-effective solar is ground-based WDG, not central station as commonly thought, due to immense transmission costs

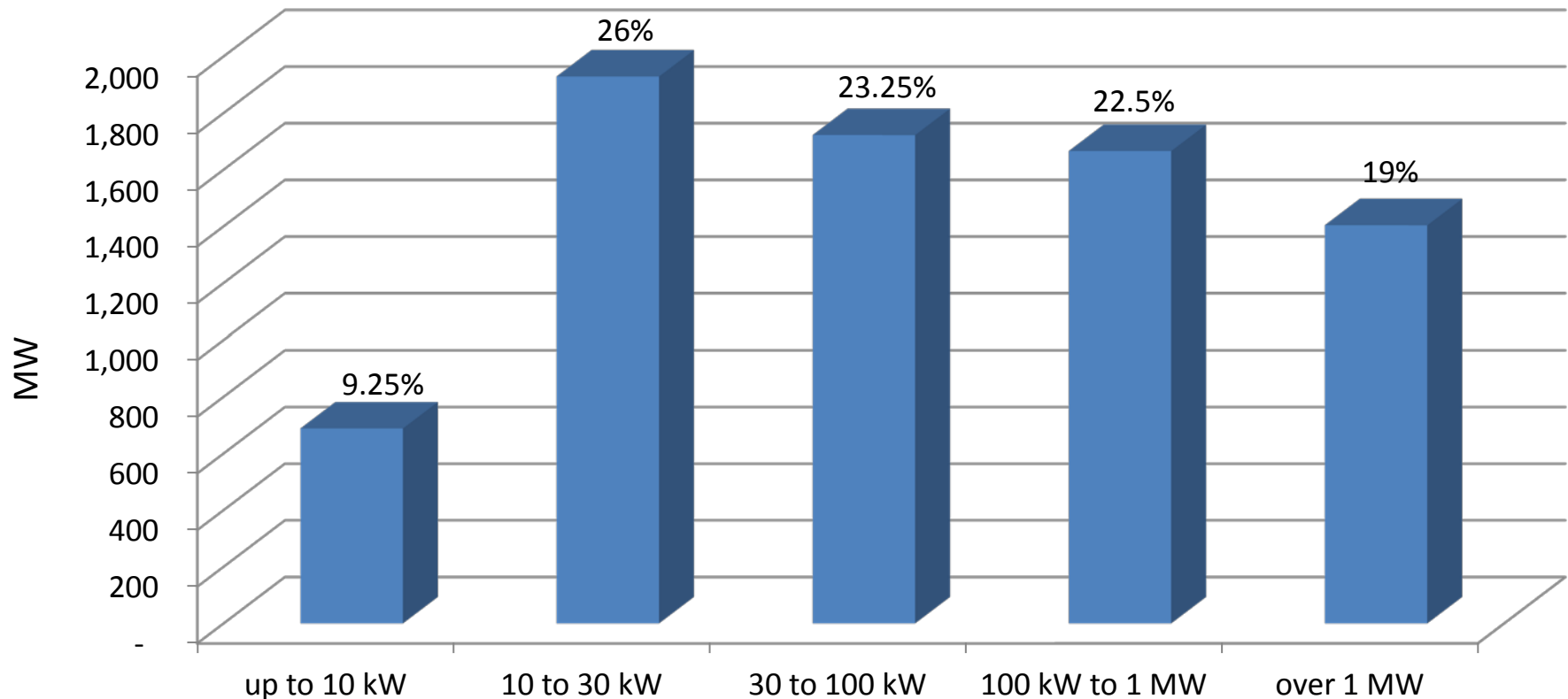


## Solar Markets: Germany vs California (RPS + CSI + other)



Germany added nearly 15 times more solar than California in 2011, even though California's solar resource is 70% better!!!

## German Solar PV Capacity Installed in 2010

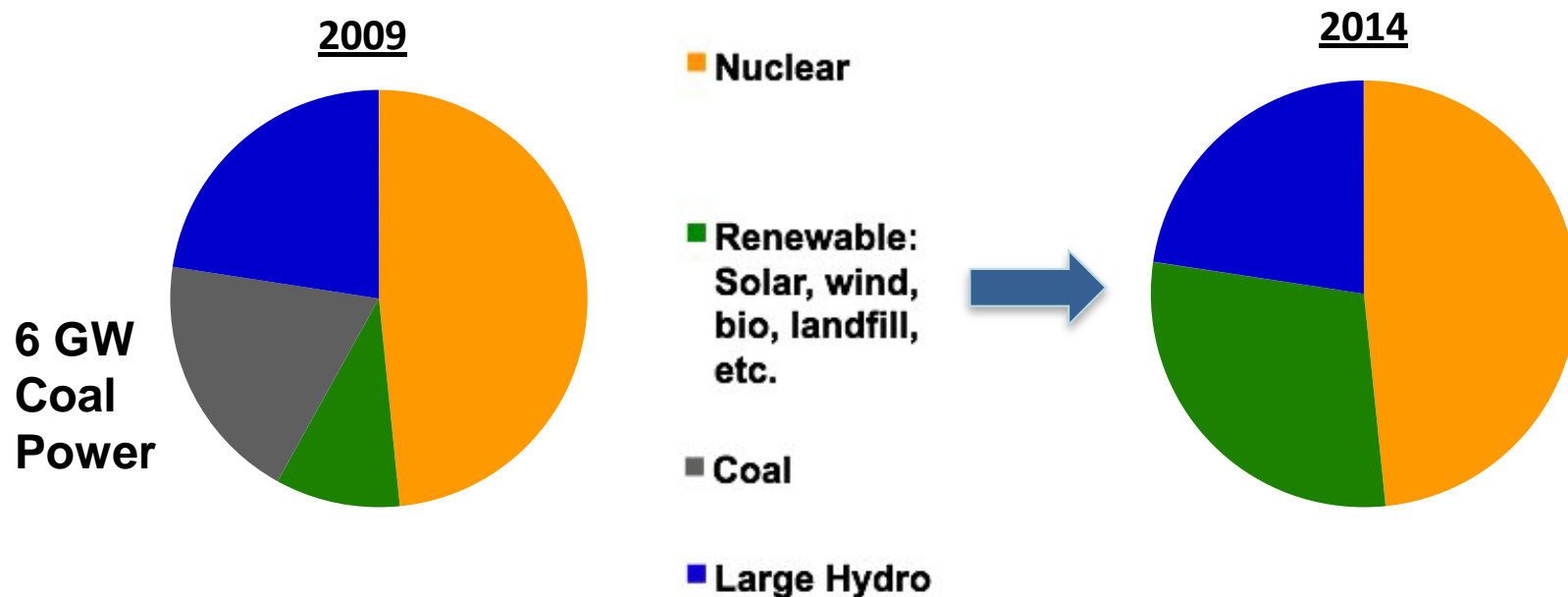


Source: Paul Gipe, March 2011

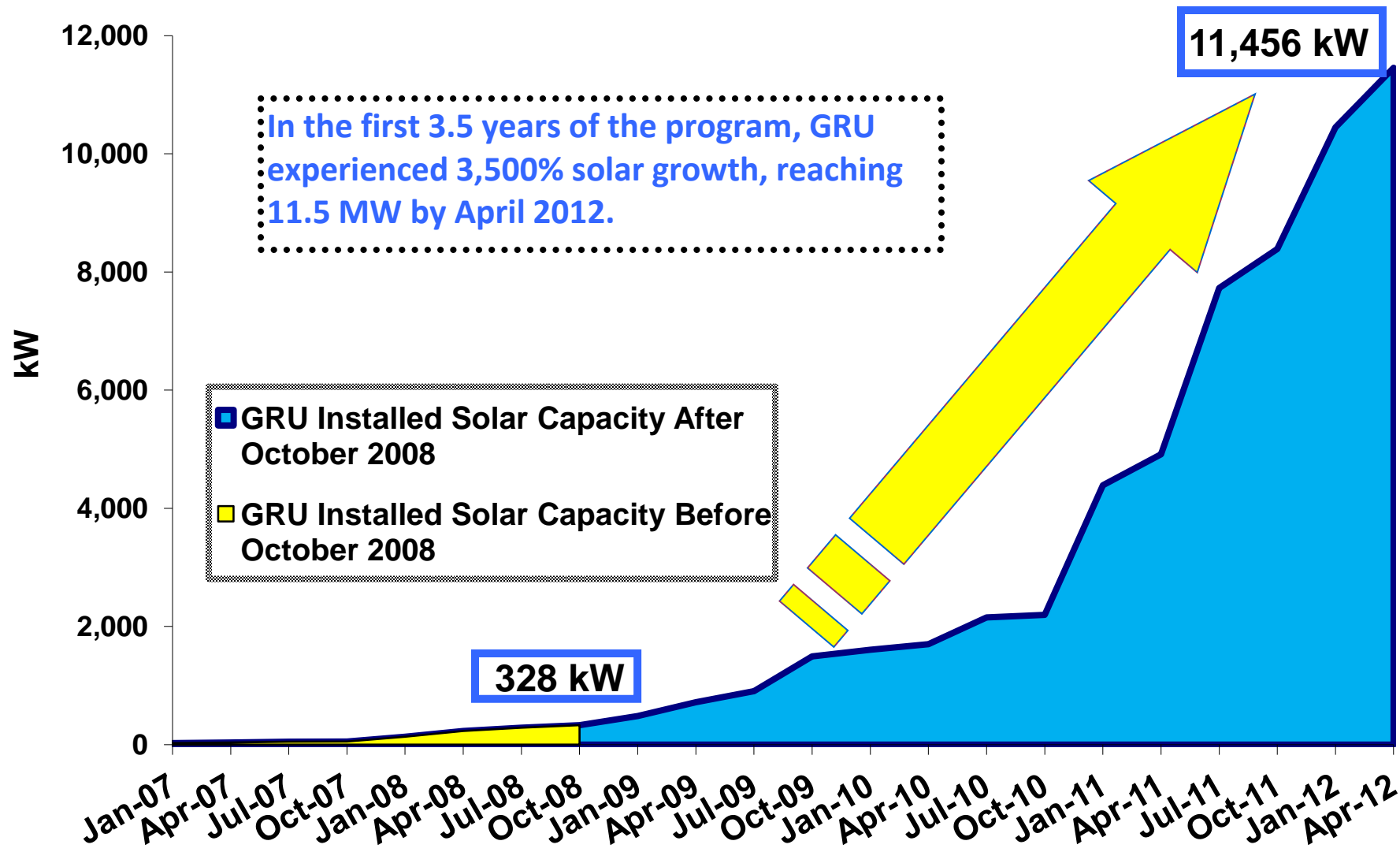
**Germany's solar deployments are almost entirely <2 MW rooftop projects interconnected to the distribution grid (not behind-the-meter)**



- On track to replace 100% of coal power by 2014
- Created tens of thousands of jobs, and on track to create 50,000 jobs
- Attracted over \$20 billion in private-sector investment to Ontario
- More than 30 companies are currently operating or plan to build, solar and wind manufacturing facilities in Ontario



GRU Cumulative Installed Solar



In April 2012, the City Council and the Mayor authorized the Los Angeles Department of Water and Power to purchase up to 150 MW of solar power generated by local property owners.

## Timeline:

- May 2012 – Launch 10 MW pilot program to determine prices for energy
- Fall 2012 – Expand program to 75 MW
- 2013 – May expand program to 150 MW

Los Angeles Business Council found that a 150 MW program would:

- Create 4,500 jobs
- Generate \$500 million in economic activity
- Offset 2.25 million tons of carbon dioxide emissions



LIPA plans to approve a CLEAN Solar Program in June 2012:

- Fixed Rate Contracts: 22 cents/kWh solar electricity for 20 years
- Program Size: Purchase 50 MW over 2 years



"Several aspects of the CLEAN Program have **proven to simplify and streamline the process.**



First, there is a **standard set of "bright line" rules** for a project to qualify, demanding no staff analysis or interpretations.

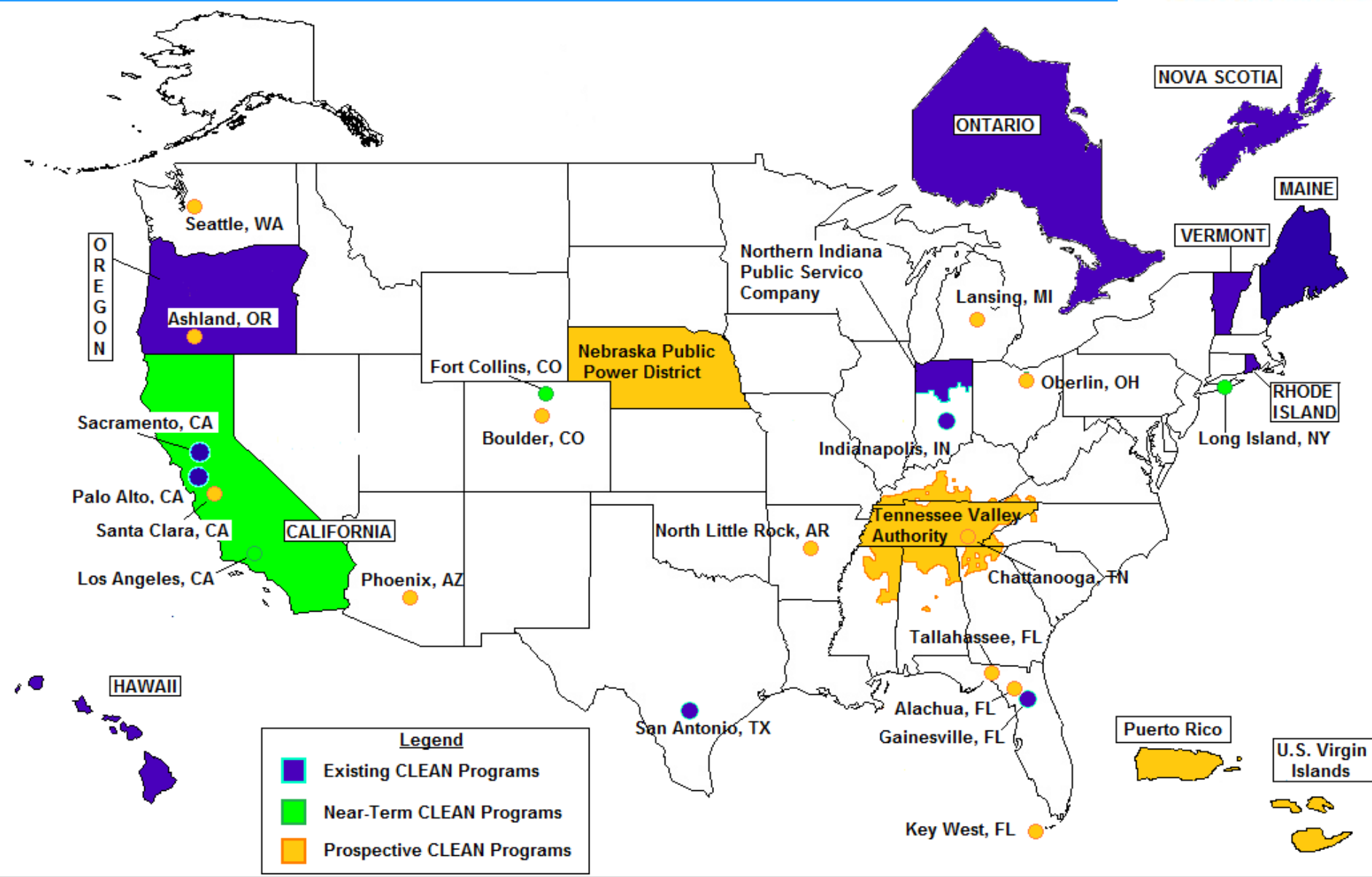
Second, there is a clear method for assigning capacity to qualifying projects... There is **no staff time wasted with evaluating RFPs...**

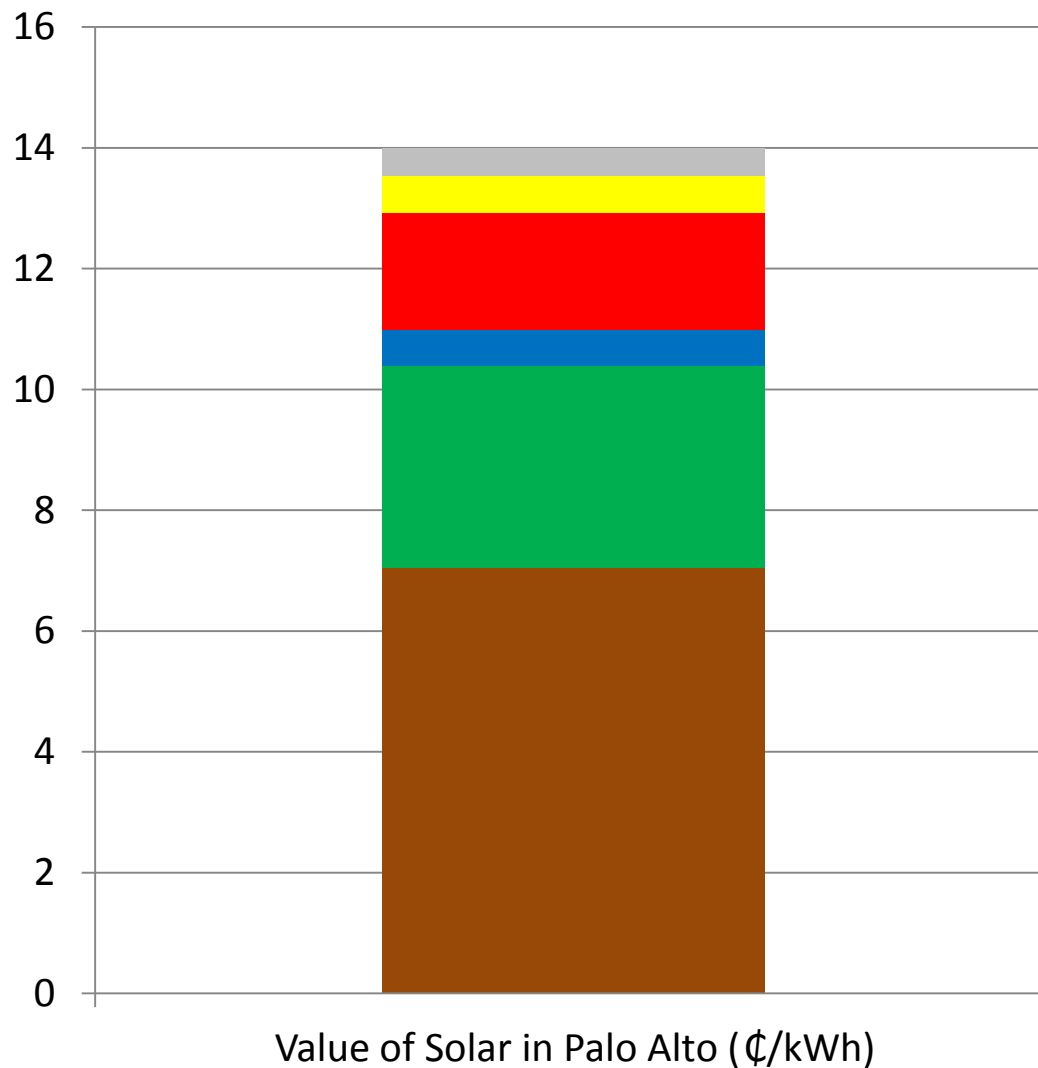
Third, each project... signs a **short, standard offer contract** and interconnection agreement.

There is **no valuable staff time wasted in negotiations and legal disputes.**"

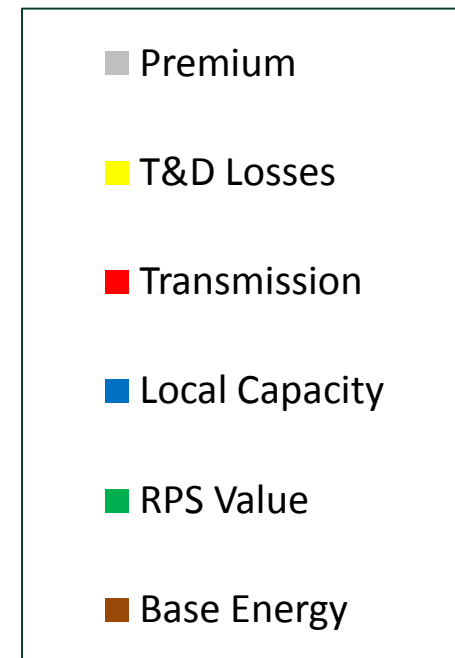
- John Crider, GRU Strategic Planning

# Map of CLEAN Programs in the U.S. and Canada





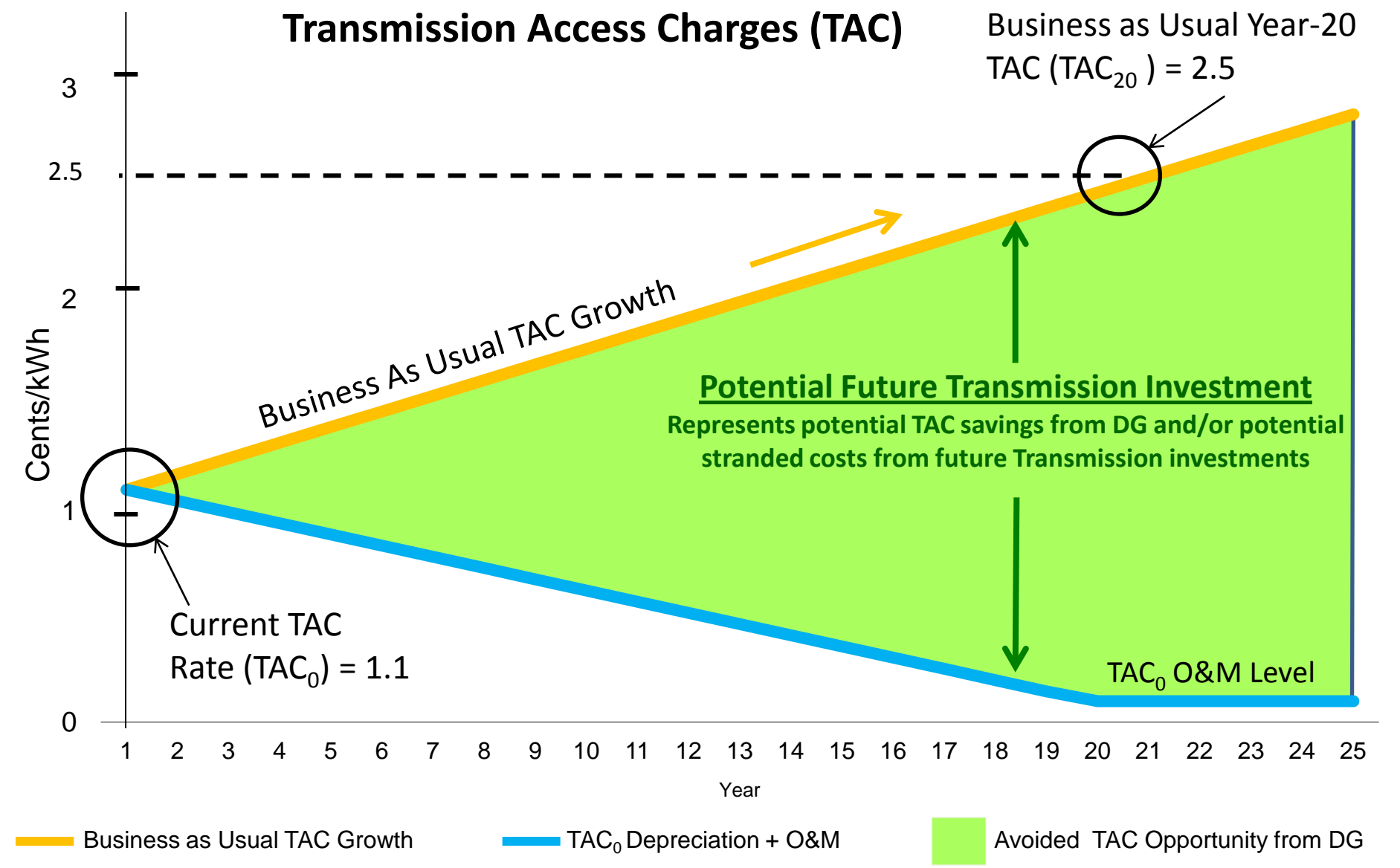
*“Palo Alto CLEAN will expand clean local energy production while only increasing the average utility bill by a penny per month” -- Yiaway Yeh, Mayor of Palo Alto*



Source: Palo Alto Utilities

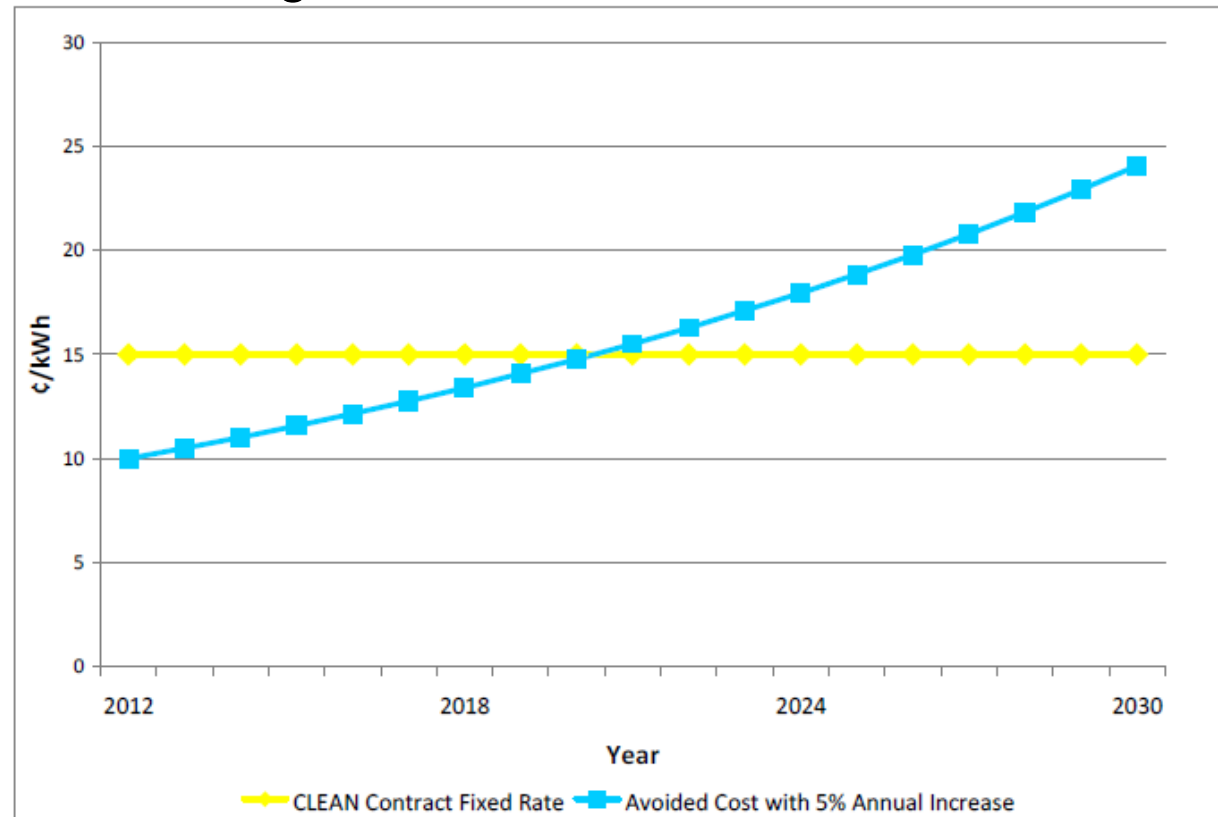


# Potential Avoided Costs From DG are Massive



- May result in a small rate increase during initial years (e.g. Gainesville, Florida, achieved a 2,000% increase in deployed solar capacity with a rate increase of less than 1% during first 2.5 years of program)
- Protects communities from rising fossil fuel costs over time

For this single 10 kW solar rooftop project in Colorado, avoided costs will rise above the CLEAN contract price within a few years



Source: Clean Coalition, 2012

**Free download:** <http://www.Clean-Coalition.org/local-action>

**Contact us:** [LocalGuide@Clean-Coalition.org](mailto:LocalGuide@Clean-Coalition.org)



  
**Local CLEAN Program Guide**  
Module 1: Overview & Key Considerations



## **Modules of the Guide:**

1. Overview & Key Considerations
2. Establishing CLEAN Contract Prices
3. Evaluating Avoided Costs
4. Determining Program Size & Cost Impact
5. Estimating CLEAN Economic Benefits
6. Designing CLEAN Policies & Procedures
7. Gaining Support for a CLEAN Program

## Back-Up Slides

- Local Job Creation

- CLEAN projects are local and “shovel-ready”
- Renewable energy creates far more jobs than fossil fuels or nuclear power (UC Berkeley)

- Local Capital Investment

- CLEAN Programs level the playing field, giving local residents and businesses the opportunity to reinvest capital in the community
- Local ownership of renewable energy increases the economic benefits to the community by 200% to 300% (US GAO)

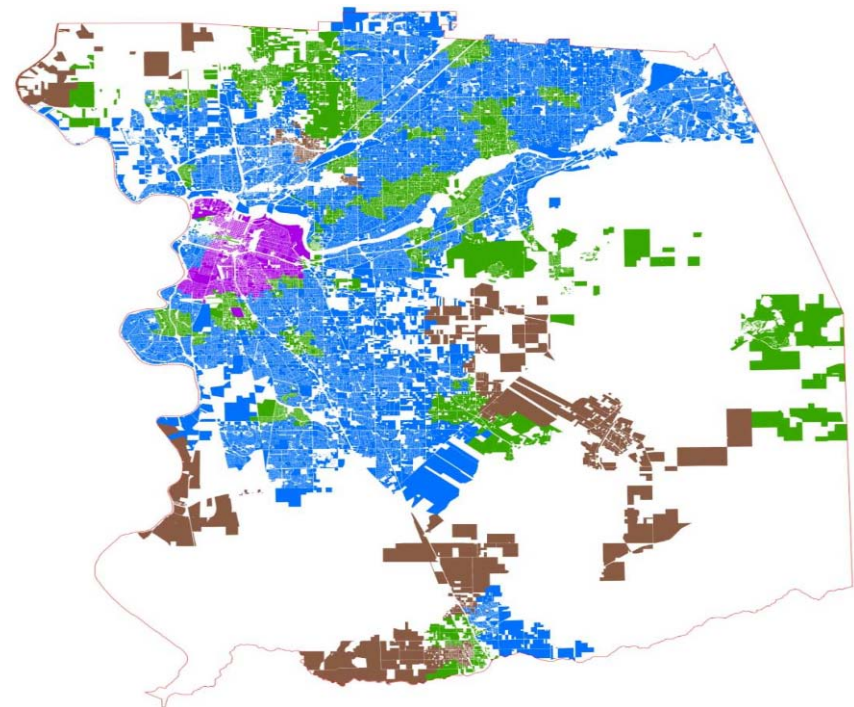
- Local Tax Revenues

- Local job creation and capital investment in the community creates new sources of state and local tax revenues
- Does not rely on government subsidies



## Timely and transparent distribution grid interconnection:

- Interconnection of wholesale distributed generation projects to California investor owned utility distribution grids takes an average of 2 years.
- In contrast, interconnection to Sacramento Municipal Utility District's (SMUD) distribution grid takes an average of 6 months.
- Two SMUD staff members completed interconnection studies for 100 MW CLEAN Program projects in two months.
- SMUD maximized transparency by publishing this interconnection map on its website.



- Volumetric Price Adjustment (VPA) automatically adjusts the fixed CLEAN Contracts price as the market responds to the program.
- To implement a VPA, program designers determine:
  - Buckets of capacity for assessing market response
  - Magnitude of price adjustments (up and down)
  - Length of the waiting periods to gauge market response before the price is adjusted
- For example:
  - Start with first 20 MW of capacity to contract at 16 cents/kWh.
  - If the first 20 MW bucket is filled within 6 months, then the next 20 MW bucket will contract at 15.5 cents/kWh
  - However, if the first 20 MW of capacity is not filled within 9 months, then the contract price for that bucket will automatically rise to 16.5 cents/per kWh.



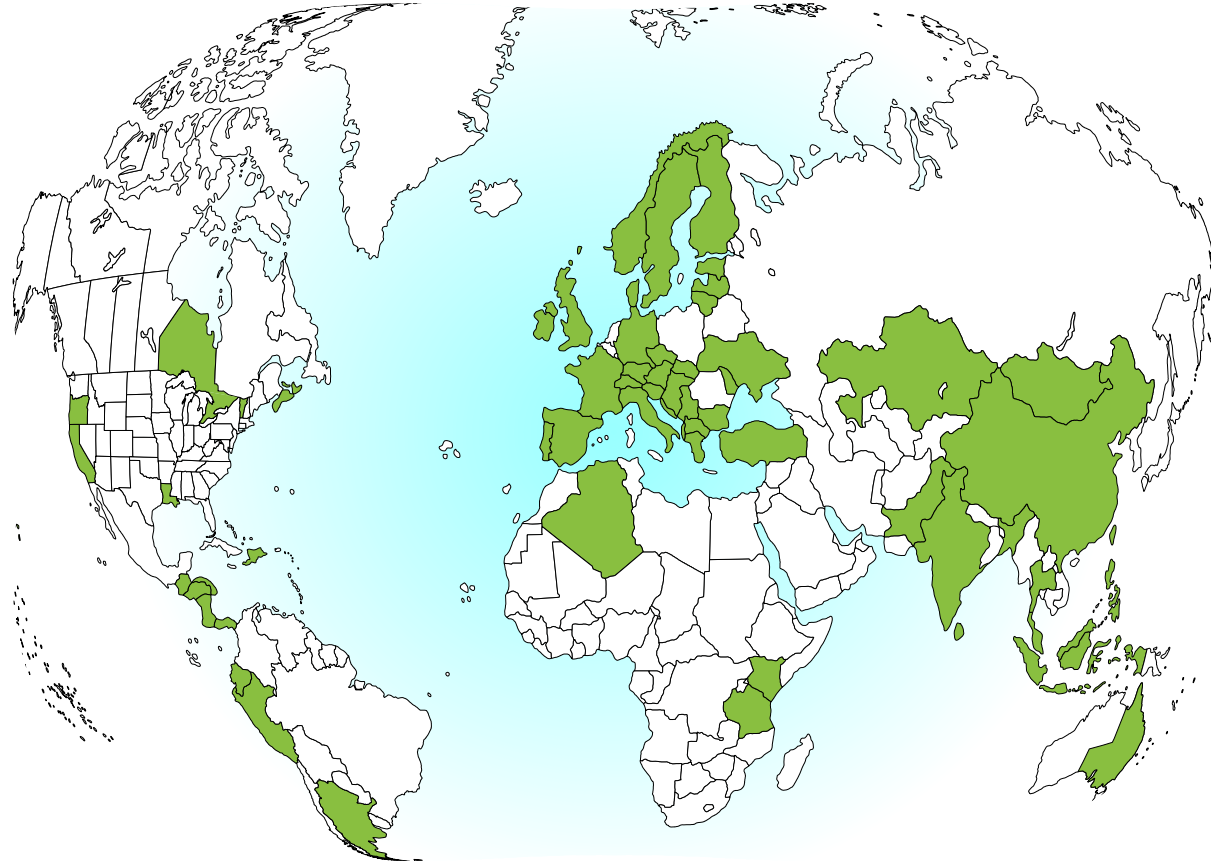
CLEAN Programs (also known as feed-in tariffs) are the most effective policy solution for spurring renewable energy installations around the world:

45% of wind energy and  
75% of solar PV capacity  
installed in the world  
before 2008

National Renewable Energy Laboratory

86% of solar capacity  
deployed in the world  
in 2009

Meister Consultants Group



Source: Renewables 2011 Global Status Report,  
Renewable Energy Policy Network for the 21st Century