

**PUBLIC TESTIMONY  
TO THE SENATE BUSINESS AND COMMERCE COMMITTEE  
ON THE INTERIM CHARGE – ERCOT PROTOCOL CHANGES  
Hearing of July 10, 2012**

Senator Carona and committee members - Thank you very much for your service to the citizens of Texas, and thank you for the opportunity to testify at this public hearing today.

My name is Richard Howe. I am a native Texan and a longtime resident of Plano, Texas. I am here as an individual concerned citizen with the objective to encourage a much stronger push to utilize the ***abundant solar energy resources*** we have in Texas.

We should be identifying and removing barriers for wider deployment of ***distributed solar power***, especially for peak demand generation. As individual citizens, producing energy from the sun at our homes (or being part of a solar community garden) is a powerful ***consumer choice option***. (My observation is that it is feasible for more residents to install solar panels than to install individual wind turbines.)

When the summer sun shines bright in Texas, we need air conditioning. And when the summer sun shines bright in Texas, we should be generating large amounts of electricity from the sun!

Today, I want to briefly touch on the following three topics:

- Why solar?
- Solar for peak demand generation, and
- The renewable energy subsidy topic

**Why solar?**

There are two main reasons I think the use of solar energy should be expanded in Texas.

1. The amount of solar energy reaching the Earth in ***one hour*** is approximately the same as the total energy used by everyone on the planet for an ***entire year***. So, we should be sure that we are taking concrete steps to better utilize this abundant resource.
2. PV Solar is real, and it is being deployed in large amounts all around the world. By the end of 2011, there was over ***70 GW-peak of installed solar*** capacity around the world. *See figure 1*. That is slightly more than the amount of peak power we use all across Texas on a hot summer day. So, why aren't we using more solar here?

A few additional reasons I think the use of solar energy should be expanded in Texas are:

- Using solar energy can help complement our significant wind energy resources to provide a ***more diversified renewable energy generation profile***;
- Because there is ***no volatile fuel cost component***, installing PV solar can provide a ***long-term, price-stable component*** to the Texas energy portfolio;
- Likewise, ensuring that residential and business ***consumers have a viable choice*** to install solar for their own use can help provide a long-term stabilizing effect for their finances.

### **Solar for peak demand generation**

As you are aware, the Electric Reliability Council of Texas (ERCOT) has indicated the need for additional energy generation, especially peak demand generation. Distributed generation from PV solar installed on residences and businesses can help fulfill this need. Earlier this year, I have written to various state legislators as well as the PUC commissioners outlining these following key benefits:

1. Electricity generation from solar is **generally aligned with the time of day of the demand**. So, while our air conditioners are in almost continuous use during our hot summers, this is also when the sun shines brightest and solar panels generate abundant electricity!
2. Solar energy (PV) installed costs are **competitive with other existing peak demand generation sources**. There have been dramatic cost reductions, especially over the last few years. *See reference 2*. Every day there are more and more examples.
  - a. My recently installed rooftop PV solar system in Plano, Texas is providing our family electricity at ~\$0.08/kWh for 25 years (based on \$2.74/W net installed cost, generating 3,579 kWh/year); and then FREE electricity after that!
  - b. In utility scale installations (*see references 3 & 4*), both Webberville (\$0.165/kWh PPA) and San Antonio Sinkin Centennial Solar Farms (approx \$0.10/kWh) indicate competitive costs; Both appear to provide lower cost solutions than may result from the proposed \$4.5/kWh wholesale price cap.
  - c. The recent Brattle Group report (*see reference 5*) indicates that having more solar as part of the Texas energy portfolio would lower the costs of electricity to Texas consumers.
  - d. My June 11, 2012 letter to the PUC chairman shows an analysis that PV solar total costs are comparable to natural gas peaker plants based on EIA data (*see reference 6*).
  - e. A competition was recently announced with the objective to install 5000 small-scale (1–15 kilowatt) rooftop solar systems at an average price of \$2 per watt or less, between August 1, 2012 through December 31, 2014 (*see reference 7*).
3. Electricity generated by distributed solar panels on homes and businesses is located where the demand is consumed (our house/business), thus **eliminating electricity transmission losses**.
4. Electricity generated from solar panels **does not require our scarce water resources** like other conventional electricity generation sources do.
5. Distributed electricity generation from solar panels is **typically a quick deployment** - 6 months versus up to 2-3 years for more conventional power plants.

### **The renewable energy subsidy topic**

The issue of subsidies for renewable energy is a concern to me as well as to most people, so I have begun to research this topic in more detail. Although the message we generally hear is that renewable energy sources are receiving too much in subsidies, what I have found in various

studies is that when taken in the context of a longer period of history, all energy sources have benefited from significant and long-term subsidies.

*See Figures 2 and 3.* For example, through the end of 2009, the energy sector receiving the largest subsidies over time has been the oil and gas industry, with a cumulative amount of \$447B over the period of 1918-2009. This averages ~\$4.9B per year for 90 YEARS! We generally don't hear this information when subsidies for renewables are being questioned and debated. Renewable energy sources, including wind and solar combined, have received a cumulative of just \$6B during the period of 1994-2009, which equates to an average of \$370M per year over 15 years.

So, if we think we must phase out subsidies on renewable energy sources any time soon, then shouldn't we first make sure that other more mature energy source subsidies are phased out first? *See references 8 and 9 for additional information.*

### **In conclusion**

As an interested, concerned, and motivated citizen, I am ready and willing to work with the legislature and staff to help **remove barriers** to expanding the role of **distributed solar power** for our electricity generation in Texas. Examples of areas needing attention are listed below.

- Review and standardize the rulings for net metering across Texas; and include standardized rules for virtual net metering to support community solar programs;
- Consider updating our Renewable Portfolio Standard to include goals for 1.5 GW-peak of solar power by 2015, and 5 GW-peak by 2020; We currently have PUC rule 25.172 stipulating a 50% goal for new natural gas generating plants; why not one for distributed solar?
- Consider legislation and rulings related to the utility business model transformation that are needed - transforming from the current model of "selling more kWh to grow" to a different business model in which promoting efficiency and effectively managing distributed resources is "how to grow";
- Enhance availability of financing options such as the PACE (Property Assessed Clean Energy) Program for installations of small distributed systems;
- Consumer choice initiatives - expanding capability of powertochoose.org to assist consumers with purchasing or leasing solar systems.

Thanks for your time today.

Sincerely,



Richard (Larry) Howe

Figure 1 – Solar PV Total World Capacity, from reference 1, Fig 11

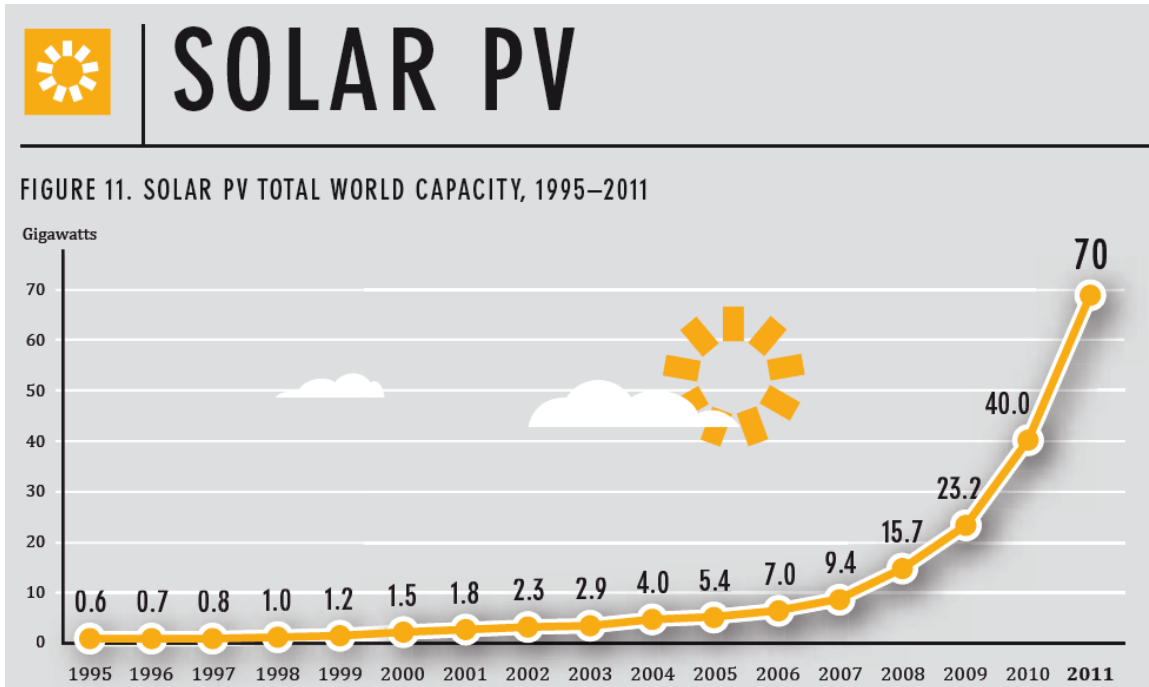


Figure 2 – Cumulative Historical Federal Subsidies, from reference 6

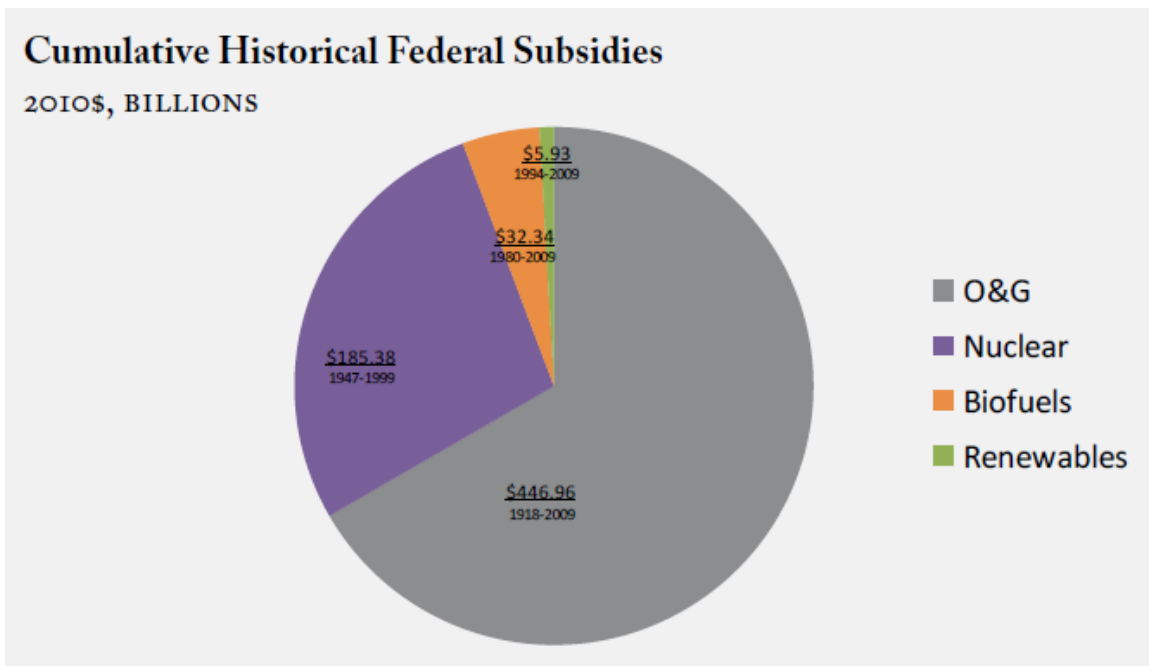
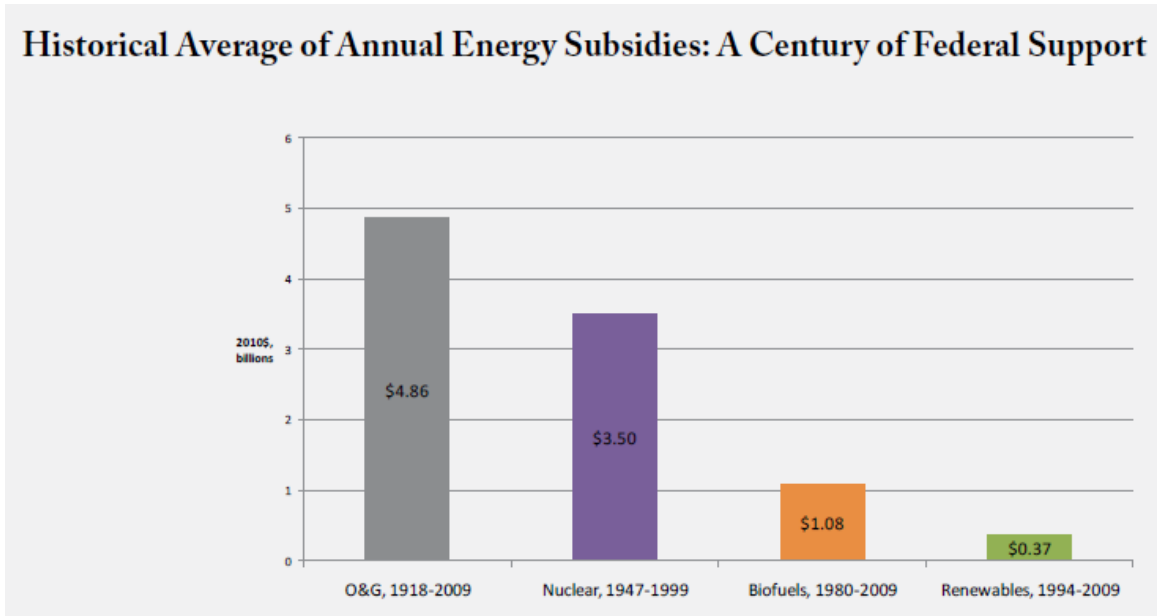


Figure 3 – Historical Average of Annual Energy Subsidies, from reference 6



## List of References

1. "RENEWABLES 2012 GLOBAL STATUS REPORT", June 2012, REN21 Renewable Energy Policy Network for the 21st Century
2. "Solar Power More Competitive Than Decision-Makers Or Consumers Realize", Forbes, Green Tech, May 24, 2012; <http://www.forbes.com/sites/justingerdes/2012/05/24/solar-power-more-competitive-than-decision-makers-or-consumers-realize/>
3. "Update and Erratum—Webberville: The Biggest Solar PV Installation in Texas", Jan 13, 2012; <http://www.greentechmedia.com/articles/read/Webberville-The-Biggest-Solar-PV-Installation-in-Texas/>
4. "CPS dedicates solar complex", June 18, 2012; <http://www.mysanantonio.com/business/article/CPS-dedicates-solar-complex-3642965.php>
5. "The Potential Impact of Solar PV on Electricity Markets in Texas", June 19, 2012, The Brattle Group
6. June 11, 2012 letter to PUC Chairman from Richard Howe
7. SunShot Prize: America's Most Affordable Rooftop Solar, July 13, 2012, <http://www1.eere.energy.gov/solar/sunshot/prize.html>
8. "What Would Jefferson Do? The Historical Role of Federal Subsidies in Shaping America's Energy Future", Sept 2011, DBL Investors
9. "Assessment of Incentives and Employment Impacts of Solar Industry Deployment", May 1, 2012, Howard H. Baker Jr. Center for Public Policy, The University of Tennessee, Knoxville