



SIMPLIFYING SOLAR



# Financing Solar in Hard Times

## How Much is Enough? Lessons from Feed In Tariffs



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## Defining the Feed In Tariff

### German Model:

- § 20 year, fixed-price contracts
- § Differentiated by technology
- § No system size cap
- § All energy is exported to the grid

### Spanish Model:

- § 20 year contracts
- § Generators can choose a German style FIT or a premium on top of the wholesale price of electricity.
- § All energy is exported to the grid.

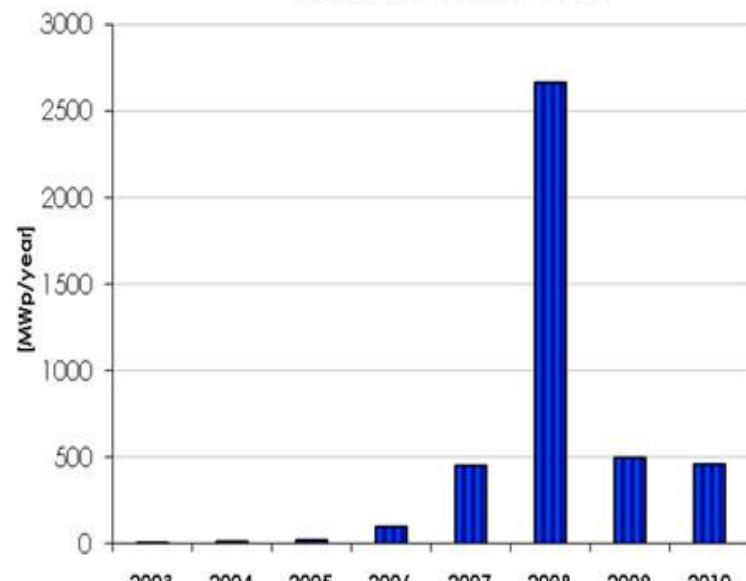
### Californian Model:

- § A short term, 5 year payment stream
- § Declining payment vintages
- § Systems < a certain size
- § Works with net metering

## Varied structures & models create confusion

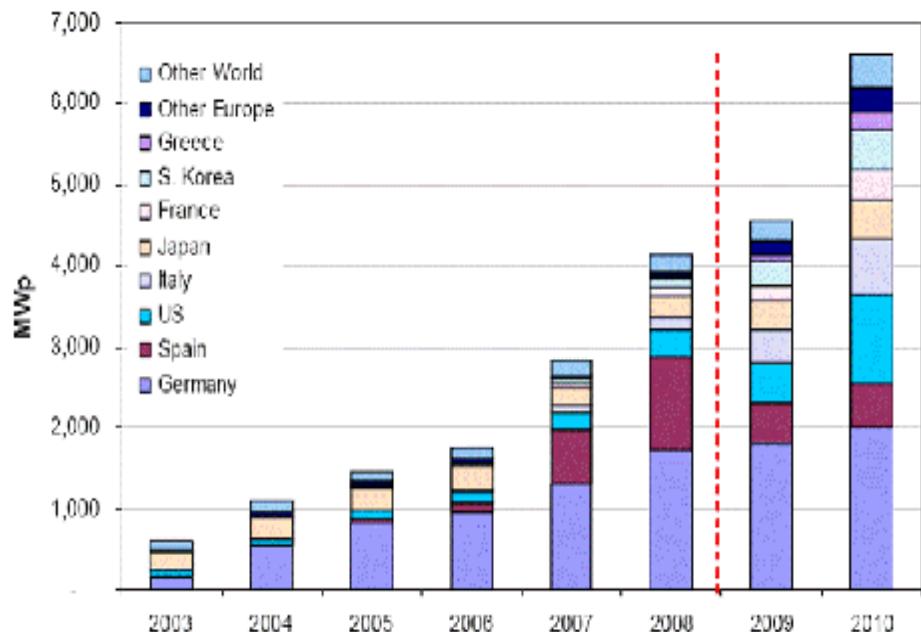
# German, Spanish and Canadian FIT Experience

The Spanish PV market: history and result  
new feed-in tariff law



© SolarPlaza Jan 2009; Data source: ASIF & SolarPlaza

Global Solar PV demand forecast - base case - Jan 09



**FITs promote rapid deployment but hyper growth observed in every market. Long term effects yet to be seen**

Source: Deutsche Bank securities

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# FITs in America – Not a Foreign Idea

**PURPA**

**Act of 1978**

**German  
FIT**

**2007**

**2008**

**2009**

- Payments to qualifying facilities based on utility's long term avoided cost

- **Michigan**

- HB 5218: Based on the German FIT.  
– \$.50-\$.71/kWh for PV

- **California**

- The CEC recommended the CPUC establish a 20 MW FIT

**§ Minnesota**

**§ Illinois**

**§ Rhode Island**

**§ Indiana**

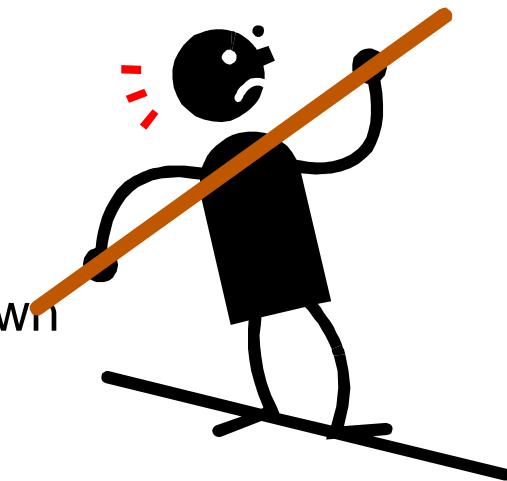
**§ Washington**

Gainesville Regional Utility, FL recently established a PV-only FIT offering 20 year contracts at .32/kWh. Enrollment commences in March, 2009.

## FIT Concerns and Mitigation:



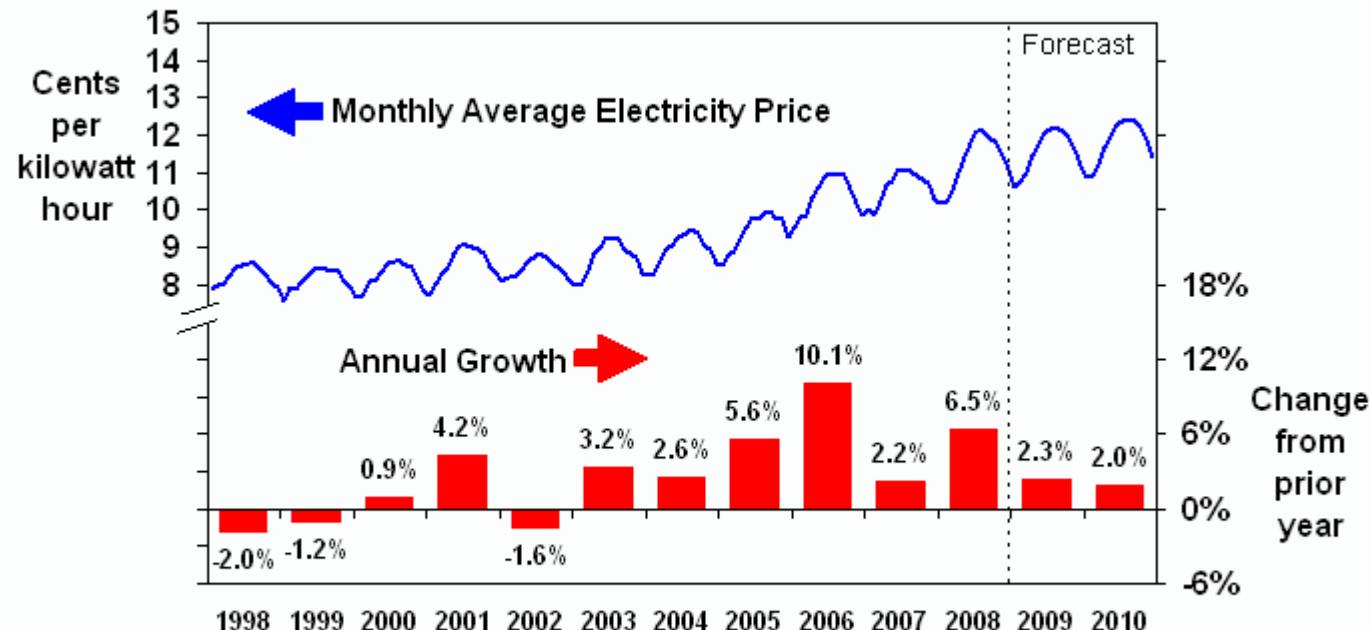
- § Funding Uncertainty
- § Hyper growth
- § Realistic Implementation Expectations
- § Transmission and Infrastructure Issues
- § Stability
- § Net Metering: the right to generate one's own electricity?



# Feed in Tariff Concerns and Mitigation: Replacing Net Metering



U.S. Residential Electricity Price



Short-Term Energy Outlook, February 2009

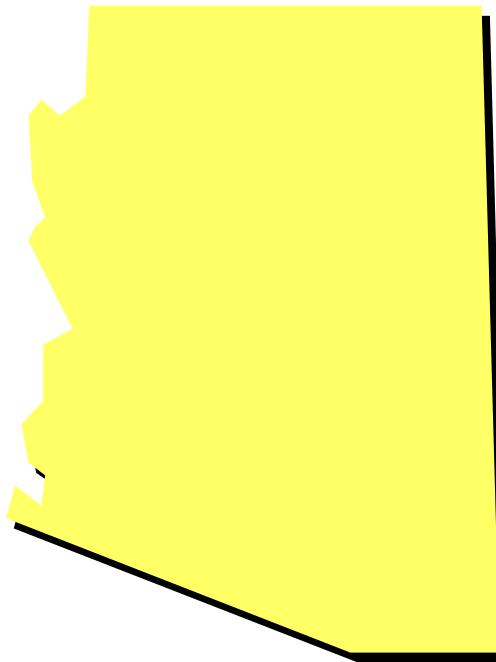


§ If FIT rates are exceeded by electricity rates, customers will sustain financial loss

# The Arizona Model – FIT-like Certainty With RPS Competition



- § A per kWh payment based on production
- § Payment term: contract terms of 10, 15 or 20 year
- § Competitive pricing offers benefit
- § Works with Net Metering
- § No system cap
- § 3<sup>rd</sup> party developers
  - Risk allocation
- § Additional Incentives

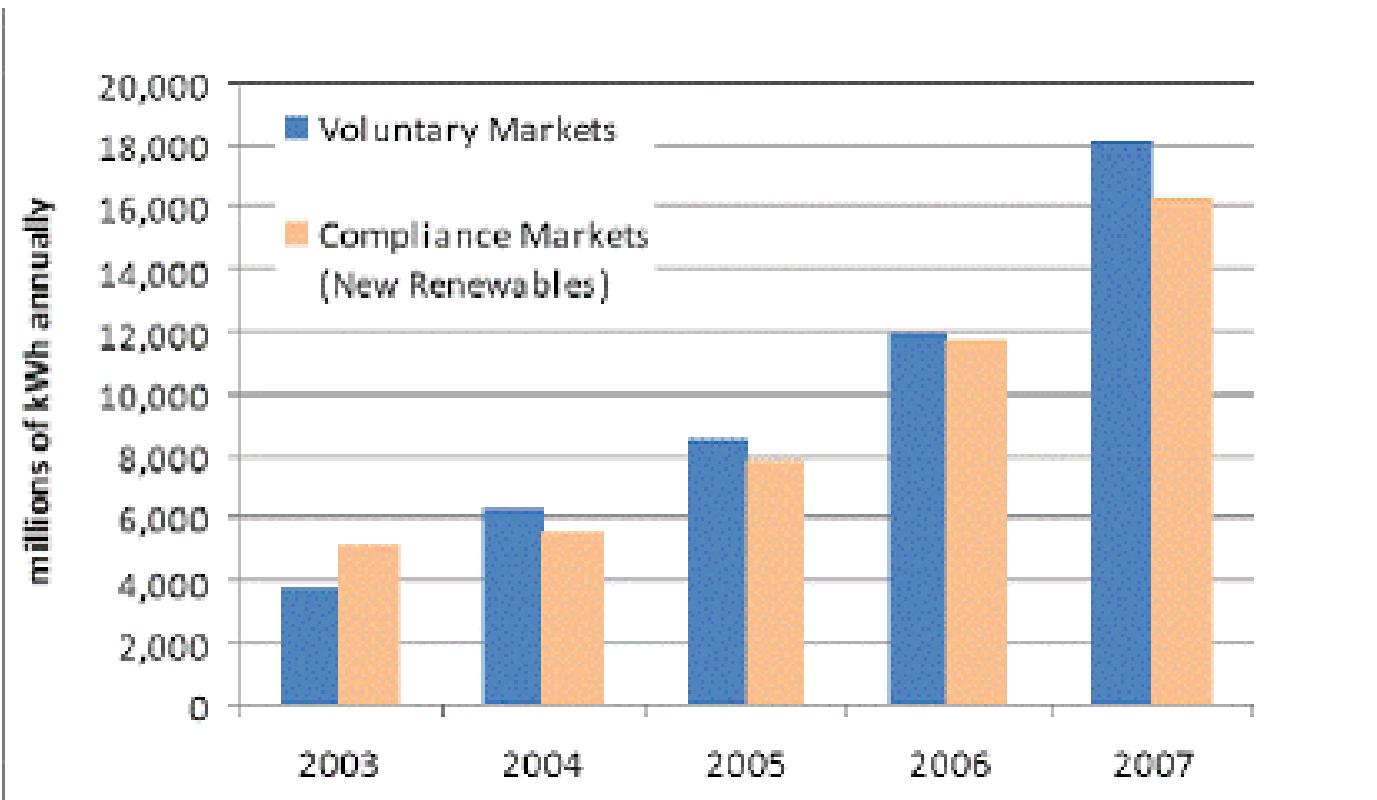


## Federal Mechanisms - FIT or RPS



Expected carbon legislation can easily be implemented into a REC based market.

Voluntary markets make a large contributions:





## Thank you! Questions?



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