



# EUCI Net Metering 2.0

---

*Balancing policies to protect consumers*

January 27, 2015

Joseph Daniel, Synapse Energy Economics

*[jdaniel@synapse-energy.com](mailto:jdaniel@synapse-energy.com)*

# Synapse Energy Economics

- Founded in 1996 by CEO Bruce Biewald
- Staff of 30 includes experts in energy and environmental economics and environmental compliance
- Leader for **public interest and government clients** in providing rigorous, independent analysis of the electric power sector

**Consumer  
Advocates**

**Rural Affairs  
Advocates**

**Environmental  
Advocates**

**State Utility  
Commissions**

**State Agencies**

**Federal  
Agencies**

# Where I've been active on distributed solar

---

California

Wisconsin

Maine

Hawaii

Massachusetts

New York

Mississippi

South Carolina

# Reoccurring questions and themes about net metering

# Overview: Content and Analytical Approach

## Questions I hope to answer by the end of the presentation

- Are these case studies applicable to my state?
- Is cross subsidization a real concern when implementing net metering?
- How can policy makers reduce cross subsidization and still meet other policy objectives?

## My approach to analyzing net metering

- Recognize net metering influences and is influenced by other policies
  - Other state policies
  - Federal policies
- Always compare costs and benefits side by side on equal footing

**Does this case study  
apply to me?**

# Why should we be careful about case studies?

Generally two camps bring up net-metering case studies to prove their point.

## Effective

- Massachusetts
- New Jersey
- New York
- Hawaii

## Expensive

- Hawaii
- Germany
- San Diego
- Sacramento

**Why is Hawaii so  
special?**



# Extenuating circumstances

Electrical and literal islands

80% solar goal  
*(at time of DGIP)*

Everything in Hawaii  
is more expensive  
*Rates are 32c/kwh*

Steam units are not  
flexible enough to  
handle solar

Solar is part of a low  
cost resource plan

HECO hasn't finished  
analyzing alternative  
strategies to  
integrating solar

Distributed solar  
displaces utility solar

The state has an RPS  
but no REC program

**Is cross subsidization a  
real concern with net  
metering?**

# Cross subsidization through rates, in theory

---

- Either reduced sales or increased costs can put upward pressure on rates
- Either reduced costs or increased sales can put downward pressure on rates
- Customer generation reduces sales and utility revenue which the utility needs to recover to remain financially solvent
- Net metering also helps utilities **avoid costs**
  - **Energy**
  - **Line losses**
  - **Capacity**
  - **T&D**
  - **Environmental compliance**
  - **Risk**
  - **Market price suppression (where applicable)**

# Cross-subsidization: An illustrative example

- 3% (by capacity) solar penetration
- 18% capacity factor for solar
- 75% load factor
- $\approx 0.41\%$  reduction in utility sales → **only represents costs**

## What are the benefits?

1. If avoided cost ( $\$/kWh$ )  $>$  rate net metering customers are compensated  
*Net metered customers subsidize ratepayers over the long term*
2. If avoided costs = net metering credit  
*Customer impact  $\approx 0.00\%$  over the long term*
3. If no long term avoided costs: avoided costs  $\approx 40\%$  of volumetric rate  
*Customer impact  $\approx 0.24\%$  over the long term*

**What are common ways  
to prevent cross  
subsidization?**

# Net metering and interconnection rules

## Preventing increased T&D costs

- Caps to total net metered capacity penetration
- Caps to amount of net metered capacity on a given circuit
- Caps to size of net metered installation

## Issues surrounding reduced sales

- Regulatory options (*not discussed in this presentation*)
- Various structures to customer site generation compensation

**Don't solve a problem  
that isn't there.**

# Why do an avoided cost study?

---

- Helps determine if/how much cross subsidization is occurring
- Avoided costs are generally well understood and part of existing regulatory structure
- Can help commissions, utilities, and other stakeholders determine the best rate structure
- Can prevent complex, confusing rate making proceedings
- Can be used to implement effective, simple, and fair rates



# To recap:

---

Q: Does this case study apply to me?

A: Not perfectly. Learn from it, but don't erroneously extrapolate.

Q: Is cross subsidization a big concern?

A: Maybe, but there are ways to find out for sure.

Q: What are frequently suggested ways to prevent cross subsidization?

A: Limits to net metering, rate making, and avoided cost studies.

# Contact Info

Joseph Daniel  
[jdaniel@synapse-energy.com](mailto:jdaniel@synapse-energy.com)  
617-453-7055

# **Fixed charges vs. Minimum bills**

# Fixed charges vs minimum bills: A solution?

Rate structure	Fixed Charge	Variable Charge	Minimum Bill
Standard	\$5 per month	\$0.10 / kWh	\$0
Fixed charge	\$30 per month	\$0.065 / kWh	\$0
Minimum bill	\$5 per month	\$0.10 / kWh	\$30

Structured so “average” customer’s bill doesn’t change

Change in monthly bill (assuming no change in consumption/generation)

