

The Capay Valley Energyshed

Energy Use and Resource Inventory

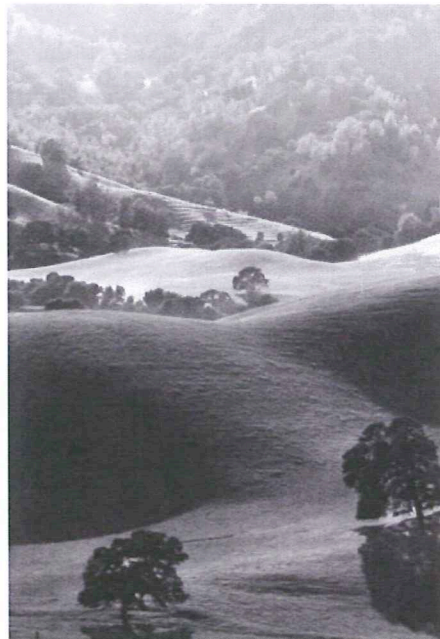
Deb Niemeier
Professor, Civil and Env. Eng.
UC Davis

The Capay Valley

- 25,000 acres, mostly rural
- Pop, 4500
- Significant agriculture



Cache Creek, CA Wild and Scenic River

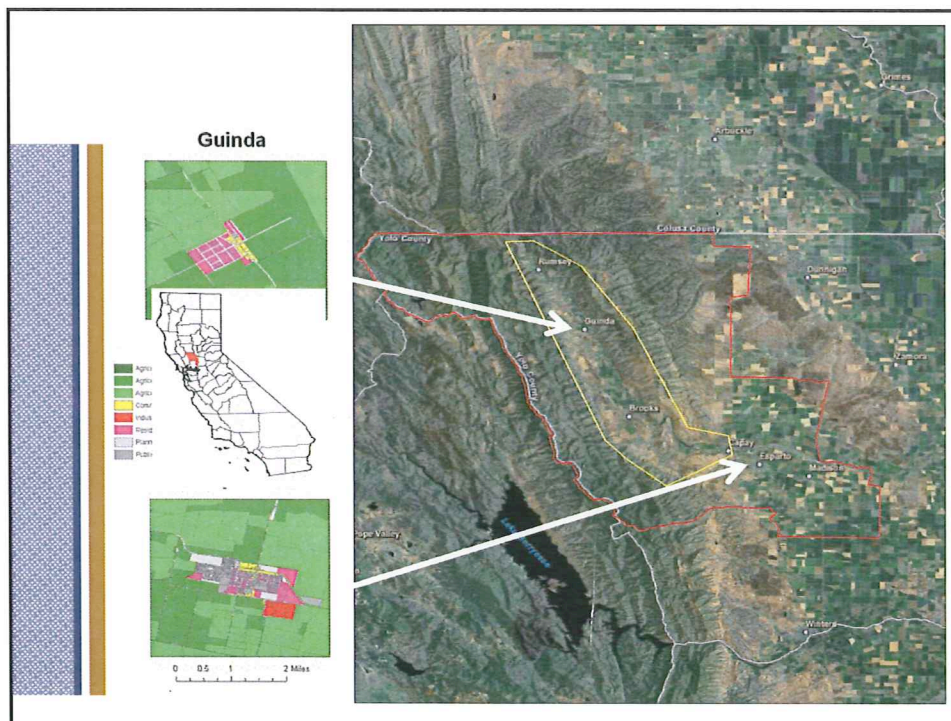
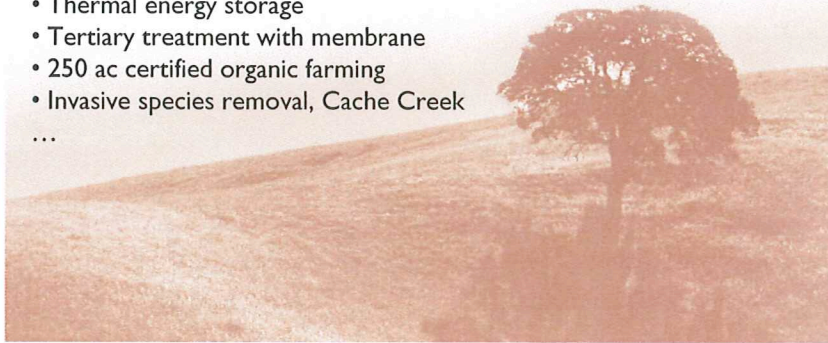


Rests between the blue hills of the Vaca Mountains and the Rumsey Hills

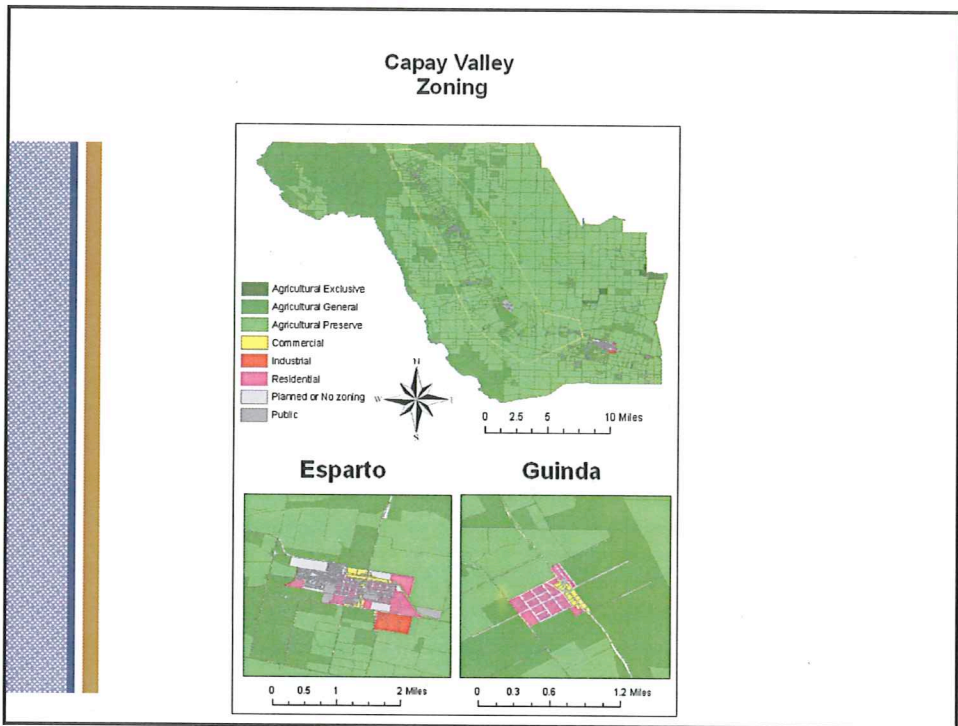
The Energyshed: the Environment

Yocha Dehe Wintun Nation

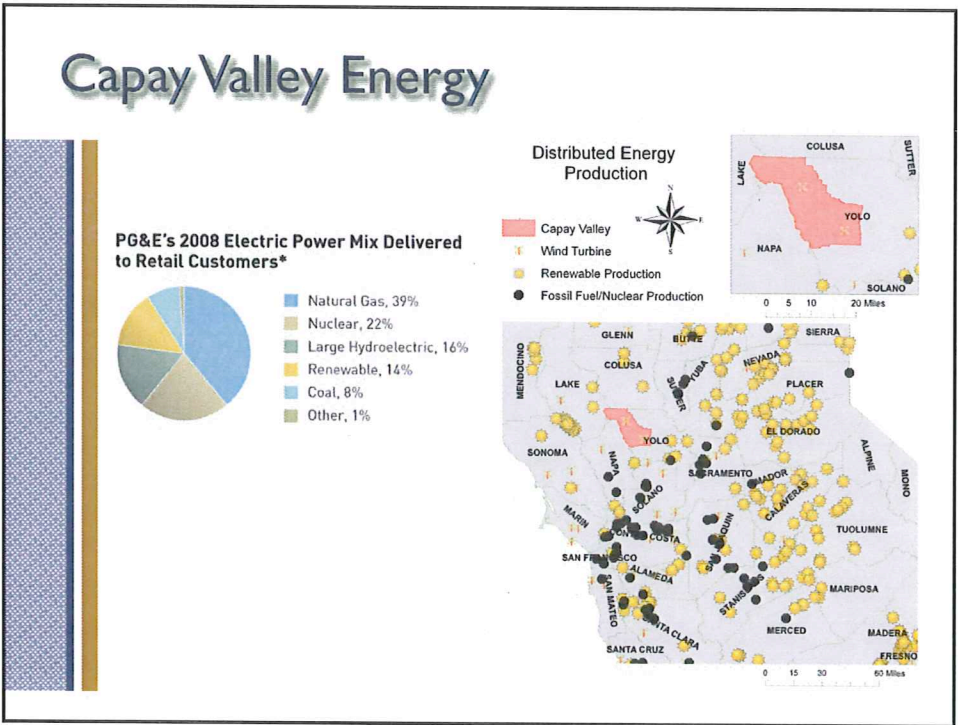
- Support to Yolo County for Clean Buses
- 1200 ac into conservation easements
- Solar array (250kW)
- Thermal energy storage
- Tertiary treatment with membrane
- 250 ac certified organic farming
- Invasive species removal, Cache Creek
- ...



Capay Valley Zoning

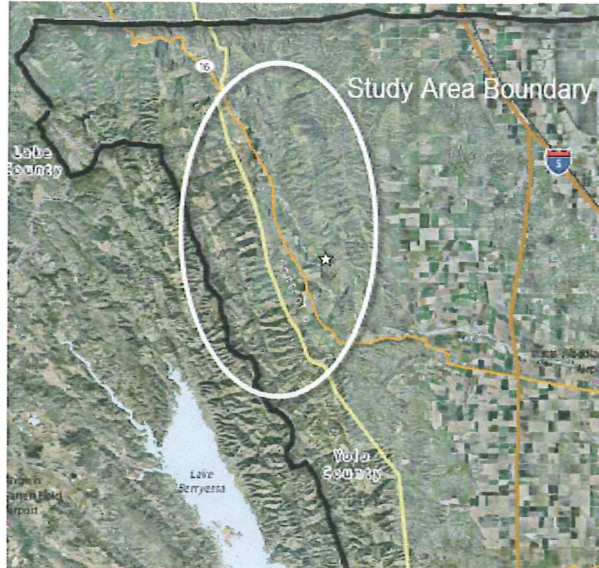


Capay Valley Energy

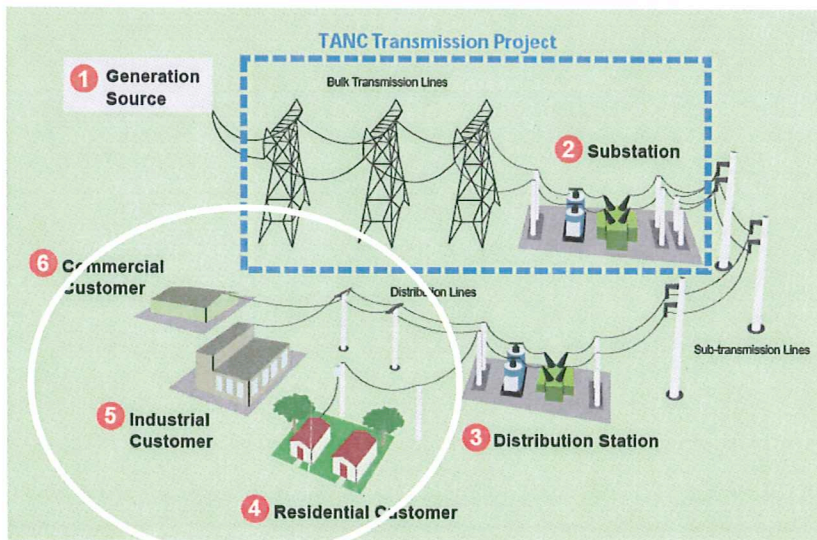


Faces of the Energyshed:

Security "Energy Independence"



It's the critical 'backbone'



SMUD service (but CValley is serviced by PG&E)

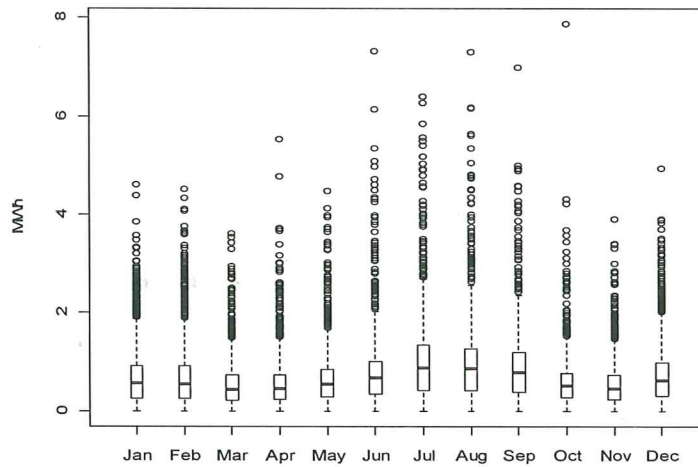
Basic Objectives

- Create an energy use inventory
- Estimate GHG emissions
- Identify potential “local” renewable resources
- Sketch out potential implementation models

Participation

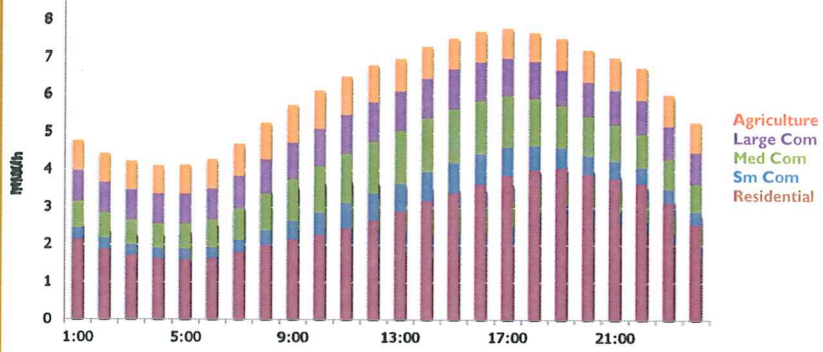
Farmers
 Commercial Sector
 Science Club
 Esparto School District
 Cache Creek Conservancy
 Yolo County Sup
 PG&E Representative
 BLM
 Tribe
 Water District
 General Public

Inventories of Energy Use (PG&E)



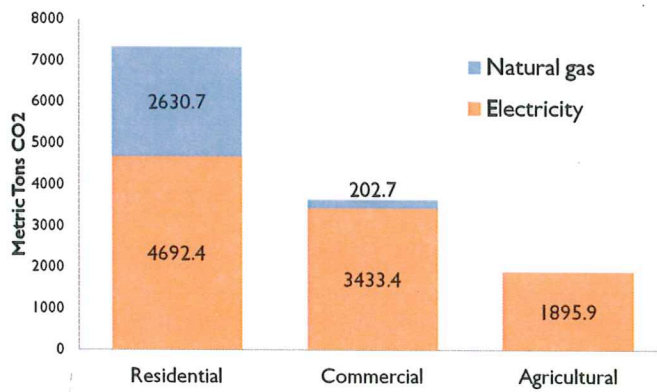
Avg Monthly Residential Electricity Use

Load Profiles

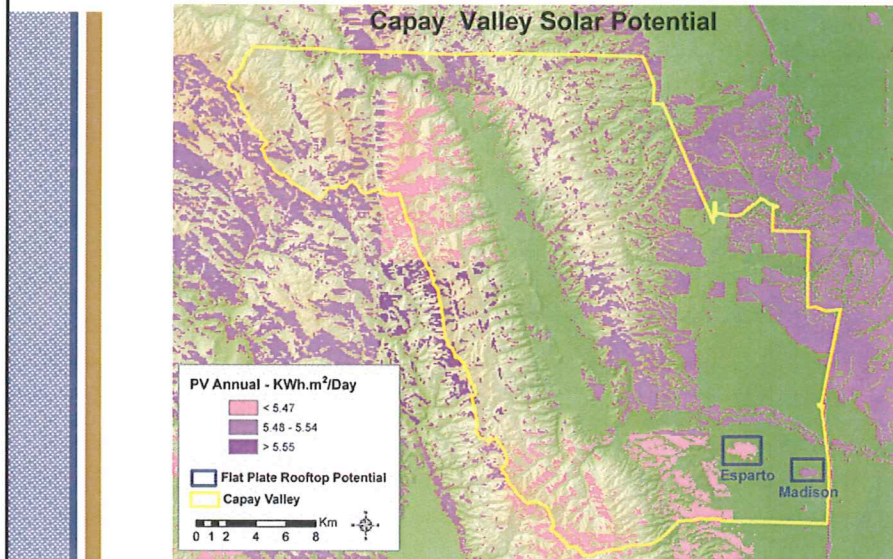


Daily Load Profiles (Jan, 2008)

GHG Emissions

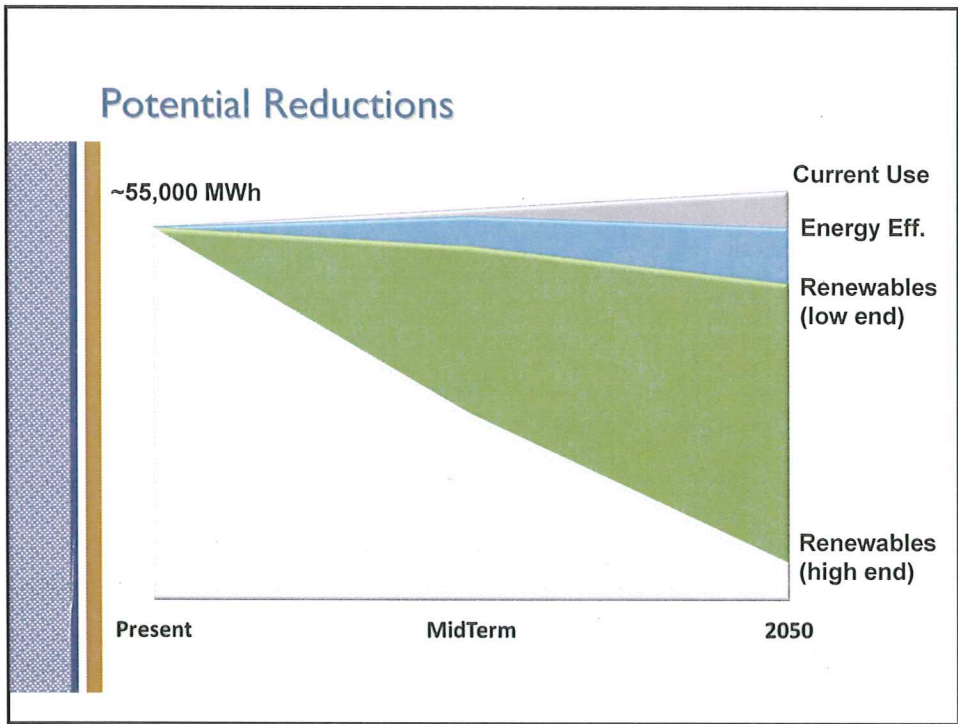
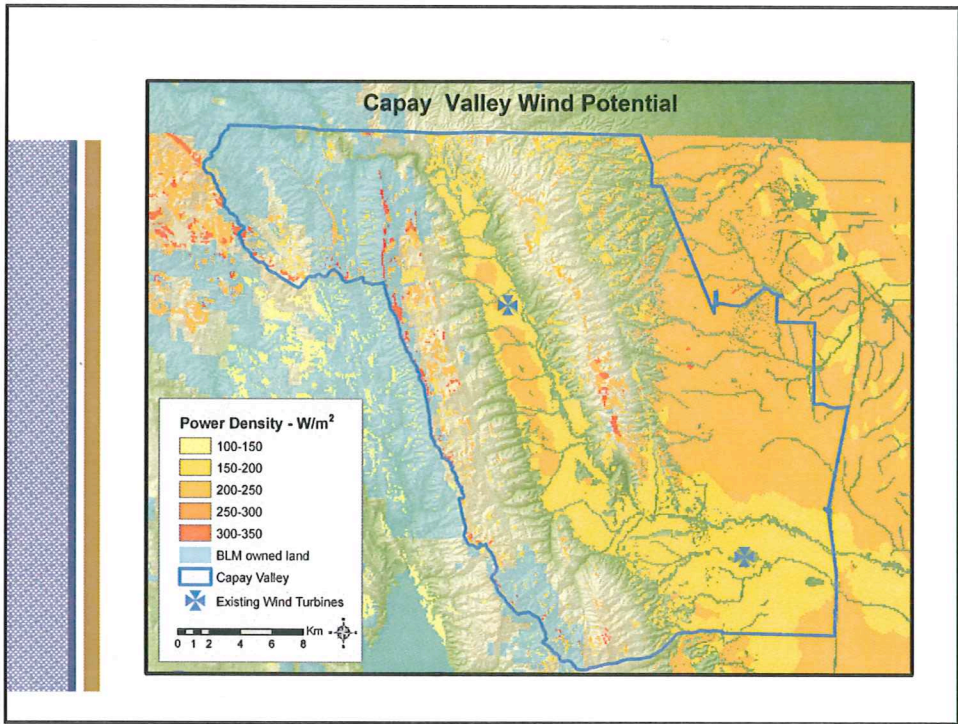


Preliminary Results: Potential



Preliminary Results: Potential (Esparto Rooftop)





Possible Models to Organize Around

- Lots of rural electric cooperatives (~900; 37m)
 - Wholesale food distribution systems (~500)
 - Credit Unions (~10,000; 80m)
 - Phone cooperatives (~272; 2m)
 - Housing co-ops (~1.5m)
- forest co-ops,
cheese co-ops,
wind co-ops,
conservation co-ops ...

Two Existing Models

- Community Choice Aggregators (AB 117)
- Using Applicable Feed-In Tariffs (AB 1969)

Community Choice Aggregation (AB 117)

Local governments can organize (aggregate) to provide energy

Motivations: increased local renew's, rate stabilization

Opt-Out v. Opt-In (AB 1890)

The infrastructure of buying electricity from a CCA



GENERATION	TRANSMISSION	DISTRIBUTION	CUSTOMERS
→ provided by CCA or investor-owned utility	→ remains utility only → lines open to all suppliers	→ remains utility's responsibility → service remains the same → rates remain regulated	→ choose generation suppliers

MARIN CLEAN ENERGY a program of the MARIN ENERGY AUTHORITY

Home Deep Green News FAQ Other CCAs Calendar Key Documents

The FACTS about Marin Clean Energy

Renewable By Choice

- Increased renewable energy supply
- Increased energy independence
- Increased price stability
- Reductions in greenhouse gas emissions
- Increased local control

marin energy authority

QUICK LINKS

- ▶ Rates
- ▶ Billing
- ▶ Rules & Policies
- ▶ Light Green Product
- ▶ Deep Green Product
- ▶ CPUC/Regulatory
- ▶ Net Metering
- ▶ MCE Brochure
- ▶ Opt-Out
- ▶ Espanol

Renewable Energy - It's your choice

Marin Clean Energy is designed to serve your priorities. It allows electric consumers to choose non-polluting renewable energy, lower Marin's greenhouse gas emissions, reduce our dependence on imported fossil fuels, foster development of local green power generation and clean technologies, and protect our homes and businesses from uncertain fuel prices.

You now have a choice of electricity with nearly twice the renewable energy content than you currently receive - at the same rates you currently pay. You also have the choice of 100% renewable energy at a slightly higher price.

What Is Marin Clean Energy?

Marin Clean Energy (MCE) is a renewable energy alternative to PG&E's electric supply that will soon be available to Marin customers. MCE is responsible for sourcing the power and purchases the energy supply while PG&E continues to deliver the energy, maintain and repair transmission lines, and provide customer service and billing.

The Marin Clean Energy Program supplies nearly twice the renewable energy content that you currently receive - at the same rates you currently pay.

facebook

Why Choose Marin Clean Energy?

Feed-In Tariffs (AB 1969)

- PG&E purchases power from customers who install renew gen up to 1.5 MW using a purchase power agreement
 - Different from net metering (export=backwards)
 - PG&E pays the “Market Price Referent”, which established through the RPS, adjusted for time of day (10yr=\$0.08)
 - PG&E does not have to contract when they meet:
 - 104.6 MW installed by public water/wastewater customers
 - 104.6 MW installed by others
- As of June 2010, PG&E had remaining:
 - 75 MW (all others)
 - 105 MW (public water/wastewater)

FiTs are controversial

Critics argue:

- Not a market based process
- Can rapidly deplete resources (subsidies); boom-bust cycles
- Downward pressure on costs not passed through the chain to consumers = inefficiencies
- High penetration can create grid challenges

Advocates argue:

- Fastest way to bring clean energy online
- Reduces regulatory/economic barriers to ownership
- Most cost-effective way to bring renew online
- Reduces risks

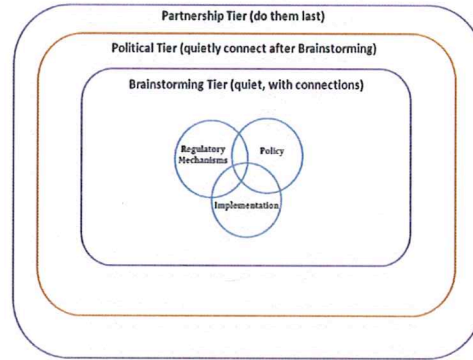
Next Steps: Models and Partners

Models Workshop (Done)

- Bring in experts, brainstorm possible new models, ext. to current (CCA, FiTs)

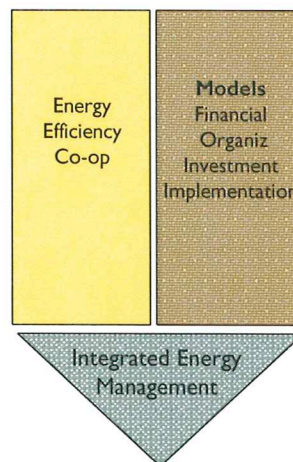
Partners

- Political: Senate, Assembly, Federal
- Operational: UC Davis, Yolo County, YC Housing



Potential Next Step: An Integrated Energy Service?

Pilot formation of an energy efficiency organization that is managed within the Valley



Pilot demonstration projects to begin to develop renewable potential