



PG&E

Monterey County Permitting Symposium

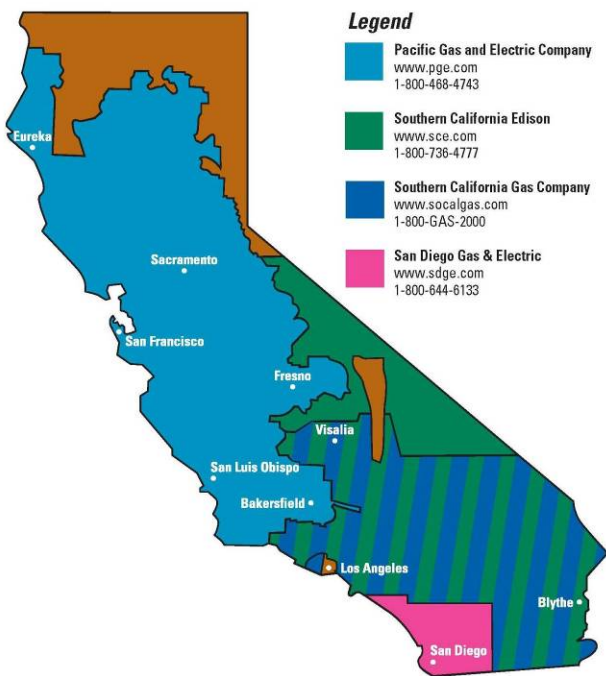
February 23, 2009



About PG&E

- Serve 5% of the U.S. population but emit less than 1% of the total CO2 emitted by the utility sector
- Connected more solar customers than any other utility in the country – roughly 50% of total solar installed

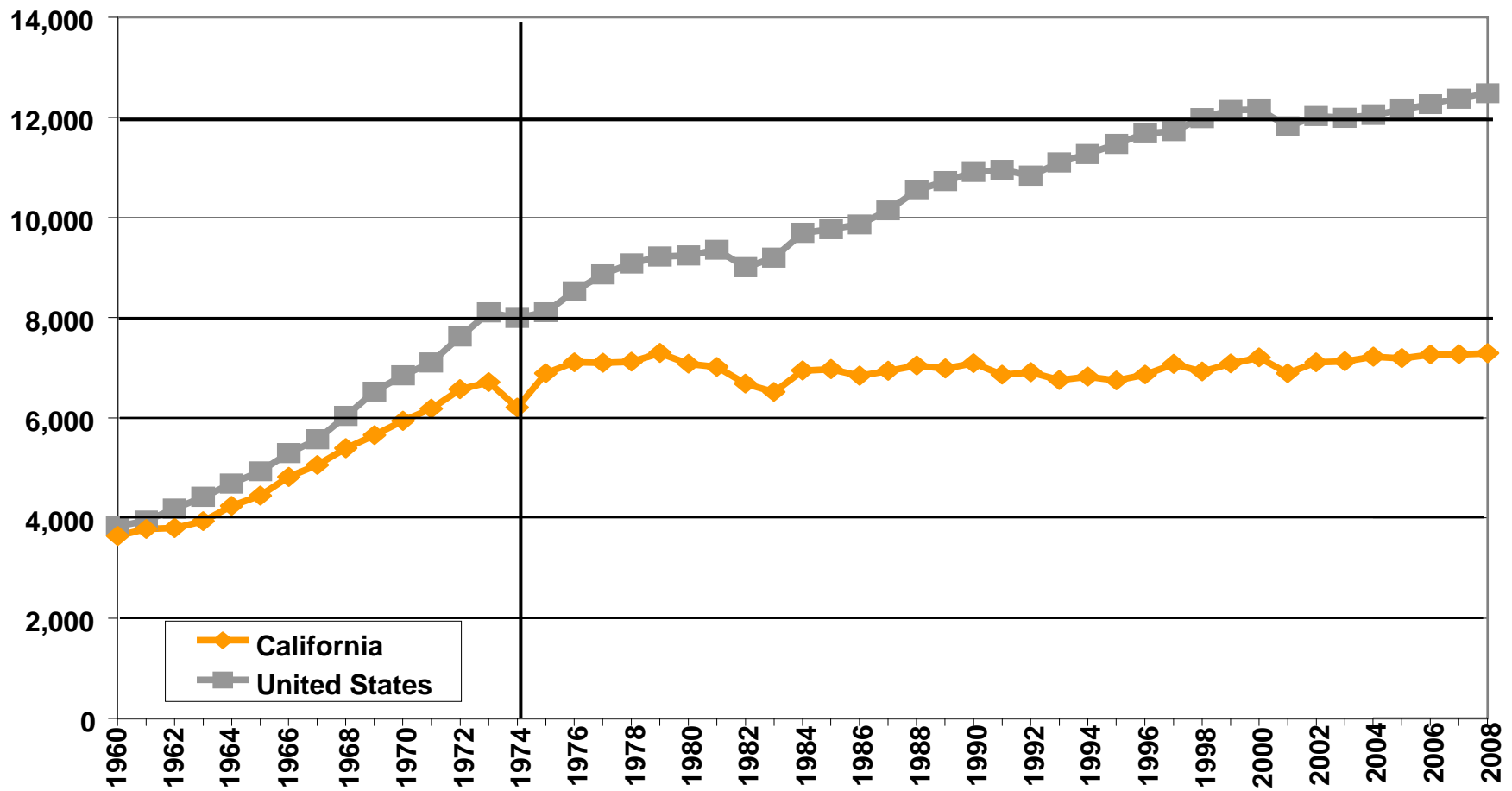
Utility Service Areas



Employees	19,800
Electric and gas distribution customers	5.1 MM electric 4.2 MM gas
Electric transmission circuits	18,610 miles
Gas transmission backbone	6,136 miles
Owned Electric generation capacity	6,000+ MW
Total Peak Demand	20,000 MW

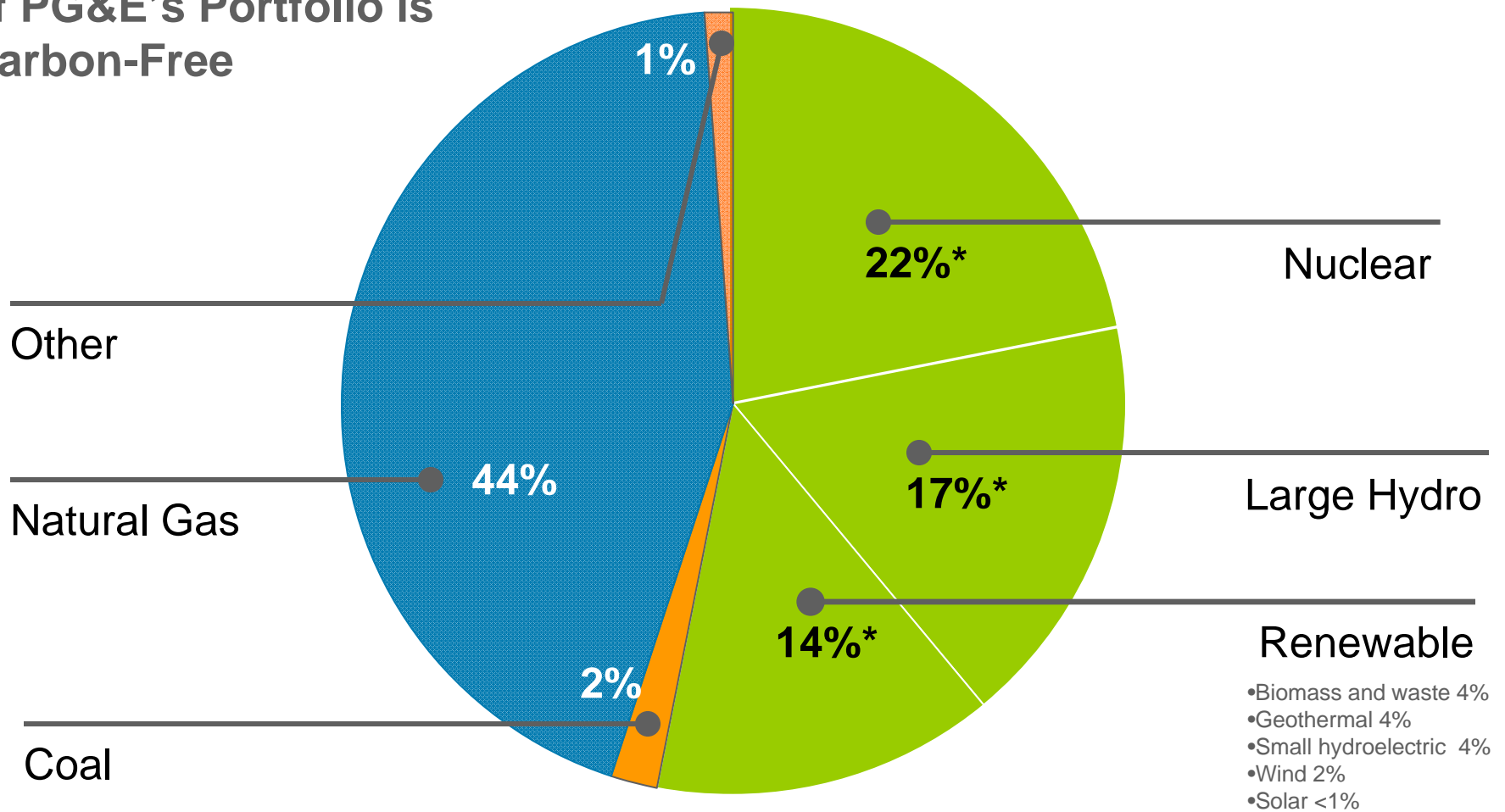
Committed to Energy Efficiency

Over the past 30 years, California per capita energy use has remained relatively flat compared to the 50% increase in U.S. per capita energy use.



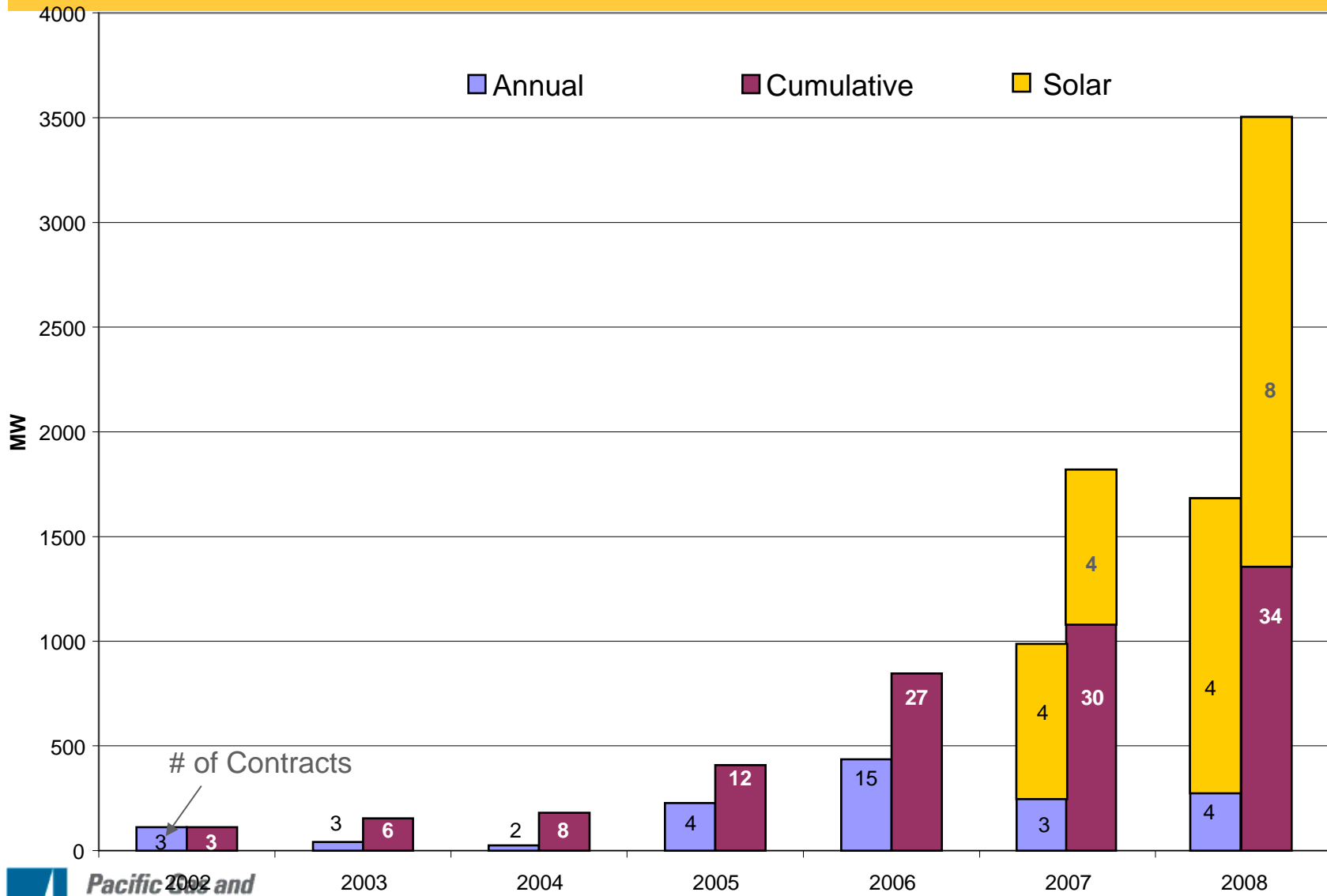
PG&E's 2008 Portfolio Mix

On average, more than 50% of PG&E's Portfolio is Carbon-Free



Note: Delivery mix includes all of PG&E's owned generation plus all of PG&E's power purchases

Aggressive Contracting for Renewables



What is Distributed Generation?

DG IS:

- Generation connected at *distribution* voltage (not *transmission* voltage)
- 1 kW to 20 MW
- Customer generation
- Voltage support
- Local reliability
- Merchant plant
- Utility plant

DG Technologies:

- Solar PV
- Solar thermal
- Wind
- Fuel Cells
- Dairy/landfill/waste biogas
- Biomass
- Distributed storage

PG&E Solar Activities

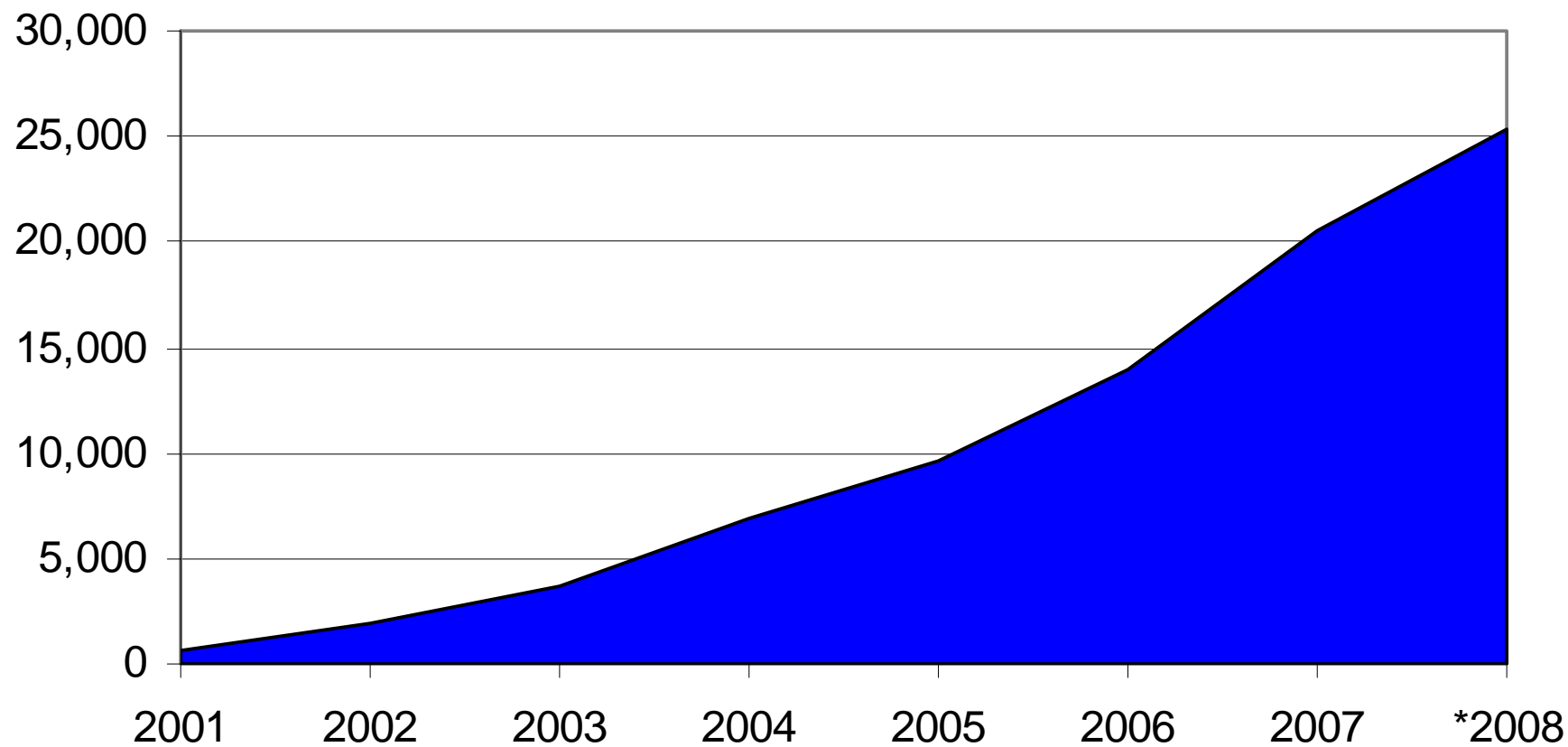
- Management of the California Solar Initiative
- Management of the New Solar Homes Partnership
- Partnering with Habitat for Humanity to build solar communities
- Teaching children through our Solar Schools program
- Creating clean solar energy at our own facilities
- Helping create Major League Baseball's first solar ballpark
- Connected more solar customers than any other utility in the county – roughly 50% of total solar installed

Other Support for Solar

- Net Metering
 - Exports to utility grid are valued at retail electricity rate
 - Capped at 2.5% of utility peak
- No standby charges
- No interconnection study fees
- Exemption from Nonbypassable Charges
- Renewable Energy Credits

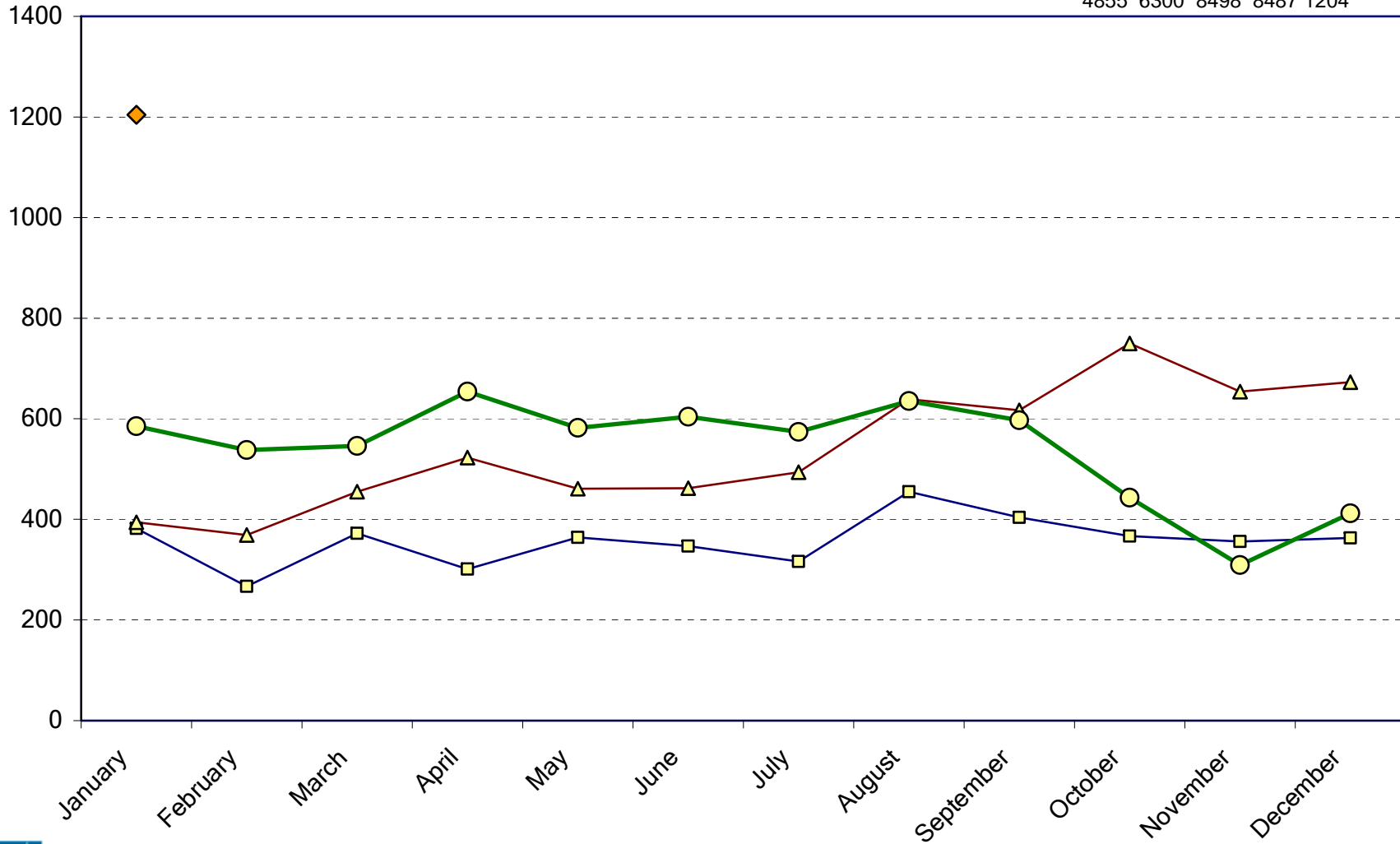
Cumulative PG&E Solar Interconnections

- ❖ 28,000+ grid tied solar installations
- ❖ Roughly 50% of all grid tied in US
- ❖ More than 280 MW



Total NEM Interconnections

Total Interconnections:
 2005 2006 2007 2008 2009
 4855 6300 8498 8487 1204

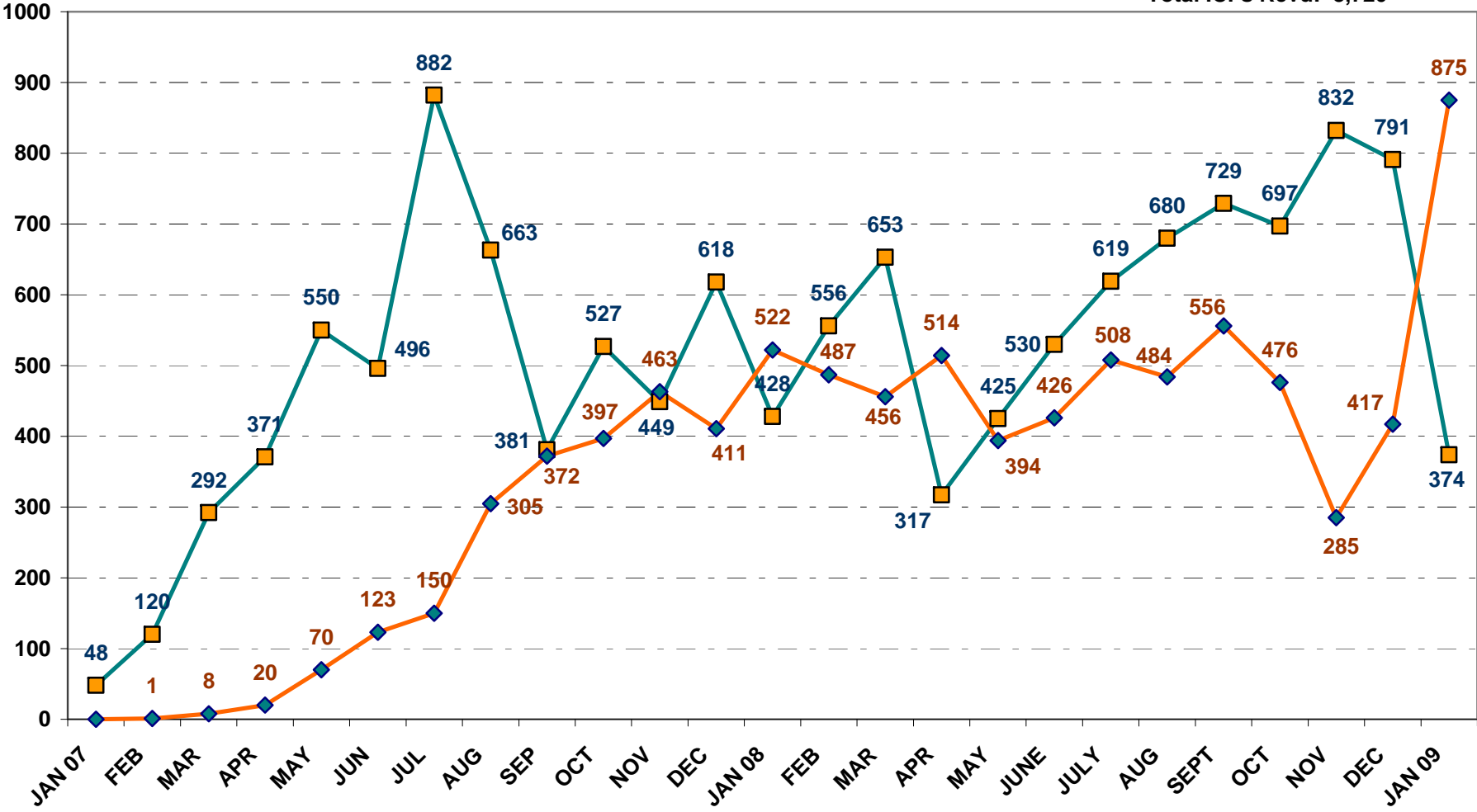


CSI – Current Snapshot

- **12,570 applications;**
- **Paid out more than 7,700;**
- **Represents more than 185 MW;**
- **Committed to more than \$420,000,000 in incentives**
- **Avoiding roughly 82,000 tons of CO2 emissions**

CSI Applications: Received & Claims

Total Received: 13,031
Total ICFs Rcvd: 8,720



SmartMeter Timeline

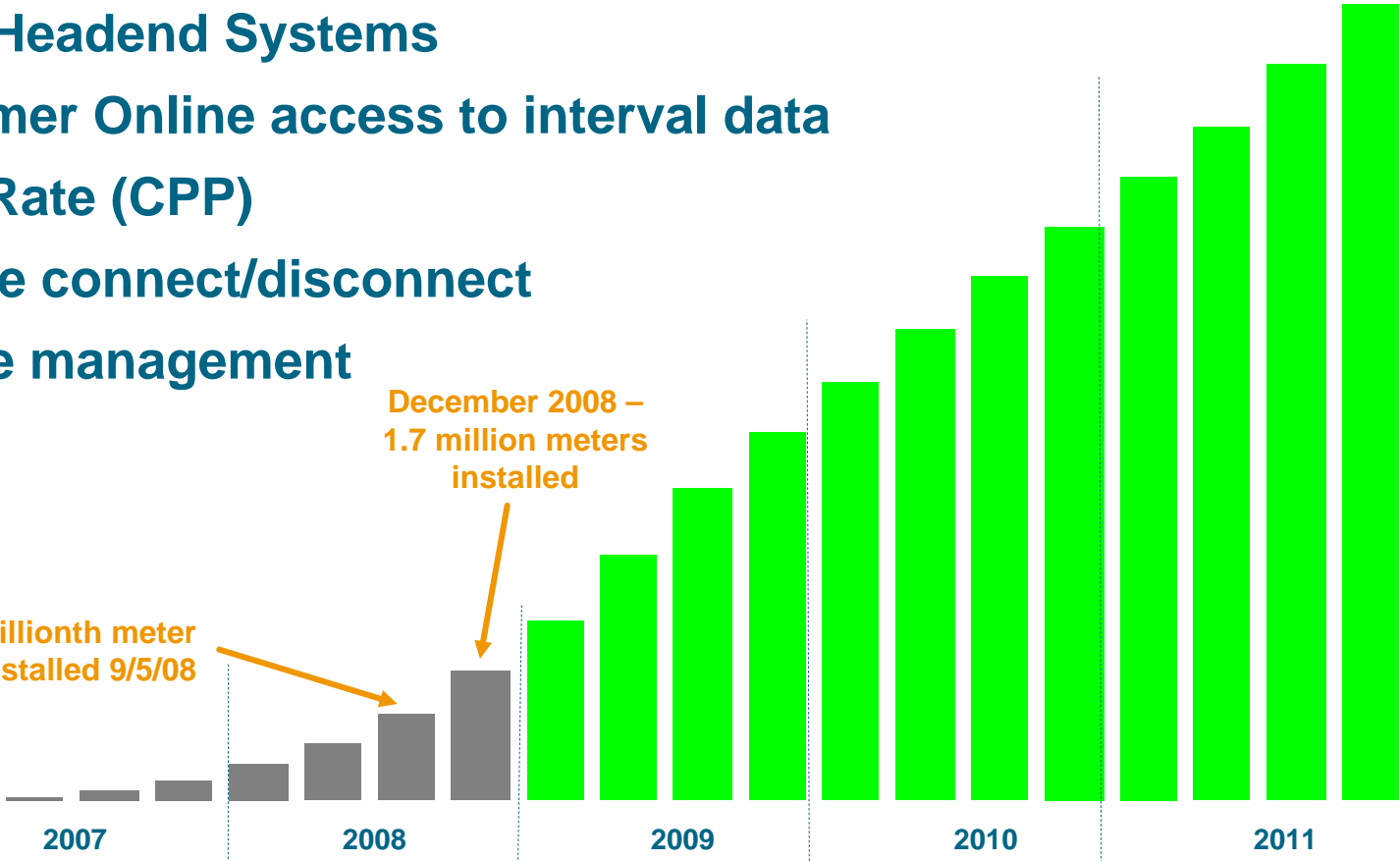
- 2005: 5000 Meter Pilot
- 2006: Full Deployment Launch
- 2007: MDM, Headend Systems
- 2008: Customer Online access to interval data
SmartRate (CPP)
- 2009 Remote connect/disconnect
Outage management

10 million meters

2005 – Pilot
2006 - Full deployment launch

Millionth meter installed 9/5/08

December 2008 – 1.7 million meters installed



Customer Home Area Network (HAN)

Customers will use energy management systems (EMS) to tie together HVAC, IP-enabled appliances and distributed generation into integrated Home Area Networks (HAN)

The **SmartMeter** HAN gateway enables PG&E to communicate with the customer's home area network



Role of local governments in solar project cycle

- Four actors in solar project cycle
 - Solar installer, Local Gov't (building + fire dept.) and Utility
- Local Governments can play an important role in enabling solar
 - Reductions in permitting costs directly effect the economics of solar projects
 - Local building departments help to assure that solar systems are properly installed and safe
- Close coordination between building and fire dept's, solar industry and Utilities will benefit everyone
 - Streamlined permitting processes and training can reduce administration costs for all parties concerned
 - Significant opportunities exist to reduce transaction costs and improve safety

Local Governments and DG opportunities

- AB 811 – (Levine, 2008) authorizes cities and counties to create property tax assessment districts that homeowners can opt into to finance their solar system
 - A local government can raise bond, which participants borrow from to pay for their solar system and then pay back through their property tax.
 - Has zero fiscal for city yet is a powerful tool to promote construction of solar projects
 - City of Berkeley and City of Palm Desert have programs. City of San Diego and City of San Francisco are actively considering programs
- AB 2466 – (Laird, 2008) allows an eligible local government to apply excess renewable power produced from its customer account (“Generating Account”) as energy credits against charges for power delivered to one or more of its other accounts (“Benefiting Accounts”).

Who does AB 2466 applies to?

- AB 2466 applies to local governments such as:
 - Cities or counties,
 - Special districts,
 - School districts,
 - Political subdivisions, or
 - Other local public agencies, if authorized by law to generate electricity
- AB 2466 does not include:
 - The State of California,
 - Any agency or department of the State, or
 - A joint powers authority

What's In Store for 2009

- Continue Simplification
 - Form simplification
 - More on-line application enhancements
 - Looking at ways to tie with interconnection process
 - Simplify, Reduce Costs
 - Create means to continue momentum through downturn
- Program review for CSI program
 - Incentive levels and energy efficiency
 - Effectiveness of program
- Outreach and education
 - “Cross the chasm” for the mainstream
 - Lifecycle of ownership
 - Partnering with CAL SEIA, Solar Tech and others
 - Building the “Path to Solar”



Thank You

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