



The Role of SGIP in a Sustainable and
Affordable Energy Future

Marcel Hawiger, Energy Attorney

TURN – A Consumer Advocacy Organization

- Representing Residential and Small Commercial Utility Customers Since 1973
 - Founded by legendary advocate Sylvia Siegel
 - Approximately 20,000 members statewide
 - Alliances with numerous consumer and environmental justice groups
- Non-Profit Consumer Advocacy
 - 15 staff, including 7 energy/telecom attorneys, community organizer, etc.
- Advocacy
 - Litigation at the California Public Utilities Commission
 - Legislative work in Sacramento
 - Community organizing with allies



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- SGIP has gone through three main phases since 2001, including valuable modifications in SB 412 and CPUC Decision 11-09-015 implemented in 2012.
- Presently, SGIP predominantly subsidizes Bloom Energy, GE, Tesla and Core States Construction. The primary technologies are fuel cells using natural gas and battery storage associated with solar PV systems.
- SGIP customer-side projects do not assist with current system needs for flexibility and ramping, and are very expensive methods of GHG reduction. Energy efficiency, utility renewable energy procurement and the new mandate for utility storage procurement are all more cost-effective.
- Residential ratepayers do not benefit from subsidies.
- No evidence of reduced system costs (market transformation).
- SGIP should not be reauthorized, or at minimum funding should be reduced and eligibility limited to renewable technologies.



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In 2001-2006, SGIP Promoted Solar PV and Internal Combustion Engines

| Technology | Incentive Paid | Capacity [kW] | \$ per KW |
|---------------------|----------------------|----------------|----------------|
| Photovoltaic | \$478,052,658 | 144,311 | \$3,313 |
| Internal Combustion | \$86,720,611 | 145,325 | \$597 |
| Fuel Cell Electric | \$32,239,816 | 10,350 | \$3,115 |
| Microturbine | \$20,094,826 | 22,968 | \$875 |
| Gas Turbine | \$6,564,285 | 26,451 | \$248 |
| Fuel Cell CHP | \$5,617,357 | 2,250 | \$2,497 |
| Wind Turbine | \$993,171 | 875 | \$1,135 |
| Grand Total | \$630,282,724 | 352,529 | \$1,788 |



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In 2007-2010, SGIP Became a Subsidy Mechanism for Fuel Cells Using Natural Gas

| Technology | Incentives (2007-2013) | Rated Capacity [kW] | \$/kW |
|----------------------------|------------------------|---------------------|----------------|
| Fuel Cell Electric | \$236,871,580 | 64,510 | \$3,672 |
| Fuel Cell CHP | \$44,197,500 | 13,715 | \$3,223 |
| Wind Turbine | \$26,057,676 | 21,888 | \$1,191 |
| Internal Combustion | \$9,601,600 | 11,940 | \$804 |
| Storage | \$5,904,444 | 2,914 | \$2,027 |
| Microturbine | \$2,022,200 | 2,061 | \$981 |
| Pressure Reduction Turbine | \$625,000 | 500 | \$1,250 |
| Gas Turbine | \$600,000 | 4,394 | \$137 |
| Grand Total | \$325,880,000 | 121,921 | \$2,673 |



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SGIP 2007-2010: Subsidy Program for Bloom Energy Corporation

Manufacturer

Incentives

(2007-3Q2013)

Bloom Energy Corporation

\$170,068,200

Fuel Cell Energy

\$43,875,000

UTC Power / ClearEdge

\$16,502,000

GE Energy

\$10,801,000

Mitsubishi Power Systems

\$5,250,000

All Others

\$18,912,476

Total

\$265,408,676



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SGIP From 2011: Subsidy for Bloom Energy,
GE Energy and Tesla Motors

| Manufacturer | SGIP Incentives In Progress |
|--------------------------|------------------------------------|
| Bloom Energy Corporation | \$116,676,100 |
| GE Energy | \$34,723,660 |
| Tesla Motors Inc | \$26,184,124 |
| Stem Inc | \$9,362,448 |
| Caterpillar | \$6,293,000 |
| All Others | \$62,667,184 |
| Total | \$255,906,516 |



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Market Transformation: NO Evidence of Declining Costs for Fuel Cells

Fuel Cell Incentives and Costs \$/kW





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SGIP – Residential Customers Pay In, But Get No Benefits

| | 2007-2013 | % Of Incentives |
|---------------|----------------------|------------------------|
| | PAID | |
| Commercial | \$187,632,676 | 70.70% |
| Government | \$37,089,000 | 13.97% |
| Non-Profit | \$955,800 | 0.36% |
| Residential | \$712,500 | 0.27% |
| (FIELD blank) | \$39,018,700 | 14.70% |
| Total | \$265,408,676 | |



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But SGIP Is Not Cost Effective

- Emissions reductions cost about \$311/ton, versus carbon price of about \$10-\$15/ton presently.
- Peak demand reduction benefits of only \$7 mm
- Most of the peak reductions and energy shown in the Itron Report are from the legacy dirty internal combustion engines. Only 30% of total energy in 2012 from renewable projects.
- Incentives cost about \$2,200/kW for systems that cost about \$6000-\$8000/kW; compared to system costs for large wind and solar of \$2000-\$4500/kW.
- Little evidence of decreased costs.



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Is There A Continuing Need for SGIP?

- Peak Demand Reduction for Reliability
 - System peak demand is not a key reliability issue due to “resource adequacy” rules
 - Key problems – addressing steep ramp due to solar output (duck curve) and meeting local reliability due to OTC retirement and SONGS
 - SGIP projects not useful to address these problems. Customer-side projects provide no flexibility benefit to CAISO.
- GHG Reduction
 - SGIP funds the most expensive technologies (fuel cells and batteries) that achieve lower GHG reductions than renewables (solar/wind/etc.)
- Distributed Generation - Why should residential ratepayers pay for fuel cells and batteries for state agencies and private companies? Why should electric ratepayers subsidize Bloom, GE, Tesla and Core States Construction with no equity stake?
- Wholesale procurement methods for all technologies – RAM, Storage Procurement, RPS – better use of ratepayer money.



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SB 412 Improved SGIP Starting in 2012

- Reduced incentives for conventional CHP burning fossil fuels
- Required 50% of payment to be based on performance for projects > 30 kW
- Required systems to result in actual reduction of GHG emissions
- Eliminated the “directed biogas” subsidy for Bloom
- 40% limit on allocating available funding to single manufacturer