

Financial Incentives and Programs for Small Hydro in California



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Government Subsidies & Finance



- 1603 Treasury Grant –30% of project cost
- IRS Section 45 (PTC) and Section 48 (ITC)
- Bonus and Accelerated Depreciation
- California Small Generator Incentive Program
 - In-conduit (pressure reducing) hydro (\$1.25-watt)
 - Energy storage (\$0.50-watt)
- Department of Energy Hydrokinetics Grant

Generation Options/ Payments



- Use Electricity Yourself
 - Self Gen
 - RES-BCT (Renewable Bill Credit Transfer)
 - FIT (Feed in Tariffs)
- Sell Electricity to Utility
 - FIT (Feed in Tariffs)
 - RAM (Renewable Auction Mechanism)
 - RPS (Renewable Performance Standard)

Use Electricity Yourself

	Self Gen	RES-BCT	FIT
Description	Use all electricity generated on site	Generate one place – get bill credit at other locations	Sell excess generation to the utility
Interconnection	NA	Rule 21	FERC SGIP
Size limits	Below minimum demand	1MW	1.5MW (3MW under SB32)
Incentives	none	CSI and SGIP	none
RECS	You keep	You keep	Utility owns excess generation RECS
Comments	Full retail price credit	Utility generation component of rates only	Full retail price for used electricity, FIT price for sold electricity

Sell Electricity To Utility

	FIT	RAM	RPS
Description	Sell electricity to utility under fixed prices	Auction mechanism	RFO mechanism, bilateral contracts
Interconnection	FERC SGIP	WDAT / CAISO	WDAT / CAISO
Size limits	1.5MW (3 for SB32)	1-20MW	unlimited
Incentives	N/A	N/A	N/A
RECS	Utility owns	Utility owns	Utility owns
Comments	Tariff/standard contract prices	Have to win auction, Standard contract	Have to win RFO

Self Generation



- Generate your own electricity on site
- Interconnection – not applicable
- Size – have to size generation at less than the minimum electricity demand on the site (no export to utility)
- Incentives – CSI and SGIP
- RECS – you keep
- Price – full retail rate

RES-BCT

Renewable Energy Service Bill Credit Transfer



- Generate at one location, get bill credits at other locations (up to 50). Have to be government entity.
- Interconnection – Rule 21
- Limits – 1 MW
- Incentives – CSI and SGIP
- RECS – you keep
- 225 MW statewide limit
- Price - Bill credit limited to energy charge of applicable tariff
 - Can get up to \$1.20/kWh during Peak Day Pricing

FIT (Feed In Tariff)



- Sell electricity to the utility
 - Full Buy/Sell or Excess Sales: customer has the choice of either full buy/sell or excess sales. The excess sales option first offsets load and then exports any excess generation to the utility
- Interconnection – FERC Small Generator Interconnection Process
- Limits – 1.5 MW per account (3 MW under SB32)
- Incentives – not allowed to use CSI or SGIP
- RECS – utility owns purchased electricity RECS
- Standard contract (tariff) and established prices (MPR)
- 230 MW statewide reserved for water agencies
- Contract Term: 10, 15, or 20 years.

RAM (Renewable Auction Mechanism)



- Sell all electricity to the utility
- Interconnection – CAISO WDAT
- Limits – under 20 MW per account
- Incentives – not allowed to use CSI or SGIP
- RECS – utility owns
- Auction – twice a year for two years
- 1000 MW total statewide
- Price – determined by auction
- Standardized contracts (20 year term)

RPS Renewable Portfolio Standard



- Sell all electricity to the utility
- Interconnection – CAISO WDAT
- Limits – unlimited
- Incentives – not allowed to use CSI or SGIP
- RECS – utility owns
- Auction – Annual RFO
- Price – determined by RFO
- Standardized or bilateral contracts
- (33% by 2020)
 - Pacific Gas and Electric (PG&E) -14.4%
 - Southern California Edison (SCE) - 17.4%
 - San Diego Gas & Electric (SDG&E) - 10.5%

TRECs (Tradable Renewable Energy Certificates)



- Adopted January 13, 2011. Tradable renewable energy credits represent the renewable attributes associated with renewable energy generation. They can be purchased by a utility and traded separately from the underlying energy produced by a renewable generating facility. These energy credits can then be applied, by the utility, toward their renewable energy compliance goals.
- Key aspects of the decision include:
 - PG&E, SCE, and SDG&E may meet no more than 25% of their RPS compliance requirement with TRECs. This limitation sunsets on December 31, 2013.
 - All TRECs must be associated with RPS-eligible energy generated on or after January 1, 2008.
 - All TRECs must be tracked in WREGIS to be used for RPS compliance.
 - In order to be used for RPS compliance, TRECs may be retained in active sub-accounts in WREGIS for no more than three calendar years (inclusive of the year in which the electricity associated with the RECs was generated) after the electricity associated with the RECs was generated.
 - TRECs for which an IOU pays more than \$50/TREC (essentially \$50/MWh) may not be used for RPS compliance. This price cap will sunset on December 31, 2013.



Summary

- There are a number of programs and incentives for small hydro development
 - If you can use the electricity yourself (getting full retail cost credit and keeping RECS) that is generally the most economic option
- Keep current on the hydro legislation
 - it may have big consequences
 - Like removing the need to get a FERC exemption for in-conduit
- Monitor the host of new turbine/generators that are being developed
 - Variable speed
 - More efficient small turbine/generators