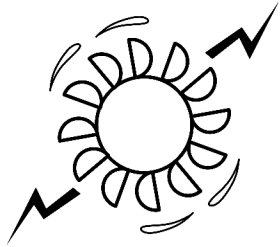


# Power Contracting for Legacy Small Hydro Facilities in PGandE's Service Territory

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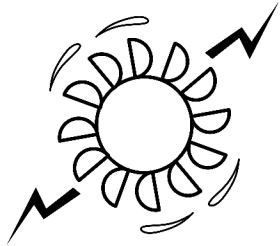
[www.henwoodassociates.com](http://www.henwoodassociates.com)

March 19, 2013



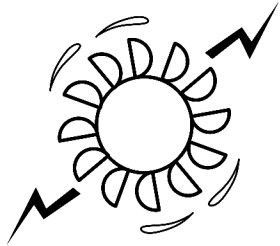
# New Contracts Required in the PGandE Territory

- In the 1980s a number of small hydro projects, “Qualifying Facilities”, were developed in California in response to federal law and encouragement by the State of California
  - It is still the policy of the state to encourage electrical generation from small distributed generation that qualifies as “eligible renewable energy resources”
- These small hydro projects
  - have all been subject to very rigorous environmental review and controls
  - have generated pollution-free renewable energy for many years and can do so for many more years
  - are an eligible renewable energy resource meeting RPS standards, and produce the Category 1 renewable energy credits most sought after by the state
- Most projects had 30 year contracts that are now expiring
- Between now and Sept 2020 50 projects  $\leq$  3 MW in size, totaling 41.2 MW need new contracts
  - Based on analysis of “*PG&E Cogen and Small Power Production Semi-Annual Report, January 2013*”



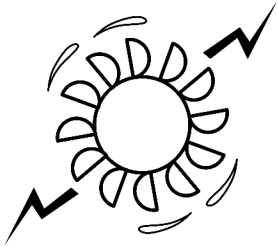
# Power Contract Options with PGandE are Limited

- “Legacy QF” style contacts are available
  - Energy prices are tied to spot natural gas prices, currently yielding electric energy prices which are:
    - 67% of average nominal price 1980-1985
    - 34%, in 1980 \$, of the 1980 – 1985 price
      - Based on PGandE published SRAC and Producer Price Index-Commodities, SWUSOP3000
      - see chart on slide 8
  - Plus a small adder, approximately 10% of the energy price, for capacity
    - HAI analysis of our actual contractual performance and published rates for legacy contract capacity prices
- FiT (Feed in Tariff) contract, when available
- Interconnect with PGandE and access the ISO market



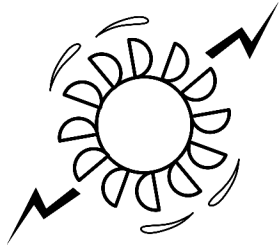
# Legacy contract

- Contractual mechanism may be workable
  - Except for exorbitant scheduling fees that should not be required in many cases
  - And a massive \$10 million insurance requirement for all projects including FiT eligible under 3 MW projects - over three times that required of RAM contracts for projects up to 20 MW
- Price levels (Short-run Avoided Cost) are very low and afford little opportunity for ongoing viable operation
  - SRAC is tied to “market prices” for wholesale spot energy, which in the western US is generated with natural gas fired combined-cycle power plants virtually 100% of the time
  - Currently around 4.0 c/kWh including an allowance for Greenhouse Gas costs
- Spot prices are not an effective mechanism to encourage long run operation of generation facilities and discourages needed maintenance investment



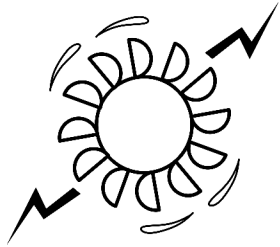
# FiT Contract has issues

- This contract is not available now and won't, in our estimation, be available until late 2013 or early 2014
- The starting price, 8.9 c/kWh, is just 74%, in 1980 \$, of the average price in 1980 – 1985.
  - This is a flat price, unchanging for 20 years, which provides no protection from underlying inflationary increases in project costs
  - The price does reflect, however, the contract price for new generation from larger RAM projects
- Costs to producers under the FiT contract are increasing due to a host of new requirements
- Access to the FiT contract is limited by MW allocated by the PUC/Legislature and by the auction mechanism set by the PUC
- We estimate 36.8 aggregate MW will be available to hydro and wind and spread out over 2 years
  - this means there will be more existing capacity (hydro 41.2 MW and wind 7.4 MW) seeking contracts than made available for multiple rounds of auction
  - With a resulting potential for drastic reductions in prices below the cost of producing new power from other sources – in contradiction to §399.20 of the Public Utilities Code



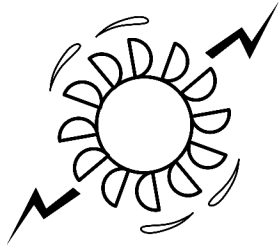
## The FiT contract has other potential cost issues due to new requirements proposed by Utilities

- 5 fold increase in insurance limits over current QF contract requirements
- Permanent collateral requirements
- Price penalties for over/under generation
- ISO jurisdiction costs for 500 – 999 kW projects
- QRE costs
- Telemetering costs
- Metering costs
- Bill preparation costs
- Forecasting costs



# The ISO market buyers

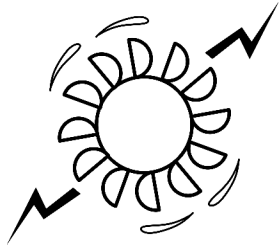
- Projects in excess of 500 kW can access the California ISO and hence a larger market.
- This entails additional CAISO costs, additional metering and telemetering equipment, and associated operating requirements
- The market for power with entities other than the California IOUs is highly uncertain and limited
  - That's why the IOU RAM auction is vastly oversubscribed – it is a better choice than other buyers accessible via the ISO
- Because of the market uncertainty this is a market of last resort – if any market at all.



# Proposed solution

- The CPUC should recognize these small hydro projects, which have no emissions and minimal environmental impacts, should continue in operation
  - These projects are currently included in RPS compliance calculations
  - The legislature's intent is to still encourage the operation of these projects which provide jobs, property taxes, CO2 offsets, and water rights fees to the State of California
- Make the FiT contract available as a viable option by:
  - Utilizing PG&E's existing FiT contract form until a new contract is approved by the CPUC
  - Allowing legacy small hydro to execute the contract at the time of contract eligibility i.e. 18 months prior to operating under the FiT contract
  - Initially use the Commission's starting price of the FiT contract for expiring contracts and adjust this price using the ReMat mechanism applied to new projects only.





# PGandE Short Run Avoided Cost (SRAC) - declining in real terms -

