

CHP Technical & Market Challenges -- *Manufacturer's Perspective*

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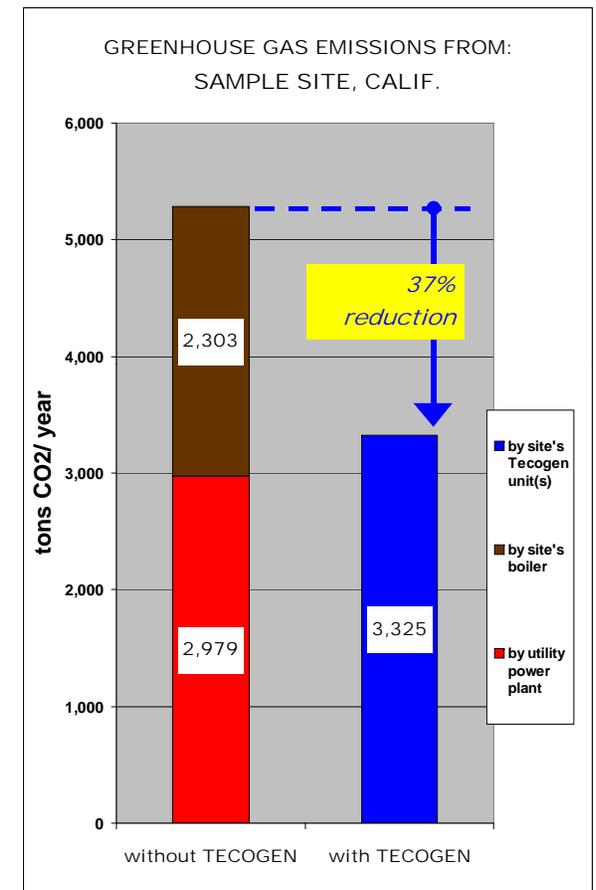
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Bill Martini, Tecogen Inc.
503-641-1768

Overview

- Small systems (<500 kW) present unique GHG-reduction opportunities
 - nursing homes, schools, community colleges, YMCA's, hospitals, community centers, apartments, pools, etc.
 - excellent thermal loads
- but face unique challenges
 - standardization required
 - complexity & project hassles are killers
 - customer payback-driven



Sample CHP System

COMMUNITY COLLEGE



Technical Challenges

Technology quite refined, but some tasks remain:



- Emissions
 - consistency, cost, maintenance, data-logging, etc.
- Maintenance
- Reliability
 - for achieving kW demand savings
- Internet/ controls interface
- Back up power capability
 - inverter-based system provides black-start capability, but further advances needed
- Absorption chiller
- Installation cost

Market Challenges



Market challenges still the bigger problem:

- Emissions
 - compliance procedures (testing, logging, reporting, etc.)
- Rule 21/ interconnection
 - relay requirements, non-export controls, relay testing, delays, etc.
 - CEC's Rule 21 certification procedure is defunct for non-solar DG
 - "simplified" interconnection isn't, even for NRTL-certified eqt.
- Electric utility tariffs
 - NEM, departing load charges, sellback contract, metering requirements, stand-by, reporting/paperwork reqts, etc.
- Unlevel playing field for competing DG technologies