

Clean Hydrogen Power Generation with Geologic Sequestration

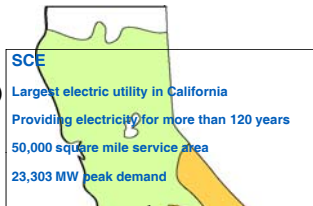
Rock Springs Wyoming

October 9, 2008



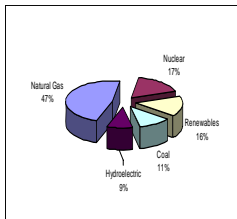
Southern California Edison

- ◆ SCE is:
 - an investor owned electric utility (EIX)
 - regulated by the California Public Utilities Commission
- ◆ SCE has 4.8 million customer accounts



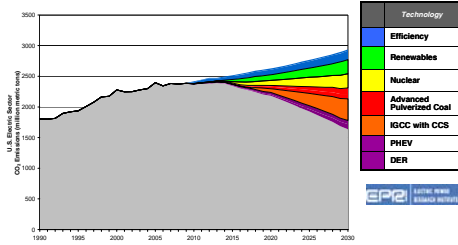
Investor Owned and Regulated

- ◆ SCE creates earnings for its stockholders through an authorized rate of return on undepreciated capital assets called the "ratebase"
- ◆ For all operating and maintenance expenses SCE files a General Rate Case seeking authority prior to incurring the expenses
- ◆ For emerging issues such as CHPG, SCE will file a stand alone application seeking approval to incur and recover costs



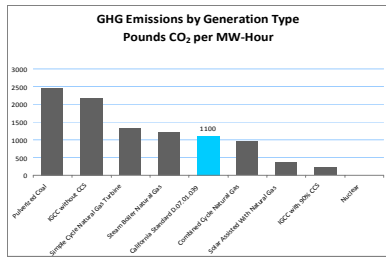
California Assembly Bill 32

- California Assembly Bill 32 - calls for reduction in California GHG emissions to 1990 levels by 2020



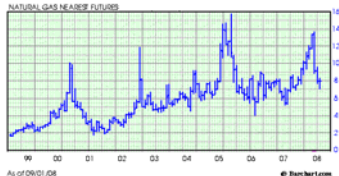
California Senate Bill 1368

- Senate Bill 1368 – limits GHG emissions from individual utility assets to 1100 lbs of CO₂/ MW-Hr



Low GHG Baseload Generation

- Whereas using natural gas generation will comply with SB 1368, it will not lower the portfolio emissions of Southern California Edison and help meet the goal of AB 32
- In addition, natural gas demonstrates high price volatility
- Therefore, base load generation sources with very low GHG emissions are of interest



Siting of Low GHG Baseload Generation

- SCE completed a siting study to locate a 600 MW IGCC power plant with 80 to 90% carbon capture
- We evaluated a six state region from Wyoming to California
- Potential plant sites were ranked by the delivered cost of electricity and subjective criteria
- The study was completed in early 2008 and the leading sites were in Utah and Wyoming although:
 - the altitude at these sites significantly reduces plant capacity, and
 - there are transmission issues



Feasibility Low GHG Baseload Generation

- In May of 2007 SCE filed an application with the CPUC for \$52 million to conduct a feasibility study of the Clean Hydrogen Power Generation plant:
 - Sequestration Testing (\$20.4 million)
 - Plant Feasibility Work (\$26.3 million)
 - Front End Engineering Design
 - Ability-to-Permit
 - Options
- The application was largely approved by the CPUC in April 2008 with some conditions



Puertollano (Spain)

Feasibility of Geologic Sequestration

- In 2007 Southwest Regional Partnership filed an application with DOE to participate in the Phase III Deployment Program
 - Stage 1 – injection testing and program development
 - Stage 2 – CHPG commercial sequestration
- The DOE approved the SWP application in October of 2007 for the \$100 million program
- We plan to develop the commercial sequestration site from data obtained under Stage 1



Summary

- ♦ As a regulated utility SCE must file an application to seek authority to recover costs:
 - The costs must be identified and approved in advance
 - Costs incurred but not approved are subject to reasonableness reviews
 - Disallowed costs are incurred by stockholders
- ♦ Therefore, considering regulatory process SCE is unable to assume open ended obligations and recover the costs
- ♦ However, insurance may be a solution since:
 - the costs are known beforehand, but
 - preliminary discussions with insurance underwriters are not encouraging
- ♦ We will continue working with the insurance companies



Background - CHPG Critical Path Schedule

