

Hydrogen for Rural Electrification

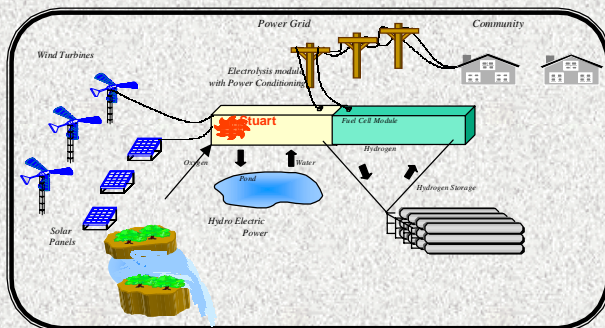
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Clean Air Now! (CAN!) Renewable Hydrogen Project (El Segundo, California, U.S.A.)

- 40-kW (nominal) photovoltaic array
- Alkaline electrolyzer
- Compressor for high pressure (5,000 psi) storage of hydrogen
- 14,000-scf storage at 5,000 psi; with 80,000-scf supplemental storage at 2,200 psi
- Hydrogen dispensing station for Xerox Corporation maintenance fleet.



Aerial view of a CAN! facility near the Los Angeles airport



Hydrogen Village concept

Hydrogen Village

- Stand-alone integrated power system
- Overcomes renewable energy gap by using hydrogen energy storage
- Flexible, renewable resources can be used, such as wind, solar, and hydro
- Hydrogen for electricity and motive power
- Can displace diesel power generators in remote communities
- Promotes use of indigenous resources for clean fuels.

International Energy Agency Annex 11 Modeling Efforts

- Seven countries participated in a 3-year effort to develop design guidelines and an analysis tool for evaluation of hydrogen demonstration projects.
- Data were collected on existing hydrogen demonstrations.
- Twenty-four component subsystem models were developed for hydrogen production, storage, distribution, and end use.
- Integrated systems were designed using component models.
- Numerous publications on this work are available in the literature.

International Energy Agency Annex 13 Analysis Effort

- Cost models will be developed for the 24 existing and any additional component models.
- Technical and economic evaluations will be performed on proposed or existing hydrogen demonstrations.
- Life-cycle assessment will be performed to quantify the environmental benefits of hydrogen energy systems.
- Activity will begin in November 1998. Participation is open to all IEA countries; non-IEA countries are also encouraged to participate as observers.

