

## Synthetic Energy Inc.

- SE incorporated June, 2005
- USDA Rural Development Grant awarded October, 2005: \$200K
- Ribbon Cutting June 10, 2006
- Annual H<sub>2</sub> production capacity: 4M scf (approx. 30 tube tank trailers)
- Client NORCO (\$150M revenues) 1-2% H<sub>2</sub> sales
- SE employees: 0
- Partners: Tom Griffith & Karl Edmark

# Plant Location



# SE Pilot Plant

- Wind Turbines            2 Entegrity 50KW
- Electrolysers:            2 Proton H6, 0.5kg/day
- Power Consumption: 120 KW max
- Power cost:                \$0.0375 / \$0.029 w/offset
- Wind Category:           2 - 2.5
- Power Offset:             ~20%
- Power Contract:         Net metering agreement  
(100 KW max w/Idaho  
Power Company)



## H2 Sources

- 95% Reformed Natural Gas
- 5% Electrolysis

## H2 Uses

- 90% Petrochemical Refining
- 10% Commodity



## H2 as an alternative product

### Selling Protons vs Electrons


Challenges:


- Storage
- Transportation
- Regeneration
- Regulations





## Current Uses


- Power Plant Generator Cooling (\$1B)
- Annealing Processes
- Silicon Chip Manufacturing
- Specialty Glass

  
 Wind

  
 H2 Generator/compressor  
 <15 Kg H2/day


  
 Tube tank trailer


  
 Grid





## Emerging Uses

- Fork Lifts
- Power Plants (Onsite H2 Generation)
- Small (50KW) UPS Systems
- Fuel Cell Busses, Hythane® (80/20 NG/H2)

  
 Wind Turbine

  
 H2 Generator /compressor  
 >100 Kg/day

  
 Tube tank trailer

  
 Grid

