

Solar to Hydrogen Overview

Introductory Comment

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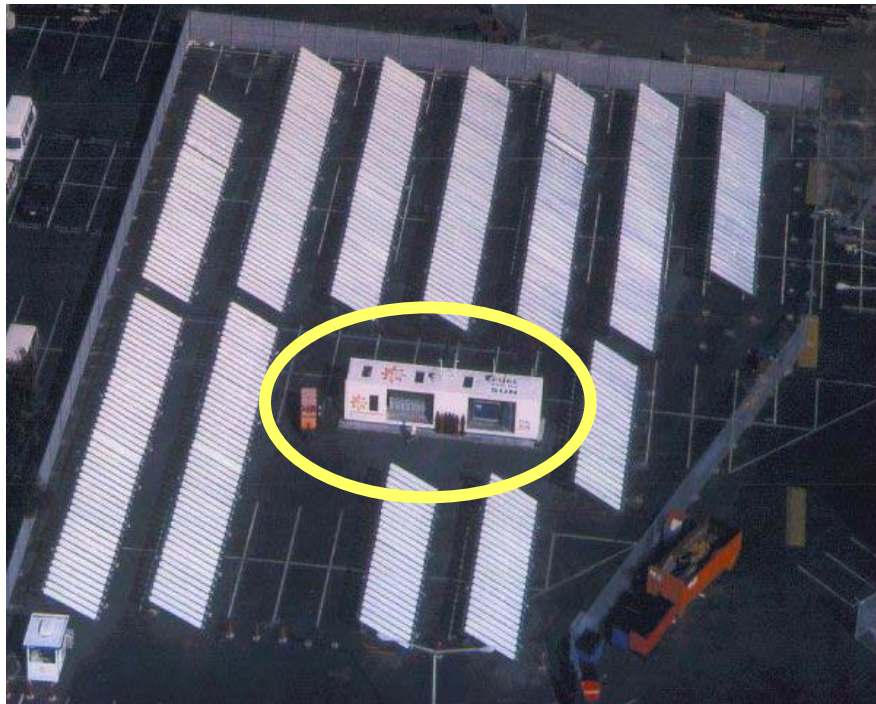
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-- Solar Hydrogen – How have we progressed in 20 years?

- **Solar-Wasserstoff Bayern, Hysolar (1988+-)**
- **Xerox/Clean Air Now (El Segundo) (1994-96)**

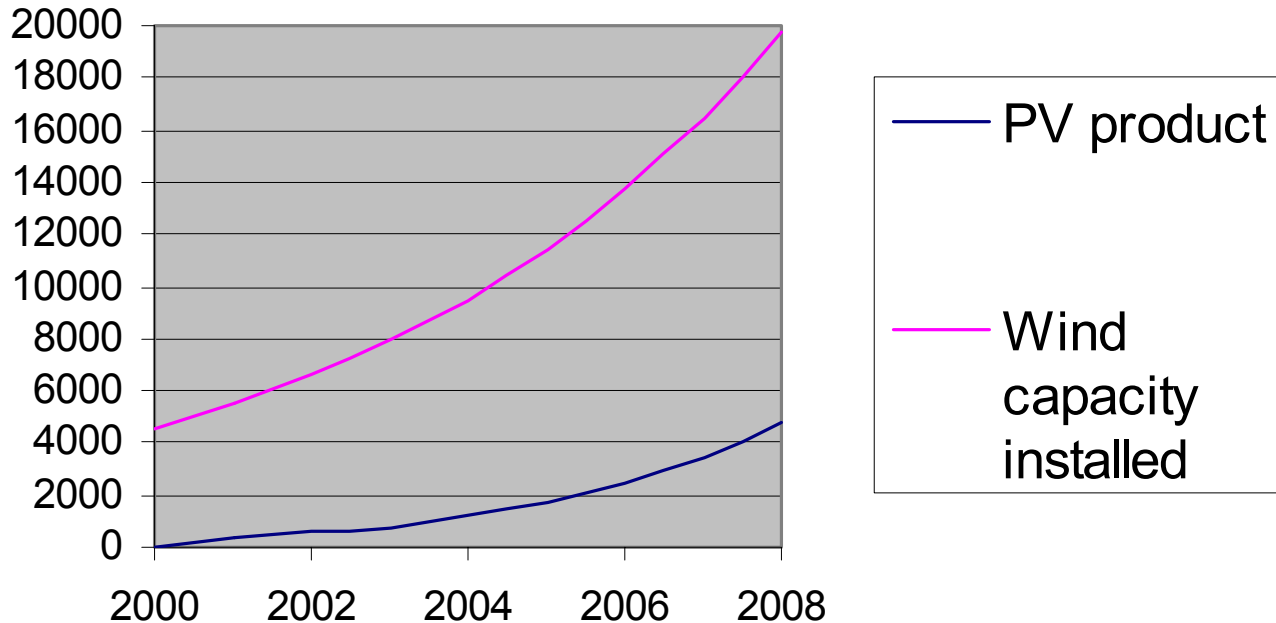


Solar & Wind are now Big Business!

(GE, Siemens, BP, Shell, ...)

Solar and wind energy growth-MW

Extrapolating at 20%(wind) and 40%(PV)



The Cost Challenge

- -- With 4 cents/kwh
- → \$2/kg hydrogen @ production site + Amortization of electrolyser, O&M, distribution
- \$4/kg *green hydrogen* is in sight! (with wind as source)
- -- With 35 cents/kwh electric, (typ. of PV)
- 67% electrolysis eff. → \$.52/kwh hydrogen → \$17/kg H₂ (electricity alone!)
- Add electrolyser amortization, O&M, distribution ...

The Need is Here & Now – Vehicles are available for the Hydrogen Highway

