

Catalyzing Innovation in PV Manufacturing

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President & CEO



Solar Photovoltaics – An Industry in Transition



Fulcrum Technologies at a Glance

**Specialty Equipment
Capital Projects
Global Customer Base**
(Alcoa, ST Microelectronics, Magna
International, Smurfit-Stone Container)

**Thin Films
Renewable Technologies
Commercialization
Projects**
(thermoelectrics, electrochromics, waste
water, solar thermal, desalination)

2003

2004

2005

2006

2007

2008

2009

2010

2011

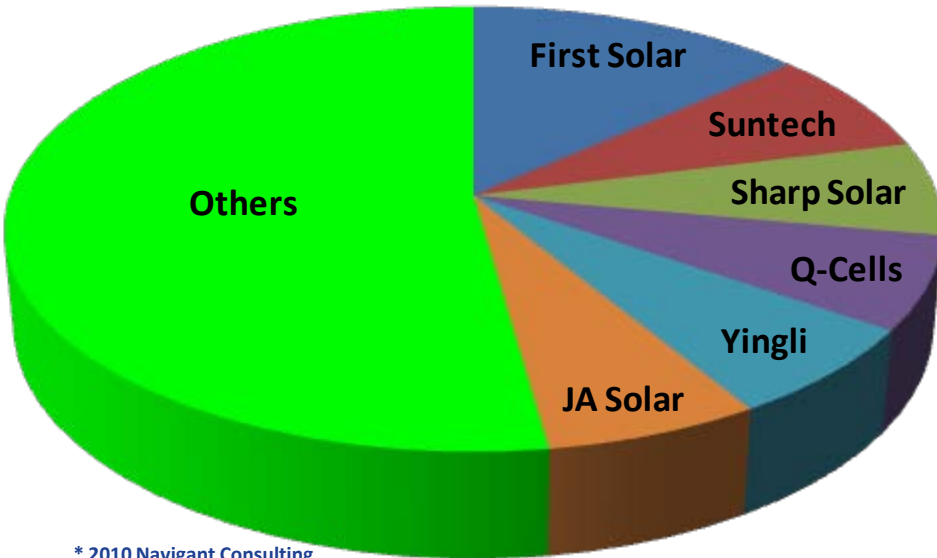
PrimeStar Solar
Co-Founder, Chairman, CEO
Commercialization of CdTe PV
Strategic Partnership with GE

Technology ✨ IP ✨ Markets ✨ Financing ✨ Commercialization



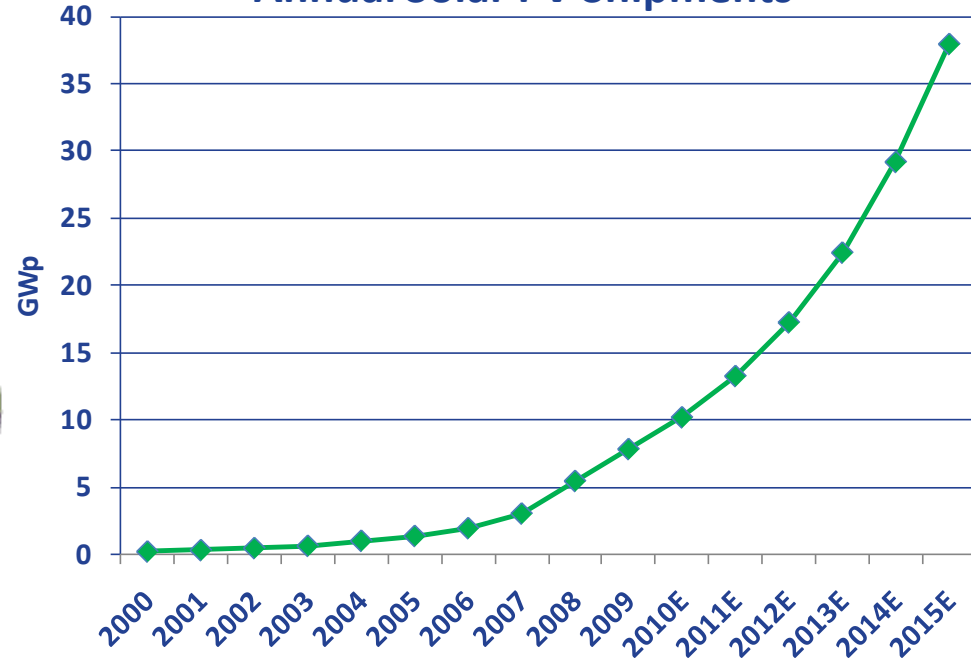
Solar PV Industry Growth

2009 Solar PV Shipments by Company*



* 2010 Navigant Consulting

Annual Solar PV Shipments*



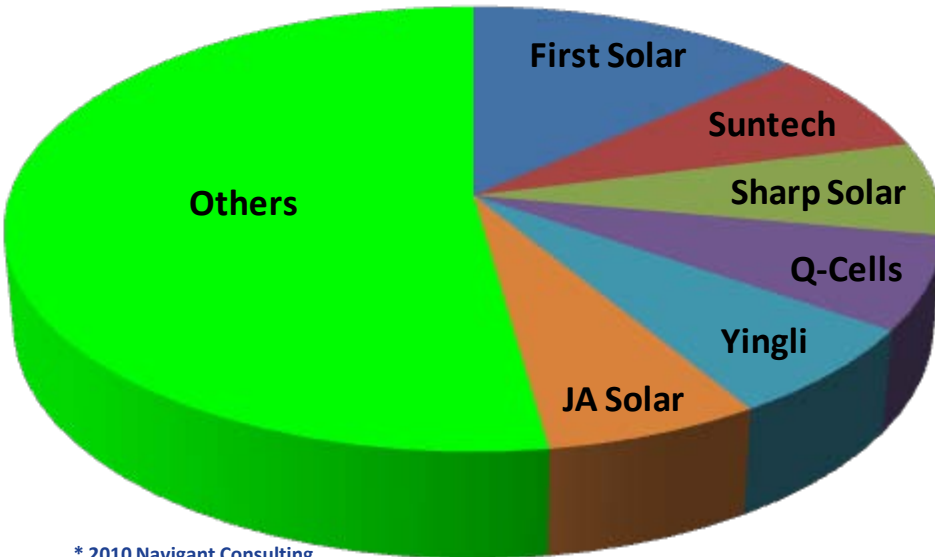
* 2010 Navigant Consulting, Fulcrum Technologies Research

Venture Backed Growth and a hint of Irrational Exuberance



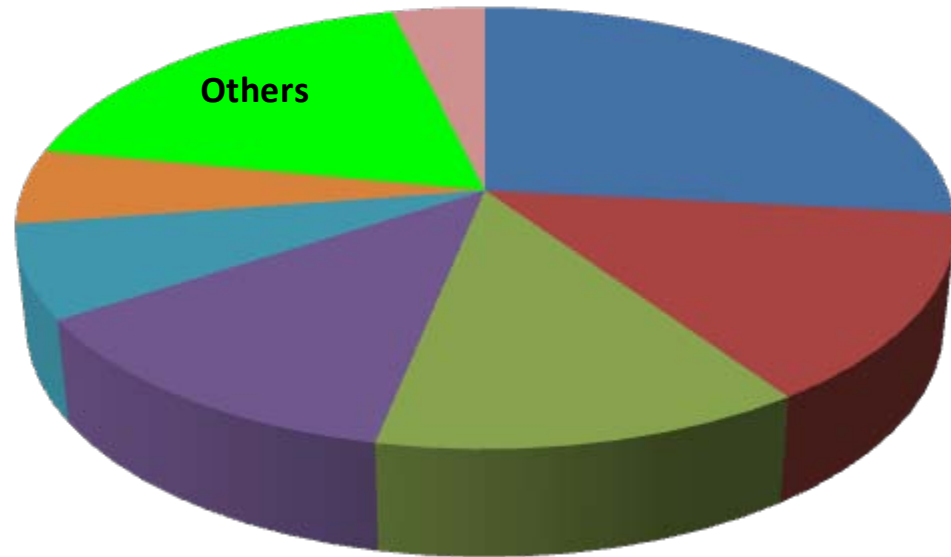
Solar PV Industry Growth

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Global Solar Installations Through 2015



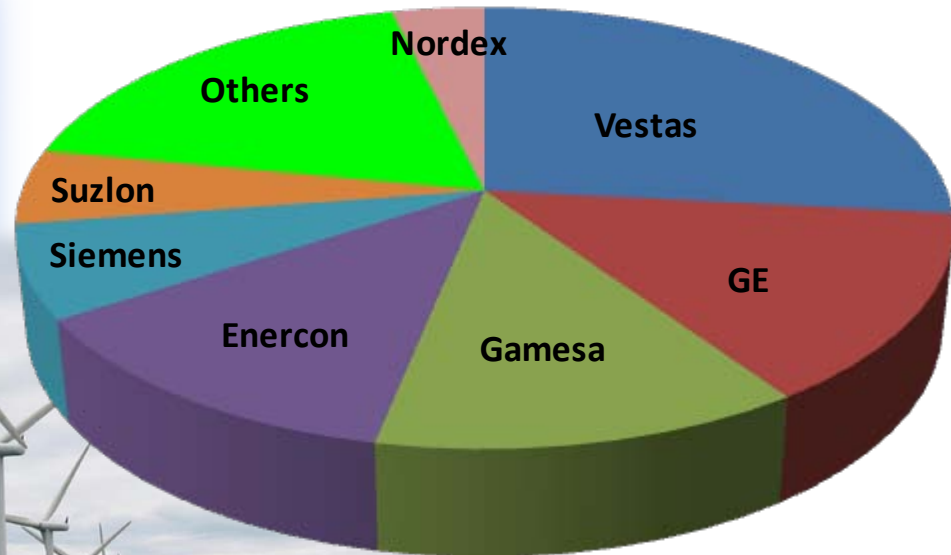
Cataclysmic Industry Consolidation as Leaders Take Market Share



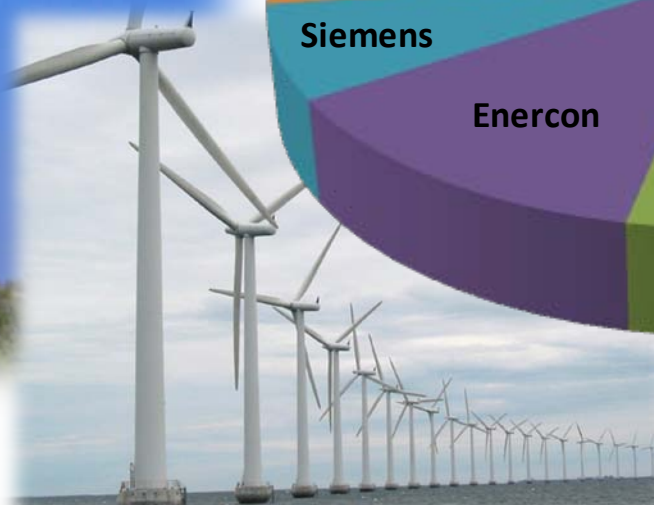
Wind Industry Growth



Global Wind Installations Through 2008*



* Wind Power 2009 – Spanish Wind Energy Association



Global Installed Capacity 23.9 GW_p in 2001 to 158.5 GW_p 2009*

* Global Wind 2009 Report – GWEC





Module Manufacturing



Fulcrum Technologies, Inc.

Equipment



Fulcrum Technologies, Inc.

Supply Chain



Project Development & Installation



Niche Opportunities



Fulcrum Technologies, Inc.

Conclusions...

- ✓ Module manufacturers approaching 1GWp, strong balance sheet, corporate support → continue to grow
- ✓ Module manufacturers in pre-production and low volume → find strategic partner for acquisition
- ✓ Equipment manufacturers → build on FPD, circuit board, and PV knowledge to develop tools optimized for high volume solar industry
- ✓ Supply chain → strategic large customers, acquisitions to broaden product offering, develop products optimized for PV industry
- ✓ Niche products → smaller market, potentially higher margins, the human mind knows no limits...





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