



May 8, 2006

Emcore Corporation

**Jefferies Alternative Energy and
Cleantech Conference**

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EMCORE Corporation Proprietary

Safe Harbor Statement



The information provided herein may include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 relating to future events that involve risks and uncertainties. Actual operating results may differ materially from such forward-looking statements and are subject to certain risks, including risks arising from: cancellations, rescheduling or delays in product shipments; manufacturing capacity constraints; lengthy sales and qualification cycles; difficulties in the production process; changes in semiconductor industry growth, increased competition, delays in developing and commercializing new products, and other factors described in EMCORE's filings with the Securities and Exchange Commission. The forward-looking statements contained in this release are made as of the date hereof and EMCORE does not assume any obligation to update the reasons why actual results could differ materially from those projected in the forward-looking statements.

GELcore Joint Venture with GE Lighting



Highlights

- CY 2005, ~\$72 million in revenues, profitable
- Estimate of \$103 million for CY 2006
- Transfer of work to Mexico from Canada June 2005
- Return to profitability in the September 2005 quarter

LED Signals

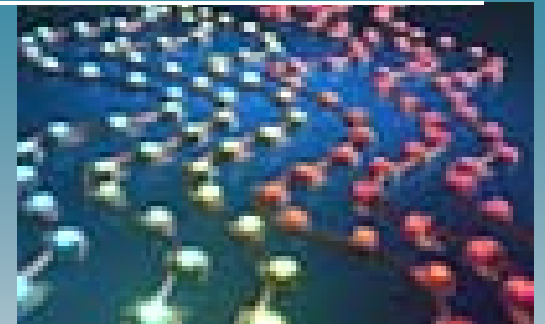
- Complete technology integration
- Electronics, optics, and high brightness LED technology

LED Channel Lighting

- High efficiency neon alternative
- Rapid return on investment
- Lower operating and maintenance costs

New Market

- Commercial Refrigeration



Emcore Photovoltaics



PHOTOVOLTAICS

- **Emcore Photovoltaics Division** formed in 1998 in Albuquerque, NM
 - Facility constructed from May to October 1998
 - First solar cells for space application delivered in December 1999



- Emcore's entry into the space market effectively eliminated the use of silicon solar cells in high power GEO satellites
 - Mid 1990's, 80% of satellite power was generated by silicon
 - Today 80% of satellite power requirements are generated by multi-junction cells
 - EMCORE is one of only two suppliers of qualified GaAs solar cells

Solar Panels for Space Based Communications



PHOTOVOLTAICS

Market

- Satellite power systems

Customers

- Space Systems / Loral
- Lockheed Martin
- Boeing

Products

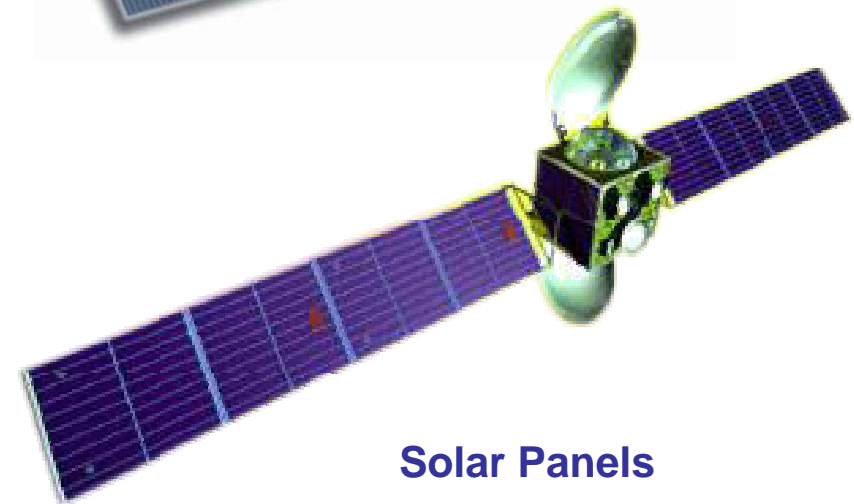
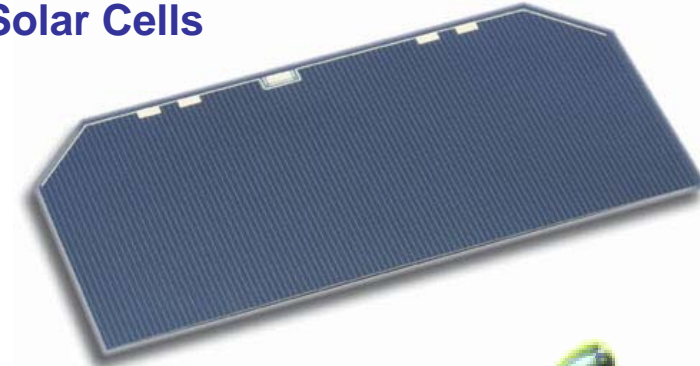
- 28.5% efficiency solar cells
 - Higher specific power than silicon
- Solar concentrators for terrestrial use

New Orders

- Over past few months approx. \$60 million of new multi-year contracts received

DARPA 50% Efficient Solar Cell development

Solar Cells



Solar Panels

DARPA Contract



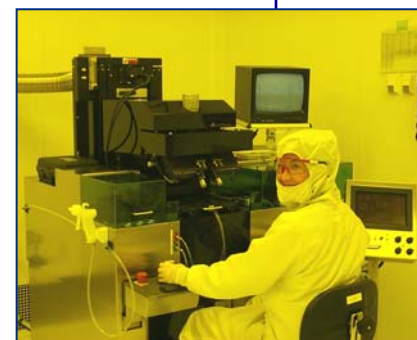
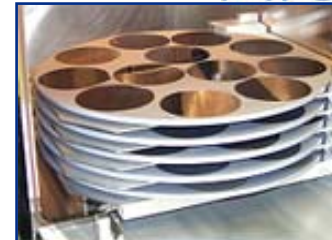
- **Leverage Emcore's high efficiency solar cell technology for military ground applications**
 - Modern Soldier carries an array of battery powered electronic gear
 - Batteries require constant replenishment
 - Objective of program is to develop rugged, mobile power station for battery replenishment in the field
 - Highly efficient solar cell required to reduce system footprint to absolute minimum
 - Only GaAs company involved in consortium
 - Multi-junction devices required to meet targeted system efficiency
 - Emcore will develop the majority of the solar cells used on this program

Solar Cell Production



PHOTOVOLTAICS

- Automated robotic, state-of-the-art 4” production line
 - Annual Capacity (simultaneous):
 - 125kW space
 - 50MW Terrestrial
 - Readily scaleable
 - Not limited by Si supply
 - Easy to expand capacity
- 8 MOCVD growth reactors
 - Exclusive Emcore IP
 - 20MW/reactor
- Over 450,000 multi-junction solar cells shipped for GEO and LEO satellites



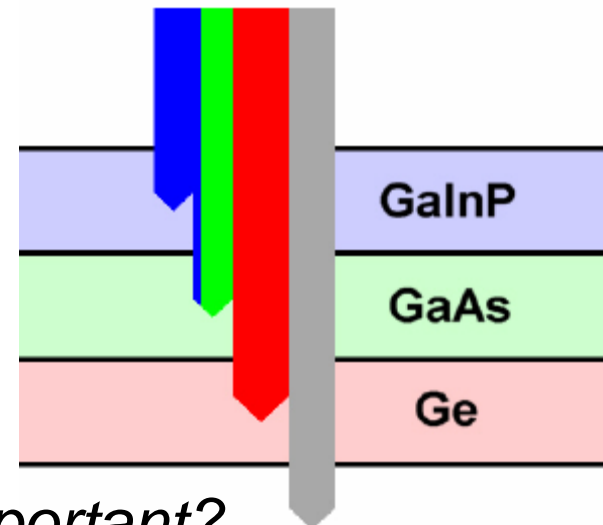
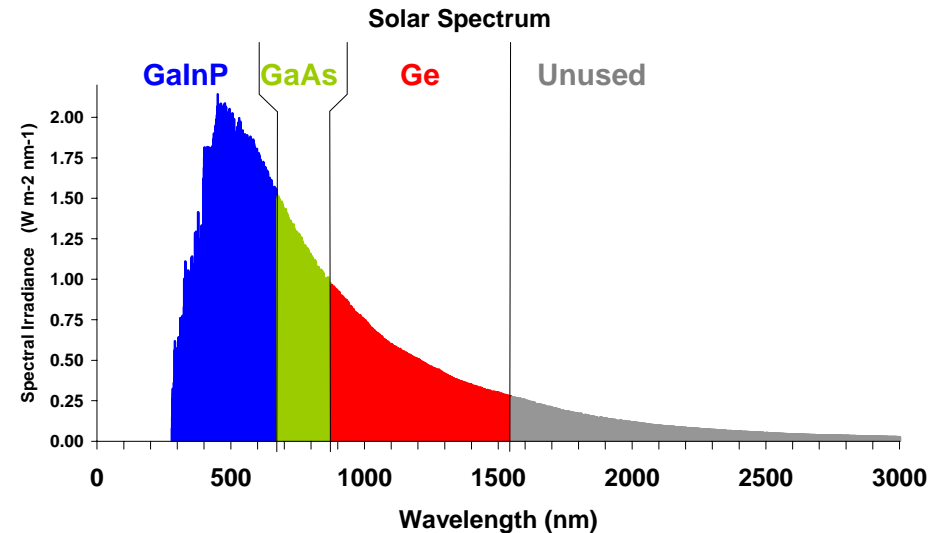
Multi-Junction Solar Cell Technology



- **Emcore's technology employs three solar cells in series**

- Each cell is tuned to absorb a different color of light

- **By converting more sunlight to electricity Emcore's solar cells operate at higher efficiency**



Why is this important?

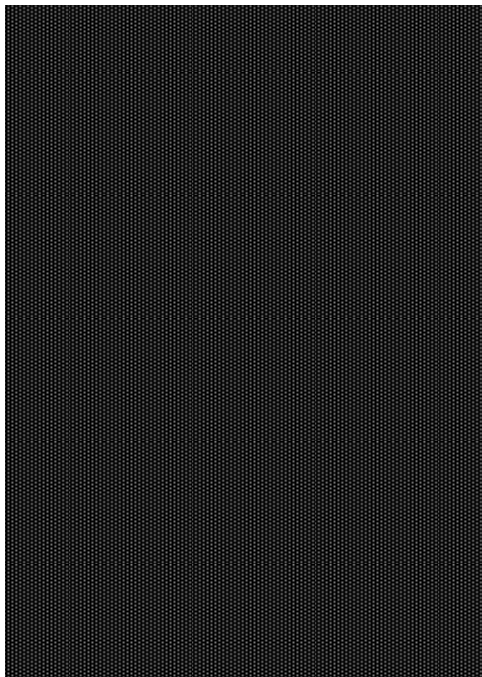
Efficiency Advantage



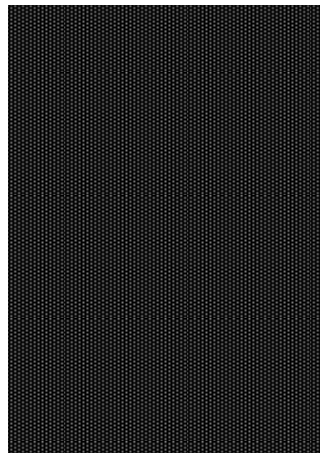
Solar Cell Efficiency makes a big difference in the size and cost of the photovoltaic element

EQUAL POWER OUTPUT

8% Efficient

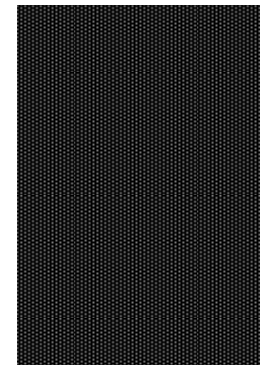


18% Efficient

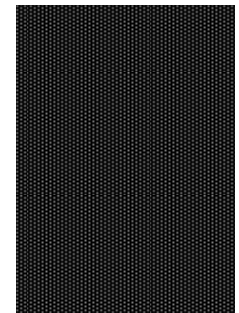


The Best Silicon

28% Efficient



38% Efficient



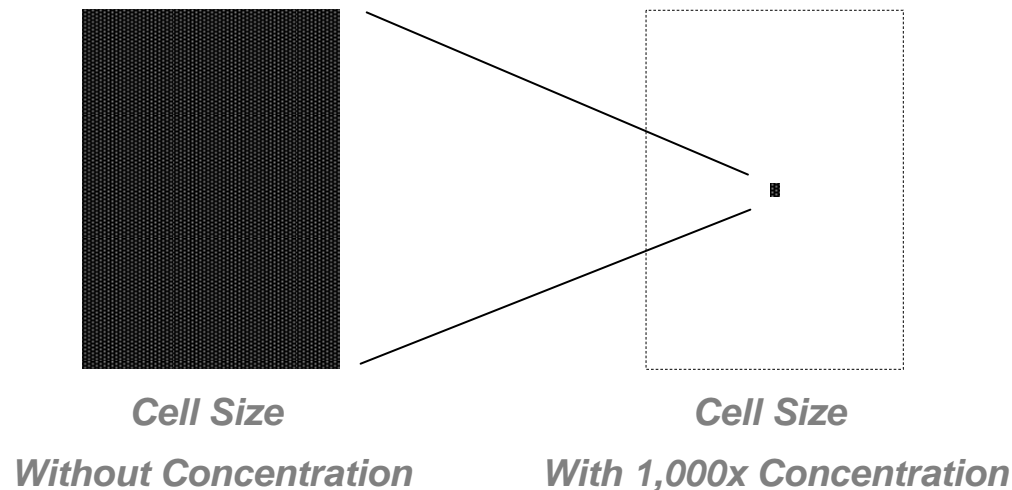
M-J Cells

Cost Advantage of Concentration



Concentration enables the use of very small solar cells

EQUAL POWER OUTPUT



The semiconductor becomes a small portion of the system cost (<20%), thus reducing overall mfg cost

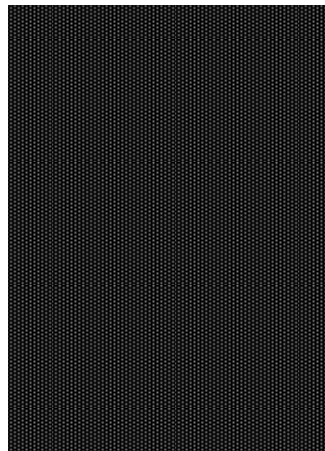
Putting It All Together



High Efficiency Multi-Junction Solar Cells combined with concentration enables a system with a low PV content

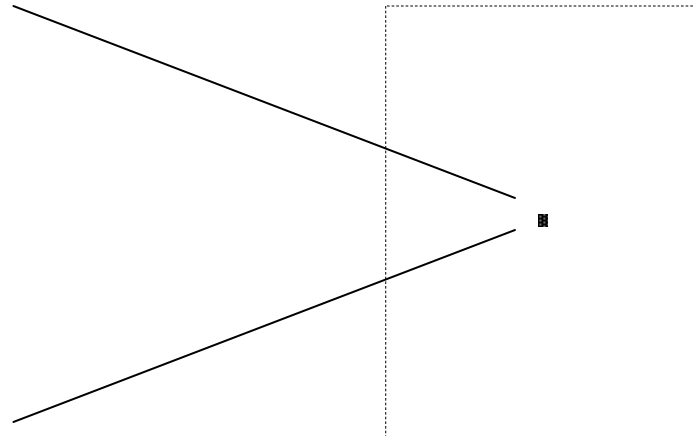
EQUAL POWER OUTPUT

18% Efficient



The Best Silicon

38% Efficient



Multi-junction cell

With 1,000x Concentration

Three orders of magnitude less semiconductor area needed

The PV element is no longer the cost driver for the system

Concentrator Systems



- **Concentrator systems are comprised of:**
 - Optics – mirror or lens
 - Receiver – solar cell
 - Cooling – Air or water
 - Tracker
 - Inverter

- **Current system price is in the range of \$6-8/watt (no subsidy)**



Cost Reduction Path



- **Improved cell efficiency**
 - More power from the same area
- **Optimized optics**
 - Reduce lost sunlight
- **Low cost components**
 - Structural members can be manufactured in low cost countries
- **Heliostat**
 - All of the above with fewer, simpler moving parts

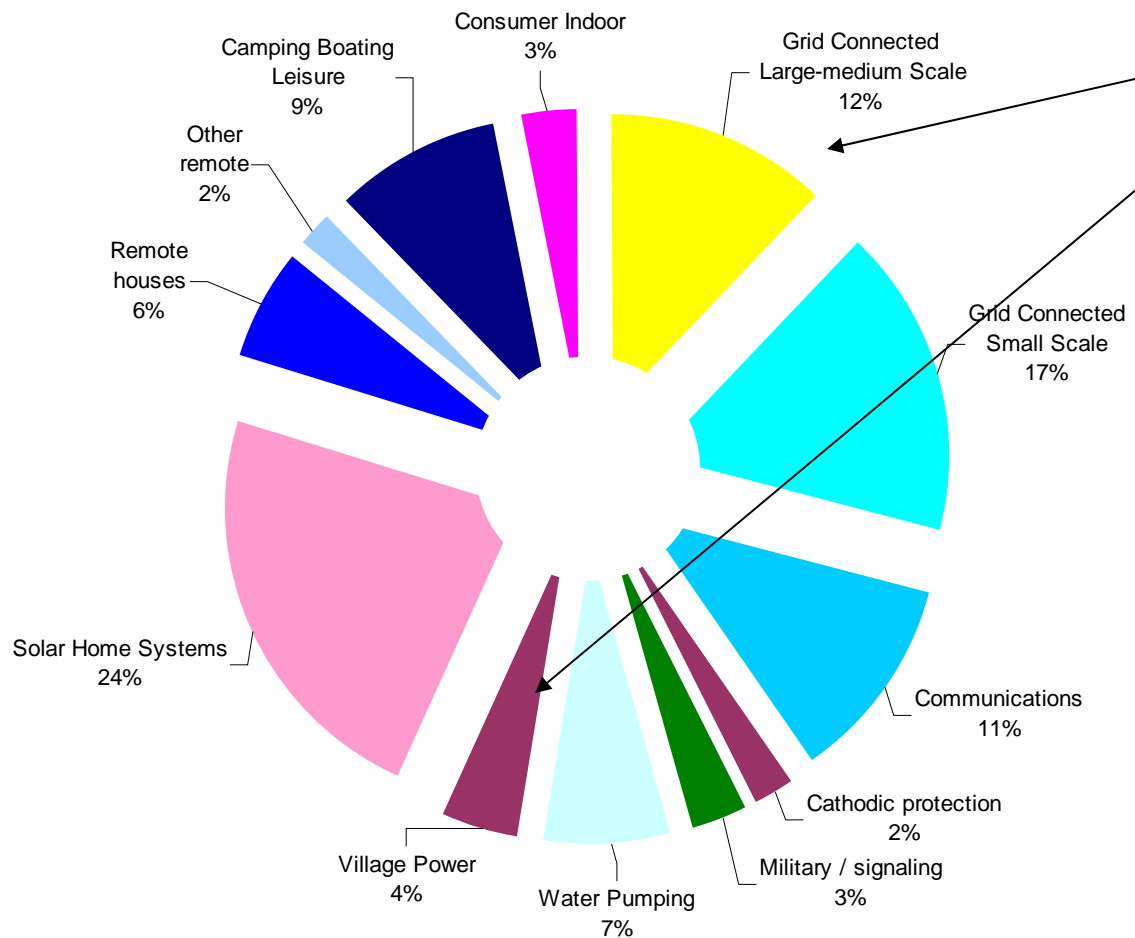


Goal is to get the price of a solar power plant under \$3 per watt and drive generating cost to less than \$0.10/kw-hr

Market Size



The Business as usual 2010 market forecast by application (Total 3,900 MWp installed)



Best Opportunities for Concentrators

- 500 MW Demand
- >\$1B TAM

Source: *Photovoltaics in 2010*

Our Strategy



- **Leverage Emcore's high efficiency solar cell technology in terrestrial applications**
 - Concentrating PV systems for utility scale (10-100 MW) power production
- **Continuously increase efficiencies**
 - Executing a roadmap to >40% by 2008
- **Team with leading concentrator companies**
 - Manufacturing and marketing partnerships
- **Influence US energy policy**
- **Penetrate the US market for solar power stations**

Summary



- **Emcore changed the direction of the solar power for space applications**
 - We are going to do the same on earth
- **Emcore's multi-junction solar cell technology has the highest efficiency in the world**
 - Not limited by Si supply
 - High efficiency combined with solar concentration results in a system with low semiconductor content
 - Executing technology roadmap to even higher efficiency
- **Emcore is leveraging it's solar cell technology to address opportunities in the utility-scale solar power market**
 - Already cost competitive with silicon
 - Cost reduction roadmap defined