

SKYLINE
solar

Skyline Solar, Inc.

**Congressional Sustainable Energy
EXPO & Forum**

May 27, 2010



Skyline Solar enables PV systems to become the primary source of new peak electricity generation





Skyline Solar's medium concentration PV solution provides the optimal path to lower cost of energy through a scalable, upgradable and capital efficient design.

History

- Incorporated August 2007
- Headquarters: Mountain View, CA

Status

- \$24.6M Series A, led by NEA
- ~50 FTE employees
- Four installations completed
- European partner
- Sales pipeline in 100s of megawatts

Board of Directors

- Bill Keating (Skyline Solar)
- Bob MacDonald (Skyline Solar)
- Lars Podlowski (Solon)
- Mark Byington (Cobalt Power Systems)
- Mark Perry (NEA)
- Ravi Viswanathan (NEA)



Jeff Osorio

VP and Chief Financial Officer

- 30 years experience in operationally oriented companies in Silicon Valley
- Chief Financial Officer for Solaicx, Corporate Controller and interim Chief Financial Officer of Cypress Semiconductor
- MBA and BSC Accounting, Santa Clara University. Chairs Executive Professor, Leavey School of Business, SCU



Hans Hartmann

Chief Operating Officer

- VP of Operations and Engineering, Element Labs
- SVP of Operations, OQO
- 29-year veteran of the technology industry – Hewlett-Packard and successful early stage technology companies
- B.S.E.E., New Jersey Institute of Technology and M.S. Engineering and Manufacturing Systems Engineering, Stanford



Tim Keating

VP of Marketing and Field Operations

- Deep experience in operations, engineering, sales, marketing, content relationships and venture capital funding.
- 22-year Intel veteran as venture consultant, Managing Director, Intel Capital Europe, WW Director of Marketing for Pentium™
- B.S. Electrical and Computer Engineering, University of California; General Management Program (PMD), Harvard University Graduate School of Business



Danny Cheung

VP of Engineering

- World class experience in systems development, product lifecycle management, prototyping, volume production and cost management
- Head of Design and Engineering for Acura TL at Honda R&D
- Honda Ridgeline (2006 *Motor Trend* Truck of the Year) Project Leader
- Co-founder, hybrid electric vehicle company
- B.S. Mechanical Engineering, Cornell University

FOUNDING TEAM



Bob MacDonald, PhD

Co-Founder and CEO

- Director of Product Marketing bSolFocus
- Co-founded and Vice President of Sales and Marketing, Onetta
- B.S.E.E., Brown University; M.S.E.E., Stanford University, and M.S. and Ph.D. Physics, Brown University



Bill Keating

Co-Founder and Executive Chairman VP Sales and Business Development

- Board Member/Advisor for SolFocus, ZVUE, SunModular, Tiara Pharma
- Founding Member of Nekei, a venture-catalyst consultancy
- 30-year veteran of the technology industry -- Vvyo/Xtend (NASDAQ: VYYO), MOXI, Microsoft, WebTV, General Magic, Rational Software, and Sun Microsystems.



Eric Johnson

Co-Founder and Systems Architect

- Solar Consultant and Sr. Engineer, GreenMountain Engineering
- Engineer Phasebridge (photonics) and Beacon Power (storage)
- B.S. Mechanical Engineering, Cornell

Company Milestones

Series A Funding (Aug 08)



- ~\$25M Series A led by NEA
- NEA has \$8.5B under investment and has funded more than 550 firms

"We think this company is going to be one of the survivors. They've got substantially lower costs because of the way they've designed this. It's more than just a clever idea."

Mark Perry, General Partner, NEA

Solar America Initiative (Feb 09)



- Up to \$3M grant to fund technology commercialization projects
- Only systems company selected by the Department of Energy

"We were impressed by Skyline's total system approach which packages many high gain solar design elements into an elegant array leveraging traditional manufacturing for large scale."

Martha Symko-Davies, Research Senior Supervisor, NREL

Demonstration Power Plant (May 09)



- 27kW power plant at Santa Clara Valley Transit Authority (VTA)
- Commissioned May 15; >2000 hours of on-sun data
- Field data confirms performance models

"Thanks to Skyline Solar, our first significant solar installation is now up and running and is providing VTA with clean, renewable energy and a unique learning experience"

Michael Burns, General Manager, Santa Clara VTA

Volume Production Partnership (Oct 09)



- Partnership with Cosma International's U.S. stamping and assemble facility
- Skyline High Gain Solar Arrays designed to fit automobile metal shop "design rules"
- Reusing America's industrial base and retaining American jobs

"We are excited to be manufacturing the Skyline HGS system and, by doing so, contributing to America's move toward energy independence."

Horst Prelog, President, Cosma International

- Key patents applications filed in the US and internationally
- Two critical patent applications have been approved by the US government for accelerated review under the Green Technologies pilot program
- Foundational 1st Patent issued

Patent 7,709,730
Issued May 4, 2010

(19) **United States**
 (12) **Patent Application Publication** (10) **Pub. No.: US 2009/0056785 A1**
 Johnson et al. (43) **Pub. Date: Mar. 5, 2009**

(54) **DUAL TROUGH CONCENTRATING SOLAR PHOTOVOLTAIC MODULE**
 (75) Inventors: **Eric C. Johnson**, Mountain View, CA (US); **Michael Leeds**, San Francisco, CA (US)
 (51) **Int. Cl. H01L 31/052** (2006.01)
 (52) **U.S. Cl. 136/246**

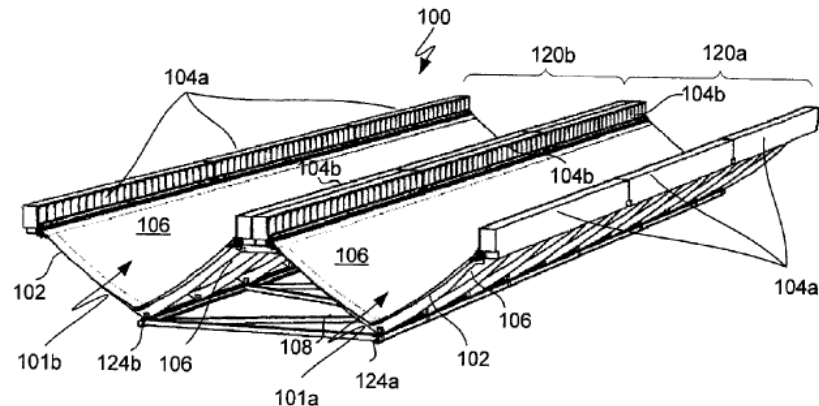
Correspondence Address:
Beyer Law Group LLP
P.O. BOX 1687
Cupertino, CA 95015-1687 (US)

(73) Assignee: **SKYLINE SOLAR, INC.**, Mountain View, CA (US)
 (21) Appl. No.: **12/100,726**
 (22) Filed: **Apr. 10, 2008**

Related U.S. Application Data
 (60) Provisional application No. 61/043,704, filed on Apr. 9, 2008, provisional application No. 60/970,007, filed on Sep. 5, 2007.

Publication Classification
 (57) **ABSTRACT**

A solar energy collector suitable for use in a solar energy collection system. The collector may have a plurality of reflector panels, a support structure that supports the reflector panels in a manner that defines a pair of adjacent reflector troughs, each trough having a base, a pair of reflective side walls and a trough aperture suitable for receiving incident sunlight during operation of the collector, a plurality of solar receivers positioned generally adjacent an edge of an associated trough and including at least one photovoltaic cell, wherein the reflector panels are arranged to direct incident sunlight towards the solar receivers using a single reflection during operation of the collector, and a frame that is coupled to the support structure near the bases of the troughs to define a closed reflector support truss framework.



Built on Proven Technology

Tracked PV

High capacity factor

Materials intensive: silicon, metal, concrete



Solar Thermal

Dispatchable but capital intensive

Only works on a massive scale

Silicon
+
Tracker

Reflector
+
Tracker

High Gain Solar PV
Combines best of both approaches
Works on distributed and utility scale



**SILICON
+
REFLECTOR
+
TRACKER**

High Gain Solar Architecture

A dramatically simplified approach with just 2 major components:



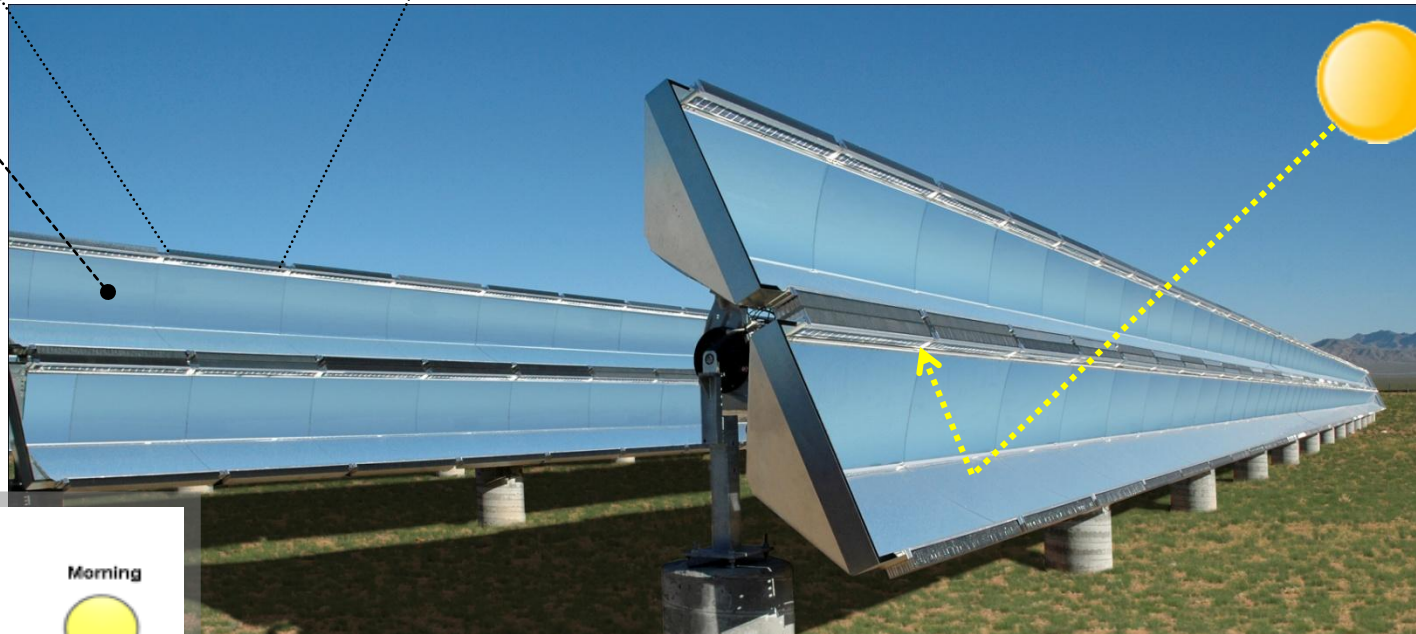
1

- Mounts vertically
- Along rails
- Facing Inwards

2

Reflective Rack

- Structural support
- Curved Reflector
- Integrated Tracker



Afternoon

Noon

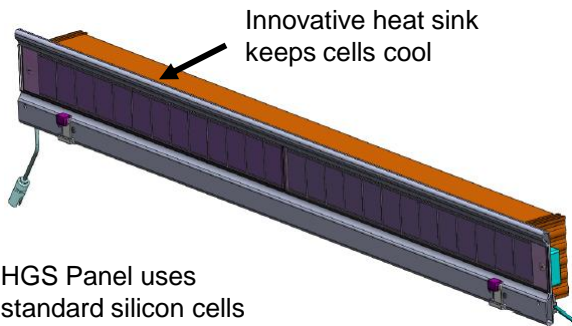
Morning



Design Efficiency Provides Cost Leverage

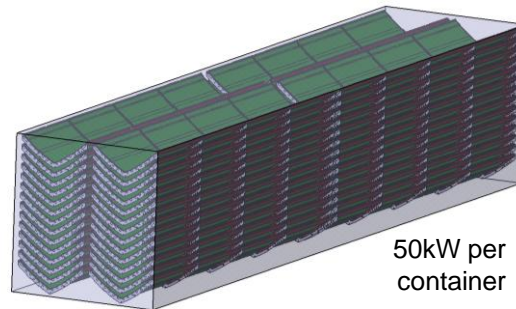
HGS Panel

- 85% less silicon
- Low cost design
 - Fraction of materials needed vs. standard panels
- Efficient thermal management
 - Vertical orientation and heat sink improve cooling
- Manufactured in existing module factories



Reflective Rack

- Breakthrough System Architecture
 - Separates light capture from power generation
 - Integrated racking and tracking
- Reflector doubles as space frame structure
- Streamlined logistics
- 100% recyclable materials

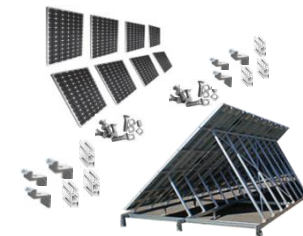


Pre-assembled Modular System

- 67% fewer parts assembled in field
- Plug & play array built from a few pre-assembled modular elements



- Compare to fixed tilt system built with many parts assembled in the field



Target Applications



**Municipality Facilities
(e.g. Water Treatment)**



**Government,
Military Bases**



**Industrial & Mining
On- or Off-Grid**

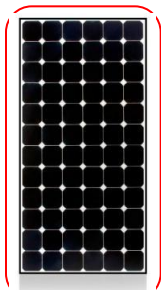
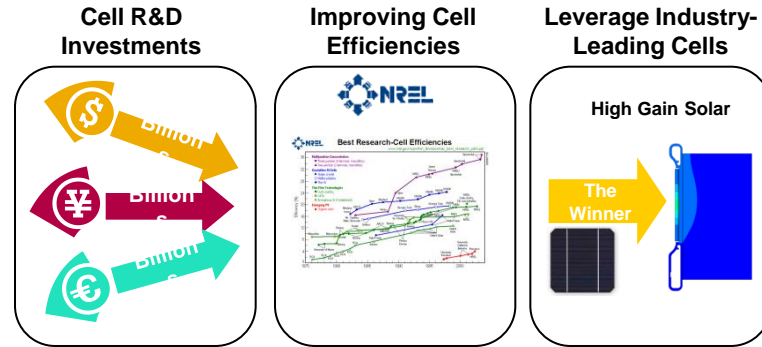
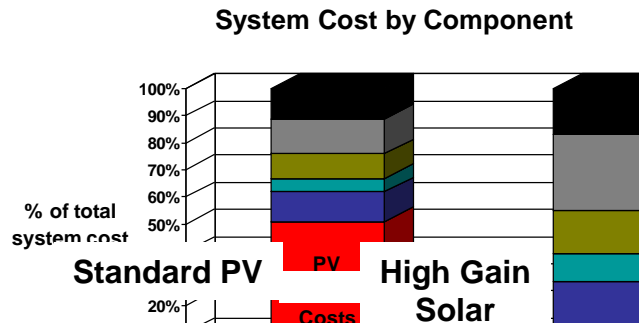
**Utility Scale
Generation**



**Grid Commercial,
Parking Lots,
Manufacturing
Campus**



Designed for Upgradability



Skyline installations give the option of power plant upgrades

Leverages Existing Automotive Factories for Rapid Scaling



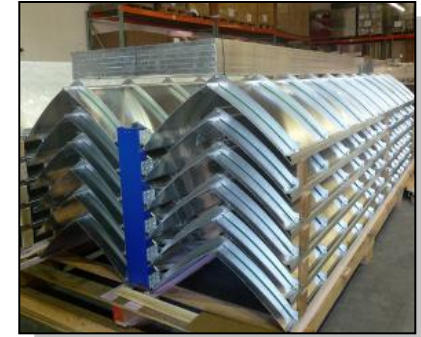
Roll



Stamp



Assemble



Stack

- **Manufacturing process and line designed for standard metal fabrication equipment**
- **Easily adopted by automotive factories, HVAC sheet metal manufacturing plants, etc.**
- **Skyline partnership with Cosma International's US stamping and assembly facility**



- **Faster energy payback**

- More Watts per pound of material
- Reduced embodied energy

- **Lower carbon footprint**

- System almost entirely manufactured out of recyclable metal
- 85% less hard-to-recycle materials: silicon, solder, encapsulents



Benefits of novel, patented architecture

- **Cost** HGS reaches grid parity ahead of the pack
- **Capital Efficiency** Factory CapEx as low as \$0.08/Watt
- **Upgradability** The world's first upgradable solar power plants
- **Reliability** Elegant design based on proven materials
- **Scalability** Factory integrated systems yield fast low cost installations

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