

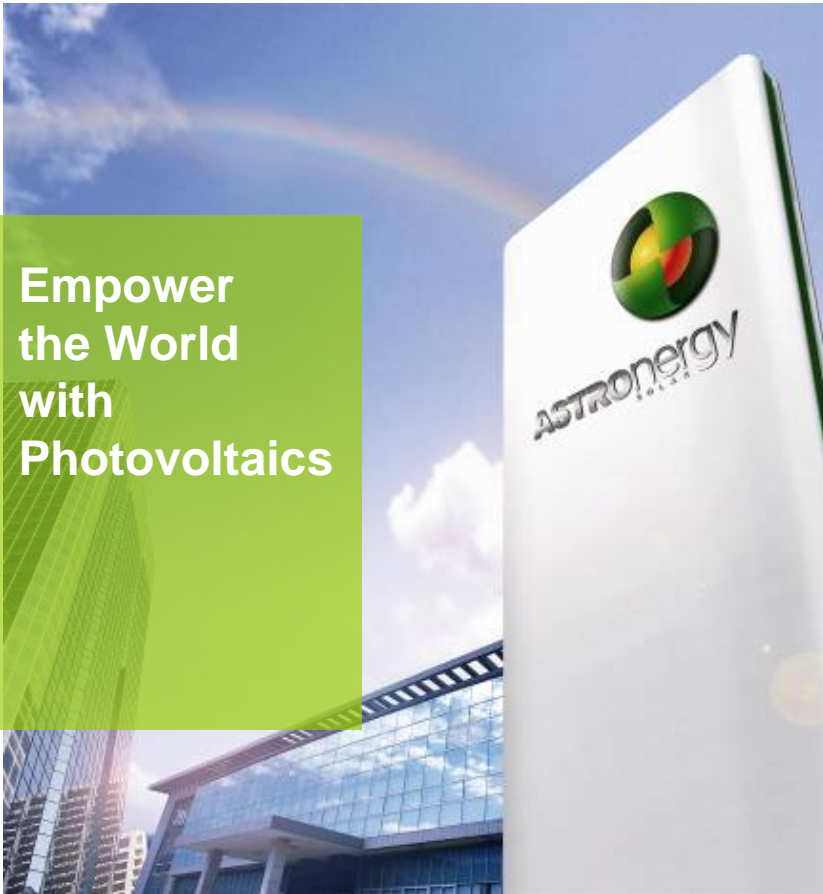
Astronergy Corporate Introduction



ASTROenergy

2/2011

Empower
the World
with
Photovoltaics



Founded: October 2006

Mass Production: from August 2007

Business Structure

Manufacturer of c-Si solar cells and modules & a-Si/ μ c-Si thin film modules, systems integrator

Current Capacity

400 MW c-Si + 50 MW TF (75 MW TF by Q2 2011)

Installed Capacity

2007: 5 MW

2008: 20 MW

2009: 52 MW

2010: 200 MW

Location

Hangzhou, Zhejiang Province, PRC



Mr. Cunhui Nan

Chairman of the Board

Founder, Chint Group
Representative, National
People's Congress

- Founded Astronergy in 2006

- Decades of R&D experience in a-Si based PV technology

- Management experience at leading solar enterprises

Senior VP



VP



VP



CS

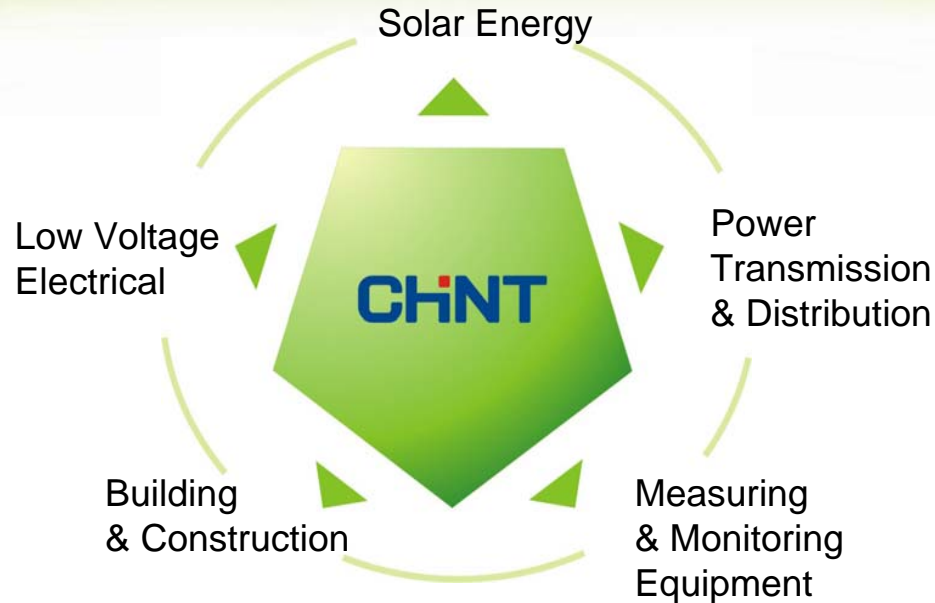


Dr. Liyou Yang

CEO and CTO

PhD, Rutgers University
Co-founder of Astronergy
Former Head of Research, BP Solar





- Founded in **1984**
- **Fourth Largest** Private Enterprise in China (annual revenues in excess of **USD 3 Billion**)
- **Ranked 15th** in Fortune 100 list of top private Chinese companies
- **40% of domestic market share** in low voltage electronics and components
- **20,000 +** Employees



CHINT 正泰

- China's leading player in the electrical industry
- One of China's top private enterprises
- Corporate parent of Astronergy



上海联和投资
Shanghai Alliance Investment Ltd

- Designated asset manager for the State-Owned Assets Supervision and Administration Commission (SASAC) in the areas of hi-tech and financial services

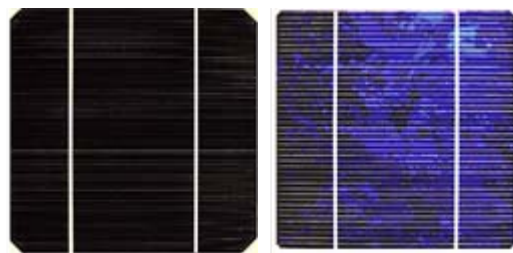


Cybernaut

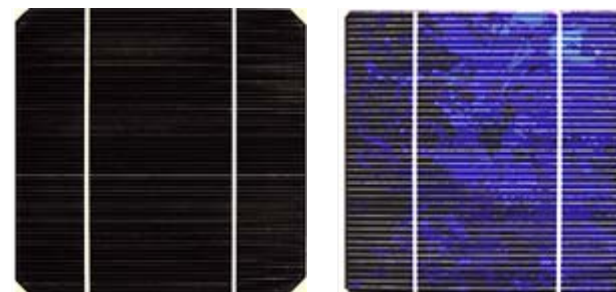
- Led by former WebEx founder, Min Zhu
- Over 500 million USD in assets under management

Steady Evolution of Crystalline Silicon

Solar Cells



125 mm²



156 mm²

Development of Applications



Standalone
Modules

2006



Rooftop Systems

2007



Commercial Power



Building-Integrated PV

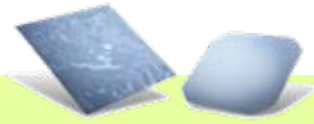
2008

2009

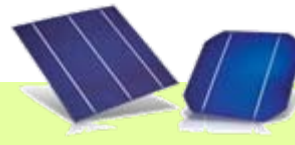
Crystalline PV



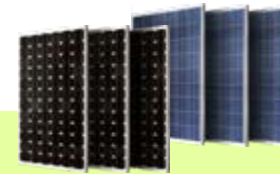
Raw Materials



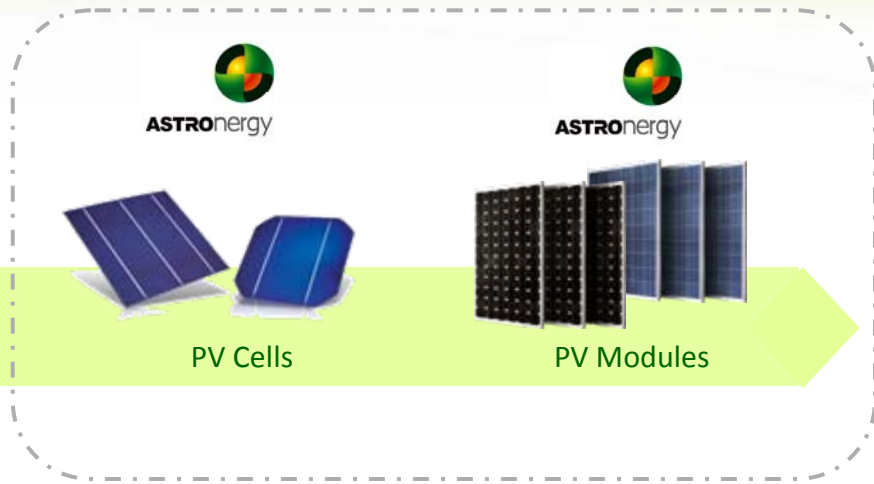
Silicon Wafers



PV Cells



PV Modules



Thin Film PV



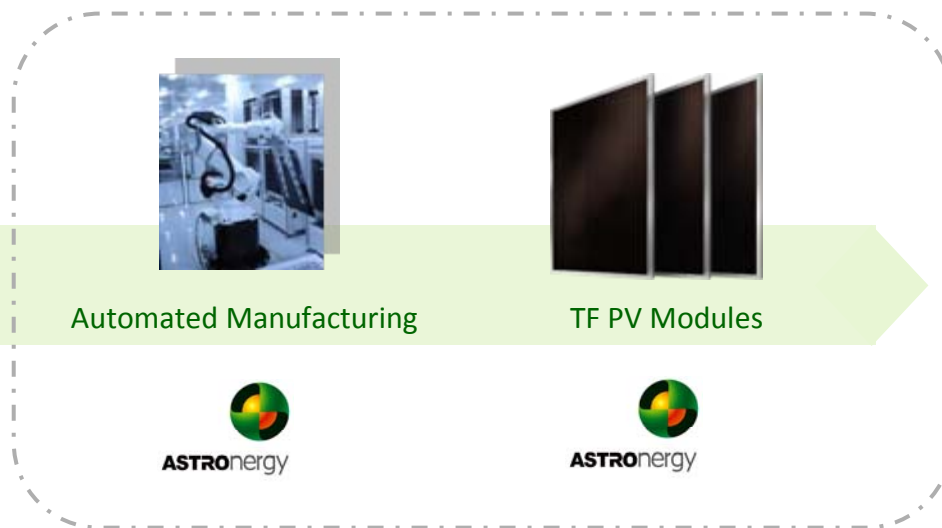
Raw Materials & Gases



Automated Manufacturing



TF PV Modules



Monocrystalline Silicon Series

CHSM 5612 M | CHSM 6610 M | CHSM 5409 M
CHSM 5612 M BL | CHSM 6610 M BL

- Wattage: 85 – 240 W
- Panel efficiency of up to 14.9%
- Double EL Inspection
- Product Liability Insurance

MES and SPC Systems used for precision cell manufacturing



Polycrystalline Silicon Series

CHSM 6609 P | CHSM 6610 P | CHSM 6612 P

- Wattage: 190 – 280 W
- Panel efficiency of up to 14.4%
- Double EL Inspection
- Product Liability Insurance

MES and SPC Systems used for precision cell manufacturing





0:00

Cell Manufacturing

4:57



4:57

Module Manufacturing

7:31



CHSM 5001 T



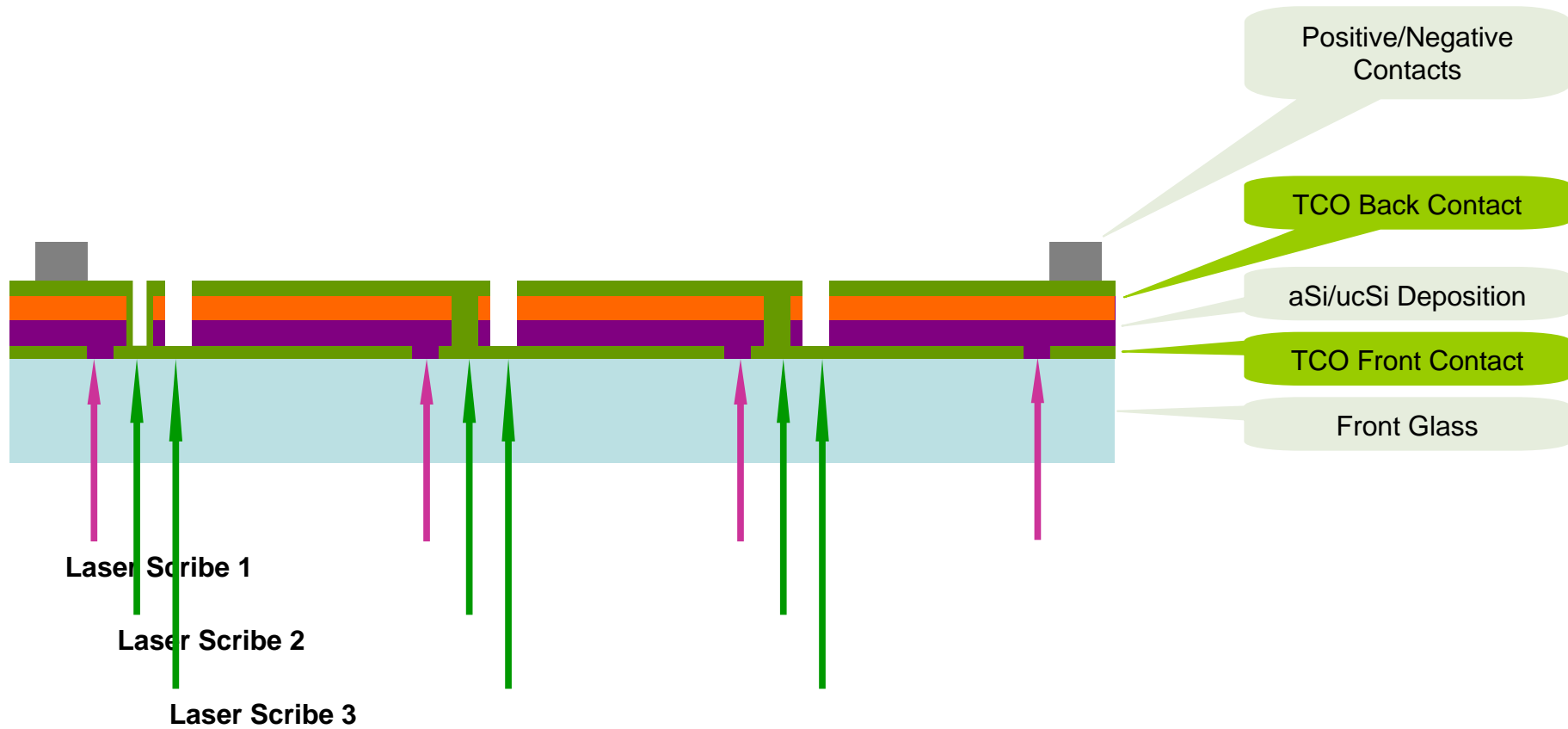
a-Si/ μ c-Si Thin Film Series

CHSM 5001 T | CHSM 5011 T

- Excellent Performance with Diffused Light
- Absorbs a Wide Spectrum of Light
- Wattage: 100 - 130 W
- Efficiency of up to 9%



We Do Quality





- Proven Equipment Partner
- State-of-the-art Process
- Quality Management

Thin Film Manufacturing



TCO Contact



a-Si/μc-Si Deposition



Contact Application



Flasher

Global Number One

Solar Turnkey Line Supplier

Best Technical Product for
Thin Film Module Manufacturing

Micromorph® Tandem Technology

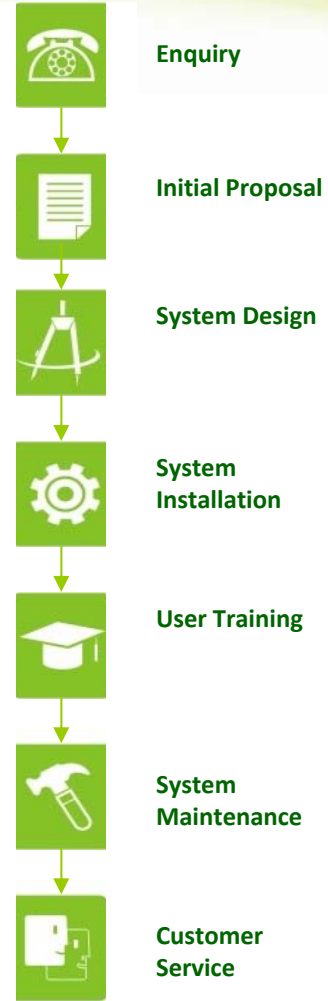
10% and more in near future

+ 16,000 employees at 157
sites in 36 countries generated sales of

CHF 2.8 billion ~ USD 2.6 billion



oerlikon
solar



QUALITY ASSURANCE, QUALITY CONTROL, QUALITY SUPPORT



- EL test repeated on each module prior to shipping
- IV and EL tests performed before lamination

1. Supply Chain Management
2. Process Control
3. Advanced Process Monitoring Systems
4. Product Traceability
5. Strict Control Over Process Changes
6. Product Quality and Reliability Guarantee
7. After-sales Service

5 Year Product Warranty

25 Year Performance Guarantee

(90% up to 10 years, 80% up to 25 years)





INTERSOLAR
Munich, Germany

EU PVSEC
Valencia, Spain



**RENEWABLE
ENERGY KOREA**
Seoul, Korea

**SOLAR POWER
INTERNATIONAL**
Los Angeles, USA



Chinese Government Support

ASTROenergy



President Hu Jintao



Premier Wen Jiabao



Chairman Wu Bangguo

Gary Locke
(US Secretary of Commerce, October
2009 US Joint Commission on
Commerce and Trade)

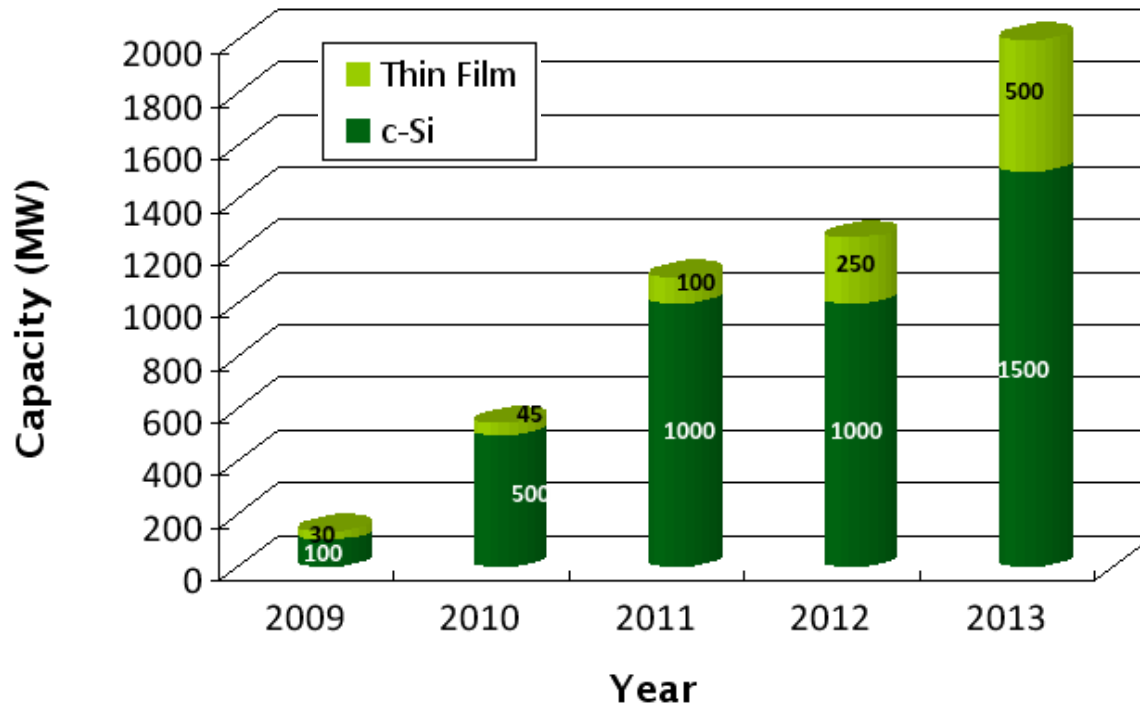


Carolyn B. Maloney
New York 14th Congressional District

Global Customer Portfolio



Capacity Expansion Plan



- ★ Hangzhou Headquarters
- ★ Wenzhou Base
- ★ Shanghai Base
- ★ Gansu Province

BIPV



- Curtain Wall
- Railing
- Rooftop

Commercial Rooftop



- Production Facilities
- Large Enterprises
- Supermarkets

Ground-mounted



- Solar Parks
- Power Plants
- Covered Installations

Off-Grid



- Telecommunications
- Water Supply
- Remote Areas



EUROPE

The Largest Single-Operating PV Solar Farm in Europe



Location: Rovigo, Italy

Modules Used: CHSM 6610M | CHSM 6610P

System Size: 70 MW (15 MW using Astronergy Modules)

Completed: 11/2010



Location: Zaragoza, Spain
Modules Used: CHSM 6610 M
System Size: 2.35 MWp
Completed: 2009

ASIA

Shizuishan Solar Power Station

ASTROenergy

CHNT
正泰集团
CHINT GROUP



ASTROenergy



Location: Shizuishan, Ningxia Province, China
Modules Used: CHSM 5001T | CHSM 5612M
System Size: 100 MWp (first phase- 10 MWp)
Completed: In Progress





Location: Daebang, Korea
Modules Used: CHSM 6610
System Size: 1 MWp
Completed: 3/2010



CHINT
正泰集团
CHINT GROUP



ASTROenergy



中国节能
CHINA ENERGY CONSERVATION
INVESTMENT CORPORATION



Location: Hangzhou, China
Modules Used: CHSM 5001T | CHSM 5612M
System Size: 2 MWp
Completed: 9/2009

NORTH AMERICA

Location: Sacramento, CA
Modules Used: CHSM 6610P
System Size: 3 MW
Completed: 12/2010



SOUTHERN HEMISPHERE



Location: Hervey Bay, Queensland, Australia
Modules Used: CHSM 5612M
System Size: 44 KWp



Location: Angola
Modules Used: 2500 sets
Completed: 4/2008

BIPV



Location: Hangzhou, China
Modules Used: CHSM 5001 T
System Size: 180 kWp
Completed: 5/2010



High-efficiency Thin Film Curtain Wall

ASTROenergy



Zhejiang Academy of Building
Research and Design



ASTROenergy

www.astronergy.com

Location: Hangzhou, China
Modules Used: CHSM 5001 T
System Size: 3000 Wp
Completed: 7/2009

A **CHINT** COMPANY

Agro 2

Location: Italy
System Size: 2.5 MW
Investor: SEP
EPC: Global Energy Service
Bank: UniCredit



Otanna

Location: Italy
System Size: 11.4 MW
Investor: Otanna Energy,
Winch Energy
EPC: Global Energy Service
Bank: UniCredit, Investec



Konigsbruck Project

Location: Konigsbruck, Germany
System Size: 2.79 MW
EPC: vis solis GmbH
Bank: Deutsche Kreditbank AG
(DKB)

Additional: DKB has financed an additional 10MW of Astronergy projects with Solmotion GmbH.



Butler Plaza

Location: Gainesville, FL
System Size: 2.2 MW
EPC: SPG Solar, Inc.
Bank: US Bank, East West Bank





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