

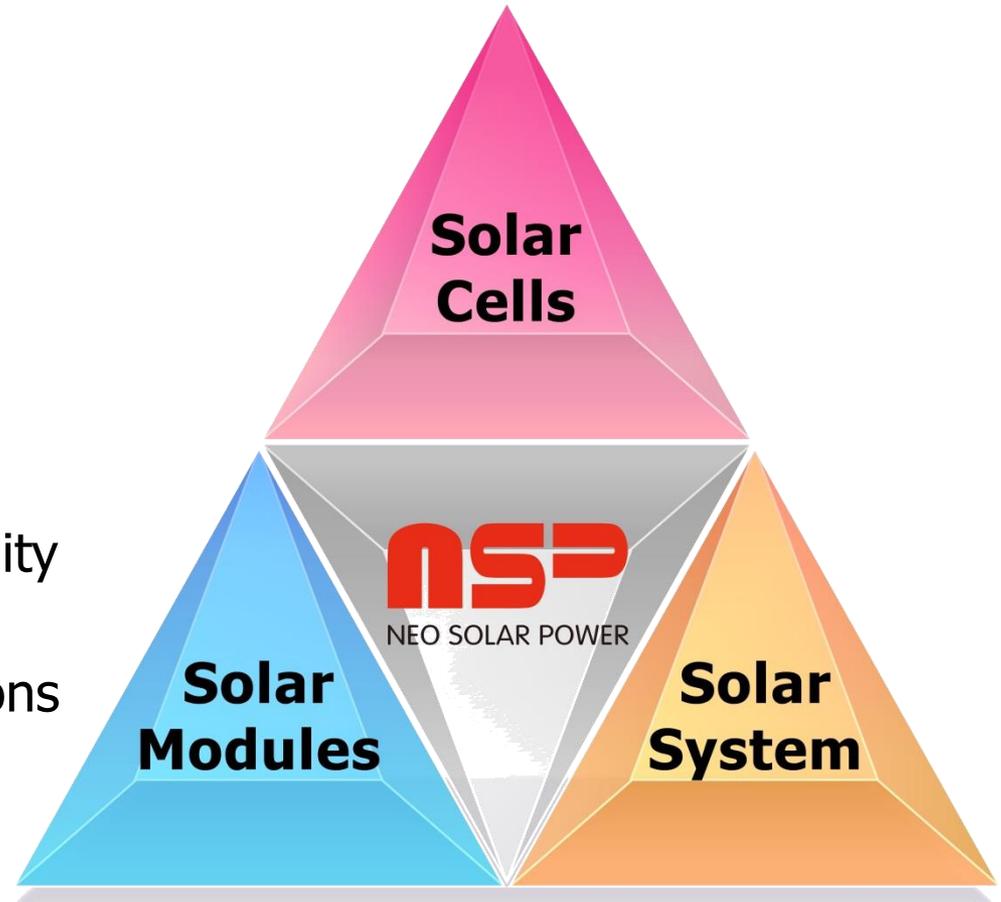
# Neo Solar Power Corporation



**December 3, 2015**

# NSP is Your Best Solar Partner

- **NSP is specialist in**
  - **Solar Cells**
  - **Solar Modules**
  - **Solar System**
- NSP is world's top merchant solar cell manufacturer with excellent track record in quality
- NSP is your best solar solutions with leading performance and recognized reliability



# NSP at A Glance

- **Founded: December, 2005**
- **Products: Cells, Modules and System**
- **2014 Year-End Capacity:**
  - Cell: > 2.20 GW
  - Module: > 480 MW
- **Employees: 3,800**
- **Headquarters: Hsinchu, Taiwan**
- **2009 Listed in Taiwan Stock Exchange**
  - **Market Cap US\$789 Million at the end of 2014**
- **The world's leading merchant cell company**



# A Pioneer in PV Industry

- **With innovative and energetic, NSP accomplished and still keep processing in PV industry**
  - **First in doing acquisition**
  - **First in building solar systems globally**
  - **First in doing YieldCo**
  - **First in commercial shipment of bifacial solar products**
  - **First in making lead free modules**



# Milestones

- **2005.12: NSP founded**
- **2006.12: Breakeven and 100% utilization achieved**
- **2009.01: Listed on the Taiwan Stock Exchange**
- **2010.10: Launched "Super 17" (multi) & "Perfect 18" (mono) cells**
- **2011.09: Launched mono cell "Black 19" at EU PVSEC**
- **2012.09: Announced "Super 18" and "Black 19+"**
- **2013.05: Merged with DelSolar**
- **2013.10: Awarded "Taiwan Excellent PV Product" by the Bureau of Energy, Taiwan**
- **2013.10: Launched "Super19", "Black20" cells and "BiFi" bifacial module at PV Taiwan**
- **2014.06: Launched "Super" (multi), "Power" (mono) module, and half cut module "PowerH" at InterSolar EU 2014**
- **2015.06: More than 7 GW of NSP Cells and Modules shipped globally since 2005**

# Core Competences

## Leading Quality

- Pioneer of combining semiconductor manufacturing discipline into our Taiwan-engineered quality solar solutions

## World-Class Technology

- Inter-disciplinary experts in semiconductors, electronic systems, silicon raw materials, solar cell processing and solar energy system engineering
- State-of-the-art facility, equipment and knowledge

## Prime Customer Services

- To enhance customer satisfaction and service efficiency
- To promote business relationship to partnership

# The Executives



**Dr. Quincy Lin**

**Chairman**

- 30+ years of experience in high tech management
- Senior Vice President of Taiwan Semiconductor Manufacturing Company (TSMC)
- Honorary Chair in Management at National Chiao-Tung University



**Dr. Sam Hong**

**CEO**

- 30+ years of experience in PV solar energy
- Research Division Director of PV Solar Energy Division at the Industrial Technology Research Institute (ITRI); VP & Plant Director of Sinonar Solar Cell
- Chairman of Taiwan Photovoltaic Industry Association (TPVIA, 2011 - 2015)

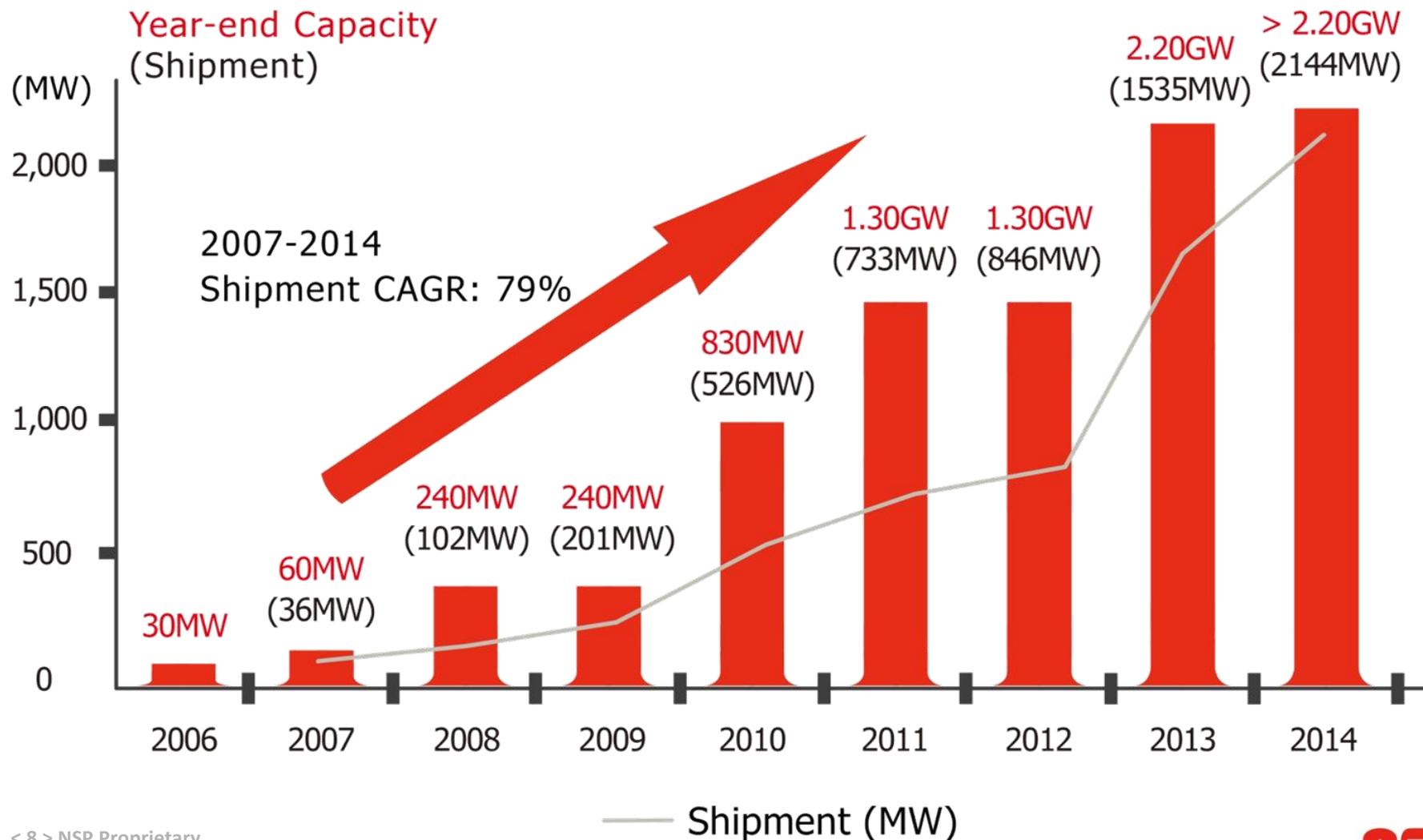


**Mr. Andy Shen**

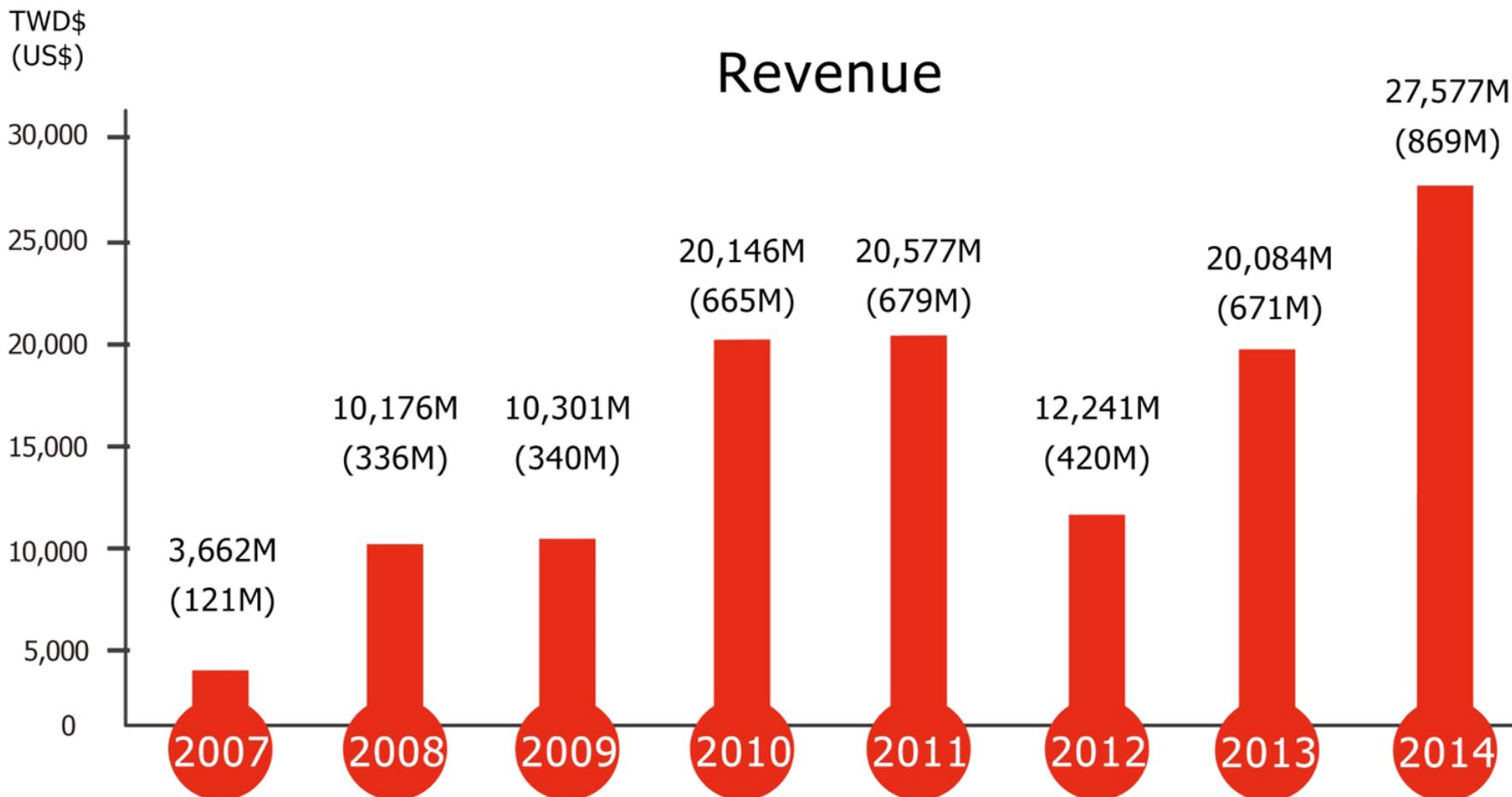
**President**

- 30+ years of experience in semiconductor engineering, sales and marketing
- Senior Director, TSMC
- Managing Director, TSMC-Europe

# Strong Growth Momentum



# Revenue Growth



- **2012 revenue declined despite 15.4% shipment growth due to ASP erosion**

# Cell Capacity Overview

**2014 Total Capacity: > 2,200 MW**

**China : > 400 MW**

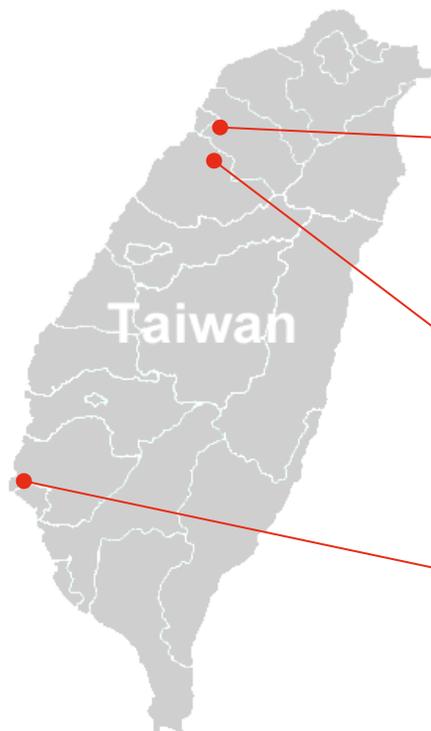


**FAB 6**



**Wujiang, Suzhou**

**Taiwan : > 1,800 MW**



**HQ & FAB 2**

**Hsinchu Science Park**



**FAB 5**

**Chunan Science Park**



**FAB 3**

**Tainan Tech. Ind. Park**

# Module Capacity Overview

**2014 Total Capacity: > 480 MW**

**China : > 180 MW**



**FAB 52**



**Wujiang, Suzhou**

**Taiwan : > 230 MW**



**GES (NSP Subsidiary)**  
Hsinchu Ind. Park



**FAB 51**  
Hsinchu Science Park

# Strong R&D Capability

- **World leader in efficiency and yield**
- **Advanced characterization based on years of experience in semiconductor device physics for optimized performance**
- **Excellent manufacturability and reliability to shorten time to market**
- **Customer oriented technology road map to support advanced products and partnership**



# NSP Multi-crystalline Products

- **Super19: High efficiency multi cells**
- **Average cell efficiency >18.9%**
- **Max cell efficiency: 19.5%**
- **Ideal for 275W (60cells) & 325W (72cells) panels**

 **SUPER19**



 **SUPER**



# NSP Mono-crystalline Products

- **Black20: High efficiency mono cells**
- **Average cell efficiency >20.0%**
- **Max cell efficiency: 20.5%**
- **Ideal for 280W (60cells) & 335W (72cells) panels**

 **BLACK20**

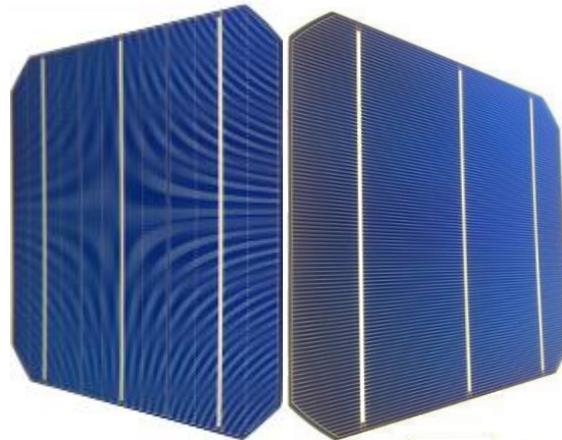


 **POWER**



# NSP N-type Bifacial Product

- **BiFi: n-type bifacial mono-crystalline cells**
- **Zero cell LID (equivalent to 3% more output in life time)**
- **Average cell efficiency (front side) >20.0%**
- **Nominal Power equivalent power 330W  
(20% power gain from rear side at suitable installation)**
- **Ideal for flat rooftops, vertical installations, BIPV, carport, snow or desert environments**



# Proven Module Capability



- **Power tolerance of 0 to +4.99 W providing a stable, high-energy system output**
- **High PV cell shunt resistance enabling increased power output in low light conditions**
- **Low temperature coefficients of power to produce high power output in all weather conditions**
- **High efficiency solar cells and state-of-the-art manufacturing technology to enhance cost efficiency per kWh**
- **High wind/snow load tolerant**
- **Ammonia-resistant according to IEC 62716**

# NSP Module Features

## ● Standard Offerings



Positive power tolerance  
0~+4.99 watt



Withstand strong wind/snow load up to 5400 Pa  
Pass ASTM E330  
Maximum wind speed: 197 km/h (safety factor 3)



Excellent low light performance  
3.5% relative eff. reduction at low-irradiance (200W/m<sup>2</sup>)



Certified ammonia resistance  
According to IEC 62716 Ed. 1



100% EL inline inspection  
Better module reliability



Prolonged aging test  
2000 hours damp heat test; 400 thermal cycles



Compliance with RoHS and REACH



PID resistant  
Enhanced module reliability

## ● Customized Offerings



Salt resistant  
According to IEC 61701 Ed. 2 (severity 6)

# Your Best Solar Partner

**World's top merchant solar cell manufacturer with proven track record in quality**

**Strong R&D commitment and technology leadership**

**Industry leading performance and reliability for our solar solutions**



**Cost effective structure**

**Strong and diverse customer base**

**Experienced and well-recognized management team with strong industry background**

# Largest BIPV Stadium in World

- **Taiwan National Stadium, 1MW PV System, EPC by Delta, Solar cells by NSP**
- **With 8,844 Solar Modules and cover a surface area of 14,155 square meters**
- **Architect: Toyo Ito**
- **The largest building-integrated PV system in Taiwan**
- **Annual CO<sub>2</sub> reduction: 660 MT**
- **Annual Power Generation: 1.1 M KWh**



# Largest Airport PV System in World

- **USA Indianapolis Airport  
25 MW PV System  
Solar cell by NSP**
- **With 76,228 Solar Modules  
and nearly 162 acres of land**
- **On-grid ceremony  
Oct. 18, 2013**
- **PPA with Indianapolis  
Power and Light Company  
(IPL)**
- **Annual CO<sub>2</sub> reduction:  
8,529 MT**
- **Annual Power Generation:  
30M KWh**



**GES**  
General Energy Solutions  
永旺能源股份有限公司



# Rooftop Solar Systems in UK

- **Tameside, Greater Manchester Rooftop Solar Systems 14 MW Solar cell by NSP**
- **With more than 56,000 Solar Modules and spread out on the rooftops of 4,500 homes**
- **The landmark installation of 1,000 homes with 3.1MW completed and COD on Oct 15, 2014**
- **Annual CO<sub>2</sub> reduction: more than 500 MT**
- **Annual Power Generation: 12M KWh**



**GES**  
General Energy Solutions  
永旺能源股份有限公司



# Corporate Social Responsibility

## ● Environmental Sustainability

- Voluntary Commitment: A Member of PV Cycle
  - Recycling end-of-life solar modules through PV cycle
  - Minimizing environmental impact of end-of-life products
- Carbon Footprint Verification
  - Received the Reasonable Level of Assurance (the highest level for this certification)
- Waste Recycling
  - Management initiated waste reduction and recycling
- Environmental Management System
  - Assuring that environmental impact is being measured and improved



PAS 2050 : 2011



PAS 2050 : 2008



ISO 14001 : 2004

# Corporate Social Responsibility

## ● Employee Well-being

### ● Safety and Health

- Adapting occupational health and safety management systems
- Training for laboratory work safety improvements



OHSAS 18001 : 2007

### ● Training and Development

- Set up internal training programs and provide information on external training courses
- Established E-learning platform and has been encouraging and promoting training courses



TOSHMS

### ● Workplace Wellness

- Practices of work-life balance
- Elimination of discrimination
- Promotion of physical and mental health



# Corporate Social Responsibility

- **Social Contribution**

- Volunteer Programs

- Environmental Care Volunteers:  
Educating the public with knowledge on green energy, energy saving and environmental protection
- Social Care Volunteers:  
Caring for community, society and the environment



# Thank You

**Neo Solar Power Corp.**

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[www.nsp.com](http://www.nsp.com)

