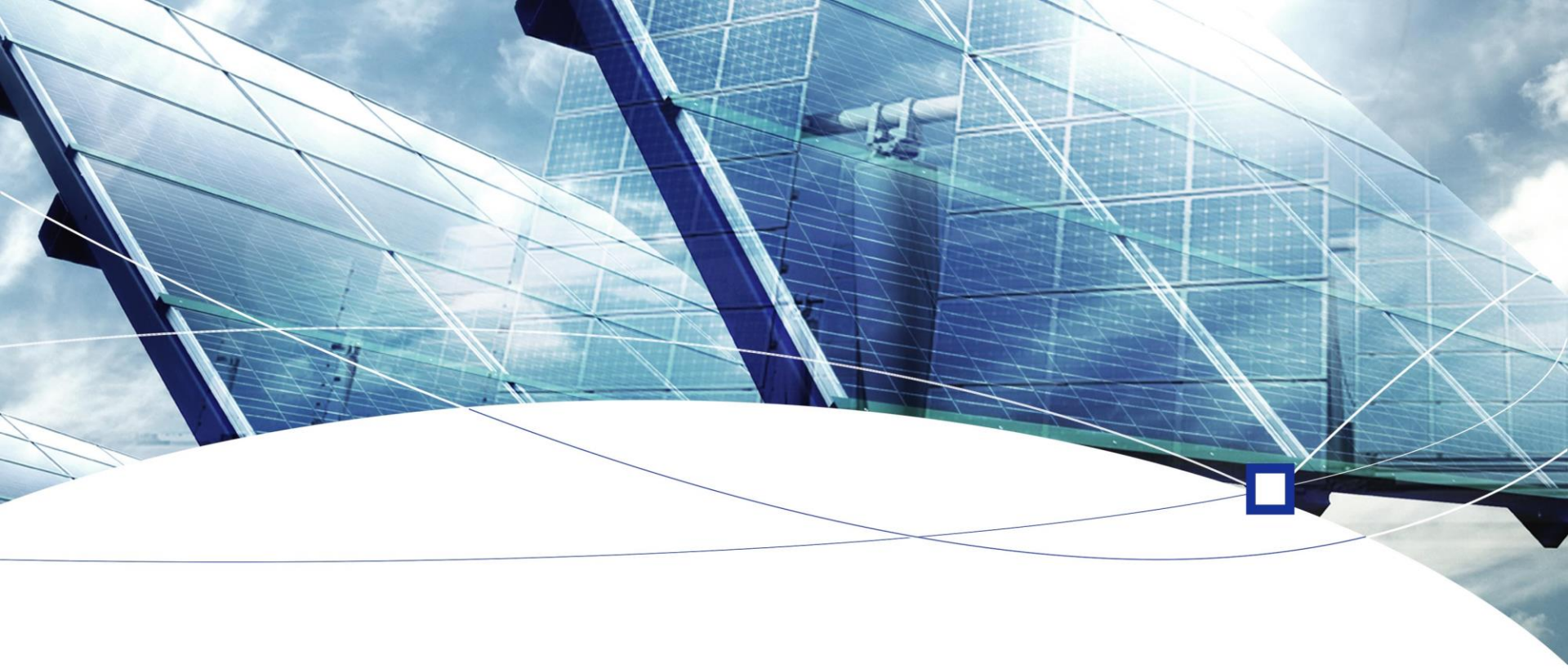


2013

S-ENERGY COMPANY PROFILE

Let us thrive to the greener future,
from the leading PV module manufacturer
to the top global renewable energy company.
New story creator, S-ENERGY is one of the key contributors
in shaping the future of the solar energy industry

New Story Creator

As the first company in PV industry in Korea, S-Energy has always been marking its name in every milestone of Korean PV history. Since 1992, we have been manufacturing PV modules and providing system integration service to our customers, and now we are proud to boast our worldwide recognition based on unbeatable quality standards and reliability.

Contents

S-Energy makes a constant challenge in rapidly changing PV market with new sense and innovative products

01 Company Overview
WHO we are

Company Overview

A pioneer in the solar industry, S-Energy is one of the key contributors in shaping the future of the solar energy industry. Over the years, S-Energy has received numerous awards from different authorities in recognition for its initiative and professional history. And thanks to its reliability and progress, it has become one of the leading companies in the Photovoltaic industry today.

Name	S-Energy Co., Ltd
Establishment	January 2001
Location	[HQ] 3rd Fl., Miraeasset Tower, 685, Sampyeong-dong, Bundang-gu, Seongnam-si, Gyeonggi-do 463-400, Republic of Korea [Factory 1] 328 Techno-2-ro, Yuseong-gu, Daejeon, Republic of Korea [Factory 2] 260 Gapcheon-ro, Yuseong-gu, Daejeon, Republic of Korea
International Branches	[S-Energy America] Irvine, CA, USA [S-Energy Europe GmbH] Eschborn, Germany
Website	http://www.s-energy.com

Company Overview

S-Energy is the nation's leading PV module manufacturer which was spun-off from Samsung electronics in 2001. S-Energy's history can truly be called the Korea's history of PV module industry; S-Energy has continued to develop its technological-edge to be the first and best PV module manufacturer in Korea with endeavors and pioneering spirit.

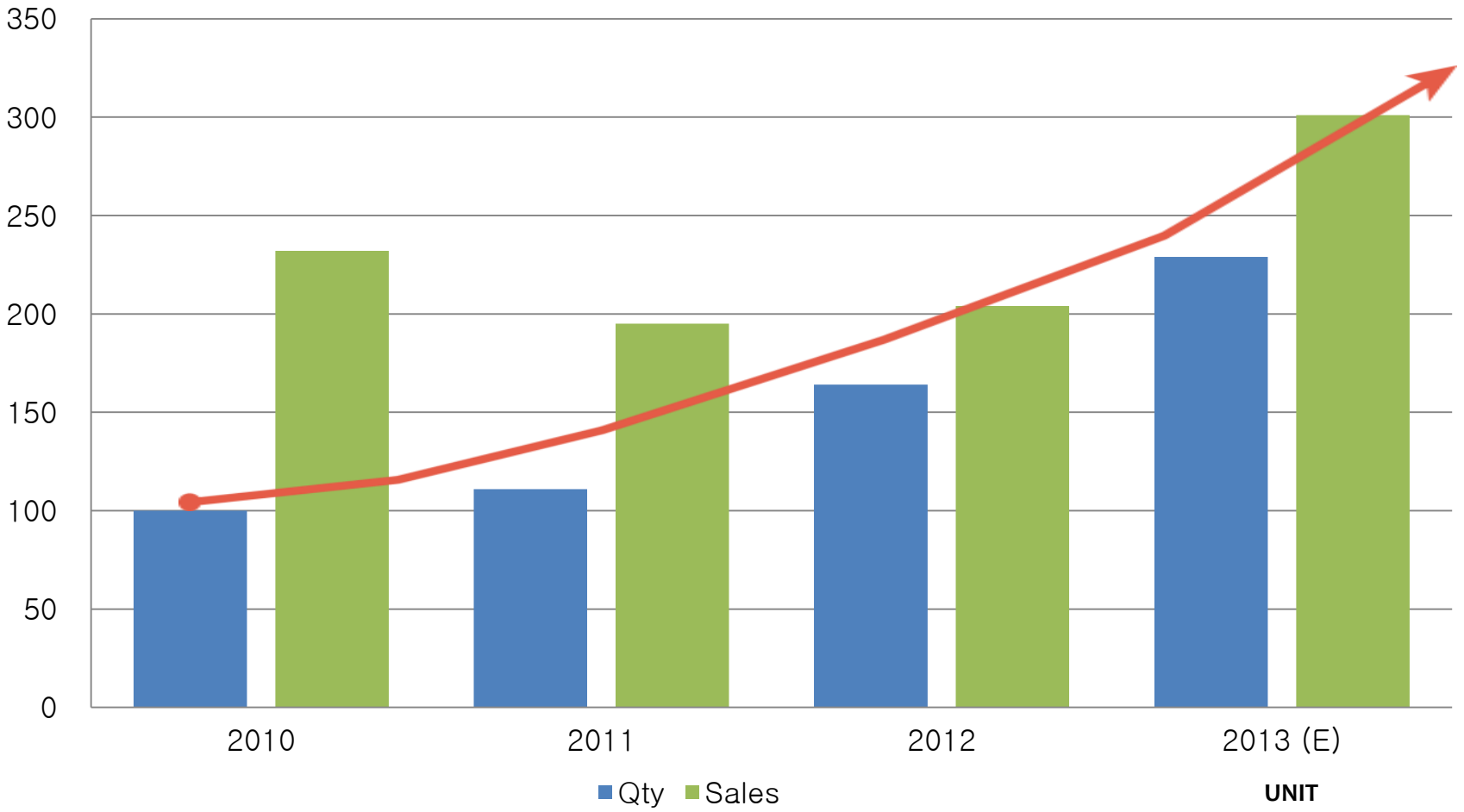
01. History

- 1992 Started as a solar division of Samsung Electronics
- 1994 Started PV module production
- 2001 Established S-Energy (Spun-off from Samsung Electronics)
- 2002 Introduced first green village program in Korea
- 2006 Completed first MW PV power plant in Korea (Dong-hae)
- 2007 IPO on KOSDAQ : 1st renewable energy company in Korea
- 2008 Started to export to European markets
- Completed Buan PV power plant (1.3MW)
- 2009 Completed S-Energy 2nd factory
- Marked USD 100M export
- 2010 Marked USD 200M export
- 2011 Set up the office in Europe and U.S.A.
- 2012 Completed Elk Grove PV plant in U.S.A. (4.8MW)
- Completed Kuala Perils Project in Malaysia (6MW)
- 2013 JET Certification

Company Overview

S-Energy is a one of the fastest growing companies in PV industry, and was awarded Fast growing Asian company by Deloitte consulting. And, we will keep our position as reliable and respectful company in the future.

02. Sales Figures



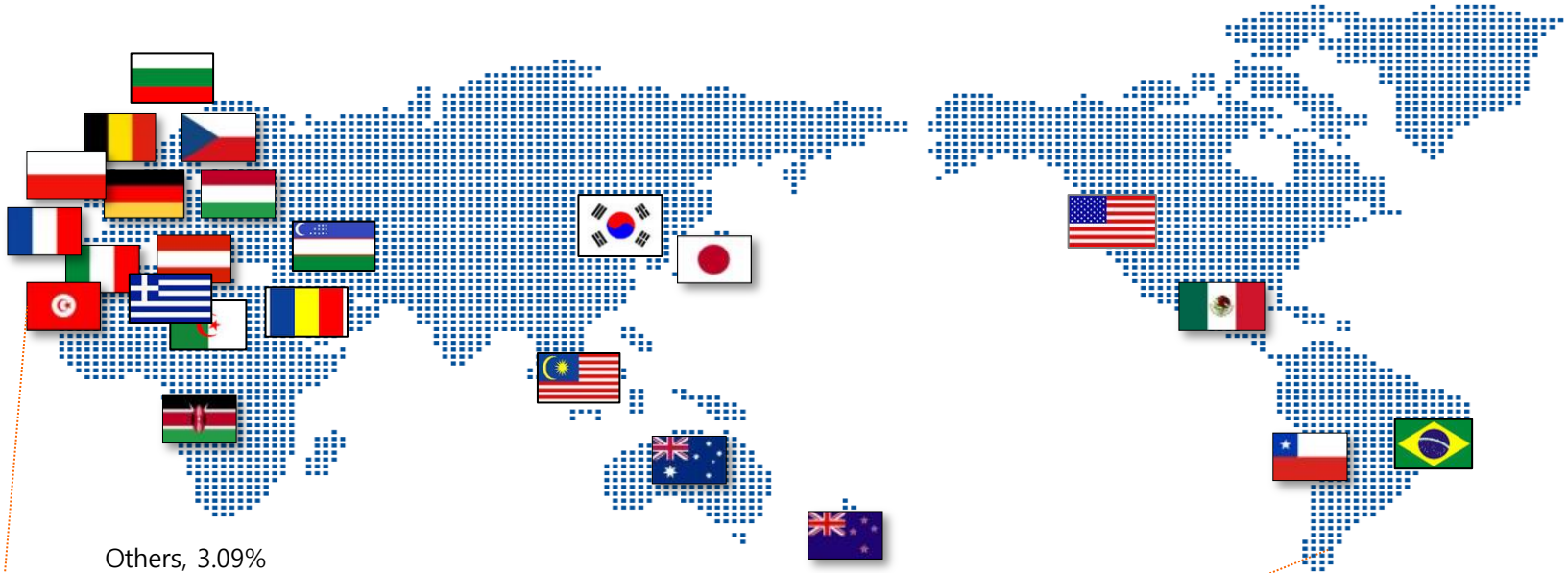
UNIT

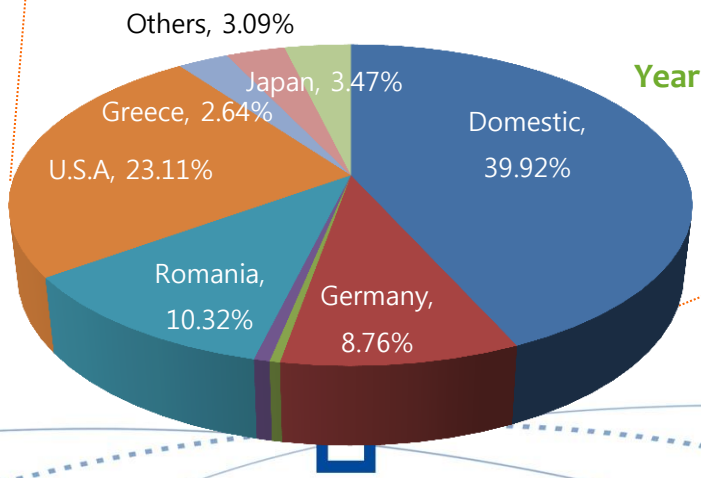
1. Q'ty : MW
2. Sales : Million (USD)

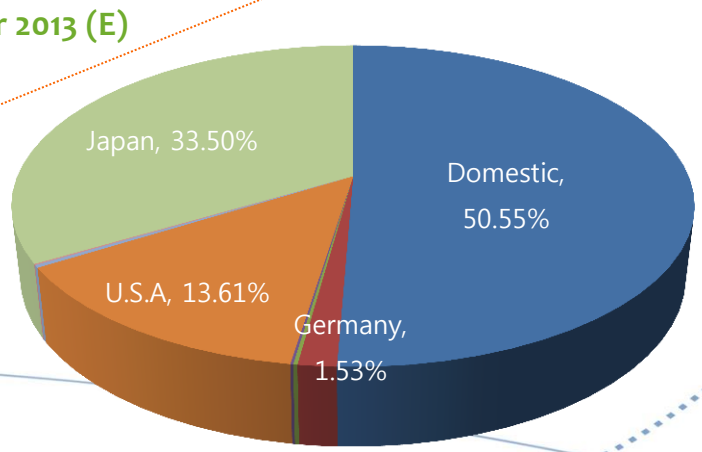
Company Overview

From north to south, from east to west, S-Energy has variety of customers all over the world. Since our first module supply in Europe, we have been expanding to every continents on the planet earth.

02. Sales Figures



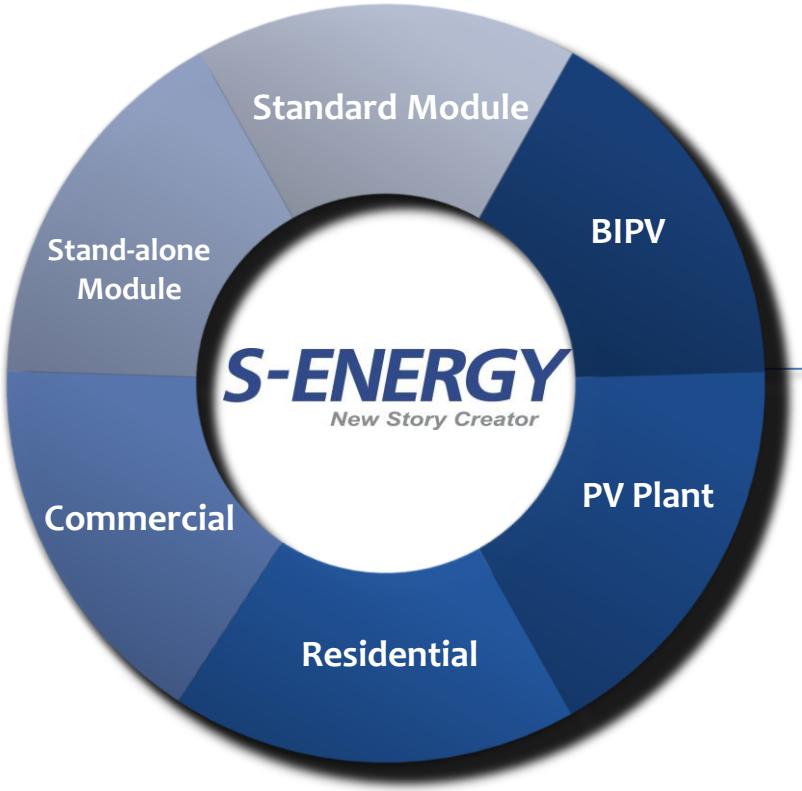




Company Overview

S-Energy is a PV module manufacturer and also a project development business provider.
This enables us to integrate our cutting edge PV module technology into PV power system , and
various lineups of PV module make it possible to satisfy customers' various needs.

03. Business Sector



PV Module Business

Project Business

COMMERCIAL

RESIDENTIAL

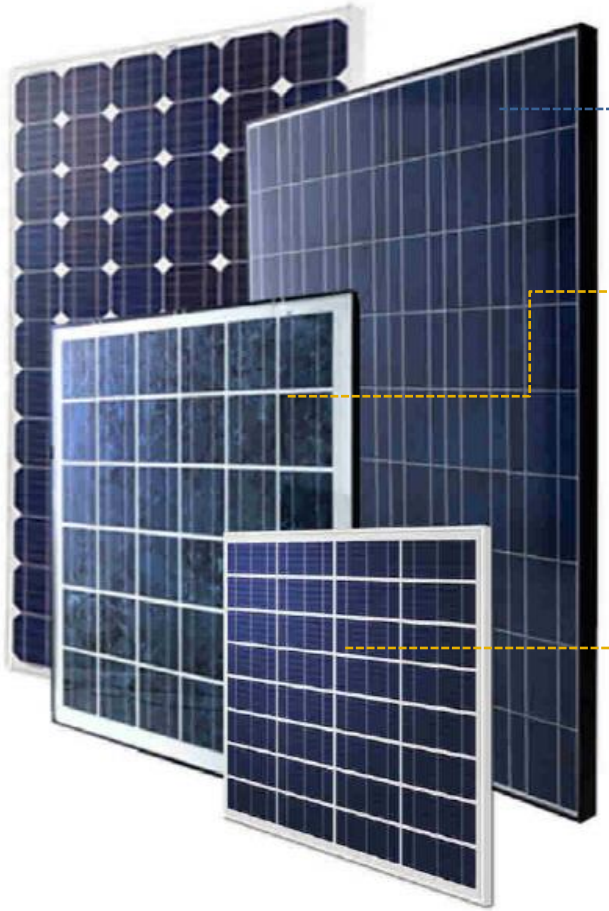
PV POWER PLANT

02 Business Sector
WHAT we do

- PV Module business
- Project business
- Research & Development
- SEIB (Investment experts subsidiary)

PV Module Business

S-Energy is developing PV modules which can be used for any installation environment.
Residential rooftops, commercial buildings, PV plants and even remote islands and mountains.
Since PV modules are designed to be installed outside, it requires high level of
durability and reliability, and S-Energy supplies the right PV module you are looking for.



Standard Module



BIPV Module

Building Integrated Photovoltaic Module



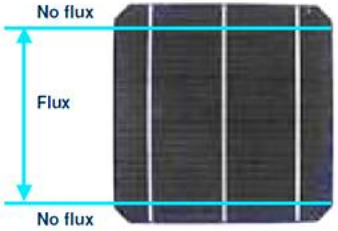
Stand-alone Module


PV Module Business

S-ENERGY's PV module is designed to survive in any environment and deliver the most power output to you. You will not waste a penny from the sun light and will be able to build your own power plant regardless of location or climate.

01. Standard Module

Reliability

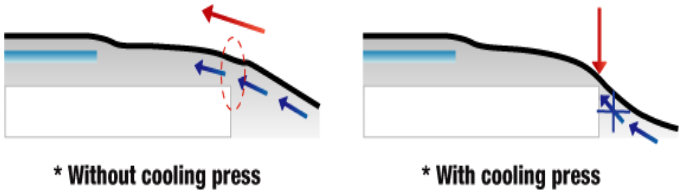


▪T&S Technology

- S-Energy's cutting-edge technology for flux application will control the position and amount of flux. Therefore, it will prevent the module de-lamination caused by flux resin vestige.

▪Lay-up vision

- Specialized camera will check the strings condition, detect defects in detail and automatically sort out the defected strings.



▪Laminator Cooling System

- A unique cooling method by applying pressure in a chamber after lamination, which is mainly for moisture protection during the cooling process.

PV Module Business

S-ENERGY's PV module is designed to survive in any environment and deliver the most power output to you. You will not waste a penny from the sun light and will be able to build your own power plant regardless of location or climate.

01. Standard Module

Durability

Mechanical load test

- **8,400Pa (857Kg/㎡)**
- S-Energy module can endure 350% more weight than the IEC standard (245Kg/ ㎡)

SM-PC8 60 Cell Series
SM-MC8 60 Cell Series

Hail impact test

- **30.7m/s Speed Hail**
- S-Energy module can endure 13% greater speed than the IEC standard (23m/s)

SM-PC8 Series
SM-MC8 Series

Ammonia corrosion resistance test

- **Applicable in agricultural and stock breeding environment**
- Test condition : temperature - 70 ℃, moisture - 70%, concentration – 750ppm, 1500 hours test

SM-PC8 Series
SM-MC8 Series

Salt mist corrosion test

- **Applicable in marine environment**
- Test condition : concentration - 5%, temperature - 30 ℃, 96 hours test

SM-PC8 Series
SM-MC8 Series

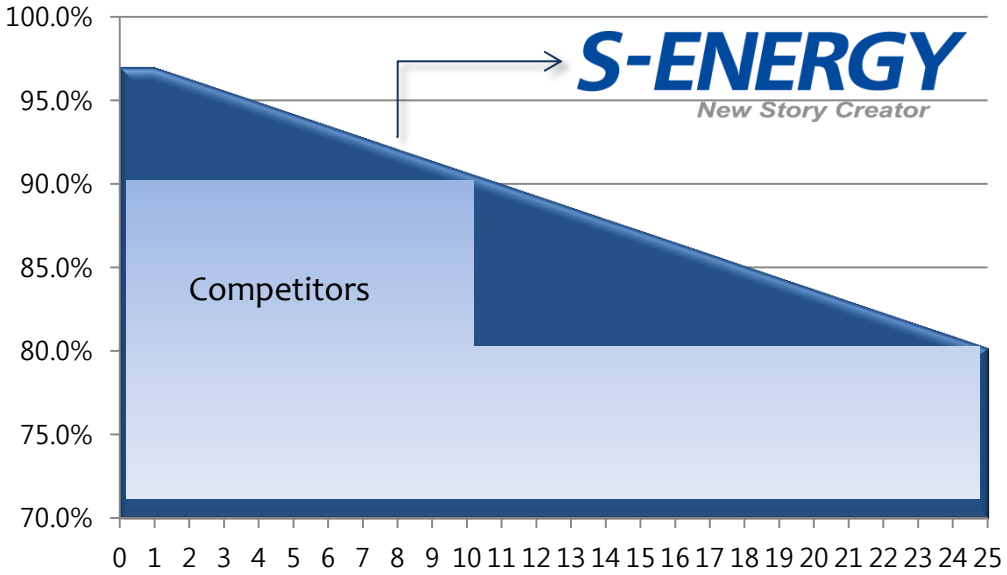
PV Module Business

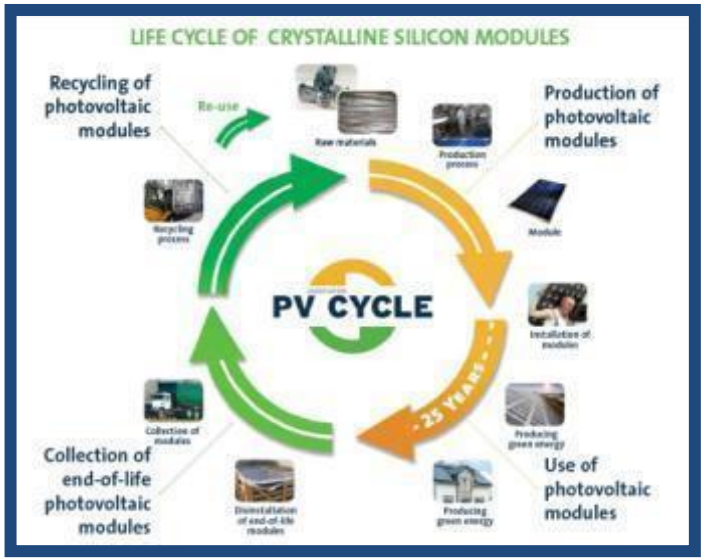
S-ENERGY's PV module is designed to survive in any environment and deliver the most power output to you. You will not waste a penny from the sun light and will be able to build your own power plant regardless of location or climate.

01. Standard Module

Sustainability

- Linear warranty for 25 years
- Max. annual power decline up to 0.7%





PV Module Business

S-ENERGY's PV module is designed to survive in any environment and deliver the most power output to you. You will not waste a penny from the sun light and will be able to build your own power plant regardless of location or climate.

01. Standard Module

The 3rd Best PV module in the world

Solarmodule: Monatsauswertung der Photon-Ertragsmessungen Dezember 2009

Hersteller	Modultyp	Zelltyp	Herkunftsland	Ertrag in kWh/kW* Monatsbesten	Abstand zum	Installationsjahr
Silken	SLK60P6L 230Wp	poly	Spanien	14,47	Monatsbester	2009
Solarworld	SW 210 poly***	poly	Deutschland	14,36	0.7%	2006
S-Energy	SM-220PA8	poly	Südkorea	14,34	0.9%	2009
Mage Solar	225/8PJ	poly	China	14,24	1.6%	2009
S-Energy	SM-220PA8	poly	South Korea	14.34	0.9%	2009
Photowatt	PW 1650-175W	poly	Frankreich	14,01	3.1%	2006
Sunrise Solartech	SRM-180D-72	mono	China	13,84	4.4%	2009
Evergreen	EC-120**	ribbon	USA	13,63	5.8%	2006
Shell	SQ 150-C**	mono	Portugal	13,60	6.0%	2006
CSI	CS6A-170P	poly	China	13,52	6.6%	2007
Evergreen	ES-180-RL**	ribbon	Deutschland	13,45	7.0%	2007
Shell	Powermax Eclipse 80-C**	CIS	USA	13,32	7.9%	2007
Kioto Photovoltaics	KPV 210 PE	poly	Österreich	13,31	8.0%	2009
First Solar	FS-265	CdTe	USA	13,27	8.3%	2007
Solarfun	SF160 MS-24 (175W)	mono	China	13,10	9.5%	2007
Dyocera	KC170GT-2	poly	Japan	12,94	10.6%	2006
Schott Solar	ASE-300-DG-FT (300 W)**	EFG	USA	12,75	11.9%	2007
BP Solar	BP 7185 S**	mono	Spanien, Indien	12,72	12.1%	2005
Isofoton	I5-170/24	mono	Spanien	12,72	12.1%	2009
Isofoton	I-110/24**	mono	Spanien	12,62	12.8%	2006
Sharp	NT-R5E3E	mono	Japan	12,49	13.6%	2005
Solar-Fabrik	SF 145A**	EFG	Deutschland	12,30	15.0%	2005
Sunways	MHH plus 190 (190 Wp)**	poly	Deutschland	12,20	15.7%	2005

* normiert auf die STC-Leistung, **wird nicht mehr hergestellt, ***wird nicht mehr hergestellt technisch leicht verändertes Nachfolgemodell Sunmodule plus SW210

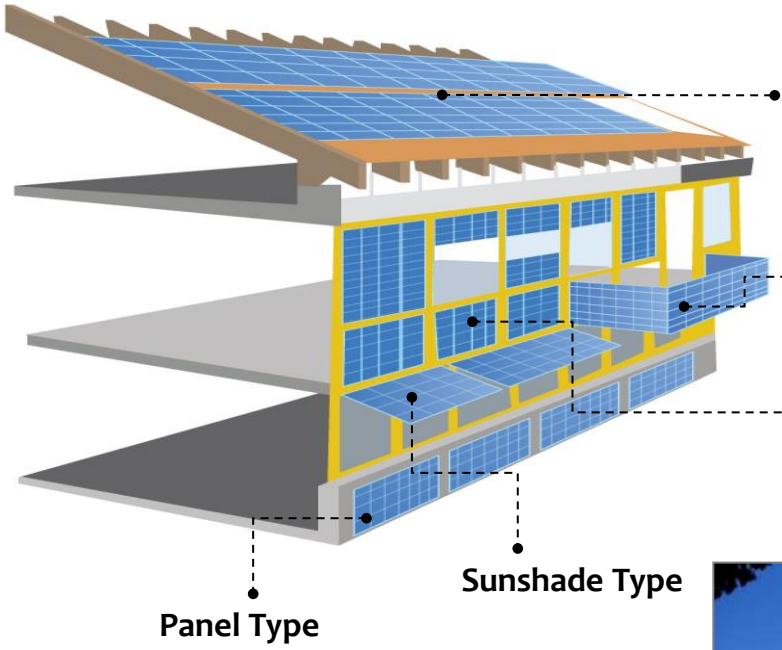
PV Module Business

BIPV is a cutting-edge technology to integrate the power plant into your building.
You can add aesthetic and eco-friendly value to your building and save construction cost.
As an industry leading BIPV designer, S-ENERGY will make your building as one of the landmarks in your city.

02. BIPV Module

BIPV (Building Integrated Photovoltaic Module)

- 70% Market share of BIPV in Korea
- 2009 Building material certificate ('GUN' Mark)



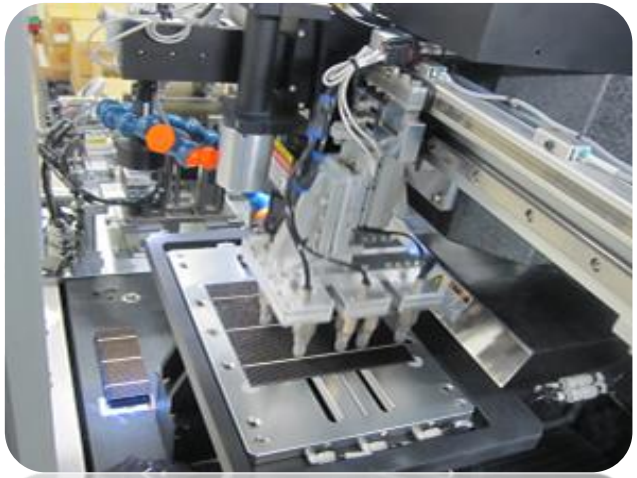
PV Module Business

S-ENERGY offers small sized stand alone modules for the remote communities, which in need of electricity without any grid connections. S-ENERGY's stand alone modules are designed to survive any environments or conditions.

Stand-alone Module

- Semi-Automated Line Designated for Stand-alone Module
- Qualified by TUV-I (IEC 61215, IEC 61730)
- Maximized Efficiency and Quality for Stand-alone module

[Auto laser cutting machine]



[Auto T&S machine]

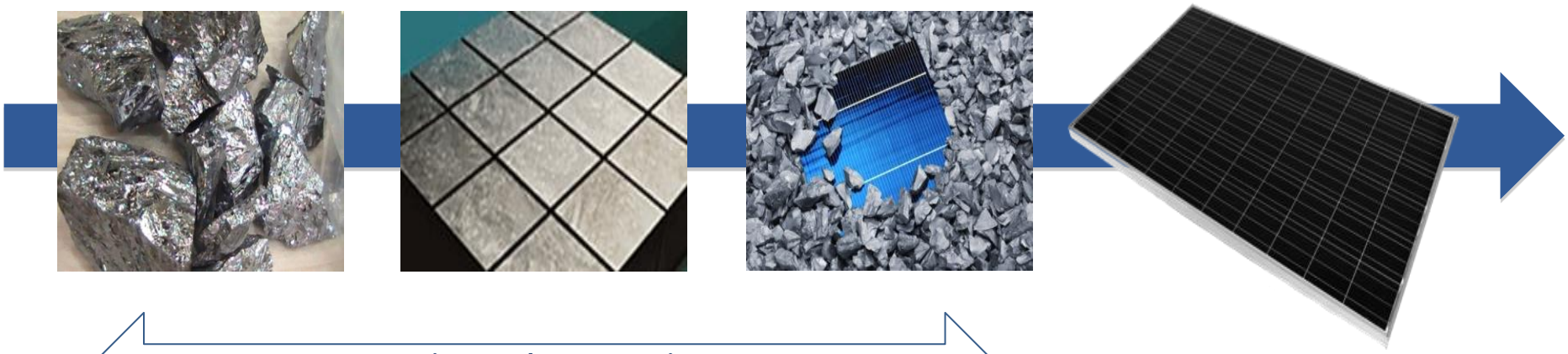
PV Module Business

S-ENERGY's strict quality control system enables us to provide our customers with world class quality products and we keep trying to improve our standards to meet customers' needs all the time.

04. Quality Control

Quality control from poly Si to module

Quality control for raw materials enables us to guarantee our products quality



Horizontal Integration
(From Poly Silicon to Solar Cells)

PV Module Business

S-ENERGY's strict quality control system enables us to provide our customers with world class quality products and we keep trying to improve our standards to meet customers' needs all the time.

04. Quality Control

S-Energy Real-Time Manufacturing System (SRMS)

Planning

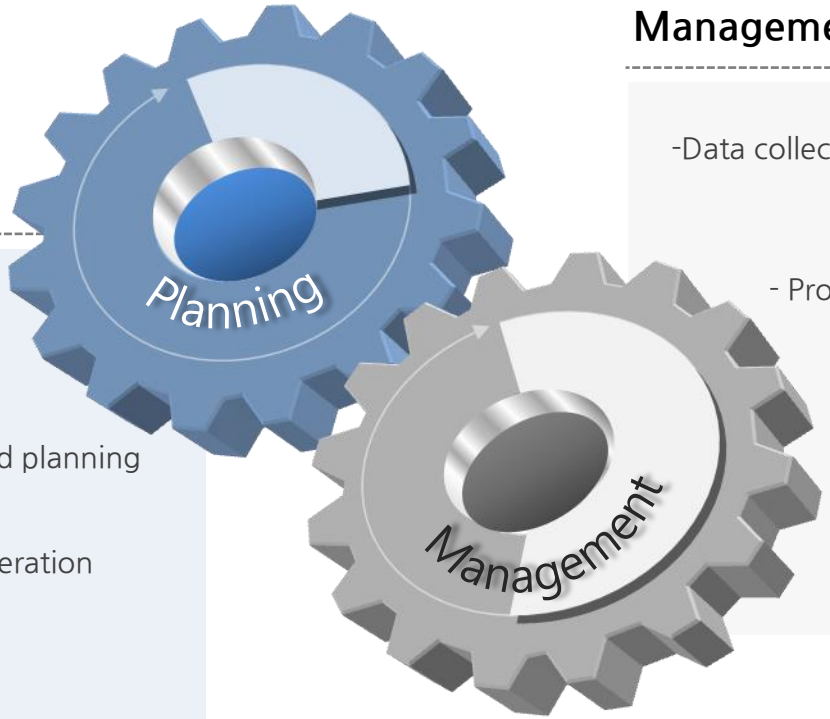
• Resource allocation & Status management
  - for equipment, work skills, components & documents

• Operation scheduling and detailed planning

• Document Control
  - for job instruction, drawing, operation standards and specifications

• Data collection

• Labor management to trace operating conditions, workers attendance etc.



Management

• Quality Management
-Data collection and analysis, working pattern analysis, SPC/SQC

• Process Control
- Process tracking, alarm management

• Maintenance Management
-Equipment / tool /resource management

• Production tracking & record

• Performance analysis
- On-line and real-time report

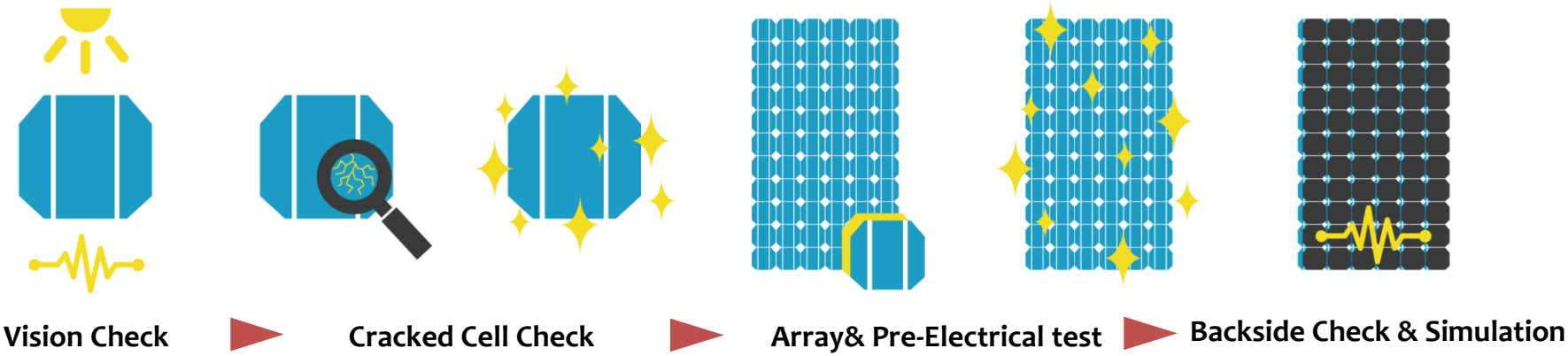
PV Module Business

S-ENERGY's strict quality control system enables us to provide our customers with world class quality products and we are trying to improve our standards to meet customers' needs all the time.

04. Quality Control

Module inspection process

- Quality inspection done in every step in the process
- NG products cannot be proceeded to the next process
- Lab's equipment satisfies IEC & UL Test Standards



PV Module Business

S-ENERGY is developing PV modules, which can be used for any installation environment.
Residential rooftops, commercial buildings, PV plants and even remote islands and mountains.
PV module is supposed to be installed outdoors and therefore, it requires high level of
Durability and reliability, and S-ENERGY supplies the very PV module you are looking for.

Desert PV Modules

- Enhanced durability for extreme environment
- Aluminum junction box
- Temperature decreasing effect using mirror coating
- PVB encapsulant for improved reliability

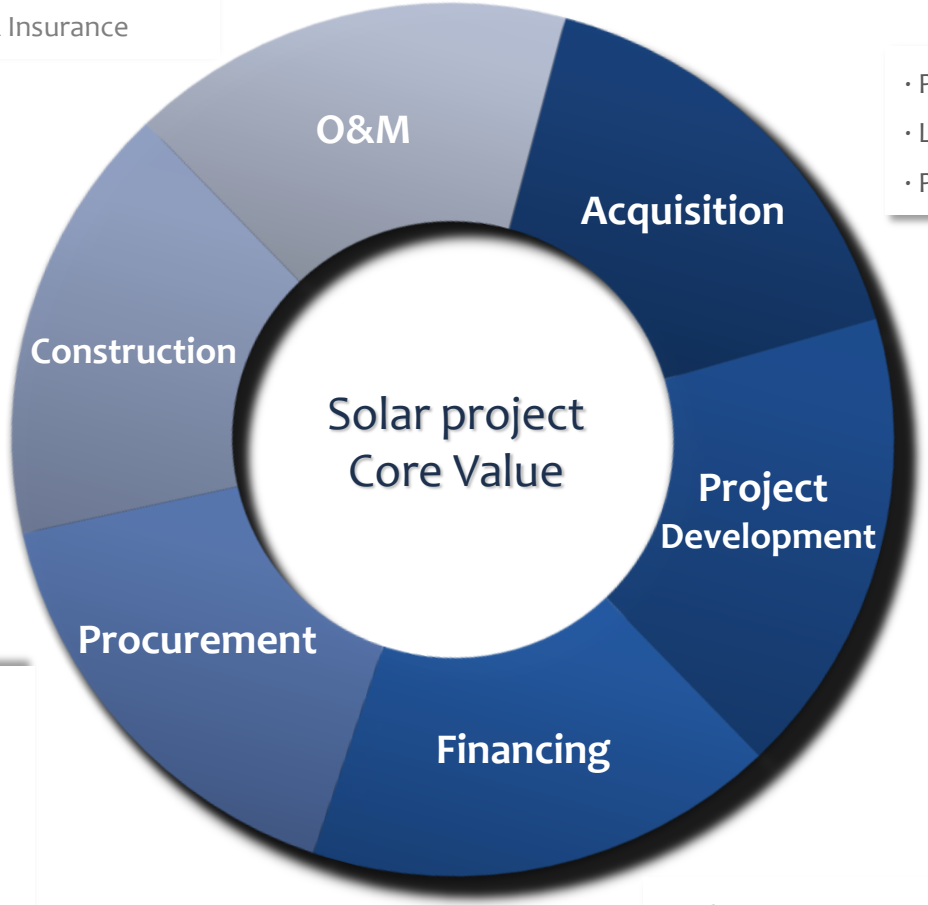
Lightest PV Module

- The lightest Module@250Wp : 8.7Kg!!
- Mechanical load ≥ 2,400Pa
- More than 50% lighter than existing modules
- 2% improved output using front film

Project Business

S-ENERGY can provide turn key project development from land acquisition to O&M.
Our financial and legal experts are ready to help you to get the best result from your project.

- 24hr Monitoring
- Security & Insurance



- Project Assessment
- Land / Roof Acquisition
- Pre-service

Well-organized local Partner
- Project Engineering
- Civil Engineering
- Electrical Engineering
- Supervisory Service

- Evaluation Power System
- Environmental Assessment
- PPA Negotiation
- Taxation Analysis

Competitive Components
- Module
- Inverter
- Racking System
- SCADA
- Bankability

- Debt Financing
- Equity Funding
- Governmental Incentives
- Financial Modeling

Project Business

As an EPC provider, S-Energy has accumulated experience for 20 years. We completed the first MW scale PV power plant in Korea and we have been serving our customers with engineering expertise , competitive component procurement and excellent construction service.

01. EPC

What makes S-Energy a leading EPC provider?

System Engineering Expert

- Experienced system engineers will provide high quality advisory services
- Systematic work process and organized with experts in variety of backgrounds

Organized Expert partnership

- Not only as a module manufacturer, But also a System integrator for 20 Years
- Strong relationship with our partners will bring us the competitiveness

First MW-level System Construction

- Over one hundred accumulated construction experience all over the world.
- As a pioneer in PV industry in Korea, S-Energy built the first MW-level PV power plant in Korea.

Project Business

S-ENERGY is managing and checking PV power generation from the sites where our products are installed. These data will be used to improve our own quality standard and provide advanced service to our customers.

Solar Performance Management Center (SPMC)

- Collecting and analyzing performance data from the sites,

SPMC enables us to provide advanced service to our customers.

S-ENERGY PERFORMANCE MANAGEMENT CENTER

1 **System Analysis**

System analysis and report

2 **System O&M**

System maintenance

3 **PV power plant manager**

For the MW power plants,
Certified power plant manager
Shall be stationed in the site

Project Business

S-ENERGY can provide turn key project development from land acquisition to O&M.
Our financial and legal experts are ready to help you to get the best result from your project.

03. Project Development

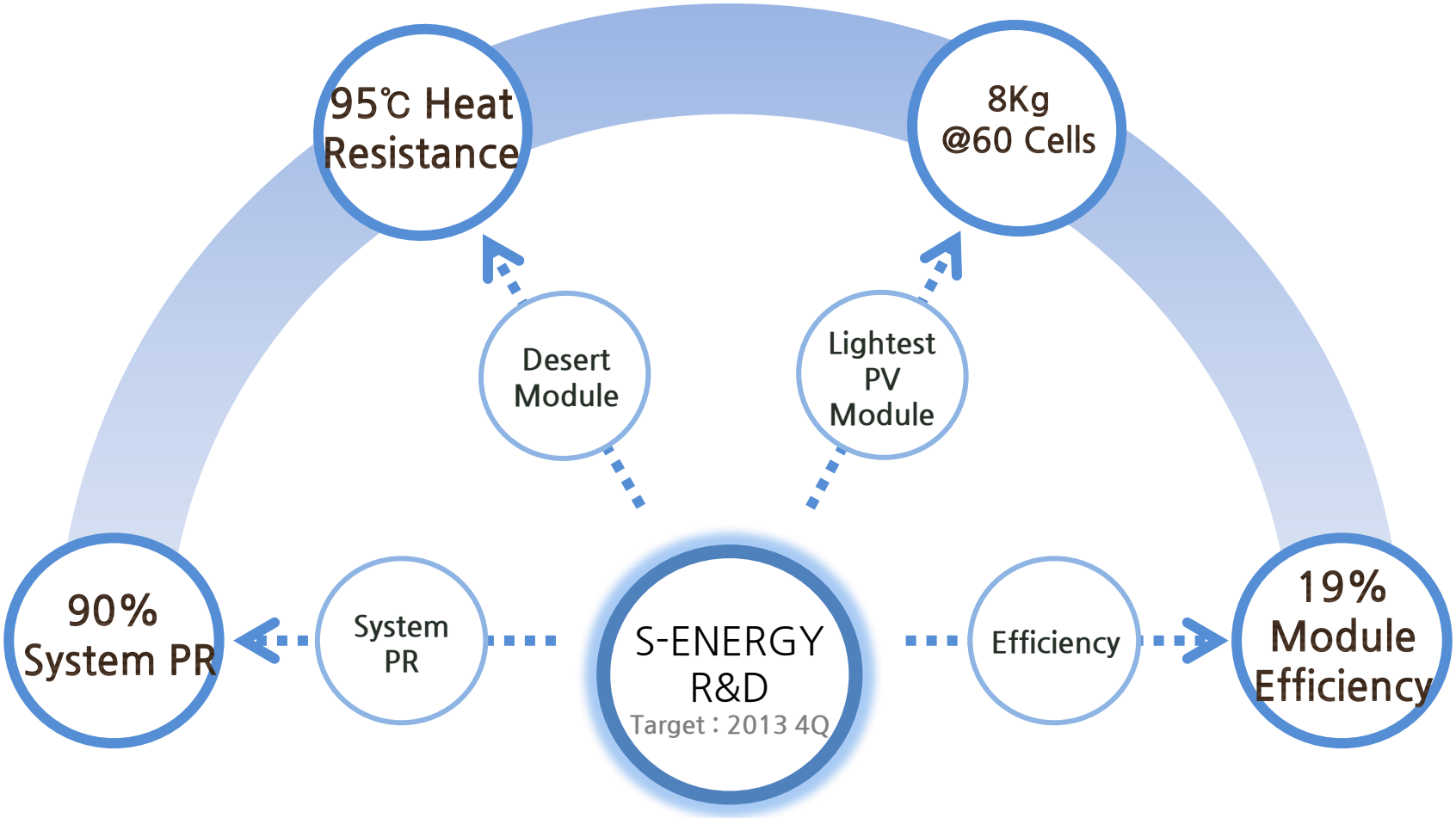
Process of Project Development

All parts of project business can be successfully completed by S-Energy

Government Approval  › System Design  › Supply Resources  › Construction  › Operation & Management 

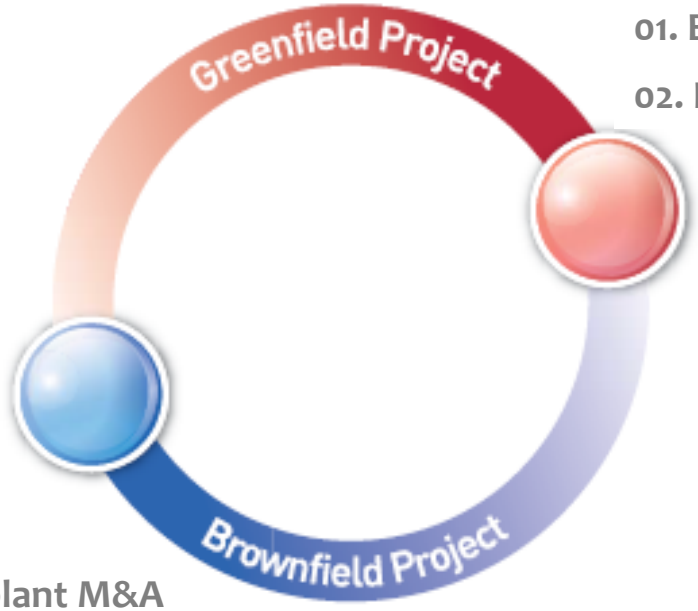
Research & Development

S-ENERGY has it own R&D center with experienced engineers and researchers, who are expertise in both PV module manufacturing, architecture and engineering. These engineers and researchers contribute to develop the technology of new concept to lead the market.



SEIB (Investment experts subsidiary company of S-ENERGY)

SEIB is the investment experts subsidiary company of S-ENERGY, and it is to invest, finance and invite investor for PV power plant such as banks, stock firms and asset management companies.

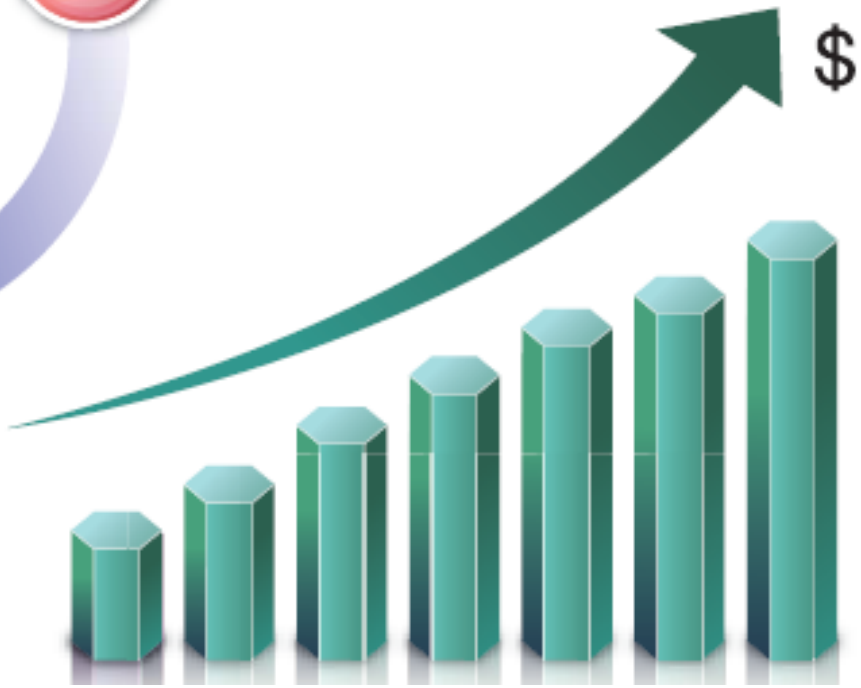


01. Equity investment

02. Project financing arrangement

01. PV Power plant M&A

02. PV Power plant remodeling investment



03 Installation Reference

HOW we can help you

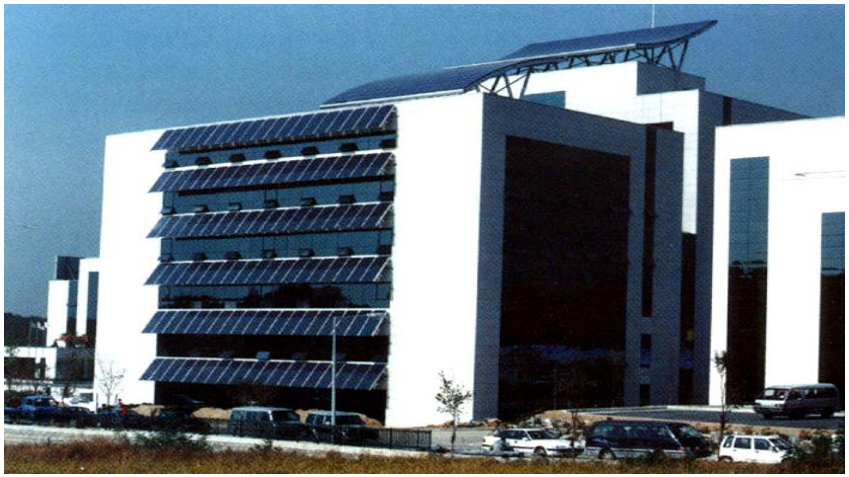
- Case Study
- Installation site

Installation Reference

From various installation cases, S-ENERGY's PV modules show better performance comparing to other PV module makers. All of our technology is melted into our PV module to maximize power performance from the PV power plant.

Samsung SDI R&D Center

▪16 years' field proven PV system installed in 1996.



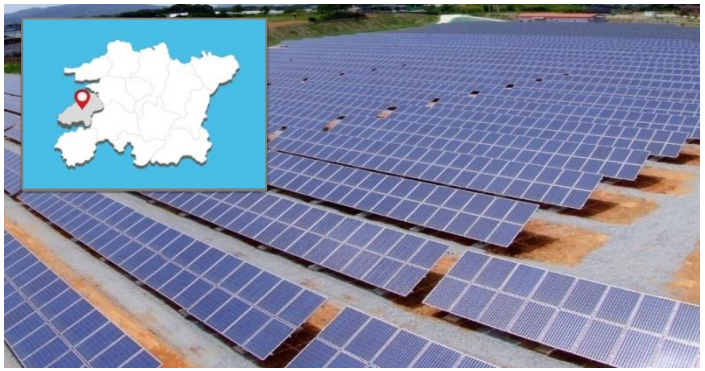
Location	Gyeonggi-do, Republic of Korea
Total Capacity	100kWp
Activation	1996
Note	BIPV Structure

Installation Reference

From various installation cases, S-ENERGY's PV modules show better performance comparing to other PV module makers. All of our technology is melted into our PV module to maximize power performance from the PV power plant.

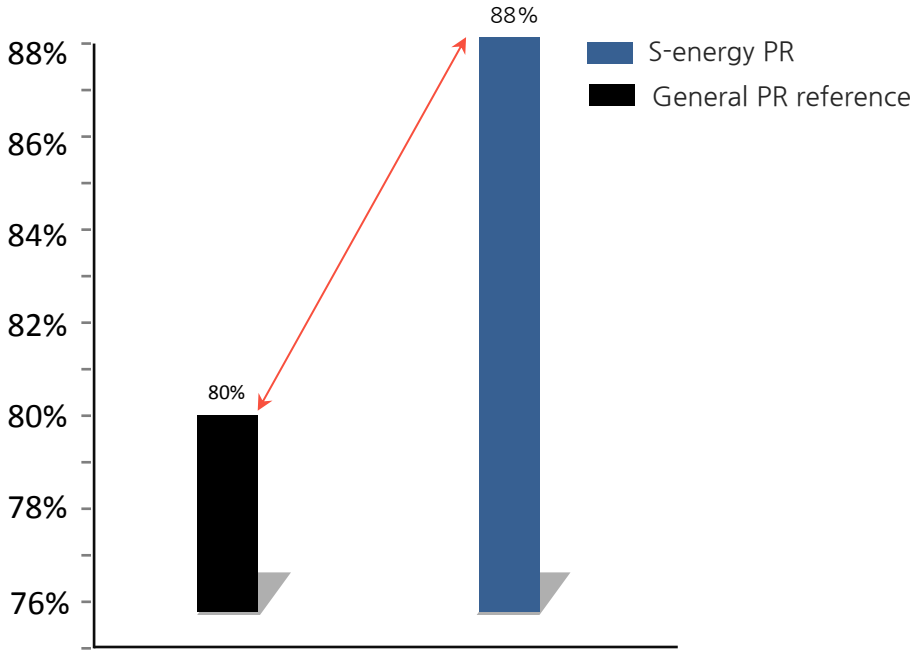
Buan PV Plant in Korea

- S-Energy owned PV power plant



Total Capacity	1,284.8kWp
Fixed Racking System	True South 30 Degrees
Commercial Operation	2008. 05. 15
Installation Area	29,500㎡ 7.5acres
PV Module	SM-200Wp (4,972ea) S-ENERGY
Inverter	SMA 500kVA 2EA , 100kVA 3EA

8% Higher than general reference



[Performance Ratio Comparison]

Installation Reference

From various installation cases, S-ENERGY's PV modules show better performance comparing to other PV module makers. All of our technology is melted into our PV module to maximize power performance from the PV power plant.

01. Case Study

Elk grove Project in U.S.A

▪S-Energy's cumulative experience is melted into Elk grove project.

Location	3705 Twin cities rd, Elk grove, CA, U.S.A
Total Capacity	4.8MWp
PPA with SMUD (100% sale of electricity)	
Annual Output (est.)	9,500MWh/year
PV Module	SM-245PC8 S-ENERGY
Inverter	SC-500HE-US (SMA)
Array Technology	Single Axis Tracker

2011. 08 30	2011. 11. 28	2012. 8.24	2012. 9.01
Project Take Over	NTP (Start)	Completion	Commercial Operation Date

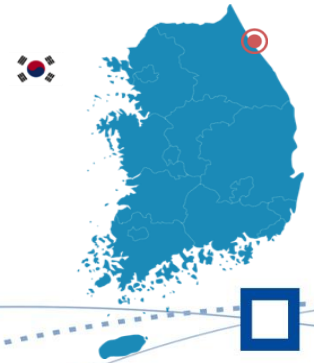
Installation Reference

From various installation cases, S-ENERGY's PV modules show better performance comparing to other PV module makers. All of our technology is melted into our PV module to maximize power performance from the PV power plant.

02. Installation Site

Dong-hae PV Power Plant

Location	Korea
Total Capacity	1,000kWp
Activation	2006
Note	1st MW PV plant in Korea



Solluce PV Power Plant

Location	Korea
Total Capacity	3,000kWp
Activation	2008
Note	Single Axis Tracker

President Office

Location	Korea
Total Capacity	40kWp
Activation	2005
Note	BIPV Structure

Installation Reference

From various installation cases, S-ENERGY's PV modules show better performance comparing to other PV module makers. All of our technology is melted into our PV module to maximize power performance from the PV power plant.

02. Installation Site

ALPS Olympic Park Project

- Location: Garmisch, Germany
- Capacity : 1,000kW
- Activation : 2009

Efico Project in Zeebrugge

- Location: Zeebrugge, Belgium
- Capacity : 1,000kW
- Activation : 2010

Tomsan Project

- Location: Czech Republic
- Capacity : 942kW
- Activation : 2009

Thank you!

■ Head quarter

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Republic of KOREA
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F:+82-70-4339-7199
www.s-energy.com

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