History

1994  Started to manufacture PV modules
2001  Established S-Energy
2002  Introduced first green village program in Korea
2006  Completed first MW PV power plant in Korea
2007  IPO, Listed KOSDAQ
2008  Started to export PV modules(EU)
2009  Established 2nd factory
       Marked USD 100M export
2010  Marked USD 200M export
2011  Established overseas subsidiary in the U.S.A.
       (S-Energy America)
2012  Completed Elk Grove PV Plant in the U.S.A.
       (4.8MW)
       Completed Kuala Perils Project in Malaysia
       (6.0MW)
2013  Achieved JET Certification
       Established overseas subsidiary in Japan
       (S-Energy Japan)
2014  Established O&M experts subsidiary company(S-Power)
       Established the fuelcell system subsidiary company(S-Fulcell)

Started as Samsung Electronics Solar Division in 1994 and subsequently spun-out as S–Energy, the Company is one of the industry’s oldest and most experienced PV module manufacturers. Twenty years of field operating data support S–Energy’s reputation as the best overall quality, performance and value for solar investors. S–Energy has further expanded functionally into specialized businesses: mainly in residential and plant PV lease, O&M, fuelcell systems. A global top tier company, S–Energy is listed in Bloomberg New Energy Finance (3rd quarter of 2014) as the world’s second most bankable solar company.
<table>
<thead>
<tr>
<th>Name</th>
<th>S-Energy Co., Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment</td>
<td>12th of January 2001</td>
</tr>
<tr>
<td>No. of employees</td>
<td>423</td>
</tr>
<tr>
<td>Subsidiaries</td>
<td>S-Power / S-Fuelcell</td>
</tr>
<tr>
<td>Branches</td>
<td>[S-Energy America Inc.] Irvine, U.S.A.</td>
</tr>
<tr>
<td></td>
<td>[S-Energy Japan Co., Ltd.] Tokyo, Japan</td>
</tr>
</tbody>
</table>
Global Top Tier

S-Energy has ranked the world’s second bankable solar company as being in the global top tier listed on Bloomberg New Energy Finance (‘Who to trust’, 3rd quarter of 2014).

Business Models

**S-Energy**
- Module Supply
  - Standard module
  - BIPV module
  - Specialized module
- Project Business
  - EPC
  - Project development
  - O&M

**S-Power**
- O&M
  - Inspection, Maintenance
  - Monitoring system

**S-Fuelcell**
- Lease & Power Supply
  - Investment, Consulting, assessment etc.
  - No.1 solar lease company in Korea, expanding its reach into the world
- Fuel cell System
  - NG series
  - HG series

**Developed by Edward Altman in 1968, the Altman-Z score is a linear function of financial ratios found to correlate with the probability of business failure leading to bankruptcy.**
PV Module Supply

Based on our experience over the past 20 years, S-Energy’s PV module has proven to be reliable and durable through production and supply of standard module, BIPV module and specialized module.

Standard module
- Long-term reliability
  EL TEST, Enhanced PID, ARC Glass

- Durability
  Higher endurance than the IEC standard

- Sustainability
  Linear warranty/Max. annual power decline up to 0.7%

BIPV module
- 70% market share of BIPV in Korea
- 2009 building material certificate (‘GUN’ Mark)

Specialized PV module
- Optimized desert PV module
- Lightest frameless type glass to glass PV module
Project Business

S-Energy has the best team of experts in engineering, financial and legal services and they are ready to help you achieve the best outcome for your project.

01

EPC

Competitive components
- PV module
- Inverter
- Racking system
- SCADA
- Bankable sourcing

Construction

Well-organized local partners
- Project engineering
- Civil engineering
- Electrical engineering
- Supervisory services

02

Project Development

EPC

Financial modeling
- Incentive/Tax equity funding
- Project acquisition

Financing

Consulting

- Project assessment
- Evaluating power system
- Environmental assessment
- Business analysis

03

O&M

- 24hr monitoring
- Immediate and reliable response
- Full insurance coverage

05

...
**Lease & Power Supply**

Guarantee ROI through project financing and equity investment for small commercial power supply and residential solar leases.

**Solar lease**

- Solar leasing for residential PV systems
  - Save over 20% on your utility bill without the initial investment by leasing home PV systems, only a monthly lease fee is required.
  - Consume PV generated power first (100kWh/month)
  - Reverse excess power back to KEPCO (200kWh/month) *
  - Use main power from KEPCO again if extra power needed after reverse power transmission to authorizer (150kWh/month) *

* It’s not a commercial power supply business for using power generation.

- Commercial solar lease (under 100kW)
  - No direct capital investment needed for PV systems by using commercial solar lease programs.

**Investment in PV power plants**

- Improve the value of a PV power plant by buying the shares, operating the plant, and making a profit via resale.

**Financial advisory and consulting**

- Advise business models with risk hedging for optimal ROI and coordinate investors for stable financial support.

**Project feasibility assessment**

- Analyze and evaluate various factors affecting project cash flow for business feasibility,
The best experts in operations and maintenance, S-Power meets customer’s needs through advanced SPMC (Solar Performance Management Center).

Monitoring
SPMC (Solar Performance Management Center) provides high quality advisory services and optimized maintenance services.

Inspection & Maintenance
The service is to ensure the performance of client’s PV assets by identifying potential issues before they directly impact on power production.

Grid-Connected System: Main results

- Normalized productions (per installed kWp): Nominal power 98.8 kWp
- Performance Ratio PR: 0.814

Guarantee
S-Power acts on your behalf, providing you optional services such as the best power-percentage guarantee, insurance, accounting and security services. All for your convenience.
**Fuel cell system**

S-Fuelcell provides core technology when it comes to fuel cell stacks, fuel processing, and the integral design of fuel cell systems.

**Configurations of fuel cell system**

Fuel cell systems provide both electricity and thermal energy, with a total efficiency (electrical efficiency + thermal efficiency) of over 85%.

1. A fuel processor is a reactor that transforms city gas into hydrogen-rich gas.
2. A stack generates energy (electricity and heat) through the reaction of hydrogen and oxygen (in the air).
3. A power conditioning system converts a direct current to an alternating current.

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**NG Series**

- **Model**: ecogener NG series
- **Fuels**: LNG/LPG
- **Power**
  - 1-5kW (electricity)
  - 1.5-7kW (heat)
- **Efficiency**: Over 85%

**HG Series**

- **Model**: ecogener HG series
- **Fuels**: H2
- **Power**
  - 1-10kW (electricity)
  - 1.5-15kW (heat)
- **Efficiency**: Over 85%
**MW Installation Reference**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Country</th>
<th>Capacity</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donghwa Power Plant</td>
<td>Korea</td>
<td>1.0 MW</td>
<td>2006</td>
</tr>
<tr>
<td>Muan Solartopia</td>
<td>Korea</td>
<td>1.0 MW</td>
<td>2007</td>
</tr>
<tr>
<td>Jangsu Dong Hwa PV Power Plant</td>
<td>Korea</td>
<td>1.0 MW</td>
<td>2007</td>
</tr>
<tr>
<td>Buan IUSNB</td>
<td>Korea</td>
<td>1.3 MW</td>
<td>2008</td>
</tr>
<tr>
<td>Kimcheon PV Power Plant</td>
<td>Korea</td>
<td>2.5 MW</td>
<td>2008</td>
</tr>
<tr>
<td>Jindo Samsung Solluce</td>
<td>Korea</td>
<td>3.0 MW</td>
<td>2008</td>
</tr>
<tr>
<td>Imsil PV Power Plant</td>
<td>Korea</td>
<td>1.0 MW</td>
<td>2009</td>
</tr>
<tr>
<td>Tomsan Project (Czech Republic)</td>
<td>Czech Republic</td>
<td>0.9 MW</td>
<td>2010</td>
</tr>
<tr>
<td>Alps Project (Alps Winter Olympic Park)</td>
<td>Germany</td>
<td>1.5 MW</td>
<td>2010</td>
</tr>
<tr>
<td>Efico Project, Zeebrugge</td>
<td>Belgium</td>
<td>1.0 MW</td>
<td>2010</td>
</tr>
<tr>
<td>T.E. Project (Czech Republic)</td>
<td>Czech Republic</td>
<td>10.0 MW</td>
<td>2011</td>
</tr>
<tr>
<td>Juseong University</td>
<td>Korea</td>
<td>1.5 MW</td>
<td>2012</td>
</tr>
<tr>
<td>Elk Grove Project</td>
<td>U.S.A</td>
<td>4.8 MW</td>
<td>2012</td>
</tr>
<tr>
<td>Kuala Perlis Project</td>
<td>Malaysia</td>
<td>6.0 MW</td>
<td>2012</td>
</tr>
<tr>
<td>Pajam Project</td>
<td>Malaysia</td>
<td>5.0 MW</td>
<td>2013</td>
</tr>
<tr>
<td>Kuala Sawah Project</td>
<td>Malaysia</td>
<td>7.0 MW</td>
<td>2014</td>
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<tr>
<td>Gamma Project</td>
<td>Romania</td>
<td>28.0 MW</td>
<td>2014</td>
</tr>
<tr>
<td>Minami Awaji Project</td>
<td>Japan</td>
<td>10.7 MW</td>
<td>2014</td>
</tr>
<tr>
<td>Tojo Project</td>
<td>Japan</td>
<td>33.0 MW</td>
<td>2014</td>
</tr>
</tbody>
</table>

**Notes:**
- Project names are referenced with corresponding images at the top of the page.
- Year indicates the year the project was completed or started, with "On-going PJT" for ongoing projects.
- Capacity is the size in megawatts (MW) of the solar power plant.
Head office

S-Energy Co., Ltd | S-Power Co., Ltd

F13, MiraeAsset Tower, 20, Pangyoyeok-ro 241 beon-gil Bundang-gu, Seongnam, Gyeonggido, 463-400, Republic of KOREA
TEL +82-70-4339-7100
FAX +82-70-4339-7199
www.s-energy.com

S-Energy 1st factory
328 Techno-2-ro, Yuseong-gu, Daejeon
Republic of KOREA
TEL +82-42-993-7715
FAX +82-42-993-7778

S-Energy 2nd factory
260 Gapcheon-ro, Yuseong-gu, Daejeon
Republic of KOREA
TEL +82-42-707-7100
FAX +82-42-717-7199

U.S.A
SEAI America, Inc. (dba. S-Energy America)
20 Corporate Park, Suite 190, Irvine, CA 92606, U.S.A.
TEL +1-949-281-7897
FAX +1-949-281-7893
E-mail operations@s-energy.com

Japan
S-Energy Japan Co., Ltd.
1-6-9, Kojimachi, Chiyoda-ku, Tokyo,
DIK Kojimachi building 3F-A, Japan
TEL +81-3-6261-3759
FAX +81-3-6261-3769
E-mail toru.yasuda@s-energy.com