

## PV Industry Note

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# Company Profile: Shell Solar

### Highlights

- Shell Solar is one of the world's largest producers of photovoltaic components
- Global presence, located in more than 75 countries
- Sixth largest producer of PV cells in 2004
- Production of solar cells and modules at 72MW each in 2004, planned production of cells at 90MW in 2005

### Background Information

Shell is a global group of energy and petrochemical companies. In 1907, the Royal Dutch/Shell Group of companies was created to incorporate their operations worldwide.

Since then, Shell has diversified to finding and producing oil and gas, producing and marketing natural gas and electricity, making a wide range of high quality fuels & lubricants and petrochemicals. The company has also undertaken operations to meet demand for hydrogen as a future cost effective fuel, and using renewable sources of energy in the form of wind and solar power.

Shell also provides business and operational consultancy, technical services and research and development expertise to the energy industry world-wide.

The Shell group is headquartered in the Netherlands and the United Kingdom, and has five members on the Executive committee. Jeroen van der Veer serves as the Chief Executive of Royal Dutch/Shell Group of Companies and the President of the Royal Dutch Petroleum Company.

### Corporate Profile

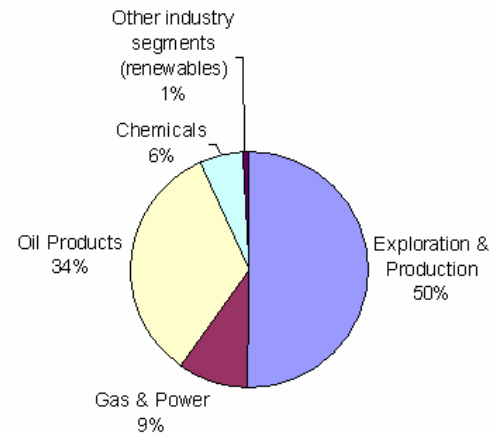
<http://www.shell.com/>

The company had a net income of \$18.2 billion in 2004. Asset sales contributed an additional \$7.6 billion and the company invested \$10 billion in its upstream business<sup>1</sup>.

The Shell Group has five core business areas: Exploration & production, Oil products, Gas & power, Chemicals, and Renewables. It presently operates in more than 140 countries and territories, employing more than 112,000 people worldwide.

The following chart gives the breakdown of earnings, according to the five core business areas for the fiscal year ending March 31, 2005.

### Percentage of Earnings by Business Area



Source: Company data FYE March 31, 2005

Shell trades about 14 million barrels of crude oil equivalent per day.

Shell Renewables is one of the five core business areas of the Shell Group, and was established in 1997 to develop commercial opportunities in Solar and Wind energy. Since then, it has been active in 75 countries across Europe, the Americas, Asia and Africa.

### Shell's Solar Initiative

<http://www.shell.com/solar>

Shell Solar GmbH, based in Domagkstrasse, Germany, was formed in 1997 when Shell Renewables acquired 100% of the shares of the joint venture between itself, Siemens AG and E.ON Energie AG, which had been formed for manufacturing and development of photovoltaic systems<sup>2</sup>. This unit is headed by Graeme Sweeney, who is the CEO of Shell Renewables<sup>3</sup>.

The company acquired all shares for Shell Solar by 2002, and had a workforce of approximately 1,300, providing integrated solutions for solar energy systems from

manufacturing silicon components and photovoltaic cells and modules to selling and designing grid and off-grid solar energy systems. The company also provides turn-key designs for large-scale solar systems.

Shell Solar has sales offices in 75 countries and has a network of distributors worldwide.

The company has access to both mono and multi-crystalline cell technologies and started series production of copper indium diselenide (CIS) solar modules.

Manufacturing units for Shell Solar are located in:

- Vancouver, Washington, USA (for Ingot growing and wafering)
- Camarillo, California, USA (for monocrystalline cells and modules)
- Helmond, the Netherlands (for multicrystalline cells and modules)
- Portugal and Gelsenkirchen, Germany (for multicrystalline cells).

The company opened a second line of production at the Gelsenkirchen, Germany plant in 2003<sup>4</sup>.

The company manufactured 72MW of photovoltaic cells in 2004. This makes it the sixth largest producer of PV cells in the world for the year 2004. The estimated capacity for cell production in 2005 is 110MW, and the company estimates production of 90MW of cells in 2005<sup>5</sup>.

Module manufacturing stood at 72MW in 2004. This makes it the sixth largest module producer of the year. The estimated capacity for module production in the manufacturing units at USA for 2005 is 90MW.

Shell Solar has invested heavily in research and manufacture of solar components and technology. The capital investment on the renewables unit was \$243 million in 2004, and the earnings for the unit were \$145 million.

The investment on the renewables unit for the first quarter of 2005 has been \$57 million<sup>6</sup>. The un-audited results show that the earnings from this segment for the first quarter (2005) were \$8 million.

### International Operations

Shell Solar has various projects across Europe, Asia, Africa, and the Americas that have been initiated to cater to the growing solar energy market.

The company has achieved a significant milestone with the installation of its 100,000<sup>th</sup> solar home system through its Rural Operations, active in India, Sri Lanka, Philippines, China and Indonesia<sup>7</sup>.

The company also completed and dedicated the world's largest single connected solar plant of 10MW near Pocking in Bavaria, Germany. This plant is planned to consist of approximately 62,500 modules and is expected to deliver enough electricity to almost 3,300 households in Germany per year ([read article](#)).

### Future Plans

The Shell Group has had a slower growth in the solar products division compared to other companies between 2003 and 2004. In terms of cell and module production, the company went down from the fourth largest in 2003 to the sixth largest producer in 2004<sup>8</sup>.

However, the Shell group foresees an increase in the adoption and use of solar and wind energy technologies. The company has plans to increase the capacity and production of photovoltaic components in the future keeping up with the growth in demand for clean energy technologies.

### Production Highlights

	<i>Cells</i>	<i>Modules</i>
<b>2004</b> Production	<u>10 MW</u> – Gelsenkirchen, Germany	<u>20 MW</u> – Portugal
	<u>62 MW</u> – Camarillo, California, USA	<u>52 MW</u> – Camarillo, California, USA
<b>Total</b>	<b>72 MW</b>	<b>72 MW</b>
<b>2005</b> Capacity (planned)	<u>15 MW</u> – Gelsenkirchen, Germany	<u>20 MW</u> – Portugal
	<u>95 MW</u> – Camarillo, California, USA	<u>70 MW</u> – Camarillo, California, USA
<b>Total</b>	<b>110 MW</b>	<b>90 MW</b>

<sup>1</sup> Company data, Shell report of 2005

<sup>2</sup> Go Solar article, January 2002

<sup>3</sup> Press release, February 2005

<sup>4</sup> Solarbuzz quarterly PV industry news report, 2005

<sup>5</sup> Photon International, March 2005

<sup>6</sup> Company data, April 2005

<sup>7</sup> Solarbuzz report, June 2005 ([read article](#))

<sup>8</sup> Photon International, March 2005