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**mitsubishi electric launches a stand-alone  
photovoltaic electricity generation system**

*Dream of electricity supply becomes a reality for people in non-electrified areas*

**TOKYO, Feb. 26, 2004** – Mitsubishi Electric Corporation (President and CEO: Tamotsu Nomakuchi) has announced the launch, on March 1<sup>st</sup> 2004, of a stand-alone photovoltaic (PV) electricity generation system. The system, which uses lead-free PV solder modules, will go on sale outside of Japan and is targeted at users living in areas around the world where the local electrification infrastructure is insufficient or nonexistent.

**Background**

The market for PV products has seen rapid growth of late. Sales are expected to continue rising as worldwide efforts aimed at reducing harmful carbon dioxide emissions intensify. The majority of PV systems currently in use in Japan, Europe and the United

States are connected to commercial grid systems. However, a stand-alone PV system is able to supply electricity without being connected to a grid system, and does not require costly infrastructure such as power plants or cables. The number of people currently living in “non-electrified” areas around the world is estimated to be approximately 1.6 billion<sup>1</sup>, primarily in Asia and Africa.

Mitsubishi Electric intends to take an active role in the electrification of currently non-electrified areas in countries such as China. The stand-alone PV system was developed with just such an intention in mind. Annual PV production capacity will increase to 130MW after 2005, and the company aims to improve the popularity of clean energy resources by adding a smaller sized module to the product lineup.

## Product Information

<i>Model name</i>	<b>PV-MF120EC3</b>	<b>PV-MF110EC3</b>
<i>Cell type</i>	<b>Polycrystalline silicon</b>	<b>Polycrystalline silicon</b>
<i>Max. power rating [Pmax]</i>	<b>120W</b>	<b>110W</b>
<i>Max. power voltage [Voc]</i>	<b>17.6V</b>	<b>17.1V</b>
<i>Max. power current [Imp]</i>	<b>6.82A</b>	<b>6.43A</b>
<i>Max. system operation voltage</i>	<b>DC 780V</b>	<b>DC 780V</b>
<i>Weight</i>	<b>11.5kg (25.4lb)</b>	<b>11.5kg (25.4lb)</b>
<i>Dimensions</i>	<b>1425 x 646 x 46mm (56.1 x 25.4 x 1.8“)</b>	<b>1425 x 646 x 46mm (56.1 x 25.4 x 1.8“)</b>
<i>Module conversion efficiency</i>	<b>13.0%</b>	<b>11.9%</b>
<i>Standard compliance</i>	<b>UL1<sup>2</sup>, TÜV<sup>3</sup></b>	<b>UL1<sup>2</sup>, TÜV<sup>3</sup></b>

NB: Electrical performance represents values under Standard Test Conditions (STC: 25 degrees centigrade, AM1.5, 1000W/m<sup>2</sup>)

## **Main Features**

### *1. Optimization of cell array*

The stand-alone system employs a 36-cell array capable of achieving effective generation at 17.1V/17.6V.

### *2. Japan's first lead-free PV solder modules<sup>4</sup>*

Mitsubishi Electric's newest PV modules entail high quality construction, excellent energy conversion efficiency, and a complete absence of lead, thereby greatly decreasing the negative impact on the environment. Previous PV modules used soldered parts with a lead volume of 864 grams per housing (24 modules with 40 cells each).

### *3. Industry's top module conversion efficiency rate of 13.0%, thanks to Japan's first solderless cell<sup>5</sup>*

The company's newest modules boast a conversion efficiency rate of 13.0%, the highest in the polycrystalline silicon module manufacturing industry. The use of a solderless cell makes this result possible as it increases the silver electrode reflection efficiency to over 90%.

<sup>1</sup> IEA World Energy Outlook 2002.

<sup>2</sup> As of January 2004: first among Japanese crystalline silicon photovoltaic cell manufacturers.

<sup>3</sup> As of January 2004: first among Japanese crystalline silicon photovoltaic cell manufacturers.

<sup>4</sup> Underwriter's Laboratories Inc.: widely recognized as an authoritative testing and certification organization based in the US. Certified products are considered to have a high value in the US.

<sup>5</sup> Technischer Überwachungs-Verein: widely recognized as an authoritative testing and certification organization based in Germany. Certified products are considered to have a high value not only in Germany but also in other EU countries.

## **About Mitsubishi Electric**

With over 80 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation (TSE: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. The company has operations in 35 countries and recorded consolidated group sales of 3,639 billion yen (US\$30.3 billion<sup>\*</sup>) in the year ended March 31, 2003. For more information visit <http://global.mitsubishielectric.com>

<sup>\*</sup>At an exchange rate of 120 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2003.

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