



# **Innovative Advancements toward a Sustainable Future**

ANNUAL REPORT 2009

**FURUKAWA ELECTRIC**

**Feature**

**Upon  
Our 125th  
Anniversary**

**1877**

Ichibei Furukawa began managing his mining business

**1920** **First in Japan**

**Energy and Industrial Products division**  
Delivered Japan's first ACSR to a power company

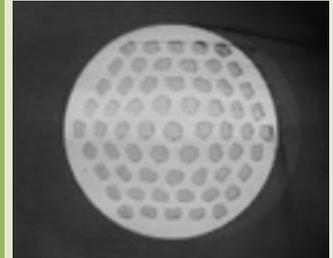
**1955**

**Telecommunications**  
Delivered antenna to Japan Broadcasting Corporation (Tokyo Tower)



**1973** **First in the world**

**Energy and Industrial Products**  
First in the world to successfully develop ultra-fine, multi-filamentary V3Ga wire



**1877**

**1884**  
Founding of the Company

Founded as a maker of wrought copper products and electric cables

**1920**  
Establishment

**Establishment of Furukawa & Co. (today's Furukawa Co., Ltd.)**  
Copper mining, refining, machinery

**ADEKA Corporation**  
chemicals, food products

**Yokohama Rubber Co., Ltd.**  
rubber, tires

**1950**

**1960**

**1970**

**1980**

**1969**

**Telecommunications**  
Delivered Japan's largest undersea cable to Chugoku Electric Power Co., Inc.



**1974** **First in the world**

**Telecommunications**  
First in the world to successfully manufacture optical fiber cables



**Establishment of Furukawa Electric Co., Ltd.**

Electric cables, nonferrous metals

**Nippon Light Metals Co., Ltd.**  
Aluminum

**ZEON Corporation**  
Petrochemicals, resins

**Fuji Electric Holdings Co., Ltd.**

Heavy electrical machinery, electronic equipment

**FUJITSU Ltd.**

Telecommunications equipment, computers

**1971**

**Telecommunications**  
Delivered Japan's largest CATV system to Kofu



# Trajectory of Innovation by the Furukawa Electric Group

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**1989** Top global share

**Electronics and Automotive Systems**  
Began sales of SRC for automobile airbags



**1998**

**Metals**  
Delivered superconducting wire rod to the European large-scale accelerator project



**2005**

**Electronics and Automotive Systems**  
Began sales of chip antennas for wide-area mobile devices



**1992** First in the world

**Light Metals**  
First in the world to develop 30-40 aluminum alloy materials for automobile panels

**2007**

Comprehensive Technology Exhibition of the Furukawa Group

**1990**

**2000**

**2010**

**1996**

**Telecommunications**  
Achieved the world's highest level of 200mW with 980nm semiconductor laser for optical amplifiers



**2006**

**Metals**  
Achieved the world's smallest AC loss with yttrium-based high-temperature superconducting cable

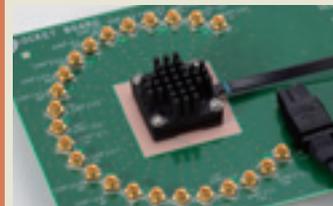
**2001** Top global share

**Telecommunications**  
Achieved the world's highest level of 400mW with 1480nm semiconductor laser for large-volume transmission optical amplifiers



**2009**

**Telecommunications**  
Developed optical transceiver with lowest energy consumption in the world; used for optical wiring in next-generation computers



Furukawa Electric Group celebrated its 125th anniversary this year. At the time of our founding in 1884, copper smelting and electric cables were the twin pillars of our business. Since then, we have expanded our domains across two centuries on the foundation of these two sources of business. Copper smelting gave rise to businesses such as wrought copper and aluminum, and electric cables led to ventures such as power cables, telecommunication cables and foamed products, which have taken their respective paths to growth. The trajectory of our company follows the steps we have taken to support the development of social infrastructure through our

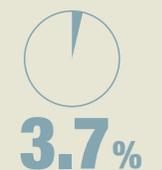
continued technological innovation in these versatile fields.

Today, we operate on a global scale, drawing upon our three material powers of metals, polymers and glass, the core competencies we have nurtured throughout our history, and applying them to the five business fields of telecommunications, energy and industrial products, electronics and automotive systems, metals, and light metals. We intend to contribute to the realization of a truly affluent, sustainable society through our endless pursuit of technological innovation.

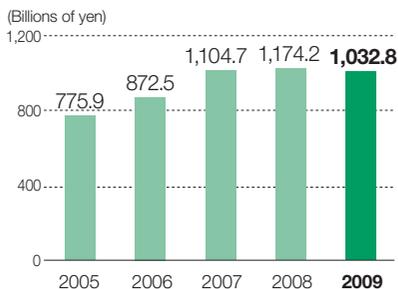
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## At a Glance

Segment		Ratio to Net Sales	Major Businesses
<b>Telecommunications</b>		 <b>14.4%</b>	<ul style="list-style-type: none"> <li>Optical Fiber Cable Business</li> <li>Photonics and Network Solutions Business</li> </ul>
<b>Energy and Industrial Products</b>		 <b>25.1%</b>	<ul style="list-style-type: none"> <li>Energy Business</li> <li>Industrial Products Business</li> </ul>
<b>Metals</b>		 <b>15.4%</b>	<ul style="list-style-type: none"> <li>Copper Strips &amp; Pipes Business</li> <li>Plating Business</li> <li>Electrolytic Copper Foils Business</li> </ul>
<b>Electronics and Automotive Systems</b>		 <b>20.2%</b>	<ul style="list-style-type: none"> <li>Automotive Parts Business</li> <li>Electronics Components Business</li> <li>Magnet Wire Business</li> </ul>
<b>Light Metals</b>		 <b>21.2%</b>	<ul style="list-style-type: none"> <li>Aluminum Rolling Business</li> <li>Aluminum Extrusion Business</li> <li>Aluminum Casting, Forging and Other Processing Businesses</li> </ul>
<b>Services and Others</b>		 <b>3.7%</b>	

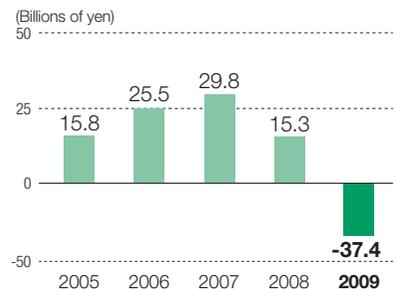
### Net sales



### Operating income/Ratio to net sales



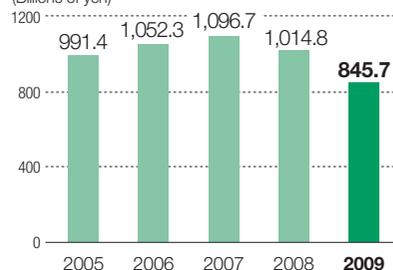
### Net income (loss)



	Major Products	2009 Topics		2007 Results	2008 Results	2009 Results
	<ul style="list-style-type: none"> <li>Optical fibers and cables</li> <li>Optical components</li> <li>Optical fiber cable accessories and installations</li> <li>Network equipments, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Optical cables: Europe capacity increased</li> <li>Optical cables: Production sites unification in Japan</li> </ul>	Net Sales	166.2	163.1	159.1
			Operating Income	11.3	11.0	9.3
	<ul style="list-style-type: none"> <li>Bare wires</li> <li>Aluminum wires</li> <li>Insulated wires</li> <li>Power cables</li> <li>Power transmission cable accessories and installations</li> <li>Plastic products such as power cable conduit material and foam sheets</li> <li>thermoelectric products, etc.</li> </ul>	<ul style="list-style-type: none"> <li>HV cable parts: New subsidiary consolidation</li> <li>HV cables: Capacity increase at a subsidiary in China</li> <li>HV cable parts: A company in Japan to be 100% subsidiary</li> </ul>	Net Sales	294.3	315.0	277.4
			Operating Income	9.2	8.1	1.1
	<ul style="list-style-type: none"> <li>Copper pipes</li> <li>Copper strips</li> <li>Electrolytic copper foils</li> <li>Shape memory alloys and other processed copper products, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Copper foils: Capacity increased at FCF</li> <li>Copper foils: FCF absorbed by Furukawa Electric</li> </ul>	Net Sales	193.9	213.7	170.2
			Operating Income	7.6	6.1	-4.9
	<ul style="list-style-type: none"> <li>Battery products</li> <li>Automotive components and electrical wires</li> <li>Magnet wires</li> <li>Heat sinks</li> <li>Aluminum blanks for hard discs</li> <li>Electronic component materials, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Wire harness: Establishment of second production site in Vietnam</li> </ul>	Net Sales	240.9	268.6	223.8
			Operating Income	8.7	9.1	2.5
	<ul style="list-style-type: none"> <li>Aluminum sheets</li> <li>Extruded aluminum products</li> <li>Cast and forged products, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Aluminum for radiators: Partnership with a Korean company</li> <li>Aluminum for solar generator panel holders: Capacity increased</li> <li>Aluminum for printing boards: Capital participation to an English company</li> </ul>	Net Sales	246.7	258.6	234.0
			Operating Income	15.0	12.4	-0.4
	<ul style="list-style-type: none"> <li>Real estate, Logistics, Information and various other services</li> </ul>		Net Sales	40.2	45.8	41.3
			Operating Income	1.6	1.5	1.8

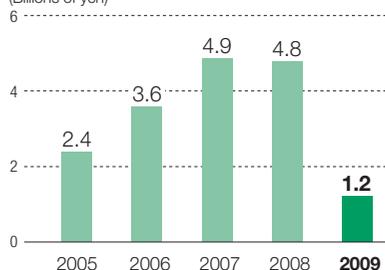
### Total assets

(Billions of yen)



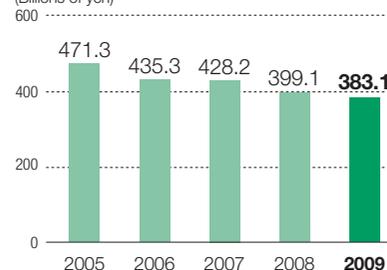
### ROA (Based on operating income)

(Billions of yen)



### Interest-bearing debt

(Billions of yen)





**Fiscal 2008 witnessed the advance of the global recession that impacted the performance of the Furukawa Electric Group, driving down both revenue and profit. In this report, Masao Yoshida, President of Furukawa Electric Co., Ltd., shares his views on the Group's policies and strategies for regaining profitability under the severe economic conditions that are expected to prevail.**

**Masao Yoshida**  
President

**Q1**

**Please start by explaining the company's performance for the fiscal year under review and your outlook for the next fiscal year.**

**A1**

**While we were forced to report declines in both revenue and income in the face of a severe business environment, we plan to return to the black in the next fiscal year by accelerating our drive toward globalization and raising the efficiency of our assets.**

During this period, a major U.S. financial institution collapsed in mid-September, triggering a rapid deterioration of the global economy.

In this environment, the Furukawa Electric Group exhibited solid performance at least during the first half of the fiscal year, led by automotive products and supported by the strength of the transmission infrastructure business in developing countries in Asia and South America. In the latter half, however, the situation took a turn for the worse as we faced the rapid wave of inventory adjustment in areas such as components for electronic devices and automotive products, and suffered an additional blow from the sharp decline in copper and aluminum ore prices. As a result, all segments reported decreased revenues for the full year, and consolidated net sales fell 12.0% from the previous fiscal year to ¥1,032.8 billion.

This pattern applied to income and expenses as well, where profit increased year-on-year in the first half of the fiscal year due to surging demand from developing countries, followed by a substantial decline in the latter half due to a rapid decrease in net sales. Consequently, with the exception of services, all other segments suffered losses, and consolidated operating income plunged 79.9% from the previous fiscal year to ¥9.8 billion.

Moreover, there was an extraordinary negative factor totaling ¥22.7 billion, which included an incremental rise in depreciation expense due to the revised tax system in fiscal 2009 (¥5.2 billion), a decline in operating income from the bare metal price (¥8.0 billion), evaluation of inventory by adoption of the

lower-of-cost-or-market method (¥3.2 billion), surging prices of fuel and auxiliary materials (¥4.0 billion), and foreign exchange loss (¥2.3 billion). As a result of these factors, consolidated net loss amounted to ¥37.4 billion, or a loss of ¥52.7 billion from the previous fiscal year.

Despite the severity of our business environment, we upheld our basic policy of paying solid dividends, and paid an annual dividend of ¥6.0 per share (¥3.5 at the end of the interim term and ¥2.5 at the end of the full year) for the fiscal year under review.

With respect to our outlook for the next fiscal year, while we expect recovery in the automobile market will take time, global investments in telecommunications and energy infrastructure led by developing countries remain robust, and we plan to reinforce our response to this demand from the global market.

In light of these expectations, while we expect consolidated net sales to decrease to ¥807.0 billion in the next fiscal year, we will work to raise the efficiency of our assets by reducing fixed costs by ¥12.0 billion compared with the fiscal year under review and by concentrating and integrating production in our traditional business segments, such as the processed copper and magnet wire businesses. We will also strive to return to the black at all levels of earnings. We therefore forecast consolidated operating income of ¥10.0 billion (up ¥200 million year-on-year), consolidated ordinary income of ¥7.0 billion (up ¥21.8 billion) and consolidated net income of ¥2.5 billion (up ¥39.9 billion).

**Q2**

**Tell us about your concrete strategies for enhancing the efficiency of assets.**

**A2**

**We will promote selection and concentration to streamline management by restructuring our portfolio.**

One of the strengths of the Furukawa Electric Group derives from its notably broad spectrum of businesses that extends beyond the power cable sector. Yet, despite the broad range of our business domains, to some extent, risks are not sufficiently dispersed and

## Interview with the President

performance is somewhat vulnerable to economic change.

To raise asset efficiency for the entire Group, I think it will be necessary to ascertain the characteristic features of each business and clearly distinguish those businesses in which we can demonstrate our strengths and those in which we cannot, and then boldly select and discard businesses as necessary. This also applies to our investment strategy, since investing equally in each business can only result in equalized returns. This means discarding low-growth businesses and concentrating only on high-growth areas. Restructuring our portfolio in this way is a major future direction for our Group.

Where, then, can the Furukawa Electric Group demonstrate its strengths? I intend to concentrate our management resources into two areas—the transmission infrastructure business, where we can expect global market demand, and in the niche materials business, where we possess distinctive technologies. On the other hand, we will seek to



improve the efficiency of our traditional businesses with high fixed costs and low growth potential, such as copper processing, through integration and reorganization.

We intend to streamline management by promoting selection and concentration to enhance asset efficiency while at the same time restraining price fluctuation risks. In fact, the Furukawa Electric Group's total assets have decreased from ¥1.2 trillion in fiscal 2002 to ¥800 billion today. Considering the rise in copper prices, actual net sales have increased since then, so we have already achieved a considerable level of streamlining. We will aim to achieve our present target of 1.2 times total asset turnover while proceeding to even further enhance asset efficiency.

**Q3** Please explain in more detail the transmission infrastructure business, which constitutes an important pillar of the company's earnings.

**A3** We will respond to stable demand by demonstrating our strengths in global production and supply.

With respect to the optical fiber and optical device markets in the transmission infrastructure business, although in advanced countries these markets are reaching maturity, broadband subscribers are increasing at a pace of 17% per year in developing countries, and demand is stable from a global perspective. On the other hand, cost competition is extremely severe and it is difficult to make a profit. However, in areas such as pump lasers, where competitors are retreating under the pressure of cost competition, Furukawa Electric is the only company that has maintained a broad product lineup, and I expect this will ensure our market durability.

In recent years, data traffic such as video distribution has shown more pronounced growth than the number of subscribers, and the demand for large-volume transmission is expected to grow even stronger. Furukawa Electric has a global supply system for optical fibers and optical cables through OFS\*1, which could present a major opportunity as long as

we can balance demand and supply. Even if we cannot ultimately avoid cost competition, our policy is to concentrate on areas where we can compete on functionality.

Next, let's look at the power cable market, which constitutes the other pillar of the transmission infrastructure business. Global demand appears to be stable and the market has a remarkably steady undertone. There are two aspects of power infrastructure: replacement demand from advanced countries and infrastructure development demand from developing countries. We expect investments to continue over the next thirty to forty years, and we recognize this area as a target for concerted effort.

With respect to replacement demand from advanced countries, as demand grows for highly efficient transmission technology from an environmental viewpoint, as seen in the Smart Grid\*2, which has become a hot topic, expectations run high for Furukawa Electric's wide-ranging response capabilities, including peripheral equipment. As for infrastructure development demand from developing countries, I think the early establishment of our high-voltage cable factory in Shenyang will provide a major advantage for responding to infrastructure demand from China and India.

As evident in high-voltage cables, the Japanese power cable industry has traditionally been highly regarded for its technology. As a company that has survived fierce competition in this industry, we intend to fully demonstrate our technological strength. In concrete terms, I would like to see us develop sustained, large-scale businesses by extending beyond simply supplying cables to providing solution services that include technical assistance only possible from a leading company, and thereby forge ongoing relationships with energy companies in India and China.

**\*1 OFS**

Overall term for optical fiber and optical cable operating companies OFS Fitel, LLC and OFS Bright Wave, LLC, purchased from U.S. Lucent Technologies Inc. in 2001.

**\*2 Smart Grid**

Concept for next-generation power infrastructure centered on the United States and spreading worldwide. Involves improving the reliability and efficiency of the power transmission network through active use of IT. The United States has announced it will include large-scale investments in its economic stimulus package.

**Q4** | **What are your overall policies for overseas markets, which are expected to become even more important in the future?**

**A4** | **We will respond to the needs of the global market through middle-end, low-cost manufacturing, with a special emphasis on the ASEAN market.**

In recent years, globalization has risen in priority for various industries, and like others, the Furukawa Electric Group is also experiencing a decline in net domestic demand. We are also aware of the need to place even greater emphasis on overseas markets and to strengthen the global development of our businesses.

While the BRICs countries are often cited as specific target regions, I am particularly focused on the ASEAN market. The population of the ASEAN region as a whole has reached 500 million, a considerably large market compared with Japan's population of 120 million, even if we discount the lower income levels. Our primary business there will be infrastructure, such as electric power and telecommunications. In addition, we are considering the automotive industry, where we can expect steady demand.

But the volume zone in the global markets, including ASEAN, does not lie in the high-specification products that are the forte of Japanese companies. For example, high volume can be expected for products such as Nano—the low-price automobile sold by an Indian automaker that recently made the news—in products that compete on price rather than quality, to use a less sympathetic expression.

Therefore, if we took our high-end, high-cost products overseas, they would only be accepted by the upper class. Recognizing this, Furukawa Electric is transforming into middle-end, low-cost manufacturing that targets the middle class.

Even a product with the most basic specifications will ultimately lose out to the competition if customers do not choose to purchase it. In five to ten years' time, when the standard of living of today's middle class has improved, demand will emerge for the higher-end

## Interview with the President

products that are currently welcomed in Japan. And we want to continue manufacturing products sought by this class of customers.

We are aware of the urgent need to develop human resources who can act with a global perspective. This is not, however, something that can be achieved with ease in a short period. Therefore, even as we are developing the human resources, we are also looking into a stronger and more effective public relations strategy to raise brand recognition in developing countries such as China and India, as well as bolstering local support staff.

**Q5** | **Considering compliance is becoming ever more important for companies, how would you describe your approach in this area?**

**A5** | **We will strive for thorough compliance through active in-house communication.**

In recent years, compliance has grown increasingly important for corporate management.

During this period, The Furukawa Electric Group caused significant inconvenience and concern among our shareholders due to problems inherent in our system of compliance, which led to the cancellation of our JIS mark certification for copper tubes, a cease-and-desist order against price-fixing in the foamed products business, and an inspection of our premises by the Fair Trade Commission in connection with our optical fiber transactions. We recognize that the gravity of these incidents requires serious reflection, and we intend to do our utmost to prevent any recurrence and to restore trust by retraining employees on compliance and other measures.

I believe that structural improvements for eliminating price-fixing are particularly necessary for surviving in overseas markets, and we intend this time to make an all-out effort to thoroughly change our mindset from the ground up. At present, a third-party investigation committee has been established, and we are working to determine the causes and prevent a recurrence.

I feel that a company that is struggling with

compliance may also have problems with in-house communication. Within the Furukawa Electric Group, we are focusing on in-house education through measures such as the publishing of our bi-monthly corporate bulletin, but that is far from enough. I make a point to visit each worksite myself and talk to each individual employee.

**Q6** | **Finally, please share with us your strategies for achieving further growth.**

**A6** | **We will demonstrate our technological competence by determining the technology platforms that provide us with an edge.**

To achieve continued growth, we will have to select and discard businesses to enhance asset efficiency.



To this end, while it is important to determine the competence and growth potential of the business itself, I think we must start out by determining which technology platform will provide strength. As long as we maintain a competitive advantage in the technology platform, we will be able to develop other businesses from that technology once the life of a particular business comes to an end.

From the technology platform perspective, we are focusing our attention on the potential of laser technology. For example, light source lasers can be applied to visible lasers by changing the wavelength. At present, we already possess the three primary colors, red, blue and green, which we believe could be extended into display equipment, such as display monitors and projectors. Our competence in the laser technology platform can be demonstrated beyond telecommunications into non-telecommunication areas as well.

Furthermore, the scope of applications for industrial lasers is extremely wide, including optical equipment such as electronic microscopes and metal processing such as cutting and molding. Lasers are also used for dental treatment. Furukawa Electric will be establishing a research laboratory specializing in laser technology to develop applications as quickly as possible, so please stay tuned.

Another example from the Niche Materials Business is the GaN power device\*3, which has recently attracted significant attention in the electronics and automotive systems market. This device features low loss equivalent to one-tenth that of conventional silicon semiconductors, and the product is expected to become a “green device” that contributes to the building of a low-carbon society.

The technology of compound semiconductors that realized this cutting-edge device is yet another technology platform that provides us with strength. Actually, in theory the GaN crystal formation technology uses the same synthesizing technology applied in the yttrium compounds we have nurtured in our research on superconductors. The technology can be applied to many other areas. For example, in solar power generation, it can realize extremely high efficiency in transforming light to electricity.

Furukawa Electric possesses many more promising



technologies that utilize our diverse material technology. For example, our optical amplifier recently received the Prime Minister’s Award in the Honorary Awards for Industry-Academia-Government Collaboration\*4.

We also plan to create an Incubation Business Division to develop a system for rapidly commercializing these technologies. We hope to fulfill the expectations of our shareholders and investors by delivering more exciting news at a faster pace.

**\*3 GaN power device**

Power device that uses GaN (gallium nitride). Given their characteristically low energy loss compared to silicon semiconductors, which have been the mainstream of conventional power devices, expectations are high for commercialization as a result of developing higher efficiency power devices. In June 2009, Furukawa Electric announced the establishment of a technology research association for jointly developing a GaN power device with Fuji Electric Advanced Technology Co., Ltd.

**\*4 Honorary Awards for Industry-Academia-Government Collaboration**

System for awarding successful efforts that have significantly contributed to promoting industry-academia-government collaboration. In the Seventh Honorary Awards for Industry-Academia-Government Collaboration announced in June 2009, Furukawa Electric, along with the Tohoku University Research Institute of Electrical Communication and NTT Network Innovation Laboratories, was accorded the highest honor by receiving the Prime Minister’s Award for the development and enhancement of the Erbium Doped Fiber Amplifier (EDFA).

**Masao Yoshida**

President

A handwritten signature in black ink that reads "Masao Yoshida". The signature is written in a cursive, flowing style.