Special Feature

New Frontier 2012

Furukawa Electric Established the 3-year Medium-Term Plan New Frontier 2012 to Seek Growth Opportunities in New Businesses and Markets in the Period from FY2011 to FY2013

At the start of fiscal 2011, Furukawa Electric launched its medium-term New Frontier 2012 plan for the period of fiscal 2011 to 2013.

The primary goal of the plan is to bolster research and development aimed at the creation of new eco businesses. The plan also calls for the reinforcement of our existing businesses, including the transmission infrastructure business, in order to target growth in demand from emerging markets where large-scale infrastructure investments are expected to continue.

In this manner, we will seek growth opportunities in new businesses and markets that represent the new frontier for our Group, and will rein in asset risk so as to develop a management base that can flexibly respond to the revised tax system and fluctuations in commodity prices.

New Frontier 2012 Quantitative Targets

We will build up shareholders' equity and pay off debt with profits while maintaining total assets at current levels.

(Billions of yen)	End-Mar. 2010	End-Mar. 2013 Plan	Change
Total assets	835.8	900.0	+7%
Shareholders' equity	162.6	210.0	+29%
Debt	362.1	320.0	-12%
D/E ratio	2.2	1.5	-0.7
ROA	2.4%	5.6%	+3.2p
Total asset turnover	1.0	1.1	+0.1

Note) ROA = Operating income (loss) / Total assets

We will boost operating income to ¥50 billion through strengthening each business segment.

(Billions of yen)	FY2010	FY2013 Plan	Change
Net sales	809.7	1,000.0	+24%
Operating income	20.3	50.0	+46%
Net income	9.7	25.0	+58%

Note) We have calculated figures for fiscal 2010 on the assumption that the exchange rate will be USD/JPY 92.90 and the price of copper, aluminum and crude oil will be ¥610.30 per kg, ¥190.20/kg and US$ 69.60 per barrel, respectively. The forecasts for fiscal 2013 are based on the assumption that the exchange rate will be USD/JPY 90 and the price of copper, aluminum and crude oil will be ¥640 per kg, ¥220/kg and US$ 79 per barrel, respectively.

We will reduce capex by 15% compared with the previous medium-term plan.

(Billions of yen)	FY07-10 Avg.	FY11-13 Avg.	Change
Capital expenditure*	38.5	33.0	-5.5
Depreciation and amortization	42.4	40.0	-2.4

*Capital expenditure focus: Copper foil, automotive parts, optical fibers, etc.

Special Feature
New Frontier 2012

I Develop New Businesses and Restructure Operating Portfolio

Create New Businesses

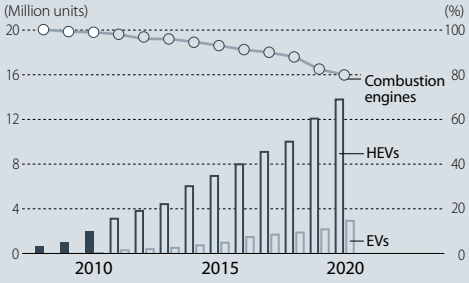
Focus area

Roadmap for the development of new eco businesses

2010

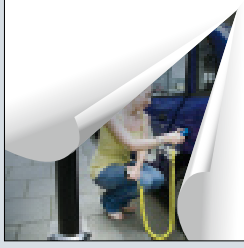
Eco-car market growing globally

World eco-car market outlook



Source: Mizuho Bank

Next-Generation Vehicles



We will focus on the development of key technologies used in next-generation vehicles, including lithium-ion batteries and lighter weight material solutions.

- On-vehicle antennas
- UWB radar
- Lightweight aluminum harnesses
- Foils for Li batteries
- Battery sensors
- Ultra long-life batteries
- Nano metal powders

Investments in smart grids increasing

Smart grid investment 2010–2030

(Trillions of yen)	US	EU	Japan	Total
Smart meters	1.7	1.3	0.5	**3.5**
Power controls	5.9	4.5	1.8	**12.3**
Inverters	4.1	4.3	3.8	**12.6**
Superconducting conducting cables	7.3	5.5	2.2	**15**
Batteries	32	32	6.4	**69**

Source: Nomura Securities

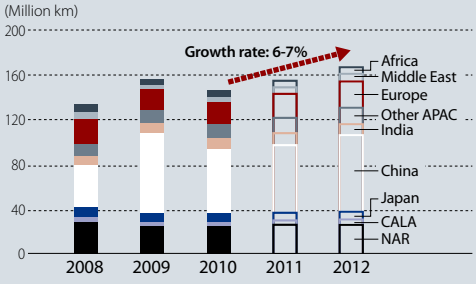
Energy / Smart Grids

We will play a leading role in developing new innovative smart grid technologies, as one of the few manufacturers with expertise in both power transmission and telecommunications.

- Nano metal powders
- SC cables
- Offshore LNG transport piping
- Fiber lasers for processing

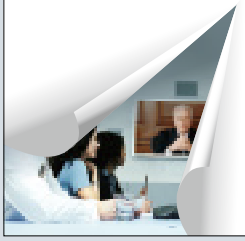
Growing demand for high-density optical telecommunications globally

Optical fiber market outlook



Source: CRU September 2009

High-Density Optical Telecommunications



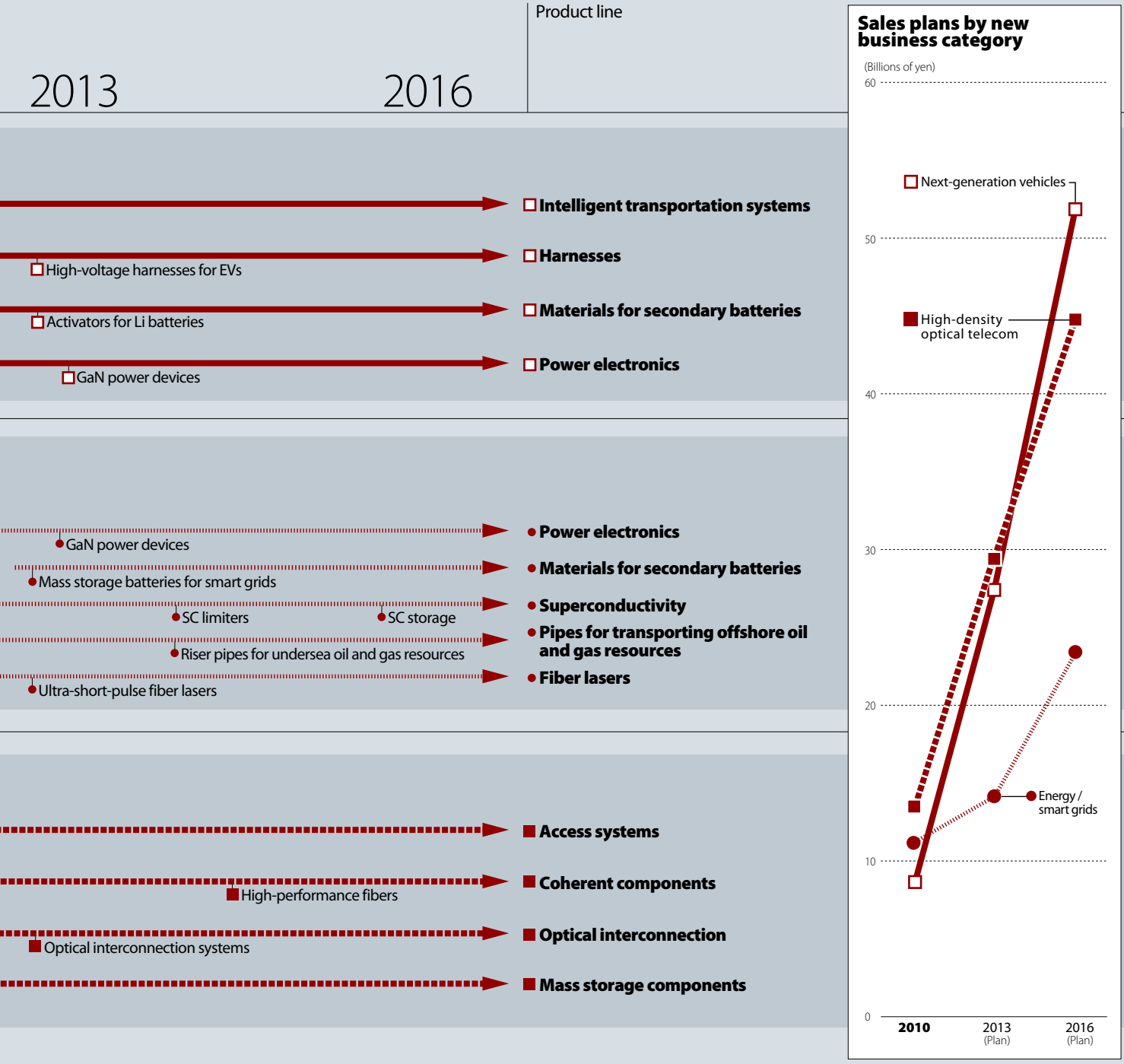
We will provide high quality products and our expertise to international markets as Japan's top supplier of optical telecom infrastructure solutions.

- PON systems
- Light source for tunable lasers
- High-function optical devices
- Active optical cables
- Glass blanks for memory disks

Becoming a Contributor to the Environmental and Energy Revolution

With the issues of global warming as well as resource depletion growing more serious, the world needs to embark on a new environmental and energy revolution to achieve the vision of a low-carbon society.

Against this background, Furukawa Electric will focus on the three eco business areas of next-generation vehicles, smart grids (next-generation transmission networks), and high-density optical telecommunications, as areas of environmental business that leverage our strength in materials technologies. We will produce innovative products and proprietary 2010 technologies in these areas, as well as increase research and development spending by 20% compared to fiscal 2009 to develop new business segments that will form the basis of our future growth.



Special Feature
New Frontier 2012

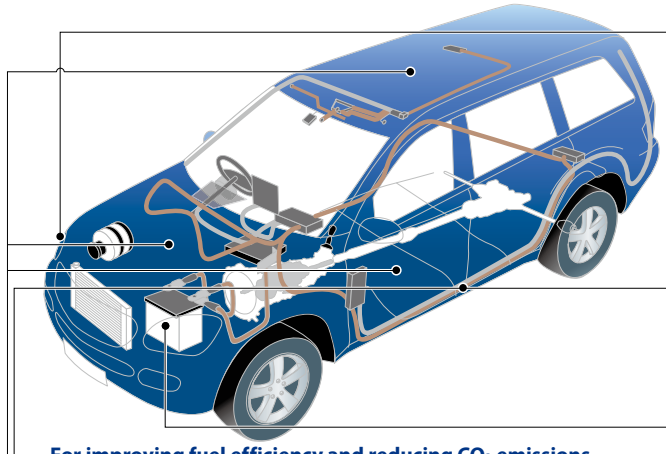
I Develop New Businesses and Restructure Operating Portfolio

Create New Businesses

A variety of technical challenges, including improving performance and fuel consumption, reducing CO_2 emissions, and pursuing safety and comfort, still must be resolved in order to promote the further spread of electric, hybrid, and other next-generation vehicles.

Furukawa Electric has accumulated a vast base of knowledge and expertise in providing a broad mix of materials and components to the auto industry. Our in-depth understanding of automaker needs also positions us to address technical developments that resolve challenges in the industry. Beginning with lower-weight bodies and cables, we are making efforts to address a multitude of challenges, including improving the function and performance of vehicle lithium-ion batteries and developing on-vehicle antennas, radar, and sensors that ensure safe and comfortable driving.

Proprietary technologies used in next-generation vehicles



For safety

Ultra-wideband RF radar (UWB radar)

A sensor for detecting obstacles and moving objects within a range of several tens of meters from a vehicle. The radar has a distance-measuring accuracy of under 10 centimeters.

For the improvement of HV and EV performance

High-voltage connector for HEV power supplies

A water-proof connector for use in high-voltage batteries featured in hybrid as well as electric vehicles. We have successfully developed a compact design.

Ultra long-life batteries

This high-performance battery significantly improves charge-acceptance performance, which is a downside of conventional batteries. The battery was developed for next-generation eco-friendly vehicles such as idling-stop or mild hybrid cars.

Copper foil for lithium-ion batteries

Copper foil used in the negative electrode of batteries with excellent performance in terms of flexibility, surface smoothness, and thickness. The foil also improves the service life and reliability of batteries.

For improving fuel efficiency and reducing CO_2 emissions

Aluminum shielded harness for HEVs

The harness has the same level of shielding as conventional copper braided shield wires against the electromagnetic effects generated by the large currents in the motor during driving. The harness also reduces vehicle weight.

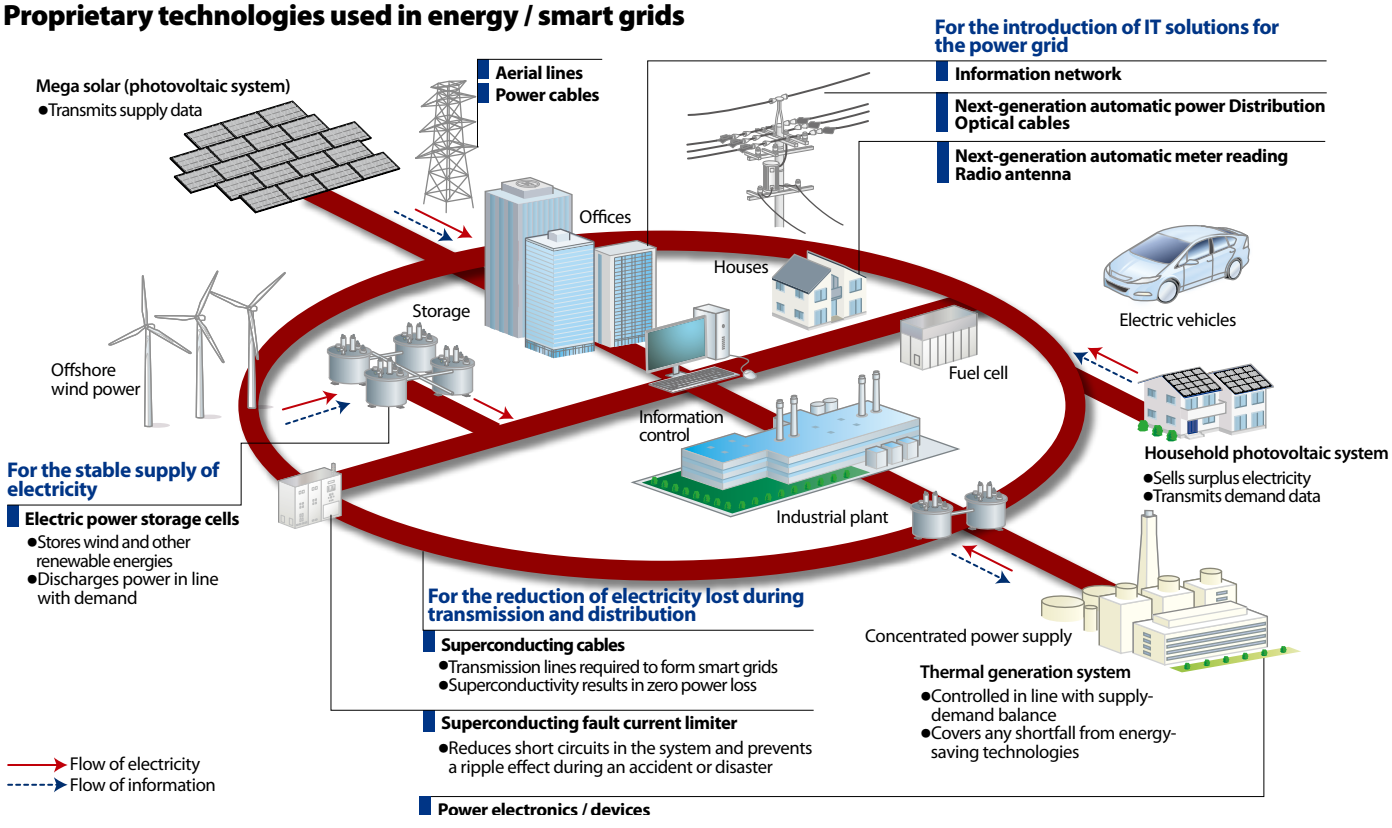
High-strength high-heat conductive aluminum alloys (for the hood, body, and outer and inner panels)

Superior heat conductivity, high strength, easy molding qualities are combined in our high-performance aluminum alloy. Use of these alloys in a vehicle's body, interior materials, and parts casings will reduce weight, yet retain high strength.

While a multitude of elemental technologies is required to realize the vision of smart grids, of particular importance is the fusion of power transmission and telecommunication technologies. Furukawa Electric has drawn considerable attention as one of the few companies globally to possess expertise in both technologies. We will continue to focus on developing new technical innovations in these fields as well as utilizing our strong knowledge base in a variety of technologies.

For example, we are developing optical telecom circuits and devices for power systems to make power transmission and distribution networks more intelligent. We are also working on a variety of smart grid technologies, including high-performance storage systems to ensure stable power supplies, and superconducting cables that prevent power loss during transmission and distribution.

Proprietary technologies used in energy / smart grids



Special Feature
New Frontier 2012

I Develop New Businesses and Restructure Operating Portfolio

Create New Businesses

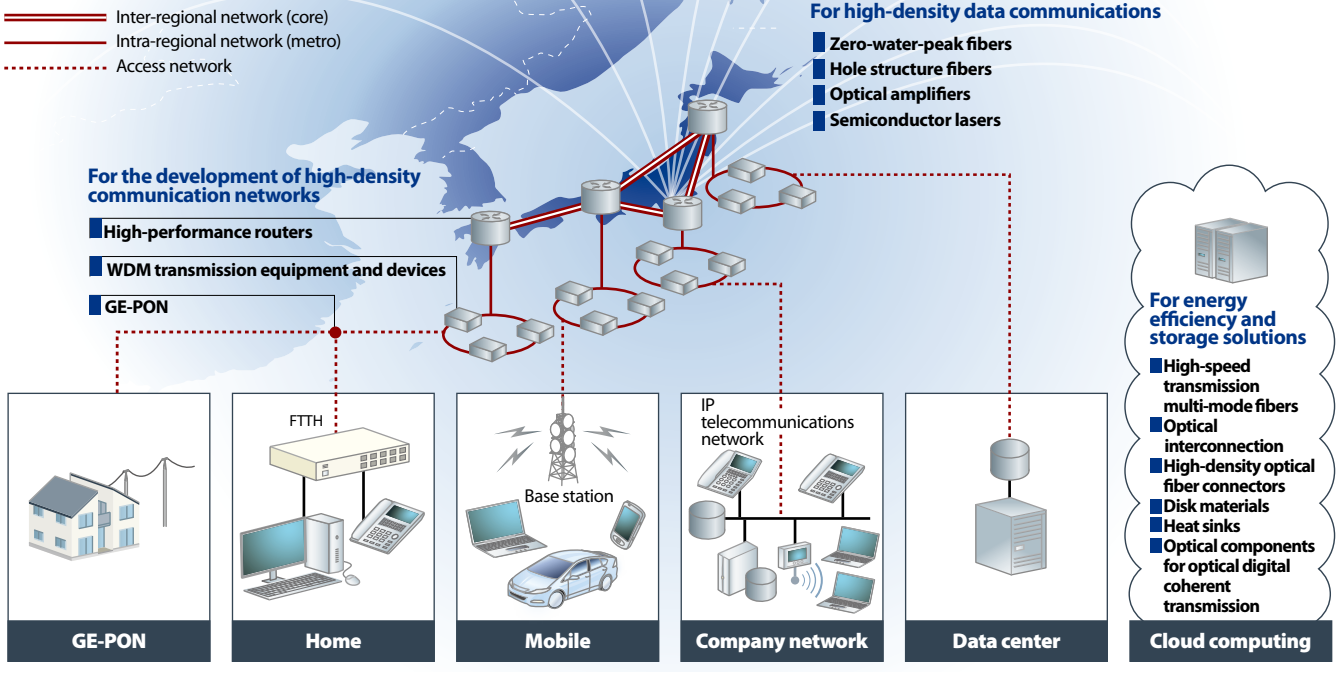
Furukawa Electric has developed the expertise to construct complete packaged solutions in the field of optical telecommunications that support high-density, high-speed communications. From backbone to metro networks, our products and technologies encompass the full spectrum of the optical telecommunications field, from photonic components such as semiconductor lasers and optical amps to network devices, optical fiber cables, and transmission equipment.

In addition, with the spread of cloud computing*, the need has arisen to focus on not only the conventional technology of telecommunications but also on data communications. Furukawa Electric possesses the technologies required for high-speed, high-density server storage solutions, including disk materials and optical inter connections.

As such, Furukawa Electric has established a superior track record of developing diverse technologies in the high-density optical telecommunications field. Leveraging this, we will continue to respond to the sophisticated needs of communications infrastructure.

*Cloud computing:
This denotes computing tasks and software accessed over a network instead of directly through a desktop computer or software.

Proprietary technologies used in high-density optical telecommunications



Message from the CTO

Strengthening Group-Wide R&D to Develop New Technologies and Businesses

Combining Multiple Elemental Technologies

Furukawa Electric has established dedicated research laboratories focused on specific key technologies, such as telecommunications, energy, electronics, and automotive, to promote research and development tailored to the needs of various industries.

We are also building an internal cross-sector framework for research and development that spans all Group companies. This will allow us to integrate our expertise and knowledge in these technologies to develop and create the new eco businesses outlined in the medium-term plan.

Timely and Global R&D

In the smart grid business, we plan to establish a dedicated research and development center within the R&D division to capitalize on the resources of each Group company.

As smart grid projects are large-scale and, in many markets, nationalized, it is critical to gather market information globally as well as create a framework for launching new business ventures. Our aim is to analyze this market information and develop links with governments and power device manufacturers, to ensure access to business opportunities and to implement research and development initiatives directly related to market needs.

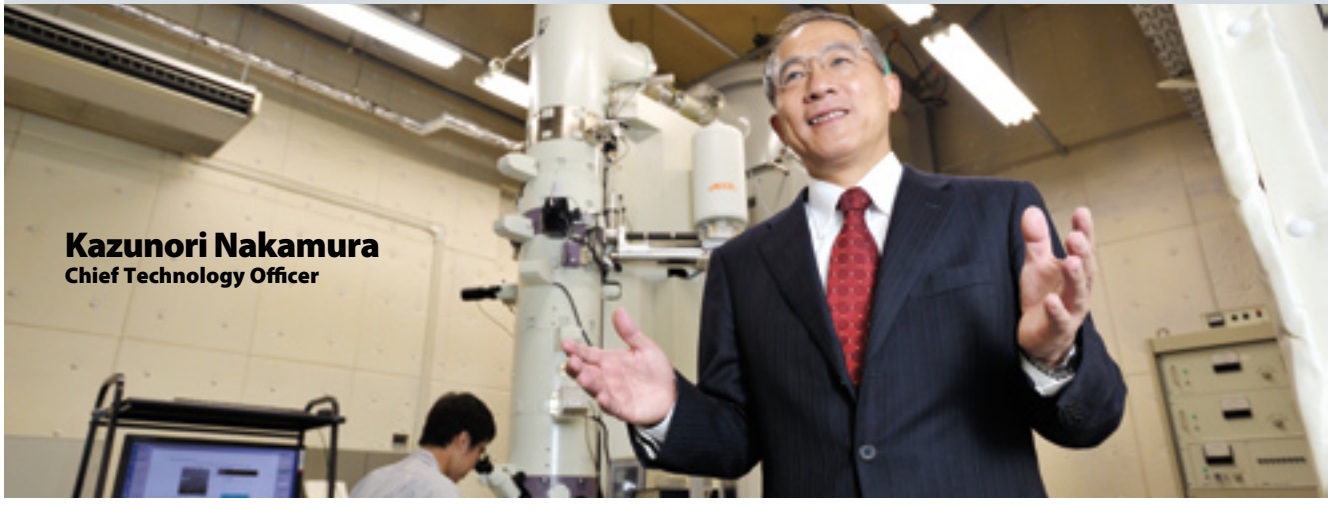
We are also in the process of developing a Group-wide framework for research and development activities in the fields of next-generation vehicles and high-density optical telecommunications.

Focusing on Next-Generation Batteries

Of particular importance to both smart grids and next-generation vehicles are next-generation batteries, including lithium-ion batteries.

We are planning a Next-Generation Battery Research & Development Center to bolster our research and development initiatives in next-generation batteries. The Center will devise research strategies for next-generation technologies and develop activators and materials for batteries.

For its development of silicon activators as an alternative to conventional carbon activators, which helps increase the lifespan of lithium-ion batteries, Furukawa Electric's technology was adopted in the New Energy and Industrial Technology Development Organization (NEDO) Li EAD Project for the development of high-performance storage systems for next-generation vehicles. The Center will establish battery assessment technology in order to conduct internal assessments of the final battery product. This will move our development forward more efficiently.



Kazunori Nakamura
Chief Technology Officer

Special Feature
New Frontier 2012

I Develop New Businesses and Restructure Operating Portfolio

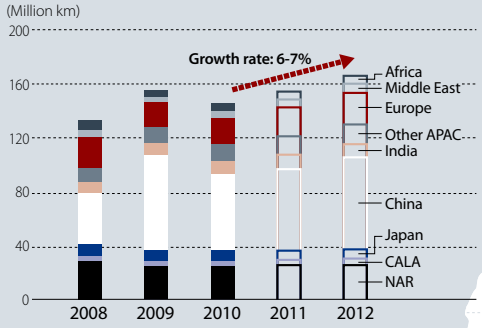
Strengthen Existing Businesses

Focusing investment on growth markets

Market for transmission infrastructure growing globally

Optical fiber market outlook

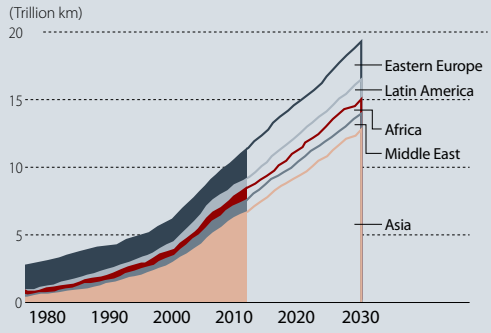
Increasing traffic will drive 3G mobile investment in emerging countries and cloud computing in developed countries. Demand will drop but rebound again, mainly in Asia.



Source: CRU September 2009

Energy market outlook

New investments in emerging countries and demand from renewals in developed countries will drive long-term growth.



Note) Power demand in emerging regicns

Source: EIA International Energy Outlook 2009

1 Transmission Infrastructure Business

We will strengthen our internal structures to respond first and foremost to capturing demand from Asia.

Telecommunications
Launched JV for laying optical fibers — *India*

Telecommunications
Signed a JV agreement to produce optical fiber raw materials — *China*

Telecommunications
Strengthening broadcast infrastructure business to capitalize on the country's use of a Japanese-style terrestrial digital broadcast system — *Brazil*

Energy
Amid growth in the high-voltage cable market, our manufacturing subsidiary Shenyang Furukawa Cable Co., Ltd. retains the top market share in China — *China*

Establishing systems to respond to the needs of emerging markets, and raising our overseas sales ratio to 35%

Meeting Global Infrastructure Demand and Providing Value in Emerging Markets

Emerging markets, such as BRICs and ASEAN, are expected to see continued market growth. This is precisely why these markets represent the new frontier for Furukawa Electric.

To meet the needs of these markets, today Furukawa Electric is moving forward with plans to bolster its manufacturing sites and sales networks in each of these regions. Currently, we have about 50 sales and manufacturing facilities in BRICs and ASEAN markets. Making use of our global supply network, we will look to increase our international sales ratio from 30.8% in fiscal 2010 to 35% in fiscal 2013, and eventually to 50% as a long-term target.

2 Functional Materials Business

We will strengthen our mass-production systems for high performance materials and components to capitalize on demand in growth markets.

Energy and Industrial Products

Make full-scale inroads into the LED TV market using our proprietary MCPET microfoamed reflective sheet *Globally*

Electronics and Automotive Systems

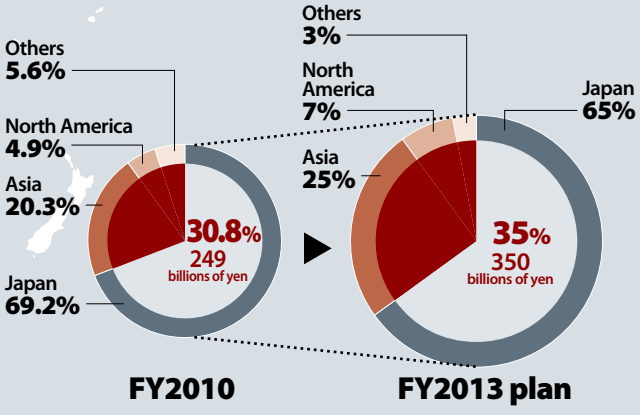
As the only manufacturer producing both aluminum and glass blanks for HDDs, aim to become the top supplier of both. Work to achieve stable mass-production of glass blanks *Globally*

Electronics and Automotive Systems, Light Metals

Develop aluminum harnesses and bodies meeting the needs of lighter weight vehicles. Retain our status as the global top supplier of aluminum compressor wheels for diesel engines *Globally*

Metals and Light Metals

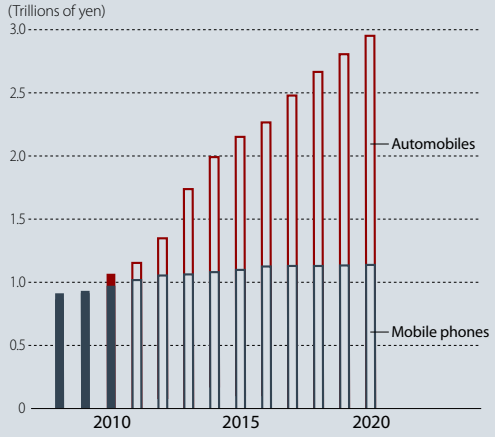
Augment production while closely monitoring the demand outlook for lithium-ion batteries used in EVs and HEVs. Strengthen our global top share in aluminum foils used in positive electrodes *Globally*



Eco and mobile device markets expanding

World Li-ion battery market outlook

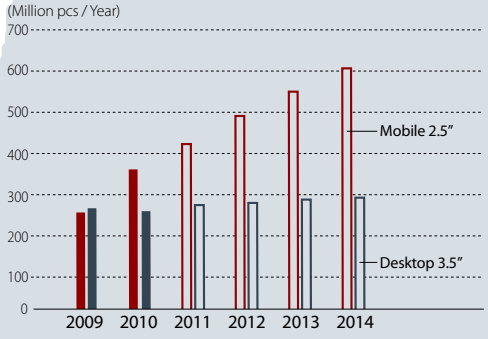
The market is expanding-steadily, underpinned by growing demand for next-generation vehicles and mobile devices.



Source: Daiwa Securities SMBC

HDD market outlook

The market for tough, impact-resistant glass blanks is expanding on the back of growing demand for mobile devices, including laptop computers.



Source: Gartner

Special Feature
New Frontier 2012

I Develop New Businesses and Restructure Operating Portfolio

Strengthen Existing Businesses

1 Expand Transmission Infrastructure Business Globally

Capitalizing on expanding global investments

Infrastructure investments in power transmission and telecommunications are expected to continue in emerging countries such as BRICs and ASEAN over the long-term.

In China and India, further infrastructure investments are anticipated due to growing traffic on 3G mobile phone networks, while investment in power transmission infrastructure in the Middle East, Russia, India, and China is also expected to increase. Eight countries in Latin America, including Brazil, have employed Japanese-style terrestrial digital TV broadcast systems, spurring demand for broadcast station antennas and cable TV transmission systems.

The Furukawa Electric Group is reinforcing its supply systems around the world to respond adequately to this increasing global demand. In India, our joint venture business with a local company for the manufacture and laying of optical fiber launched operations in March 2010. We are also increasing production capacity at our optical fiber joint venture manufacturing company in Xian, China.

In China, we boosted production capacity by 30% at Shenyang Furukawa, a major manufacturer of high-voltage cable, in May 2009. Through Shenyang Furukawa and affiliated company Viscas Corporation, we will strive to become a top global supplier of ultra-high-voltage cables.

Furthermore, we are working to expand business operations in South America through our locally incorporated subsidiary. Such localized initiatives will enable us to expand our international sales share.

Installation of optical fiber cable overseas

2 Enhance Functional Materials Business

Li-ion battery materials for EVs and HEVs as well as materials for HDD blanks

Furukawa Electric is looking to expand the operations of its functional materials business by focusing on greater value-added copper and aluminum foils used in lithium-ion batteries for EVs and HEVs, as well as materials used in blanks for HDDs.

In the field of lithium-ion batteries for EVs and HEVs, we are a major supplier of copper and aluminum foils used in positive and negative electrodes, and are striving to supply higher value-added products in the segment, including developing activators made of carbon and other materials.

The widespread use of lithium-ion batteries in EVs and HEVs began in earnest in fiscal 2011. With the spread of next-generation vehicles, we expect the lithium-ion battery market to grow three-fold by fiscal 2013 and five-fold by fiscal 2014. As such, while carefully monitoring demand, we will move forward with plans to augment our production facilities.

As we are the only company in the world to manufacture and sell both aluminum and glass materials used in blanks for HDDs, we will aim to become the number one global supplier of these materials as well. We enjoy a 50% share of the global market for aluminum materials, a conventional mainstay material for blanks, and will continue to maintain this share. At the same time, we are also planning on making full-scale inroads into the glass materials segment, in order to capitalize on growing demand from mobile devices. Accordingly, we have developed a proprietary manufacturing process that utilizes our optical fiber production technologies, launching mass production in April 2010. In consideration of today's global supply shortage, we plan to expand our production scale about twenty-fold in 2013.

In addition to these two areas, we have made full-scale inroads into the LED TV market with MCPET microfoamed reflective sheet. We also provide solutions in increased-productivity semiconductor wafer processing tape, lightweight aluminum harnesses for vehicles, and aluminum compressor wheels, where we have established a top share globally.

Glass blank for an HDD

3 Restructure Traditional Processing Businesses

Carefully assess low-profit businesses and promote greater efficiencies through a "One Product, One Factory" approach

In order to optimize its operating portfolio, Furukawa Electric understands that it must not only extend its new businesses and growth businesses, but also consider how to improve less profitable businesses that have passed their prime.

As a result, we have categorized our Group businesses into the four areas of "Developing," "Growth," "Core," and "Restructuring," with the plan to promote the reform of less profitable businesses classified under the Restructuring category.

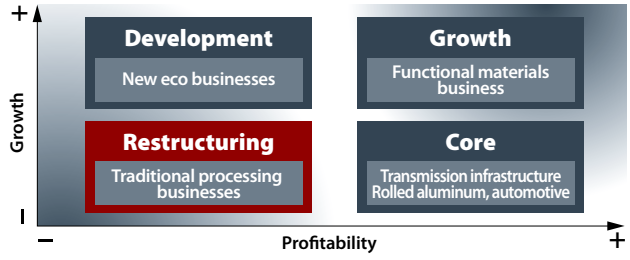
The specific target of this reform process is simple, lower value-added processed products such as copper wires and strips, rolled aluminum products, electrical wire, and general plastic products. Although these traditional processing businesses have focused primarily on the Japanese market, future growth is not expected due to weaker demand attributed to Japan's aging society and declining birthrate. As such, where we once produced a single product at several factories in order to diversify risk, we will now shift strategy to produce one product at one factory to enhance production efficiencies.

As part of moving forward with this new operating model, Furukawa Electric launched the Business Viability Assessment Committee in April 2010 to assess and discuss the effectiveness of restructuring plans. (See page 22.)

Measures aimed at restructuring

- Consolidate magnet wire business
- Optimize domestic copper piping business
- Reform structure of domestic aluminum business

Position of traditional processing businesses



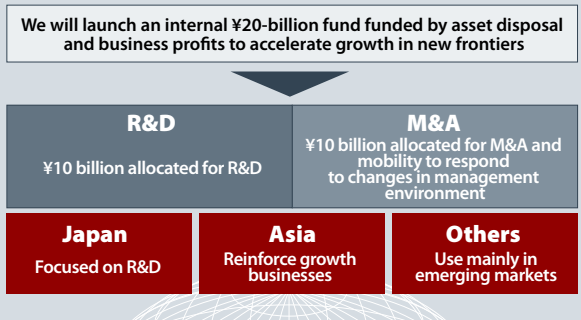
The New Frontier Fund

Investment in technology development, overseas expansion, and M&A will be critical to achieving the vision of Furukawa Electric's new medium-term plan to develop new businesses and restructure its operating portfolio.

For fiscal 2011 to fiscal 2013, we have increased average annual research and development spending 20% above fiscal 2010 levels to ¥21.5 billion, and established the New Frontier Fund with a total of ¥20 billion.

The New Frontier Fund, endowed through asset sales and business profits rather than through a new offering of capital stock, is being used to accelerate our growth plans in new businesses and markets. Of the ¥20 billion fund, ¥10 billion will be allocated for research and development, while the remaining ¥10 billion will be used for M&A and business alliances that will enhance our mobility to respond to changes in the management environment.

Launching and utilizing the New Frontier Fund



Special Feature
New Frontier 2012

II Reform Organizational Climate

A truly global corporation must understand and practice CSR taking into consideration the local customs, culture and legal systems in each country and region in which it operates.

Based on this recognition, Furukawa Electric will continue to move forward with the reform of its organizational climate with the following perspectives.

Compliance

Furukawa Electric takes seriously the repeated investigations by the Japan Fair Trade Commission on suspicion of violations of the Anti-Monopoly Act. As we implement measures to prevent future occurrences, we will strive to ensure compliance best practices in every aspect of our business going forward.

The third-party investigation committee on Violations of the Anti-Monopoly Act , established in July 2009, completed its investigation into the cause of these violations and gave recommendations on specific countermeasures in December 2009, with the committee's report released to both internal and external stakeholders.

Furukawa Electric has placed a compliance director and compliance promotion officer in each business division to reinforce its compliance structure and practices. The Company is also taking steps such as strengthening control over the price-setting process in the sales and marketing division, enhancing monitoring by the internal audit division and external experts and establishing an employee hotline to report possible violations of the Anti-Monopoly Act.

Future measures to develop and improve compliance practices

1. Strengthen the compliance structure and ensure on-site best practices
- Place a compliance director and compliance promotion officer in each business division
- Provide training and educational activities
- Conduct compliance inspection activities within each business division (confirmed using check sheets, etc)

2. Strengthen governance in sales and marketing division
- Strengthen governance of price-setting process, etc.
- Reexamine company participation, including attendees, in associations and industry organizations

3. Enhance monitoring
- Conduct audit on compliance with the Anti-Monopoly Act through the internal audit division
- Seek guidance and advice from external experts, including attorneys

4. Other
- Establish internal employee hotline for issues relating to the Anti-Monopoly Act
- Review regular rotation of human resources in the sales and marketing division, etc.

Group Management

The pursuit of efficiencies and cost reductions in manufacturing throughout the world has resulted in demand not for individual components, but rather for the supply of these components as integrated systems.

Given these global market needs, Furukawa Electric will continue to enhance overall Group competitiveness by pursuing operations that combine the technologies and products of each Group company.

Human Resource Development Activities

Furukawa Electric will undertake recruitment activities on a global scale to train and hire human resources that fit its model for growth. In addition, we will develop training programs that instill not only technical knowledge in specialist fields, but also practical business expertise, such as finance and tax systems.

Environmental Conservation Activities

We have established a target to reduce CO_2 emissions by 15% compared to 2001 levels by fiscal 2013 and are currently striving to reduce the environmental impact resulting from our business activities to meet this target.

At present, we have achieved a 12% reduction, giving us confidence that we can achieve our 15% target on schedule by continuing to improve production efficiencies through process innovations.

Special Feature
New Frontier 2012

III Improve Financial Strength

In order to implement the measures we have discussed and continue expanding globally, Furukawa Electric must build a corporate structure that can stand up to various management risks.

Our initiatives thus far, such as our extensive cost-cutting efforts implemented to weather the global financial crisis over the past two years, have enabled us to steadily reduce interest-bearing debt and improve asset efficiency. We will continue to improve financial strength further to attain our fiscal 2013 targets of ¥1 trillion in net sales, ¥50 billion in operating income (5% operating margin), and ¥25 billion in net income.

Asset Rationalization

Furukawa Electric will rein in asset risk by maintaining total assets around the current ¥900 billion level and expanding sales by developing new business segments and strengthening existing businesses. Furthermore, we will seek to increase profitability by continually working to reduce inventory, receivables, and fixed costs.

With our emphasis on asset efficiency, ROA (return on assets) on an operating income basis will be a key financial indicator. Our target of 5.6% exceeds our previous record of 4.9%, achieved in fiscal 2007. By using profits to pay off interest-bearing debt and build up shareholders' equity, we plan to reduce interest-bearing debt to ¥320 billion, a 12% decline from fiscal 2010, and achieve a debt-to-equity ratio of 1.5 by fiscal 2013.

Enhance Investment Efficiency

Furukawa Electric plans to reduce capital expenditures by 15% from ¥115.8 billion during the 2007–2010 medium-term plan (¥38.5 billion annual average) to ¥100 billion during the 2011–2013 medium-term plan (¥33 billion annual average).

Capital expenditures during the first half of the 2007-2010 plan focused on the light metals segment, such as rolled metals and wrought copper. Going forward, however, there will be less need for investments to increase production in Japan, as the focus of capital expenditures will be on generating new businesses and developing new technologies. The key focus will include investments aimed at the overseas expansion of copper foils used in lithium-ion vehicle batteries, automotive parts and optical fiber cables.

The Business Viability Assessment Committee and Investment Committee

Furukawa Electric established the Business Viability Assessment Committee in April 2010 as an organization to improve asset efficiency and accelerate the restructuring of its operating portfolio. The Committee has been given the mission to review less profitable business and formulate restructuring strategies, and is responsible for evaluating the feasibility and relevance of restructuring plans devised by operating divisions as well as the authority to make changes where necessary.

In August 2009, Furukawa Electric established the Investment Committee as a deliberative organ to reduce potential risks and to bolster the prior review of decision-making relating to financing and investments, such as capital expenditures and M&A.