

# Power Electronics Business Strategies

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Fuji Electric Co., Ltd.
Power Electronics Business Group



#### **Contents**

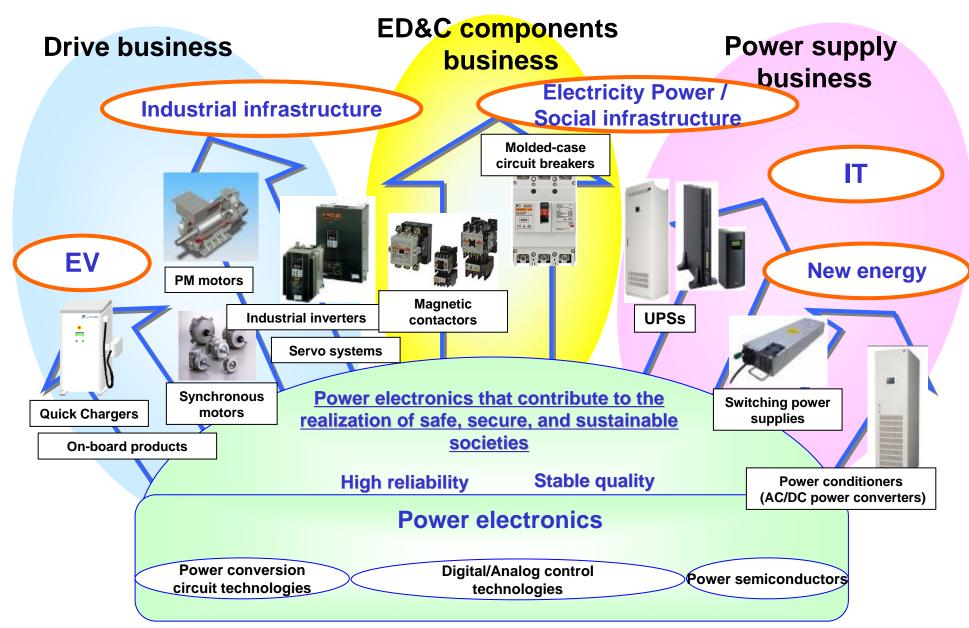
- Business Overview
- **■**Business Targets
- ■Business Strategies / Priority Measures



# **Business Overview**



#### **Business Overview**





# **Business Strengths**

#### Wide range of product lineup

- Industrial inverters, servo systems, motors
- UPSs, power conditioners
- On-board products, quick chargers
- ED&C components

#### **Technologies supporting high reliability**

#### Production system creating stable quality

- Heat-radiating and bonding technologies for power semiconductors
- Heat and EMC control technologies
- High-efficiency power conversion technologies
- Electrical energy storage applications
- Diagnostic and network technologies

Integration of power electronics technologies

Contributing to the realization of a safe, secure, and sustainable society

- High-mix, low-volume and optimum production
- System of local production for local consumption
- Compliance with ISO 9001 quality standard

- Global service network
- Rich menu of services catering to customer needs

**EMC: Electro Magnetic Compatibility** 

**Comprehensive service that providing dependability** 

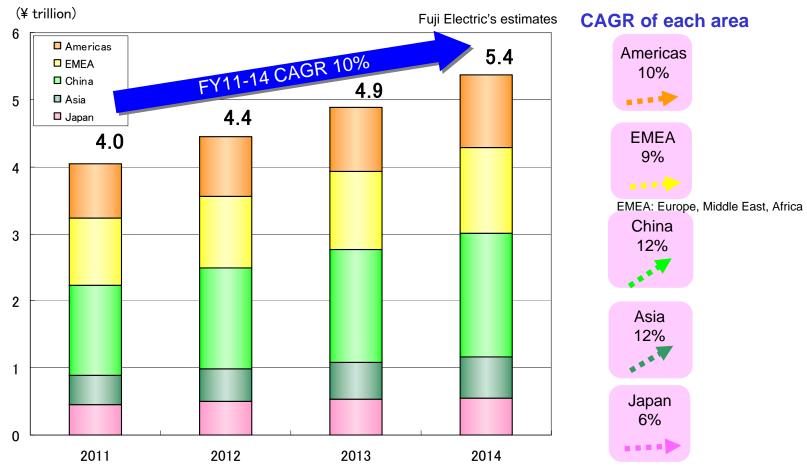


# **Business Targets**



#### **Market Trends**

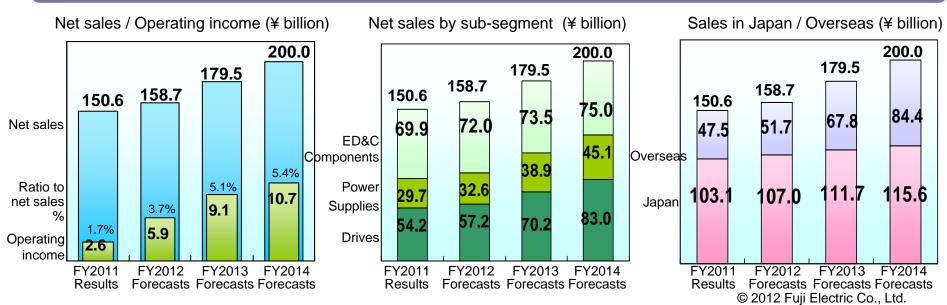
- Growth will be supported by China and Asia
- Markets will expand on a global basis due to rise in demand for energysaving products and new energy
- EV systems will begin to establish a presence in US and Chinese markets
- Demand for power conditioners for mega solar systems will increase around the world



# **Business Targets**

#### **Basic Policy**

- Providing the markets requiring high-quality and use of efficient energy with competitive drives, power supplies, and other power electronics products both component and in systems as Fuji Electric's core business
- •Improving profitability expanding overseas sales centered on China and Asia (overseas sales ratio in FY2011: 32% → ratio in FY2014: 42%) through reducing costs and introducing new products on a global scale
- Thorough cost reduction in regard to drives
- Expand overseas power supply operations
- Accelerate introduction of new ED&C products





# FY2012 Business Strategies / Priority Measures



# Business Strategies / Priority Measures for Drives

#### **Business strategies**

- Expand overseas sales and improve profitability by introducing new products
- Actively develop products for new growing field of EVs

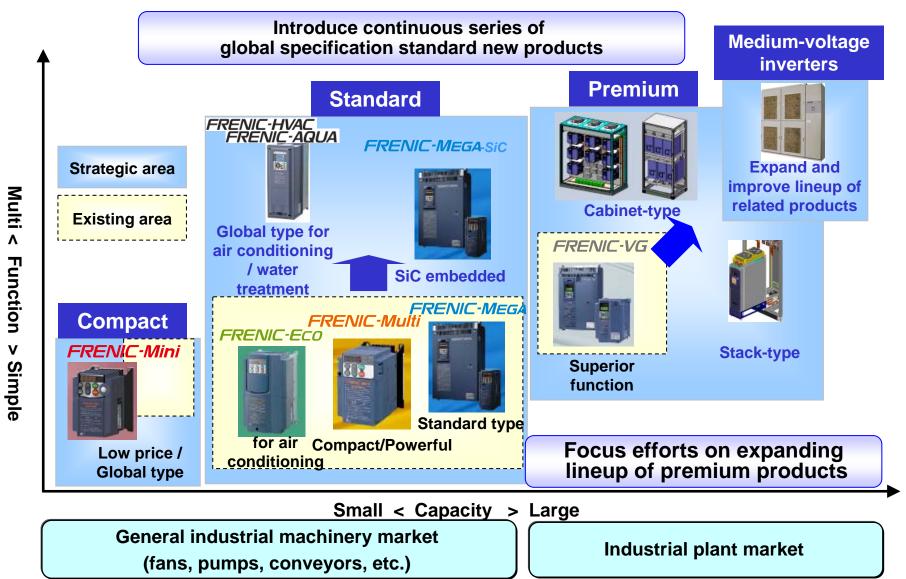
#### **Priority measures**

- Inverters: Develop market for products used in solutions and strengthen engineering capabilities
- Motors: Increase added-value nature of business through introduction of High-efficiency products
- EV: Bolster lineup of quick chargers and introduce on-board products into Chinese market
- Cost reduction initiatives
- Pursue local production for local consumption by promoting local production of products (expand range of product produced overseas) Reduce material costs through global procurement
- Shrink inventories through establishment of global supply chain



# Priority Measures for Drives: Industrial Inverters

Expand solutions business through introduction of new-type inverters





Multi

Λ

**Function** 

V

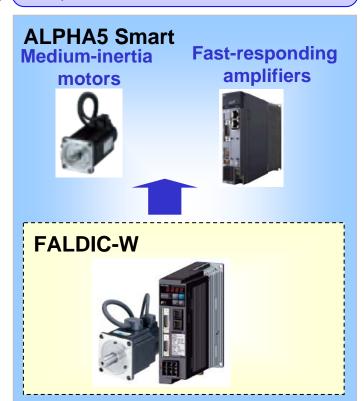
Simple

# Priority Measures for Drives: Servo Systems

Expand overseas sales by utilizing new products (bolster series of functional / high-capacity products)

Pursue ease of use through combination of fast-responding amplifiers and medium-inertia motors

Expand range of applicable equipment by boosting capacity





Strategic area

**Existing area** 

Small < Capacity > Large

Semiconductor manufacturing equipment and electronic component processing equipment

Machine tools and metal processing equipment



Multi

Λ

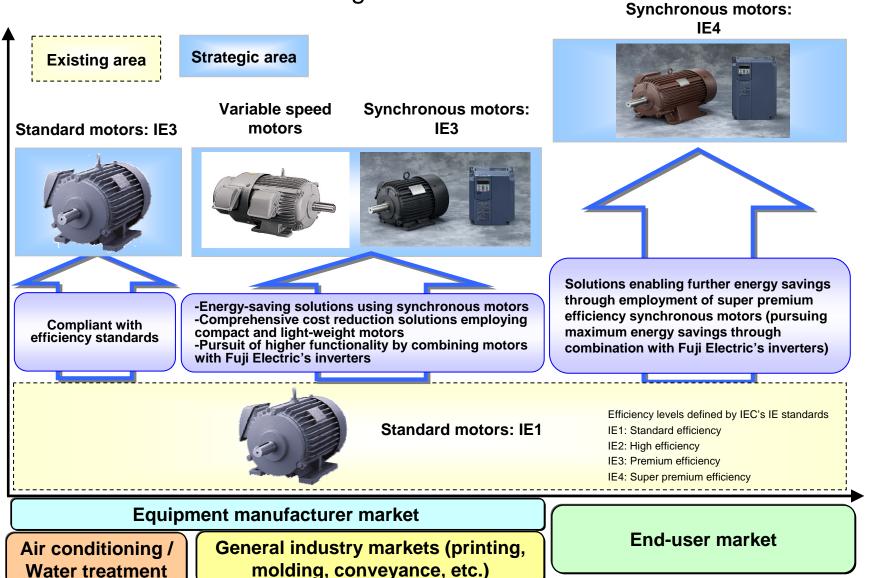
**Function** 

V

Simple

# **Priority Measures for Drives: Motors**

# Introduce highly efficient motors and strengthen the solution combining with inverters





# Priority Measures for Drives: EV Systems

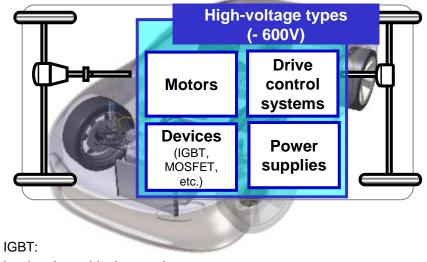
Quick chargers: Enhance functionality of domestic lineup and develop overseas operations On-board devices: Begin full-fledged advancement into Chinese market focusing on drives

#### **Quick Charger line-up** Multi **Network type** ٨ Mid- to wide-area coordination market **Function** Stand-alone charging type Stand-alone market V General-purpose 25kW 50kW Charger Charger Small < Capacity > Large measures

Enhance functionality of domestic lineup (payment / transmission functions)

Enter into US market by acquiring certification under UL standards

#### **Applicable on-board products**



insulated gate bipolar transistor

MOSFET:

metal oxide semiconductor field effect transistor

measures

For Chinese market

Introduce next-generation circuit boards for buses Enter into passenger vehicle drive market



### **Business Strategies for Drives**

# New technologies and products

Existing

technologies

and

products

Expand and enhance series of products featuring new functions and cost reduction

- Premium (General-purpose use, high functionality) inverters
- Low-price compact inverters
- Highly efficient motors
- Power electronics for EV systems
- Strengthen services and establish software customization systems

Advance into new markets by leveraging new products

- Expand through industrial solutions
- •Introduce new equipment for the global market of air conditioning
- Take on infrastructure markets centered on China and Asia by expanding series of highly functional inverters products
- Enter into new markets by introducing SiCembedded products

System oriented sales

Component oriented sales **Drive** 

FY2012 ¥57.2 billion

(FY2011 ¥54.2 billion)

Improve competitiveness by cost reduction

- Thorough cost reduction by shifting production overseas
- Strengthen customer retention efforts and improve in-store share among existing customers

Accelerate global expansion

Develop operations in emerging nations and growing fields

- Emerging nations strategies (Medium / Low-voltage drive markets) India, Australia, Middle East
- End-user infrastructure market strategies for China and Asia

Water treatment, steel, petrochemicals, etc.

#### **Existing customers**

#### **New customers**

# Business Strategies / Priority Measures for Power Supplies

#### **Business strategies**

- Expand overseas operations
- Increase share in domestic market
- Focus on the new energy market, a growth field
- Cost reduction by shifting production overseas

#### **Priority measures**

- Expand UPS lineup centered on products for Chinese and Asian markets and establish sales system for these products
- Aggressively introduce high-efficiency products and promote sales of these products
- Introduce high-capacity power conditioners for mega solar systems
- Reduce costs by shifting production facilities to overseas bases, especially for overseas sales products
- Construct a globally competitive supply chain

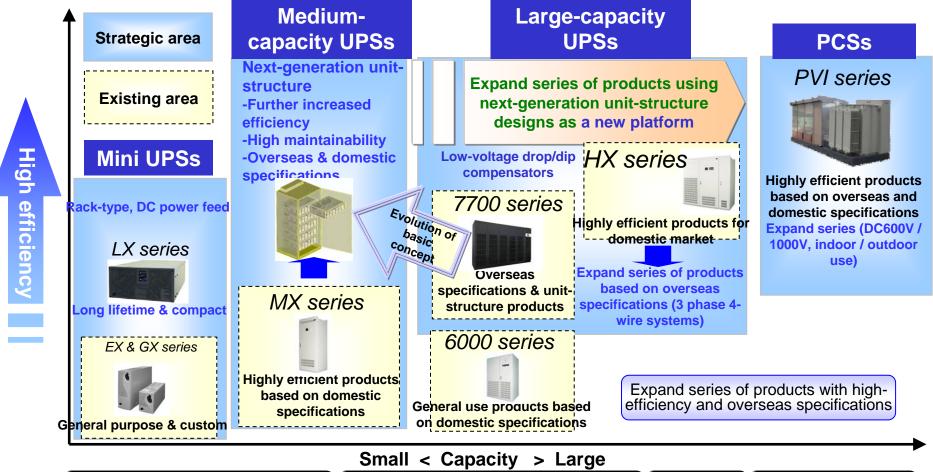


# **Priority Measures for Power Supplies**

#### Begin full-fledged advancement into Chinese and Asian markets

Actively introduce high-efficiency products utilizing new devices and highly efficient power conversion technologies

Develop and expand the new product series employing next-generation unit-structure designs



Industrial / Digital equipment market

General/consumer-use information and telecommunications system services market

IDC market

New energy market



# Business Strategies for Power Supplies

# Develop multiple-level power conversion and platforms

- Expand lineup of components compatible with IDC systems
- Expand lineup of rack-style power supply systems for mobile phone base stations
- Introduce power supplies with new features (low-voltage drop/dip compensators)

Expand operations in growth markets by leveraging new products employing high-efficiency power conversion technologies

- Introduce high-efficiency UPSs designed based on overseas specifications (3 phase 4-wire systems)
- Introduce globally compatible power conditioners for the mega solar markets
- Expand lineup of custom switching power supplies (for use in EV chargers, vending machines, etc.)
- Develop long back up, long-lifetime UPSs (LiB-UPSs)

System oriented sales

Component oriented sales

Power Supply FY2012 ¥32.6 billion

(FY2011 ¥29.7 billion)

New

markets

# Expand operations by reducing costs and enhancing services

- Improve product competitiveness by reducing costs and expanding product lineups
- Expand range of maintenance and other services provided

#### Expand sales in overseas markets

- Introduce medium- to high-capacity UPSs into growing overseas markets (Asia, China) → Construct sales and service systems
- Promote sales to the domestic manufacturing sector
- Introduce low-capacity UPSs into emerging nations

### **Existing customers**

#### **New customers**



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