

## V. Operational Highlights

### 5.1 Business Activities

#### 5.1.1 Business Scope

##### A. Business Scope

Business Scope	Sales %
Industrial Products	54%
Home Appliances	15%
Construction	6%
Others	25%
Total	100%

##### B. New products development

###### a. Industrial Products Business:

The development of ultra high-efficiency motor conforming to Japan's JIS-IE3, high-voltage & high-efficiency motor conforming to China's third-grade energy efficiency, industrial-use large high-voltage new series general-type and explosion-proof motor. IE3 aluminum high-efficiency motor, IE3 explosion-proof high-efficiency motor, IE4 IEC high-efficiency motor, CNS powder explosion-proof motor, motor for gas/electric hybrid car, direct-current brushless motor for air conditioner, and pan-Europe series ATEX explosion-proof motor. The R&D on integrated starting motor generator, R&D on next-generation servo motor, R&D on synchronous magnetic-resistance motor and drive, R&D on auto motor and drive, and joint development of electric car.

###### b. Home-appliances business:

Mobile Internet-of-things smart inverter air conditioner, air conditioner with first-grade energy performance exceeding the 2016 national standards and brand-new indoor unit, first-grade inverter refrigerator series, freezing machine for home-delivery logistics, water-cooled air conditioner for use on ships, smart cloud-end centrifugal chiller, modularized inverter air-cooled chiller, type-type VRF air conditioner, wall-type, hung-type, embedded indoor unit for VRF series, pipes for Korean-standard silent security-type draught fan, smart inverter oil cooler, smart inverter water color, air conditioner for electricity box, Japanese-standard water-cooled air conditioner, assembly-type air conditioner, remote-control system for 4G smart home appliances, compact sophisticated stereo system, large-sized LED TV, Taiwanese-standard H.264 HDTV, Internet smart and whole-series large-sized 4K, 2K UHD LCD display.

###### c. The wind-turbine business focuses on large-scale 2MW wind-power generating units, in addition to covering low wind-speed wind turbines, with blades exceeding 110m in diameter, 5MW and larger-scale offshore wind-power systems, KW-grade horizontal small-scale wind-power generating units, generators, power converters, solar energy-power converter, and self-consumption-system, for both products and engineering works.

#### 5.1.2 Industry Overview

##### A. Industrial Product Business

With industrial motors featuring extensive applications and steady demand on the global market, Taiwan's industrial motor is a major export item for heavy-electricity products, thanks to the excellent evaluation it enjoys. Under the energy-conservation and carbon abatement policy of governments worldwide, the development of industrial motor centers on high efficiency, environmental protection, and low carbon

emission. Due to the trend of energy conservation, carbon abatement, and green environmental protection, as well as the trend of automated industrial production, system automation focus in its development on products featuring high efficiency, energy saving, and precision system control.

System Automation products stand at the terminal in the development of the heavy-electricity industry, offering controlling components for products at the electricity-consumption end. They include control components for motors, including inverter, servo drive, and low-voltage devices for protecting peripherals, products essential to safety in industrial electricity consumption and products for automation and energy conservation.

#### B. Wind-power industry:

- a. Due to limited natural resources, soaring energy prices, and global warming, energy conservation and carbon abatement has become a global current. Governments worldwide have encouraged the development of renewable energy via legal means. It's estimated that current wind-power generation cost has been comparable to the cost of fossil fuel-fired power generation, making it most cost-effective renewable energy.
- b. There are two trends in the development of wind-power turbine: One is large scale and offshore models. 1.5MW and 2MW are mainstream on-shore models, 3MW models are of both on-shore and offshore usage, while over 3MW models are mainly installed offshore. Various system suppliers have been rolling out models with ever larger capacities. Secondly, 50KW and smaller models are mainly applied in buildings, farms, fishing ponds, and communities. The diversified power sources can greatly enhance the reliability of power grid and demand for wind-power generators has been on the rise, along with the settlement of wholesale prices for the purchase of wind-power electricity.
- c. In the recent two years, demand in China's wind-power market, among the fastest growing ones in the world, has been mainly for low-wind velocity models in the recent two years, which have been installed mainly central and southern China. Backed by rapid development of system products, wind power has become the third largest source of power supply in China, after thermal power and hydraulic power, in line with the Chinese government's policy of vigorously developing clean energies, in order to combat smog and alleviate air-pollution problem. In quality control, it emphasizes the certification for LVRT (low voltage ride-through) in linking to the grid, quality and quantity of electricity and type of wind turbines, as well as plans to strengthen the strength of power grid during the period of the 12th five-year economic development plan, so as to assure steady output of wind-power generation in northwestern and northern China. If Taiwanese firms can demonstrate their consistent quality control and long-standing overseas marketing experience, they will be able to obtain cost edge in penetrating the international market.
- d. Offshore wind power is also a development focus of various countries. Europe has an early start in this field and has achieved various concrete results. China, Korea and Japan is carrying out a number of items, mainly for R&D and demonstration. Taiwanese government also encourages domestic firms to develop exemplary offshore wind power generation. There are already two private companies and one government owned company won the projects. These demonstrated projects might bring hidden potential business opportunities domestically before 2019. In order to accelerate the achievement of the goal for the installation of wind turbines, the government has publicized zones for the development of wind farms.

#### C. Home-appliances industry

##### a. Application of inverter technology in home appliances

Energy conservation and environment-protection is a major appeal in product development at present. The application of DC inverter duty technology and environment-friendly coolant in home appliances can lead to the achievement of high COP value, which embodies the care of enterprises for "energy conservation" and "environmental protection." On the solid foundation laid by its system automation department, TECO has developed key inverter duty control technologies in household air conditioners, refrigerators, washing machines, and VRF air conditioners, pioneering breakthrough in the technology for indigenous home appliances and air conditioners.

#### b. The Development in Smart Appliance Market

According to the data of the ITIS plan, under the IEK (Industrial Economics and Knowledge) of the ITRI (Industrial Technology Research Institute), the Internet application has been gradually extending from studies at homes to smart handheld devices and entering virtually every aspect of people's daily life. The company has developed, one step ahead of peers, open-end platform for 4G air conditioners, facilitating the development of white goods and movable small home appliances for use in kitchens with Internet-access function, capable of data storage/retrieval and control by accessing the Internet via smartphones. As Internet access is a critical trend for home appliances, entire series of TECO's home appliances are now furnished with hardware and software for Internet access and have been in use in various places, including switching centers, schools, and smart buildings. TECO's first-grade household inverter air conditioners and VRF air conditioners, which are furnished Internet-access function, for instance, have encountered warm market reception. A number of the company's home appliances with Internet-access function, including household air conditioners, VRF air conditioners, dehumidifiers, and refrigerators, have been affirmed by the Taiwan Excellence Awards in 2015.

### 5.1.3 Research and Development

#### A. The company spent NT\$1,603,590 on R&D in 2014

##### a. Industrial Motors Category

1. JIS IE3 good-efficiency induction motor
2. dedicated medium high-voltage high-efficiency motor for North America
3. high-efficiency axis end-free induction motor  
(the above items receipt Taiwan Excellence Award)
4. successful new-generation compact wholly sealed medium high-voltage high-efficiency motor
5. Pan American semi-sealed good-efficiency energy-saving motor passed CSA safety certification
6. R&D of backpack-style 1.5MW and 2MW DFIC wind turbine
7. Pan-Europe aluminum-case IE3 good-efficiency motor (recipient of Taiwan Excellence Award)
8. Japan IE3 good-efficiency induction motor (recipient of Taiwan Excellence Award)
9. IE4 inverter IPM motor (recipient of Taiwan Excellence Award)
10. Pan-American good-efficiency motor passes explosion-proof certification of CSA Class II
11. IEC IER motor series (11~185kW)
12. Certification of GB explosion-proof Ex e
13. Next-generation alternating-current permanent-magnet servo motor (0.85~1.8 kW)
14. Development of motor for electric agricultural transport vehicle
15. Development of integrated starter-motor generator for oil-electricity hybrid cars
16. Development of motor for E-Jeepney
17. Cloud-end monitoring system for smart motor

##### b. System Automation Category

1. Development of Inverter A510 series
2. Development of Inverter 575/690V series
3. Development of filer
4. Development of L510s inverter series

5. Development of high-performance servo drive
  6. Development of control technology for constant-pressure plastic injection
  7. Technology for automatic detection and adjustment of inertia/friction
  8. Automatic detection and adjustment technology for controller
  9. Development of IPM detector-free control technology
  10. Development of high-speed voltage vector control technology
- c. Renewable energy- green energy
1. 5KW and 4 Quadrant Wind-Power Converter
  2. Development of medium E-bus with 21 seats
- d. Freezing and Air-Conditioning Category
1. Mobile Internet-of-things smart inverter air conditioner
  2. Brand new indoor unit and air conditioner with grade-one energy performance exceeding 2016 national standards
  3. Air conditioner for electricity box
  4. Dedicated smart inverter oil cooler
  5. Dedicated smart inverter water cooler for machine tool
  6. Whole-series refrigerators (90~605L) with national first-grade energy performance
  7. Freezer for home-delivery logistics
  8. Three-door 600L inverter energy-saving refrigerator
  9. Development of smart cloud-end centrifugal chiller
  10. Modularized frequency conversion air cooled water chiller
  11. Trunk-type variable refrigerant flow (VRF) air conditioner (3-6RT)
  12. VRF series wall-mounted, suspended, and embedded indoor unit (1-6RT)
  13. Packaged cooling series for vessel (5RT~20RT)
  14. Japanese-specification water-cooled packaged air conditioner (5RT-20RT)
  15. Korean-specification silent security-type fan coil series

#### B.Future R&D projects:

TECO's growth relies on R&D and innovation. In recent years the company, via pooling the strength of its domestic and overseas R&D units and market experience, plus cooperation with academic institutions and research bodies, has been consolidating its core businesses by actively investing in the green energy industry, including execution of a number of critical R&D projects, including those in the fields of wind power, photovoltaic current transformer, rare-earth permanent-magnet motor, auto electric-power components and parts, transmission motor for robotic arm, related computing methods, and applications of the Internet-of-things.

To meet the business need for new technologies and new products in the long run and improvement in the performance-price ratio of existing products in the short term, TECO's R&D team has been actively seeking the assistance of external resources via technological consulting, cooperation, and introduction, thereby boosting technological strength.

Based on core technologies including design for existing rotating electric machinery and generator, drive and design for electric machinery, electric-power and electronic control and design, and gateway, the company formulates overall R&D strategy and technological roadmap by integrating new market needs, industrial

specifications, application of new materials, application technologies for sensors, wireless network technologies and green technologies.

The company takes the following elements into account in formulating an effective R&D plan:

- 1.Trend of industrial development, government policies, and market pulse;
- 2.Establishment and consolidation of key technologies;
- 3.Comparative advantages over rivals in Europe, the U.S., and Japan;
- 4.Global market positioning and technological consolidation;
- 5.R&D progress and quality.

Therefore, TECO is expected to continue or kick off the following projects:

- 1.Guidance on technological trend by forward-looking technological advisory committee;
- 2.R&D on high-performance motor and servo motor;
- 3.R&D on motor for use by the U.S. and Canadian mining firms;
- 4.R&D on magnetic-resistance motor and drive;
- 5.R&D on low energy-consumption inverter refrigerator;
- 6.R&D on auto motor and drive and joint development of complete car;
- 7.R&D on whole-series wind turbine and drive;
- 8.R&D on remote-monitoring technology for motor and generator;
- 9.R&D on medium-voltage inverter four-phase control and switch between industrial network or inverters;
- 10.R&D on high-end models and technologies of electric-control product series;
- 11.Development of multi-connected commercial air conditioner and smart air-conditioning system.

The above R&D projects are meant to help existing products conform to new European standards and develop high value-added innovative applications for existing sales channels, as well as seek commercialization and create new business opportunities for emerging technologies.

In charge of the company's overall R&D strategy and technological planning, the company's General Research Institute has formulated R&D projects covering continuing R&D on the technologies and products overseen by various business departments, plus technological deployment and product development for short, medium, and long term, as summarized in the following:

R&D schedule	R&D focus	Major projects
Short-term	Development of application markets for new products and enhancement of the performance, profitability, and market share of existing products	R&D on high-performance servo motor and drive
		R&D on inverter direct-drive washing machine
		R&D on super premium motor
		R&D on permanent-magnet motor and drive
		R&D on servo system controller
		R&D on high-revolution motor
		R&D on multi-connected business packaged air conditioners
		R&D on sine-wave detector-free drive technology
		Automatic adjustment technology for servo parameter
		Development of auto-electric power packages
		Development of smart battery and battery management system
		Development of technology for refurbishing of braking dynamism
		Development of certification technology for complete energy-saving car
Medium term	Accumulation of core technologies as basis for developing new technologies	Development of certification technology for auto battery
		R&D on technology for medium- and high-voltage inverter
		R&D on advanced inverter technology
		R&D on large high-efficiency FSR motor
		Oil hydraulic motor for hybrid injection molding machine
		R&D on wind-power technology
		Application of digital-home technology in smartphone
		Remote-monitoring technology for motor and generator
Long term	Deployment for new businesses	Gateway technology for system automation product series
		Design for and R&D on commercial air conditioners for train car
		R&D on rare-earth auto in-wheel motor and drive
		R&D on electric four-wheeled passenger car or truck
		R&D on technology for super-conductive motor and generator
		R&D on new-generation digital home appliances
		R&D on micro electric-machinery system for large high-efficiency power system
		R&D on new-generation industrial servo system
R&D on industrial technologies for regional markets		
R&D on integrated innovative technologies		

The company is expected to spend NT\$1.8 billion in R&D in the coming two years.

### 5.1.4 Long-term and Short-term Development

For industrial motor business, the company's long-term goal is to become the world's best motor manufacturer. In the short run, with the company's factories in Wuxi, Jiangxi, Qingdao, Fujian, Japan, Middle East and Turkey, gradually manifesting their benefits, the company will continue its global deployment, enhance manufacturing and cost-control capability, and accelerate the establishment of strategic alliances with partners in mainland China, Europe, the U.S., and Japan, so as to augment its global market share. In line with the government's promotion of alternative energy, the company has developed self-made wind-power generator and become a leading manufacturer of the product in Greater China.

For wind-power business, the company's long-term goal is become one of the world's 10 largest manufacturers. In the short term, rapidly obtain certification and highly reliable performance record, to pave the way for foraying into the Chinese market. Starting from low wind speed area, Teco set up the production facilities in Hunan province to take advantage of wind resource, then establish local supply chain for components and parts; seek cross-Taiwan Strait technological and business cooperation, for development of special requirements in Asia Pacific area. TECO has obtained TFC2000 onshore wind-turbine certification. Test of LVRT (low-voltage ride-through) technology, a highly regarded technology in China, was already passed by Electric Power Research Institute. Meanwhile, the company will also start to develop and produce the offshore wind power system for adapting the wind condition in Taiwan. The company will continue conducting R&D on small renewable-energy equipment as part of decentralized power supply for smart grid and roll out related products, to meet the trend.

For home appliances, in the long run, the company aspires to become the leading brand in Taiwan and actively penetrate overseas market. For commercial air-conditioners, the company will horizontally integrate the largest domestic chiller OEM to raise the company's competitiveness from operating cooperation and productive integration. Meanwhile, the company will also expand the cooperation in business in south-east Asia and China market, and arrange air-conditioner's market in Turkey. For LCD TV, the short-term plan is to establish a cross-strait division-of-labor system for expanding its shares in the world and Taiwan.

In other aspects, backed by abundant experience of electric machinery of buildings, mass rapid transit system, and high-speed rail, the company will dedicate to winning large-scale businesses for office buildings, rapid mass transit system, and rail engineering. The company also took several projects of Data centers because of rapid growth in cloud computing. For high-voltage gas insulation switch, the company has sold to localization project of Taiwan Power Co., Ltd. In addition to continue seeking business from Taipower, the company will also actively explore the private market. Moreover, following installation of development platform for specific sample electric cars in Taiwan, the company will develop new-version electric car in line with market need.

## 5.2 Market and Sales Overview

### 5.2.1 Market Analysis

#### A.Sales (Service) Region

The company is shipping industrial products to such major regions as America, Europe, Australia, Japan, China and Taiwan, and targets to extend the reach to the Middle East, India and Turkey. Home appliances are shipped mainly to the domestic market, with minor markets including Australia, Southeast Asia, Singapore, and Japan. The company plans to tap the home-appliances markets in China, Vietnam, Indonesia and Turkey. For wind-power products, in addition to the Chinese market, the company is set sight on the markets of Southeast Asia, New Zealand, and Australia, where awareness of clean energy has emerged.

## B. Market Share (%) of Major Product Categories

### (1) Industrial Product

The company boasts 50% domestic market share in general purpose sector and also offers customers custom motor featuring special usage and specifications, with the capacity reaching 30,000 horsepower in induction motors, ranking Top 5 around the world.

### (2) Wind-power business

The first wind-power turbine was erected in Inner Mongolia of China in 2010 and completed linkage with grid for power generation in March 2011. Also, the company completed wind-turbine certification, and arranged LVRT (low-voltage ride-through) certification in China, fulfilling many-year power generation under rigorous environment. Successfully forayed into Southeast Asian market in 2011 and obtained orders in Vietnam. Considering the demands of wind resource in the China market, the company will start to build factory in Hunan, and serve in nearby area. Backed by its terrestrial experience, the company has forayed into the realm of offshore wind farm and is scheduled to install the first offshore wind turbine in Taiwan, in conjunction with a number of domestic partners.

### (3) Home Appliances and Air Conditioner

The company is one of the top three makers of home appliances and air conditioners in Taiwan, with market share reaching 9% for household air conditioners, 14% for refrigerators, 15% for washing machines, 10% for LCD, and 35% for commercial-use air conditioners.

## C. Market Trend of Major Product Categories

### (1) Industrial Products

TECO originated from motor production, which has remained a core part of the company's operation, offering the dynamism for Taiwan's industrial development. After years of effort since the company's inception, it has set up various production and marketing bases through the world. It ranks among the world's top five heavy-electrical equipment suppliers and has hit world-class level, in terms of quality, variety, production scale, and sales channel.

Business for low-voltage motors, which is closely linked to overall economic situation, has been recovering since the second half of 2014, but demand for medium- and high-voltage motors still slackened in the second half of 2014, due to oil-price tumble. In 2015, the pace of overall economic recovery will remain sluggish and so will the recovery of the U.S. domestic demand. The Chinese economy, however, will continue to expand, thanks to the new economic measures of the "Belt and Road" strategy of the Chinese leadership. In the year, the Japanese manufacturing industry will continue to benefit from a weak yen.

In 2015, the aspect of heavy-electric products, the company will continue intensifying integration of marketing and production, in order to boost market share and cut cost, development new products, and develop, via concerted effort of domestic and overseas companies under the group, OEM markets and emerging markets, in addition to aggressively soliciting orders for domestic and overseas civil-engineering works, so as to achieve the high-growth target. To tap the global business opportunities related to energy conservation and carbon abatement, such as that deriving from the implement of carbon tax in the European Union, the company will develop various custom solutions featuring combination of motor and inverter.

### (2) Wind-Power Business

Due to global warming and drastic climate changes, countries worldwide have begun to emphasize the use of renewable energy by setting up development goal for renewable energy, in order to cut emission of greenhouse gases. Among renewable energies, wind power is most cost-effective. Therefore, the European Union targets raising the share of wind power to 50% by 2030.



Despite its high entry barrier, TECO is ready to tap the market by integrating its solid R&D strength in the fields of machinery and electricity. The company has successfully made inroads into the wind turbine assembly market in the U.S. and has developed 2MW permanent-magnet wind-power turbine bearing own brand, the first such product made by Taiwan which boasts high local content rate. This wind turbine system boasts solid structure and complete lineup, capable for meeting the needs of areas featuring strong typhoon or cool climate, suits both 50/60Hz enabling global use, and can easily meet the rigorous demands for connection to grids of countries worldwide.

TECO will root its wind power business on Taiwan and set sight on China, combining Taiwan's advantage in quality control and China's huge market potential. It will establish wind turbine assembly plants near wind farms and foster local supply chains, so as to save on transportation cost and facilitate the management and maintenance for up to 20 years, thereby augmenting the utilization rate of wind turbine and maximizing profits. In addition, the company will integrate Asian supply chain and technology transfer from Europe in the joint development of next-generation 5MW offshore wind turbine which suits the Asian climate. In addition, the company has successfully developed 3kW horizontal-axis wind turbine for decentralized renewable-energy power generation system, which is indispensable for smart grid in the future. The product has started to be shipped to Japan, after becoming the first Taiwan-made horizontal-axis wind turbine to be certified by Japan's ClassNK, in time to board the bandwagon of the liberalization of Japan's power market, scheduled for inauguration in 2016.

### (3) Home Appliances

Growth of market demand for home appliances is limited, since they are mature products. In addition to existing products, the company will develop or introduce new products with high added value or key components/parts, such as smart appliance, full serial of large-size (39" ~65") 4k2k LCD TV, LED TV, inverter refrigerator with high EF value, multi-temperature-layer refrigerator, flexible multi-unit inverter air conditioner, remote-control SAA(Smart Appliance Alliance), energy-saving air conditioner with power consumption display, HEPA(air conditioner with medical level filter), and other home appliances with health appeal. The purpose is to expand sales channel and increase revenue and profit with differentiated products.

Meanwhile, the company has been constantly rolling out new models for industry-use air-conditioning and freezing products, such as package air conditioner, central air conditioning equipment, flooded water chiller, centrifugal water chiller, inverter multi-evaporator VRF air conditioner, and train air conditioner, thereby creating optimal and the most comfortable workplace for domestic and overseas industries. The company also offers various air-conditioning and freezing engineering service with cutting-edge technology, to help with industrial upgrading.

Along with the development of new technologies and the increasing convenience of the Internet, information products have integrated with home appliances, giving birth to information appliances. The company will marry its decades-long experience for home appliances with cutting-edge information technologies of the members of the group in developing information appliances suited to market needs, thereby creating even larger profits for shareholders.

Besides domestic market, the company has also made major inroads into the international market, following years of strenuous effort, especially for LCD TV and air conditioner which have enjoyed very good sales to Southeast Asia, Australia, and Europe. In the future, along with increase in national income and the advent of the information age, the company will continue to launch various even more human-friendly new products, so as to meet market demand.

## D. Favorable and Unfavorable Factors in the Long-range Future and Countermeasures

### (1) Industrial Product

The company's industrial product has won very good reputation, in terms of quality and function, in the industry. It has established a far-reaching operation network on both domestic and overseas fronts, including production and marketing bases in the U.S., China, and Southeast Asia, and marketing offices in Japan, Europe, and Australia. However, rapid change in the business climate and the transformation of economic conditions and industrial structure has posed major challenge to the company's future development.

Favorable and unfavorable factors for industrial product business, along with countermeasures follow:

a. Favorable factors

- Good brand image
- Higher production scale and market share than peers
- Solid market channel
- Reliable quality
- Complete product lineup
- Huge market potential of the greater China market, for which the company has established a firm foothold in China

b. Unfavorable factors

- Low-price competition from imported products in the domestic market due to WTO membership
- Market saturation leading to price competition among machinery firms and increasingly rigorous demand for price and delivery by buyers
- Transplantation of traditional machinery firms to China and other countries, due to their declining competitiveness and demand of emigrated downstream customers

c. Countermeasures

- Reduce cost, shorten delivery schedule, enhance competitive edge, and boost market share.
- Accelerate new-product development, develop products with high added value, and establish a production system featuring cross-strait division of labor.
- Increase overseas marketing offices and establish an effective service network.
- Strive for emerging business opportunities related to environmental production and energy conservation.
- Join hands with foreign engineering firms in soliciting project orders.

(2) Wind Power Business

a. Favorable factors

- The company has established good reputation for industrial product in the field of wind-power business, capable of achieving synergy effect readily by integrating the resources of the group.
- The U.S. subsidiary already has the experience for contract assembly of complete wind turbine, which can be copied in any other region of the world.
- The company boasts complete product lineup and cutting-edge technology, capable of meeting the rigorous demands for connection to grid in the future. Its products suit both 50/60Hz, facilitating logistics work and cost control.
- The company has sound communications channel with its affiliates worldwide, enabling it a firm grasp of the latest development in renewable-energy laws/regulations and demands of grids worldwide.

b. Unfavorable factors

- Insufficient domestic supply chain for components and parts of wind turbine, complicating the effort for cost/delivery control
- Shortage of domestic R&D talents for wind turbine, impeding technological development
- Saturation of domestic onshore wind power market and difficulty in obtaining the testing ground, which postpones certification schedule

- Chinese wind-power equipment firms resort to low-price competition to tap the overseas markets, thereby disrupting the market order.
- Taiwan's wavering policy is adverse to long-term decision-making.

#### c. Countermeasures

- Set up Asian supply chain by utilizing the wind-power production capacity of China, thereby gaining a local edge.
- Establish joint R&D team with Industrial Technology Research Institute, capitalizing on the latter's electrical-machinery talents to facilitate technological development, and solicit Chinese talents released from its tightening policy, to facilitate deployment in the Chinese market in the next stage.
- Seek legal testing grounds on both sides of the Taiwan Strait and tap the Chinese market via strategic alliance with China Datang Corp. and Xiang Tan Electric, and other non big five power generation group.
- Set up logistics team to strengthen local services and cut maintenance cost.
- Take advantage of Taiwan offshore model wind farm, tap technology transfer from Europe and integrate domestic component supply chain to develop the technology which can adapt to the unique environment in Taiwan Strait.
- Tap business opportunities of energy-conservation projects with bundled sales of motors and inverters.

### (3) Home Appliances and Air-Conditioning Business

#### a. Favorable factors

- TECO can capitalize on its good brand image and support of the group's resources, facilitating the demonstration of synergy effect.
- The company has pioneered the rollout of around-the-clock service and expanded its sales channel, strengthening its competitive niche.
- The company has joined "The R&D Alliance of the Smart Home-Appliances Industry," giving it a ready access to information on smart home appliances and online digital communications technology.
- Conform to MIT logo and first-grade energy-saving model, one step ahead of peers.

#### b. Unfavorable factors

- Home appliances/household air conditioning market has saturated, featuring acute competition and low margin.
- WTO membership entails tariff cuts, bringing in competition from renowned brands of Japan, the U.S., Korea, and China.
- The Taiwanese market is limited in scale and it's difficult to develop the global branding, due to high expense for marketing own brands and insufficient price competitiveness.
- Competition from hypermarkets and chain sales channels impacts the traditional channel of agents.
- The current of bilateral or regional free-trade agreements in recent years has posed major challenge to Taiwan.

#### c. Countermeasures

- Expand product lineup and cut cost via OEM (original equipment manufacturer) strategic alliance, thereby raising market share.
- Capitalize on China's low-cost edge and embrace SKD (semi knock-down) production mode, so as to boost the cost competitiveness of some products.

- Grasp product development trend in domestic and overseas markets via the operation of product panel and new-product review sessions, thereby introducing innovative products timely.
- Plan differentiated products tailored to the needs of the targeted customers of different channels.
- Step up assistance for agents for strengthening their management and store outlets, thereby enhancing their competitiveness.
- Establish directly owned store outlets gradually.
- In conjunction with various cutting-edge information technologies of leading domestic firms, the company will push smart home appliances in suitable markets, so as to enhance the added value of products.

### 5.2.2 The Production Procedures of Main Products

Industrial Products:

Products	Use	Production Process
High-efficiency motors, single-phase motors, low- and high-voltage 3-phase motors, synchronous motors, explosion-proof motors, brake motors, variable-pole motors, gear-reducing motors, crane motors, high-temperature exhaust gas fan motors, inverter-duty motors, high-thrust motors, steel-cased motors, aluminum-cased motors, eddy-current motors, wound rotor motors, submersible motors, DC motors, ventilation blowers, wind-powered generators.	Provision of power for industrial production	Casting, Stamping, Electrical Engineering, Mechanical Engineering, Design, Planning, Assembly, Integration
Electric vehicle power motioned permanent magnetic motor, Electric vehicle power motioned induction motor, permanent magnetic motor, AC/permanent magnetic servo motor,	Industrial and electric vehicle used	Stamping, Electrical Engineering, Engineering, Magnet, Design, Planning, Assembly, Integration

Wind Power Products:

Products	Use	Production Process
2.0MW PMSG (Permanent Magnetic Synchronous Generator) wind turbine	Energy supply Decentralized power application	Power, Control, System integration, Composite materials, Casting, Stamping, Electrical Engineering, Mechanical Engineering, Design, Planning, Assembly, Integration
5.0MW offshore wind power system	Energy supply	Power, Control, System integration, Composite materials, Casting, Stamping, Electrical Engineering, Mechanical Engineering, Design, Planning, Assembly, Integration, Shipping, Marine engineering

Products	Use	Production Process
KW level wind turbine	Decentralized power supply	Casting, Stamping , Electrical Engineering, Mechanical Engineering, Design, Planning, Assembly, Integration
5kW PV inverter/ PV Self-Consumption-System	Decentralized power supply	In-grid photovoltaic system, photovoltaic charging system, machinery-electricity integration, system design, power, site planning, assembly, service.
Wind-light supplementary system	Decentralized power supply	Wind-turbine charging system, voltaic charging system, mechatronics, system design, on-site planning, assembly, and service

Home Appliances & Air Conditioners:

Products	Use	Production Process
High EER air conditioner, new environment-friendly coolant inverter duty air conditioner (one to one and VRF type), smart air conditioner, energy-saving inverter duty refrigerator, high EF-value refrigerator, direct-drive inverter duty washing machine, dehumidifier, clothes dryer, small home appliances, home-delivery low-temperature table trolley, elevator air conditioner, cooling device for machine tool, low-temperature logistics freezer, heat-dissipation module for PC	Household, commercial, industrial use	Design, planning, assembly, and peripheral
LED TVs, DVD Players, Recordable DVD players, Stereo Systems	Home Entertainment	Design, Planning, Assembly
Chillers for centralized air-conditioning systems, package air conditioners, split-type air conditioners, inverter multi-evaporator VRF air conditioner, train air-conditioning systems, centrifugal chiller	Commercial, Industrial Applications; Transportation systems	Design, Planning, Assembly, Integration

**5.2.3 Major Suppliers and Clients**

A. Major Suppliers Information for the Last Two Calendar Years

None

B. Major Clients (each commanding 10%-plus share of annual order volume) Information for the Last Two Calendar Years

None

### 5.2.4 Production over the Last Two Years

Unit: Units; NT\$thousand

Output	Year	2013			2014		
		Capacity	Quantity	Amount	Capacity	Quantity	Amount
Major Products							
Motor		1,169,070	1,025,290	15,965,713	1,543,571	1,201,164	15,965,713
Compressor (Qingdao)		1,000,000	485,437	603,345	1,000,000	255,910	328,011
System Automation		11,030,824	8,251,586	5,008,082	12,958,413	8,691,044	5,617,344
Home Appliance		394,333	313,420	4,445,051	361,404	278,562	4,515,297
Others (TECOM)		1,356,722	1,356,722	2,488,175	814,679	814,679	1,483,574
Total		14,950,949	11,432,455	28,510,365	16,678,067	11,241,359	27,311,543

### 5.2.5 Shipments and Sales over the Last Two Years

Unit: Units; NT\$thousand

Shipments & Sales	Year	2013				2014			
		Local		Export		Local		Export	
		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Major Products									
Motor & System Automation		1,614,439	8,226,980	3,326,018	23,067,863	1,461,374	6,657,971	3,394,766	22,560,409
Home Appliance & Air Conditioner		610,669	4,690,949	314,548	1,434,702	794,624	6,923,577	256,305	1,162,248
Construction			3,525,135				3,231,285		
Other			12,560,571		3,112,337		11,433,029		1,852,085
Total		2,225,108	29,003,635	3,640,566	27,614,902	2,255,998	28,245,862	3,651,071	25,574,742

### 5.3 Human Resources

Year	2013		2014		March 31. 2015		
	TECO	Global	TECO	Global	TECO	Global	
Number of Employees	2,653	24,023	2,659	23,672	2,618	23,833	
Average Age	38.8	36.2	39.5	36.9	39.7	37.5	
Average Years of Service	12.8	6.3	13.2	6.6	13	6.3	
	Masters above	13.8	7.4	14.9	9.2	14.7	9.4
	Bachelor's Degree	49.6	48.8	49.5	53.4	49.9	53.9
	Senior High School	29.4	30.9	28.6	26.1	28.5	26.5
	Below Senior High School	7.3	12.9	7.0	11.3	6.9	10.3

## 5.4 Information on Outlays for Environmental Protection

Explain in the recent one year up to the publication of the yearbook, the total amount of the company's loss (including compensation) from pollution and fines, plus possible outlay from countermeasures.

### 5.4.1 Loss resulted from polluting environment

#### A. Plant Chung-Li

- a. The environmental bureau of Taoyuan county fined the company NT\$100,000 on July 8, 2014, for violation of item 2, article 24 of the Air Pollution Prevention Law. Countermeasure: Implement the management mechanism of recording the amount of waste-water meter and conduct regular inspection and report of the preventive equipment of cleaning tower and formulate manual for operation, to facilitate standardized control.
- b. The environmental bureau of Taoyuan county fined the company NT\$200,000 on Nov. 18, 2014, for violation of item 2, article 24 of the Air Pollution Prevention Law. Countermeasure: Substitute electronic meter for pressure difference for conventional model in equipment inspection and conduct real-time monitoring by furnish worksites with Internet access.
- c. The environmental bureau of Taoyuan county fined the company NT\$300,000 on March 13, 2015 for violation of item 2, article 24 of the Air Pollution Prevention Law. Countermeasure: Substitution of new prevention equipment for activated-carbon absorption equipment and plan abatement method from the source, thereby reducing emission of vaporized organic materials.

### 5.4.2 Countermeasures

#### A. Improvement measures planned

##### a. Improvement plan for environmental-protection equipment

Installation of new environmental-protection equipment, waste reduction by strengthening the maintenance of existing equipment and improvement of production process, improvement of workplace, promotion of energy conservation, recycle and reuse of waste water, and reuse of waste materials, so as to prevent emission of pollutants and comply with legal requirements

##### b. Plan for management improvement

Continue pushing ISO14001 environment management system, pinpoint sections in the operational process (covering the entire product life which includes production, sales, the usage of product, and its disposal) which produce impact on the environment and improve the emission of pollutants, thereby alleviating the environmental impact and augmenting environmental performance.

Continue pushing OHSAS 18001 vocational safety and hygiene management system and the passage of the certification of CNS 15506 by the Council of Labor Affairs; incorporate safety and hygiene management into the corporate management culture; regularly hold environmental-protection and safety/hygiene training, fire-fighting drill and drill emergency response; regularly inspect operating environment and physical examination of employees, so as to lower the hazards of risk of workplace and prevent the occurrence of vocational disaster.

##### c. Continue pushing the program for checking and reduction greenhouse-gas emission

In response to global climate change, the company began to check greenhouse-gas emission in 2005 and passed external greenhouse gas inspection (ISO 14064-1) in 2012. The company started to push energy-conservation and carbon-abatement program, in 2006, especially power usage in the second category, which has been participated all the factories and staff units. The company has also established

energy-conservation task force and hired experts to help with diagnosis and offer advices for the execution of the program.

TECO has been dedicating to the materialization of the strategic vision of “TECO GO ECO,” which calls for the production of energy-saving and environment-friendly products, via efforts in the fields of R&D, production, materials, process technology, and marketing. We also focus on green energy in business expansion and even organize various sci-tech and humanistic events via the foundation, in order to substantiate eco value and induce the company to develop in the direction of sustainability.

d. TECO Corporate Social Responsibility Report

Sustainable development for enterprise is an indispensable mindset for corporate management in the new century. At the time when enterprises are facing rigorous challenges, they need to rethink the direction and strategy for their sustainable development and manifest their management performance via report on corporate social responsibilities. The report covers information on the three major aspects of economy, society, and environment, so as to improve external image and help communicate with stakeholders. Corporate social responsibility is the fifth information report unrelated to financial performance publicized by TECO in 2014, with the purpose of manifesting the company’s methods, achievements, and related strategies and goals of the company in fulfilling social responsibilities in a transparent and open manner for the social public and stakeholders. The report mainly covers various acts and performance figures concerning corporate governance, environmental protection, social participation, and concern for employees, clients, and consumers.

e. Projected capital outlay for environmental protection in the next three years

(a)Planned procurement of anti-pollution equipment and outlays

i. Plans in next three years

2014	2015	2016
Inspection and repair of gas tank and heavy-oil boiler and improvement of casting operation and environment.	Maintenance, improvement, or installation of air pollution-abatement equipment	Maintenance, improvement, or installation of air pollution-abatement equipment
Maintenance, improvement, or installation of air pollution-abatement equipment	Replacement of the consumption materials of activated carbon, filtering net, and filtering ball	Replacement of the consumption materials of activated carbon, filtering net, and filtering ball
Replacement of the consumption materials of activated carbon, filtering net, and filtering ball	Installation of energy-saving light	Improvement of waste-water equipment
Installation of energy-saving light& light-absorpting shade	Elimination of Leakage	Improvement of Illumination
Improvement of waste-water equipment	Improvement of waste-water equipment	

ii. Projected outlays (Unit: NT\$thousand)

2015	2016	2017
\$ <u>106,702</u>	\$ <u>78,084</u>	\$ <u>69,002</u>

(b) Expected improvements

- i. Cut emission of air pollutants and waste water to the level in compliance with legal requirement.
- ii Push cut on industrial waste by reducing output of waste materials, strengthening mechanism for the recycle of waste materials, implementing control for emission reduction.



- iii. Establish energy-conservation and carbon-abatement task force, which will pinpoint equipment with larger energy consumption and areas with higher power consumption, as well as formulate feasible energy conservation programs after consulting experts/scholars and push their execution, thereby slashing carbon emission.
- iv. Push to cut emission of greenhouse gas and dedicate to the development of energy-conserving environment-friendly products, to alleviate the impact on the environment and fulfill corporate social responsibility.
- v. Install high-efficiency power-saving lighting to enhance the efficiency of existing lighting equipment and adopt proper power deployment and control circuit to save power.
- vi. Carry out risk evaluation for workplace, so as to assure the provision of a safe workplace.

f. Expected effect of improvement

(a) Effect on net profits

- i. Avoidance of loss from fines
- ii. Avoidance of loss from suspension of operation
- iii. Avoidance of disputes for environmental pollution
- iv. Cut production cost via reduction of environmental-protection outlays, thanks to waste abatement and pollution prevention.

(b) Effect on competitiveness status

- i. Augment the corporate image and meet the expectation of related parties.
- ii. Comply with the global environmental-protection current, avoid trade barriers, and boost sales opportunities.

B. Failure to adopt countermeasures

- a. Failure to adopt improvement measures: Nil
- b. State of pollution: Nil
- c. Possible loss and compensation amount: Nil

### 5.4.3 Workplace and Protection Measures for the Personal Safety of Employees

A. Special environmental-protection and safety/hygiene units are presented at the headquarters, every department, and factory.

Complying with “Enforcement Rules of the Occupational Safety and Health Act”, specialized units and staffers are instituted to handle affairs related to environmental protection and safety/hygiene and practices related to safety/hygiene affairs are carried out regularly, according to legal requirement.

B. Environmental-protection and safety/hygiene training are conducted regularly:

New employees and employees shifted to new positions must undertake safety/hygiene training courses, whose duration and contents comply with legal requirement. Only trained personnel with necessary licenses can operate dangerous machines or equipment, such as overhead traveling crane, forklift, organic solvent, boiler, and high-pressure gases. Specialized staffers or technicians all must undertake retraining regularly.

C. Workplace safety

In addition to the Occupational Safety and Health Act for machinery equipment and norms for use and safe utilization of personal protective gears, the company has managerial staffers carry out safety inspection regularly, to assure compliance by employees to safety norms in their operation and detect points of further improvement, thereby fostering the safety awareness among all employees and achieve safety protection

better than legal requirement, to assure safety of workplace.

#### D. Detection of operating environment

According to “Enforcement Measures for Detecting Laborers’ Operating Environment,” detect the operating environment for chemical and physical elements, with the former including carbon dioxide, dust particle, and organic solution, and the latter including noise and overall temperature index. Entrust qualified operating-environment detecting institutions to carry out the detection periodically, to assure compliance of the operating environment with law/regulation.

#### E. Health care and management

Employee health is the largest assets of the company. The Company respectively exercised health examination for regular task and special dangerous task according to “Labor Safety and Health Act”. Organize health classes, publicize health information and organize health-improvement activities. Continue pushing employees to stress self-health management and create a safe and comfortable working environment, so as to enhance employees’ health and physical strength and further extend the concept to their families.

#### F. Fire-fighting drill and emergency-response drill for special workplaces are held regularly:

Ordinary fire-fighting drill takes place every half a year and covers such training items as team organization, practice, response to emergency, and post-accident handling. Emergency-response drill for special workplaces is conducted every year, in order to train employees’ capability in handling accidents.

#### G. The safety and hygiene management system was verified and passage of performance certification

The safety and hygiene management system of various plants (Plant Chung-Li, Plant Kuan-Yin, and Plant Hu-Kou) has passed the “OHSAS 18001,” “Taiwan Occupational Safety & Health Management System (CNS15506),” and its following check.

#### H. Pushing Globally Harmonized System of Classification & Labeling of Chemicals

To highlight dangerous and hazardous substances, safety labels for materials have been installed in workplaces, where updated information on safety data sheet (SDS) is available as reference for employees. Change in raw materials and production process cannot be made before the review, collection of information on safety data sheet (SDS), and completion of training of related employees in accordance with the company’s management measures.

## 5.5 Labor Relations

### 5.5.1 The company’s various employee welfare measures, advanced study, training, and retirement system, along with their execution, as well as labor-management agreements and various employee-benefit protection measures follow:

#### A. Employee welfare measures

The company has high regard for employee welfare and work safety constantly, as evidenced by the setup of employee welfare committee back in 1964, which handles various employee welfare measures, so that employees can share the profits of the company. The company’s welfare measures follow:

##### a. Employee welfares provided by the company

- (a) Marriage and funeral subsidy
- (b) Physical examination for employees

- (c) Company uniform
- (d) Dividend sharing and stock option
- (e) Year-end bonus
- (f) Pension fund
- (g) Meal subsidy
- (h) Labor insurance, health insurance, group insurance, pension hand over and accident insurance
- (i) Preferential rates for purchase of the company's products

b. Welfare measures provided by the employee welfare committee

- (a) Subsidy for travel, marriage, funeral, and hospitalization
- (b) Group parties
- (c) Birthday gift
- (d) Childbirth subsidy
- (e) Gifts for three major festivals
- (f) Scholarship for employees' children
- (g) Other employee welfares

B. Advanced study, education, and training

The company appropriates 0.1% of its annual revenue for employee training, which is included in the annual corporate plan, holding regular courses on professional and management knowledge for employees at various positions and cultivating excellent talents with aggressive working attitude and innovative concept, according to training plans for various stages for their career.

In 2014, the company held courses on executive training, common knowledge, professional capability, and company policy, which boasted 17,710 persons of attendance, on top of 245 persons of attendance for outside courses. Every employee received 23.03 hours of training on average.

C. Retirement system and its implementation

The company has formulated "measures for labor retirement," in compliance with legal requirements, according to which the company appropriate a certain amount of fund to be deposited into a specialized account at the Central Trust of China for care of employees after their retirement. For employees who embrace labor-pension system after July 1, 2005, the company appropriates a sum equivalent to 6% of their monthly pays, set according to an official pay scale, to their individual accounts at the Labor Insurance Bureau every month.

D. Labor-management agreements and protection measures for employee benefits

The company has enjoyed harmonious labor-management relationship, thanks to open-minded management style of executives and the understanding of company policy by laborers.

The company set up TECO employee welfare committee in April 1964, in charge of various employee welfare affairs, which was followed by the establishment of TECO labor union in July, 1974. In March 1980, the company's factories initiated labor-management meeting, in order to boost working efficiency, improve labor conditions, and bridge the opinions of management and labor. The company has reported to the regulator for the establishment of those organizations, which have been functioning normally over the past years.

To safeguard the interests of both labor and management and assure their harmonious relationship, the company signed a group contract with representatives of the labor union on December 28, 1981, which was then forwarded to and approved by the regulator.

In 1999, the company was granted the “national good labor-management relationship business award” and “exemplary labor-management meeting award” by the Council of Labor Affairs and the “good labor-management relationship award” by the Taoyuan County government. In 2009, it passed the certification for healthy workplace by the Bureau of Health Promotion and in 2010 it was granted the award of “national manpower innovation” by the Council of Labor Affairs and “excellent award for healthy workplace” by Taipei city government, in 2012 it was awarded “2012 Corporate Citizen Award” by Common Wealth and was award “Happy Corporate Award” by Taiwan City Government in 2013, in acknowledgement of the company’s effort in achieving a harmonious and co-prosperous relationship between labor and management.

#### E. Guidelines for employee behavior or ethics

- a. To uphold the working order at workplace and clearly define the rights and obligations of labor and management, the company has formulated “employee working rules,” which has been approved by the regulator and publicized as the guidance for the company in employee management. The rules set out clear regulations on employees’ position, title, employment, leave, service, salary, reward and punishment, evaluation, promotion, welfare, layoff, compensation for vocational injuries, and retirement. The company expects every employee to do his/her best to contribute to the achievement of the company’s business goal and enhance his/her ethical standard. It, therefore, has formulated “behavioral guidelines,” with major contents including:
- (a) The staff in the implementation of the company's business, should avoid by means of its position in the company as of to themselves, spouse, parent, child or any other person to obtain improper benefits.
  - (b) The company’s internal information (or information related to the company’s interest or business), be it in the aspect of technology, finance, or business, is the company’s business secret, for which employees have the obligation of confidentiality and cannot leak it to any outside party. In addition, after leaving the company, employees still have to abide by the confidentiality obligation according to the principle of integrity and refrain from leaking the company’s secrets or utilize them in engaging in illegal competition.
  - (c) Political donation: Employees should not donate to or sponsor via other means political candidates under the name of the company or its affiliated institutions.
  - (d) Charitable donation: When making any charitable donation or sponsorship, staffers should check the outlet and purpose of such donation and sponsorship to make sure it doesn’t become bribery in disguise.
  - (e) Obligation of reporting and informing: The company encourages open communication with staffers and third parties, who can report or inform management or human-resources unit for any question, finding, unfair treatment at worksites, or violation of the guidelines, without vicious fabrication, though. The company will handle such reporting or informing confidentially and protect those who take part in the investigation.

Subjects of the reporting or informing should not revenge or threaten the informants, who can report any revenge, threat, or harassment to human-resources unit upon which the company will act instantly.

#### 5.5.2 Status of the company’s staffers related to financial-information transparency in securing certificates designated by the regulator.

License	Number of People	
	Financial Accounting	Auditing
CPA	2	
US CPA	1	
CFA	2	
CIA	0	3
Investment trust and consulting representative	3	

**5.5.3 The company had not incurred any loss from labor-management dispute as of the date for the publication of the annual report and expects no such loss in the future.**

## 5.6 Important Contracts

Agreement	Counterparty	Period	Major contents	Restrictions
1. Agency contract	Top-Tower Enterprises Co., Ltd. and others, totaling 592 companies	One year after the starting of shipment, should any party fail to notify contrary opinion three months before the ending of the contract, the contract will be extended by one year automatically, an arrangement which will be repeated afterwards.	Rights and obligations for agency for home appliances, electric motor, and air conditioners.	Nil
2. Syndication loan contract	First Bank	Dec. 15, 2010 -Dec. 14, 2015	Mid-term revolving loan	Yes