Ablerex

Experts in Power Conversion

2017 Corporate Social Responsibility Report

企業社會責任報告書

About Corporate Social Reasonability (CSR) Report

Since its establishment, Ablerex Electronics Co., Ltd. (hereinafter referred to as "Ablerex") has persistently valued corporate sustainable development and social responsibility as long-term commitments and obligations of the company. To actively disclose the company information and demonstrate the outcome of Ablerex in sustainable development, since 2015, Ablerex takes the initiative in the publication of the annual article of "Ablerex Electronics Co., Ltd. Social Responsibility Report."

To improve the overall report disclosure quality and to satisfy international standards, Ablerex has prepared and established the CSR report according to the GRI Standards announced by the "Global Reporting Initiative (GRI) in 2016." In accordance with the guidelines described in the "GRI Standards." Ablerex hopes to meet the expectations of stakeholders with the information disclosed in the report and to sufficiently demonstrate the company's efforts and outcomes in sustainable development.

Report Scope and Year

The information disclosed in this Report is mainly to demonstrate the activity data information and performance in finance of Ablerex (excluding foreign investment companies), quality service, environmental safety and management as well as work environment and social benefit during the years 2016 and 2017. Most of the information disclosed covers the status of all locations in the Taiwan region. If indicators of other regions are involved, further explanations will be provided in the contents of the report.

Report Preparation Guidelines and Verification

This report follows the GRI standards: Core In addition, the content of 2. Financial Performance Data of Chapter 3 of this Report refers to the financial annual report information certified by PricewaterhouseCoopers Taiwan (PwC Taiwan). For details, please refer to Chapter 3 of this report or the company's annual report. For the present year, the CSR assurance has not yet been introduced, and in the future, we will continue to seek opportunities for the assurance.

Issuance of Report

2016 CSR report: issued on September 2017
2017 CSR report: issued on October 2018
Report Period: January 1, 2017 to December 31, 2017
Report Period: 1 year
To cope with the trend of environmental protection and eco-friendliness, the company promotes paperless operations. Accordingly, this report is an electronic version and is published on the company's website.
Shall you have any suggestions or questions on this report, please feel free to contact us.
Contact Window: Ablerex Corporation / Administrative Management Department
Contact Method:
Telephone: 02-2917-6857
Fax: 02-2914-8126
E-mail: ablerex.service@ablerex.com.tw

Message from the Chairman

Renewable energy and environmental protection have been major issues for the 21st century. Under the impact of greenhouse effect, the earth that we depend on is showing warnings and we have seen numerous natural disasters around the globe. In view of such environment, Ablerex seeks not only to provide economic returns to all shareholders and employees but also actively to develop and innovate solar power technologies along with the focus in the researches of enhanced energy storage system in light of providing assistance to the government and society in the evolution of power supply equipment as well as achieving continuous improvement in the energy usage efficiency and functional stability.

Ablerex has demonstrated not only its commitment in the core business continuous development but also the attitude in the advancement of technologies in order to increase the satisfactions of the customer and shareholders. Furthermore, Ablerex implements the corporate governance thoroughly, fulfills the social responsibility of the company and seeks the corporate sustainable development. In addition, through extensive care for the environment and society, the company implements the humanistic rationale of "Return benefits gained from the society" and upholds the spirit of "Viewing the suffering of others as one's own" in light of seeking a harmonic in the concept of one green earth among the company, employees and the society.

Ablerex has voluntarily published the CSR reports for three years consecutively. With the presentation of CSR report, Ablerex is able to evaluate the performance of the company in fulfilling the corporate social responsibility in three main aspects of economics, products (environment) and society., and from which, the appropriateness of the operational directives of the company be further determined and verified. In general, the aspects concerned by Ablerex have been confirmed to comply with the present main stream of the corporate social responsibility, and all directives made will continue to move forward along the trend.

Since Ablerex received the outstanding performance of Top 6%~20% in the (First Year Corporate Governance Accreditation) in 2014, the company has actively enhanced and improved the operational structures of the company. Furthermore, in the subsequent Second, Third and Fourth Year Accreditations, the company continues to receive the outstanding achievement of Top 5%, demonstrating that Ablerex continues to excel and improve in the right path. For the purpose of allowing all stakeholders to have thorough and complete understanding of the company's directives and to supervise as well as to drive the company to achieve higher goals, we will continue to issue CSR reports. The demonstration of corporate social responsibility expresses Ablerex's commitment in the fulfillment of such responsibility, and the company will excel further to reach new heights during the continuous publication of CSR reports.

Chairman and President

Steven Hsu

Table of Content

Ablerex Overview

1. Company Profile

1.1 (About Ablerex)

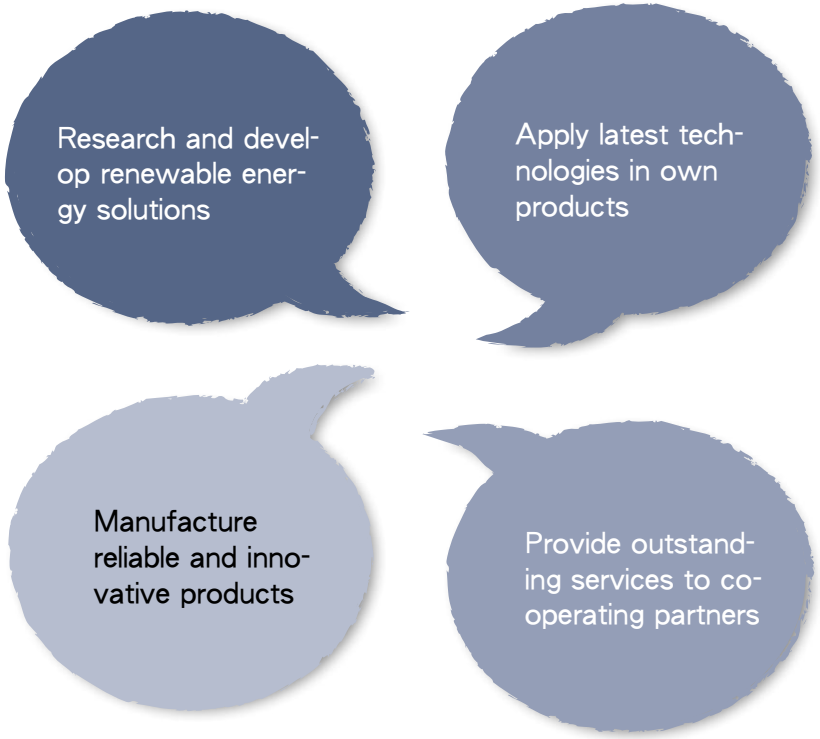
Ablerex Electronics Co., Ltd. with its headquarter stationed in Xindian, New Taipei City, R.O.C. is a world leading manufacturer in Uninterruptible Power Supply (UPS) systems and Power Quality Devices (PQD).The main products include UPS, active power filters, photovoltaic (PV) inverters, power monitoring systems and automatic transfer switches etc. With a strong R&D team and advanced professional production equipment, Ablerex is committed to the development and production of fast and high-efficient power electronic products that are capable of satisfying the market demands.

To satisfy the market demands and price competition for power electronic devices, the company established its first manufacturing facility plant in Suzhou, China in 2005. Subsequently, as the company continues to launch new products, to meet the rapid development of the market demand, the company has completed the construction of Suzhou Plant 2 in 2008, and its scale is five times greater than Plant 1. All of the Pingtung and Suzhou Plants of the company have qualified and received the international certification of ISO9001-2008 and ISO14001. In addition, the products of the company have also qualified certifications of the international quality control system one after another along with the acquisition of TLC product certification and various international certificates, such as: CE, UL, CB and VDE etc.

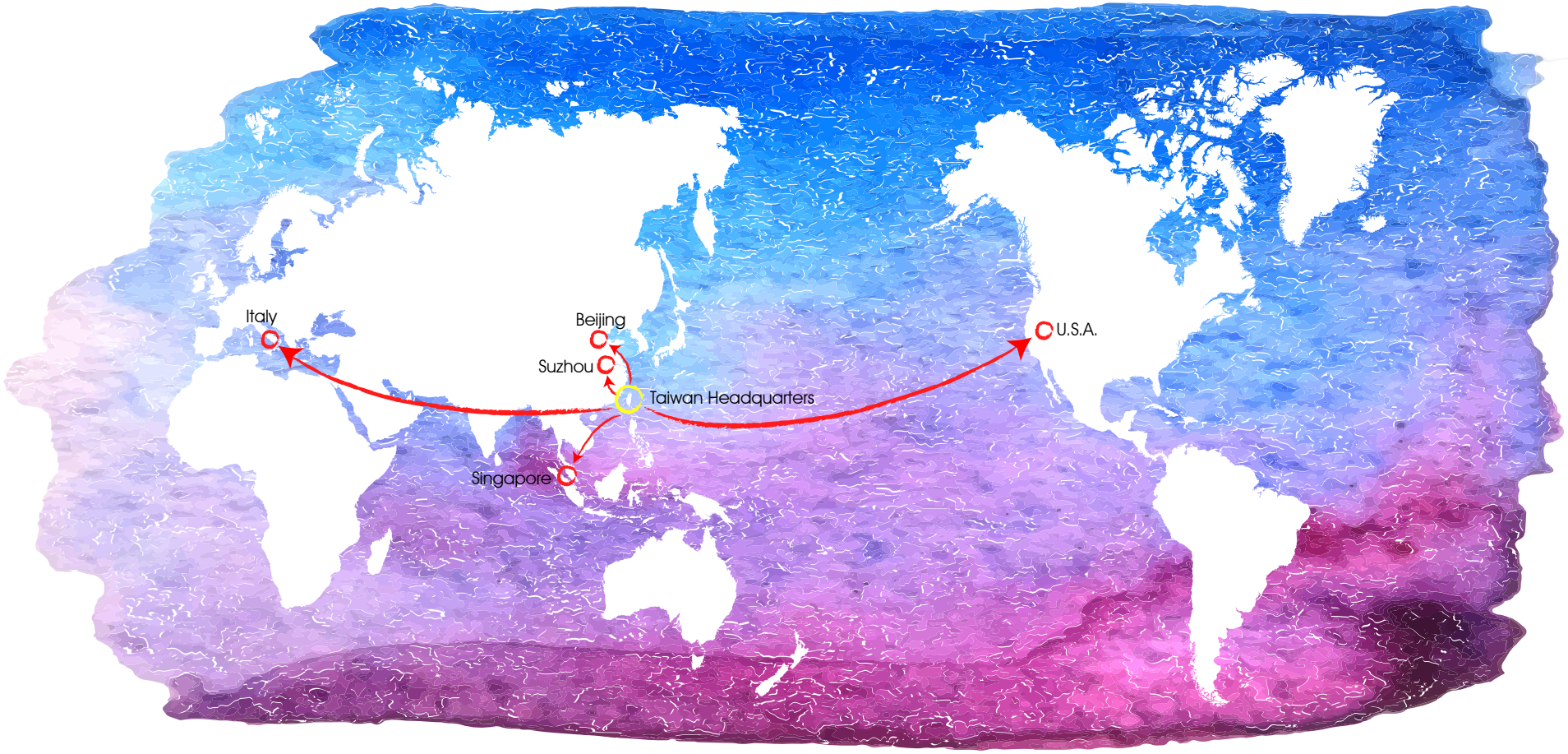
Up to the end of 2017, Ablerex has not yet signed the economic, environmental and social regulations, principles or other initiatives established by the external and approved by organizations. Nevertheless, to cope with the emerging green environmental protection concept, the R&D team of the company is devoted to the development of renewable energy solutions. In 2005, Ablerex completed the PV inverter as the first R&D achievement of our company. In the next few years, we will continue to research and develop wind power inverters and fuel cell inverters.

"Experts in Power Conversion" is the ultimate goal we seek to achieve with dedication. Our mission is to be the best energy solution provider in the fields of industrial application and information application.

The company's future operation will continue to focus in:



With the expansion of the market and business operation scope, Ablerex presently have operation offices in Taiwan, China, Italy, Singapore and U.S.A. For the region of Taiwan, in addition to the headquarter of the company, we also have offices in Hsinchu, Taichung and Tainan. Furthermore, we have also established R&D centers and manufacturing sites in Kaohsiung and Pingtung. The total number of employees in Taiwan is approximately 299 people. We have gathered thousands of professional employees with strong R&D and manufacturing capabilities, and Ablerex is indeed the best choice as the power solution provider for consumers.



1.2 (Company History and Milestone)

Company History

1998
Established Ablerex Electronics Co., Ltd.

2001
Established Suzhou production site

2004
Capital increased to NTD 310,000,000

2005
Suzhou Plant 1 in China completed and officially in operation

2006
Established US office

2008
Established Kaohsiung R&D Center
Invested in Singapore office
Suzhou Plant 2 in China completed and officially in operation
Initial public offering

2009
Established Beijing Italy offices
Listed in the emerging stock market

2010
Taipei Exchange Board of Directors approved for OTC on June 25
Capital increased to NTD 450,000,000

2011
Received award of 2011 "Deloitte Technology Fast 500 Asia Pacific".

2012
Pingtung facility completed and officially in operation, investment in establishment of Pingtung Plant
Received the German VDE-AR-N 4105 certification issued by Intertek Testing Services, and became the first manufacturer in Taiwan to receive the new certification.
Received the international authentication institution SGS 18-Year Quality Sustainability Award.

2013
Received the Taiwan Innovation Award Purchased real estate in Singapore and established sales officePurchased real estate in U.S.A. and established sales office

2014
Pingtung Plant 2 construction started

2015
Established office in Milan, Italy as the service location for expanding sales in Europe.

2016
Invested in Hsinchu office and purchased real estate as service location for Hsinchu office
Pingtung Plant 2 completed and officially in operation

2017
Established Japanese subsidiary Wada Denki Co., Ltd. to expand Japanese market and develop sale of own branded products in September.

Technology Milestone

1995 Received ISO 9001 certificate

2000 Cooperated with the incubation Center of National Kaohsiung University of Applied Science in talent cultivation and technology development

2001 Completed and introduced the development and mass production of Active Power Filter (APF).

2002 Established R&D team in Suzhou Plant

2003 Completed the development of DSP control and UPS parallel redundancy technology.

2004 Received ISO14001 certificate and developed the sales model for ODM & OEM

2005 Completed development of PV inverter

2006 Products complied with RoHS& WEEE standards

2007 Established automatic mounting and SMT production line

2008 PCB own assembly production

Completed wireless technology in battery monitoring system (BMS) application

2009 Completed the development and mass production of three-phase 30 KVA converter

2010 Developed Multi-Level converter for 100 KVA

2011 Applied LCD touch screen technology to all products

2014 Completed the development and mass production of three-phase 200 KVA UPS

2015 Completed the development and mass production of 5KW household energy storage system

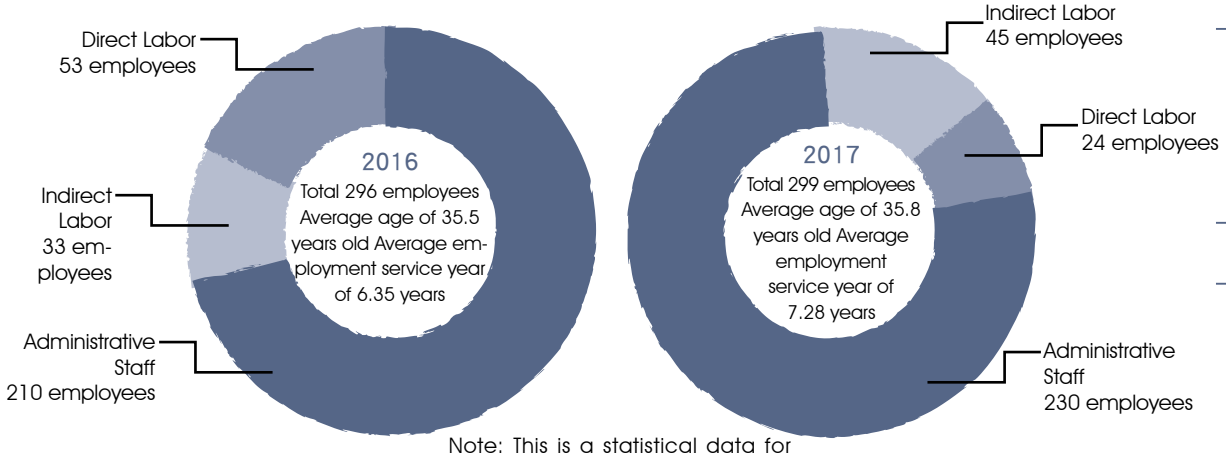
1.3 (Profile)

Stock Symbol	3628	Company Name	Ablerex Electronics Co., Ltd.	Industry Type	Other electronics business
Address		1F, No. 3, Lane 7, Baogao Road., Xindian District, New Taipei City		Telephone	02-29176857
Paid-in Capital		NTD 450,000,000		Company Establishment Date	4/27/1998
Chairman		Steven Hsu		President	Steven Hsu
Spokesman		Jeff Lin		Deputy Spokesman	Damon Chao
Main Operating Business		Uninterrupted Power Supply (UPS) system research, development, manufacturing, sales and agency Power quality improvement system and equipment, photovoltaic power system equipment research, development, manufacturing and sales Maintenance and technical service business			

1.4 (Employment Status)

All of the present employees of Ablerex are regular employees and there are no contractual employees. Relevant information on employees is as follows:

1.4.1 Up to the date of December 31, 2017, the number of employees, average period of employment in the last two years classified according to the gender and employment contract (regular and temporary) of employees in Taiwan is as follows:



Note: This is a statistical data for employees in the region of Taiwan

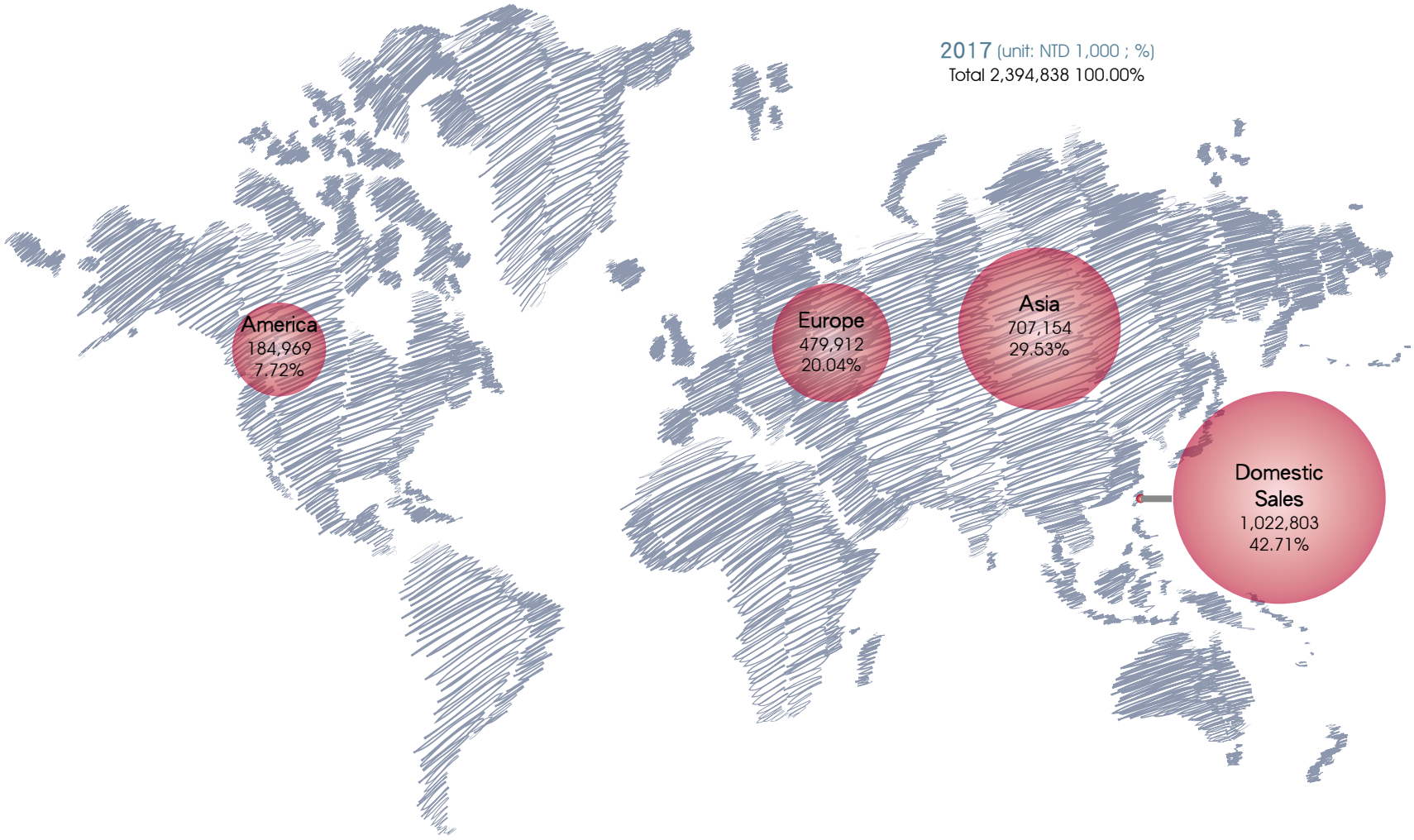
1.4.2<Employees classified according to the gender and employment contract (regular and temporary, full-time and part-time) in Taiwan>

2016			2017	
Full-time/ Regular	236		237	Full-time/ Regular
Temporary/ Part-time	0		0	Temporary/ Part-time
Total	236		237	Total

Full-time/ Regular	60		62	Full-time/ Regular
Temporary/ Part-time	0		0	Temporary/ Part-time
Total	60		62	Total

2. Industry Supply Chain

2.1 (Sales (Supply) Regions of Main Products (Services) of Ablerex)

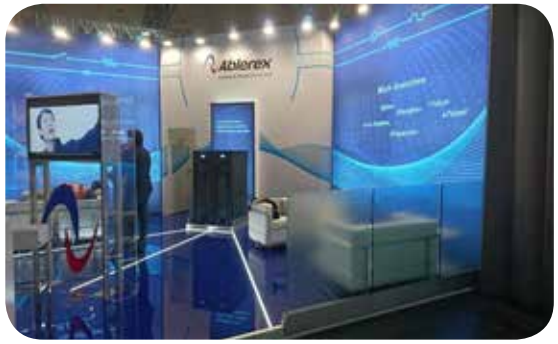


2.2 (Competitive Niche)

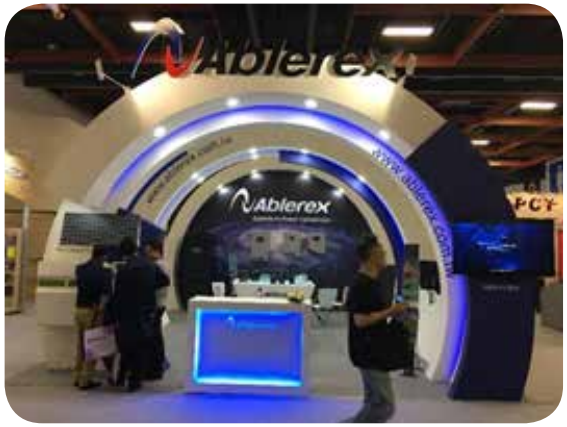
The yield rate, production efficiency and specification completeness of UPS systems have become the key factors for the worldwide giants and channels in selecting UPS suppliers. Presently, the company has the following competitive advantages in marketing and sales, product R&D and production manufacturing process:

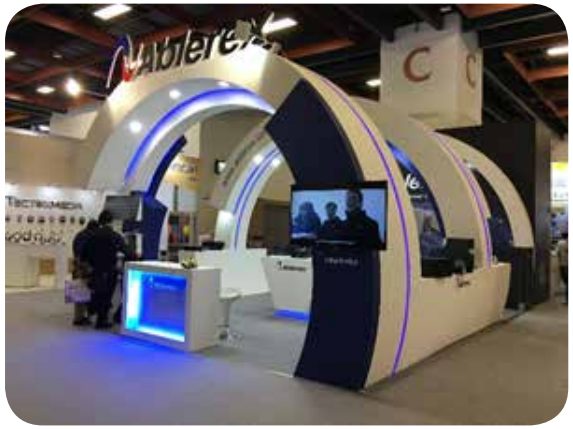
2.2.1 Marketing and Sales

In recent years, the Company actively participates in international exhibitions (German CEBIT)


and important domestic exhibitions (COMPUTEX)





In recent years, the company actively participates in international and domestic important electronic information industry exhibitions, and Ablerex is well-known in the relevant global industry chains. The products of the company have also received safety standard certificates in various countries, facilitating the expansion of the sales. In addition, the company offers complete product specifications for small and micro types of UPS in order to provide a complete product line to satisfy the customer demands. Furthermore, the technical image and R&D competence of the company are strong, and the company is able to continuously meet the demands of customers in the development of new products. In the domestic industry, Ablerex is a cooperating partner receiving great recognition from international giant manufacturers, which is beneficial to the company in seeking ODM and OIM cooperation opportunists.

2.2.2 Product R&D

UPS products are heading toward the trend of being lightweight and compact in size as well as the direction of the functions of intelligence, modular and network. The core technology of the company has been headed completely toward the field of high-speed and high-precision. Moreover, in terms of the product development, the company has not only been equipped with the software and hardware design and development capabilities but also achieved the first class level on the product development seed and design quality. Accordingly, the company is able to cope with the changes in customer demands and evolution of technologies in order to timely launch new products and to engage in the market competition with greater performance and quality at a lower cost.

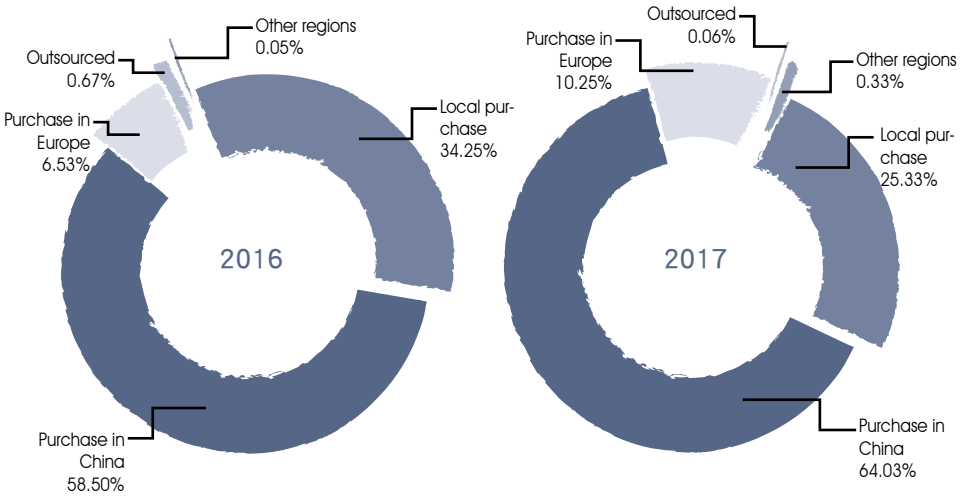
2.2.3 Production Process

Improvement of production process is an important factor in manufacturing cost control, and the quality stability is also a key for the customer satisfaction and future business development. For the new product development process, the company implements detailed planning in the overall manufacturing process along with the continuous process and quality improvement operations in order to facilitate the production and effectively reduce the cost while improving the quality thereof. Ablerex is equipped with the professional manufacturing capability for a complete process of its own product development, software design, manufacturing and automatic assembly testing. The company continues to provide products of excellent quality, achieve on-time delivery and complete after-sales services such that the company is equipped with adequate competitive abilities.

2.3 Supply Chain Overview

The main raw materials for the products of the company include batteries, transformers, semiconductor electronic parts, plastic materials, metal shell PCB, cables etc., including 217 suppliers in Taiwan, 4 suppliers in China, 5 suppliers in Europe and 1 supplier in other region, for a total of 227 suppliers cooperating with the company. Despite the great number of suppliers, the company controls the quantity of purchases from each supplier such that there is no overly centralized materials purchasing from one single supplier. Furthermore, the company maintains long-term and excellent cooperation relationship with the suppliers. To ensure the stability of the supply source, the company also maintains contacts with other suppliers such that the materials supply condition is excellent, and there have been no incidents of shortage or interruption of supplies. As shown in the figures below, in 2017, there was a greater change in the purchase amount in Taiwan and China in comparison to the amount in 2016, and the main cause is the shutdown of the sheet metal department such that the assembly parts are purchased from China. In addition, with the continuous sales growth in Europe, some component parts require local purchase; therefore, in 2017, the purchase amount in China and Europe increased by 9.25% over the last year.

Annual Overall Purchase Amount Distribution Map

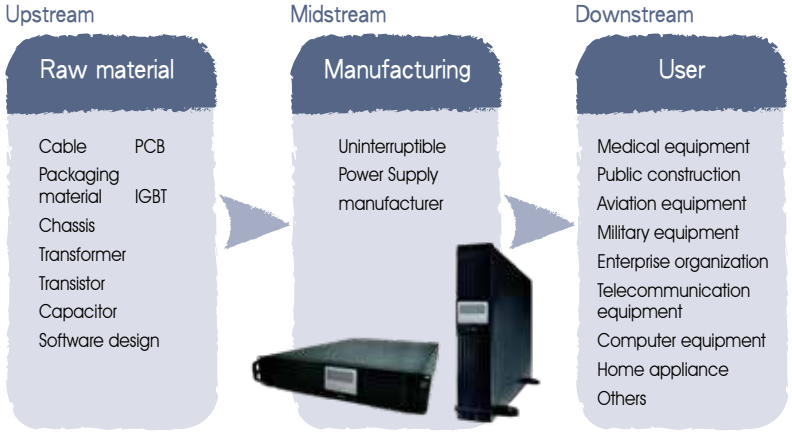


2.4 Main Product Supply Chain

2.4.1 UPS Production Process (upstream, midstream and downstream)

Ablerex is a professional design and production manufacturer of UPS systems, and the upstream of the product mainly includes the component parts (transformers, chassis, cables, capacitors, PCB etc.) suppliers, battery supplier and software development company. All of the products are provided to the downstream terminal users, such as: various industries of medical, aviation, military equipment, financial, security, nuclear power, petroleum, telecommunication and computer equipment etc., through an integrated sales network.

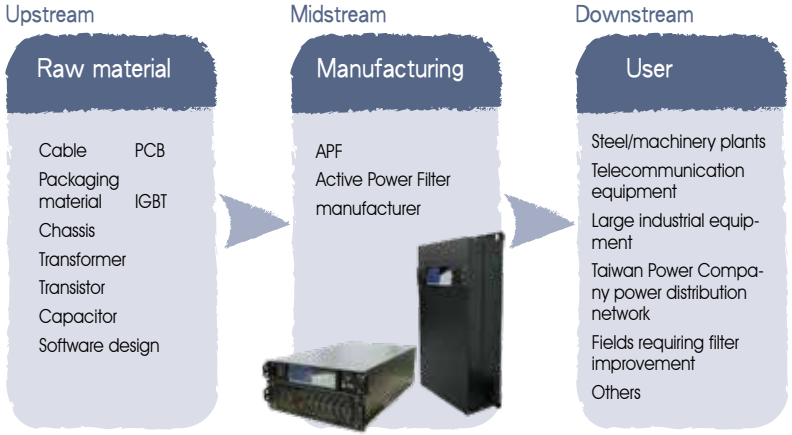
With the rapid development of internet network, information and telecommunication industries, the demand for power supply quality also becomes more rigorous, which attracts more enterprises to the use of UPS to protect the computer equipment of companies and drives the demand for UPS. Accordingly, the future potential industrial growth of the company is remarkable.



2.4.2 Active Power Filter

Ablerex is a professional design and production manufacturer for Active Power Filters (hereinafter referred to as "APF"). The upstream of the product mainly includes the component parts (transformers, chassis, cables, capacitors, PCB etc.) suppliers, battery supplier and software development company. All of the products are provided to the downstream terminal users, such as: various industries of steel machinery manufacturers, telecommunication equipment, large industrial equipment, Taiwan Power Company power distribution network and other fields or equipment requiring filter improvement etc., through an integrated sales network.

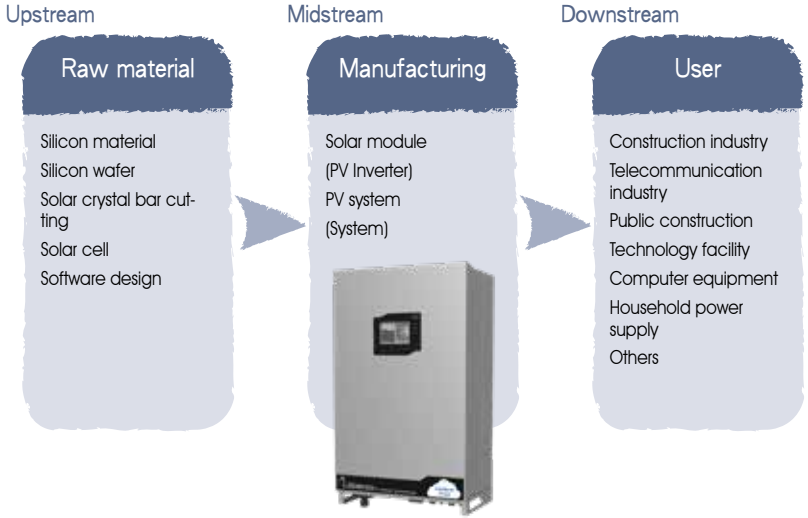
The demand for power supply quality of various industries has become more rigorous nowadays, which drives more industries to use APF to improve the power usage quality and to reduce the power consumption loss. In addition, the technical barrier of such product is high such that there are only a few domestic and foreign manufacturers for such product. Consequently, APF product of the company is of great competitive advantageous in the market and is one of main products promoted by the company.



2.4.3 PV Manufacturing Process (upstream, midstream and downstream)

Ablerex is in the system and converter sectors of the PV industry chain. The company designs and manufactures PV Inverters. The products manufactured by the company are provided to the downstream system integration and various industries, such as: construction industry, telecommunication industry, public construction, technology facilities etc., through integrated sales network.

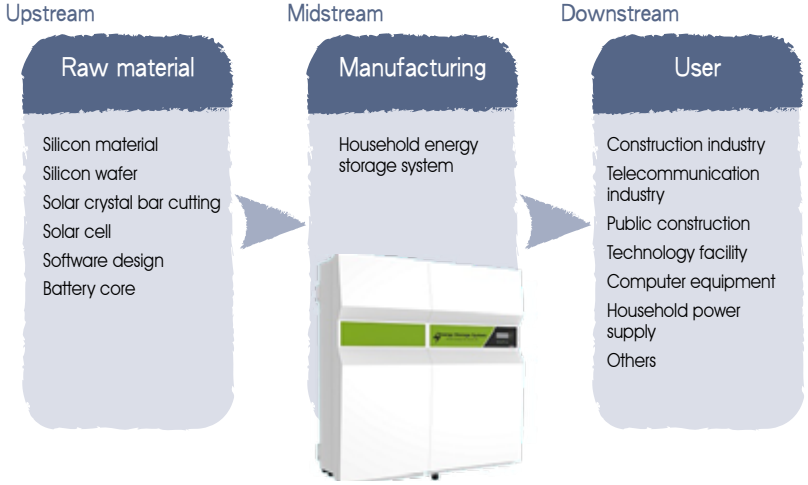
Since the PV industry is of a great business opportunity in the future, and presently, the number of domestic competitors is small due to the limitation of the advanced technology barrier, the PV Inverters manufactured by the company have certain advantages in terms of the quality and price competitiveness. Currently, Ablerex has become one of the leading global manufacturers of PV inverters, and a great number of international giants have designated Ablerex as the ODM supplier; therefore, PV inverter is one of the products capable of increasing the revenue of the company.



2.4.4 Household Energy Storage System Manufacturing Process (upstream, midstream and downstream)

Ablerex is in the system and converter sectors of the household energy storage system industry chain. The company designs and manufactures ESS converters. The products manufactured by the company are provided to the downstream system integrators and various industries, such as: construction industry, telecommunication industry, public construction, technology facilities etc., through an integrated sales network.

Since the energy storage system industry is of great business opportunity in the future, and presently, the number of domestic competitors is small due to the limitation of the advanced technology barrier, the ESS converters manufactured by the company has certain advantages in terms of the quality and price competitiveness. Currently, Ablerex has become one of the leading global manufacturer in PV inverters, and numerous domestic giants have designated Ablerex as the ODM supplier; therefore, ESS converter is one of the products capable of increasing the revenue of the company.



3. Industry Development Strategy and Vision

3.1 Main Production Technology, Product

3.1.1 (Present Main Product (Service) Items of the Company)

3.1.1.1 Self-developed, manufacturing and sales of UPS equipment of single-phase 20KVA and below (inclusive) (referred to as single-phase UPS or small UPS).

Single Phase On-Line UPS

3.1.1.2 Self-developed, manufacturing and sales of UPS equipment of three-phase 10KVA and above (inclusive) (referred to as three-phase UPS or medium/large UPS).

Three Phase UPS

3.1.1.3 Agency for the sale of medium/large UPS equipment above three-phase 15KAV (inclusive) (referred to as three-phase UPS or medium/large UPS) of European brand of SOCOMEC.

3.1.1.4 Self-developed, manufacturing and sales of power quality improvement equipment of Active Power Filter (APF), which is also known as "Active Power Harmonics Conditioner."

Modular cabinet type

Floor-standing type

Wall-mounting type

3.1.1.5 Self-developed, manufacturing and sales of green energy system equipment of "Photovoltaic Inverters" (referred to as "PV Inverter"), which is also known as Solar Inverter.

Grid-Connected Single Phase

Grid-Connected Three Phase

Stand-Alone System
Solar Charger 1000-1500W

3.1.1.6 Provide the design and manufacturing services in OEM/ODM/OIM (Original Innovative Management in establishment of product innovation and original design) models.

3.1.1.7 Maintenance and technical service businesses for the aforementioned products.

3.1.2 (New Product (Service) Project Development)

3.1.2.1 Development of multi-functions of compact, intelligent, network and decentralized UBS new technologies.

3.1.2.2 Three-phase high frequency parallel redundancy medium/large UPS

3.1.2.3 Power quality management technology

3.1.2.4 Hybrid grid-connected PV Inverter

3.1.2.5 Power management software technology

3.1.2.6 Smart Grid application related product PDU

3.1.2.7 Wireless BMS battery monitoring system

3.1.2.8 Energy storage system

3.1.3 (Product Development Vision)

3.1.3.1 UPS and APF

A. With the continuous evolution of the high-tech industry, the demand for UPS and power quality improvement continues to growth

With the advancements in the high-tech industry, the equipment used is more expensive and the demand for power quality by the precision production process becomes higher; consequently, the need for UPS and APF capable of improving power quality also increases.

B. Excellent R&D technology, stable product quality

Through years of own research and development as well as accumulation of extensive experience, Ablerex has received 98 patents, among which 88 patents are invention patents, and all of the patents have been applied to the main products of the company. In addition, the company has qualified for the ISO 9001 and ISO14001 certifications, demonstrating the guarantee of the high quality of the company products. Moreover, the company also strengthened the production efficiency, expansion of production capacity in order to satisfy customer demands.

3.1.3.2 PV Inverter

A. With the continuous increase in the demand for energy, the international crude oil price remains high.

As the new emerging countries of China, India and Brazil continue to show economic growth, and the European and American countries continue to expand the scale of their economies, the global demand for energy continues to increase. Nevertheless, the global oil inventory is declining year after year such that the international crude oil price remains high. As a result, countries are seeking alternative energies in order to reduce the increase in costs and insufficient supply. Among these, the investment in solar energy has been most prominent. In the future, the energy demand can be expected to continue to increase and the use of renewable energy will become more popular.

B. Increase of environmental protection awareness

From the Kyoto Protocol signed in 1997 to the Copenhagen Accord signed in 2009 and the Paris Agreement in 2015, countries around the globe have gradually specified the goal for greenhouse gas emission through various flexible mechanism operating principles including the emission trading and cleanliness development mechanisms and joint emission reduction. In

addition, countries have recommended harmful environment pollution subsidy reform issues, agreement in the reduction goal of greenhouse gas emission and have also proposed specific carbon reduction goals and provided assistance to developing countries in resolving global warming. Based on the concern for sustainable development, countries around the globe are also actively developing the renewable energy industry.

C. Government subsidy, reduction of construction cost

Since the present solar power conversion rate is still low, the use of solar power cost is relatively higher than the cost of other traditional power generation methods. In addition, as the solar system construction price is high, the general public is reluctant to undertake the installation of solar systems due to t economic concerns. Consequently, through various subsidy policies established by countries around the globe, it is expected that the photovoltaic market will slow exponential growth and the market demand will continue to expand.

3.2 Industry Development Vision

3.2.1(Product Development Trend)

3.2.1.1 Uninterrupted Power Supply (UPS)

A. Modular trend to prevent excessive configuration

Modular UPS formed by a multiple number of modules in order to facilitate expansion. The use of traditional UPS often causes excessive configuration of power system; for example: the actual power user load is 12KVA; however, to prevent hassles in the future expansion, if traditional 20KVA UPS is purchased, it can cause the excessive configuration of the system. On the other hand, the use of modular UPS can overcome such type of problems.

B. Diversity of product design and electronic consumption

In the future, the development of UPS systems continues to head toward the trend of compact size, light weight, high efficiency and low noise, in order to allow the UPS systems to gradually move from large utility rooms to conventional offices. Accordingly, there is a greater emphasis on the appearance and operation of the system in order to facilitate user operations.

C. Toward the development of intelligent and network systems

As the technology innovates continuously, users also demand UPS products of higher quality and greater functionality. Traditional analogue power controlled UPS are also shifting to fully-digital controls such that through the programming control of the CPU at the internal of UPS, one single unit of UPS can be connected to a multiple computer systems. In addition, it can further utilize the communication interface for connection to the computer system in conjunction with the smart monitoring software and network protocols. Consequently, users are able to more conveniently and effectively perform local or even remote analysis and management of the entire computer and UPS systems.

D. High reliability and safety

The development of the UPS system will head toward greater reliability and safety.

a. Automatic detection: During the startup of the unit, UPS immediately performs the elements (inverter and battery, etc.) load inspection in order to discover problems timely.

b. Self-protection: Through self-protection design, regardless of UPS overload, short-circuit or UPS over temperature, UPS is able to automatically shut down the unit in order to reduce damage to the other hardware due to malfunction in the UPS.

3.2.1.2 Active Power Filter(APF)

Harmonic suppression has always been an important issue in the power quality improvement. With the rapid growth of non-linear load, causing the power quality to be further degraded, power companies are forced to establish harmonic control standards in order to limit the harmonic quantity generated by users and to maintain the power quality of the entire system. Accordingly, in the future, the development of filters will need to not only satisfy the demand for high power but also be equipped with numerous important functions, such as: the functions of virtual power compensation and suppression of voltage, etc. Currently, the price of Active Power Filter (APF) is higher than passive power filter (PPF). In particular, for loads greater than 500KW, the APF becomes non-economical; consequently, there are hybrid types of filter energies in the market. Such types of filter combine the merits of APF and PPF to form the structure of a filter. In the future, it can be a trend in the harmonic improvement technology.

3.2.1.3 PV Inverter

The PV inverter will head toward the development of high power in the future, and it will also move to the replacement of other alternative energy development, such as wind power generation, in order to respond to the expansion of the market. In 2008, the company has already obtained the first Intertek

GS certificate for PV inverters in Taiwan, R.O.C. Presently, the company has been further qualified in numerous countries, including Germany, Spain, France, Italy, Belgium, UK, USA, Japan, etc. In addition, the company continues to apply for further certifications in more countries according to the market trends, which is beneficial to the market expansion of PV Inverters in the future.

3.2.1.4 Household energy storage system.

For household energy storage system (ESS), it will not only head toward the development of high power products for commercial markets in the future but also overcome drawbacks of other alternative energy developments, such as wind power generation or solar power generation, such that its market is expected to expand. In 2016, the company has applied for certifications in the Germany, Australia and Japan, consecutively, which is beneficial to the market expansion of the energy storage system (ESS).

3.3 Outstanding Achievements and External Participations

3.3.1 Outstanding achievements

- In 2014, First Corporate Governance Accreditation results ranked among the top 6%~20%
- In 2015, Second Corporate Governance Accreditation results ranked among the top 5%
- In 2016, Third Corporate Governance Accreditation results ranked among the top 5%
- In 2017, Fourth Corporate Governance Accreditation results ranked among the top 5%

Listed companies Fourth year top5%

Symbol	Abbreviated Name	Symbol	Abbreviated Name	Symbol	Abbreviated Name	Symbol	Abbreviated Name	Symbol	Abbreviated Name
1216	UNI-PRESIDENT	1504	TECO	1605	WALSIN	1789	SCINOPHARM	2002	CHINA STEEL
2049	HWIN	2201	YULON MOTOR	2204	CHINA MOTOR	2207	HOTAI MOTOR	2301	LITE-ON
2303	UMC	2308	DELTA ELEC-TRONICS	2330	TSMC	2356	INVENTEC	2395	ADVANTECH
2408	NANYA TECHNOLOGY	2409	AUO	2412	CHUNGHWA TELECOM	2448	EPISTAR	2610	CHINA AIRLINE
2618	EVA AIRWAYS	2633	TAIWAN HIGH SPEED RAIL	2809	KING'S TOWN BANK	2823	CHINA LIFE INSURANCE	2881	FUBON HOLDINGS
2882	CATHAY HOLDINGS	2884	E-SUN HOLD-INGS	2912	PRESIDENT CHAIN STORE	3042	TXC	3045	TAIWAN MOBILE
3094	DAVICOM	3443	GUC	4904	FAR EASTONE	4915	PRIMAX	5871	CHAILEASE
6251	DYNAMIC	6409	VOLTRONIC	8454	MOMO	8926	TCC	9904	PCC
9907	TON YI	9940	SINYI REALTY	9941	TAC	A total of 43 companies			

OTC companies Fourth year among the top 5%

Symbol	Abbreviated Name	Symbol	Abbreviated Name	Symbol	Abbreviated Name	Symbol	Abbreviated Name	Symbol	Abbreviated Name
1259	AN-SHIN	1777	SYN-TECH	3088	AXIOMEK	3105	WIN	3264	ARDENTEC
3374	XINTEC	3548	JARLLY	3623	TRANSTOUCH	3628	ABLEREX	4105	TTY
4126	PAHSCO	4152	TLC	4162	PEI	4175	MEDFIRST	4971	IET-KY
4972	TONS	4979	LUXNET	5209	CTCI ASI	5227	ALEEES	5347	VIS
5371	CORETONIC	5483	SAS	5530	LUNG YEN	5536	ACTER	5820	JIHSUN FHC
5878	TABC	5904	POYA	6023	YUNTA FUTURES	6147	CHIPBOND	6263	PLANET
6523	DR. WU	6803	EOVE	8255	ATC	8432	TSH	A total of 34 companies	

Association Enrollment		Mem-ber
taiseia 台灣智慧能源產業協會	Taiwan Smart Energy Industry Association	✓
台灣區電機電子工業同業公會	Taiwan Electrical and Electronic Manufac-turers' Association	✓
TCA 台北市電腦公會 Taipei Computer Association	Taipei Computer Association	✓
	National Association of Small & Medium Enterprises R.O.C.	✓
	Electricity Industry Association R.O.C.	✓
	Pingtung County Industrial Association	✓
	Taiwan Smart Grid Industry Association	✓
TPVIA 台灣太陽光電產業協會 Taiwan Photovoltaic Industry Association	Taiwan Photovoltaic Industry Association	✓



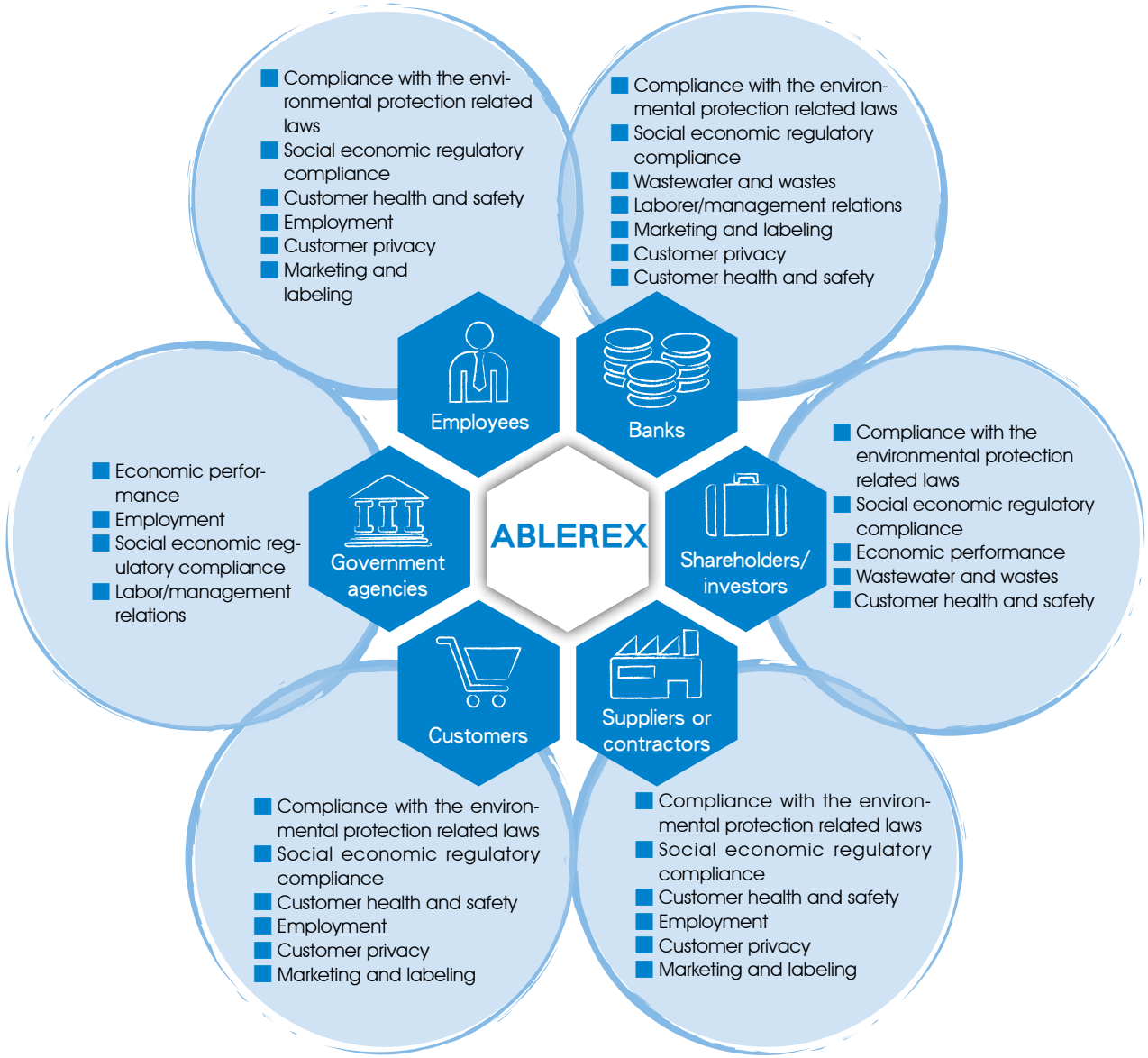

2 Identification of Stakeholders and Material Topics

1. Stakeholder Communication

As a corporate citizen, Ablerex respects social ethics and values sustainable development. In addition, the company also cares about the rights and benefits of stakeholders while taking up the social responsibilities required to be borne by corporate entities. During the seeking of sustainable operations and stable profits, the company also improves on the aspects of Environmental, Social, Governance (ESG) by management. In addition, the company also analyzes and summarizes the material topics that concern stakeholders in order to provide active response and to continuously improve in all aspects of the business operations.

1.1 (Identification of Stakeholders)

The corporate social responsibility task force members of Ablerex upholds the principle of AA1000 Stakeholder Engagement Standards (AA1000 SES) along with the international trends and viewpoints, including the ESG development, in order to identify that the main stakeholders of the company include employees, government agencies, suppliers/contractors, shareholders/investors and banks.



1.2 (Stakeholder Communication Channel)

Stakeholder	Issues concerned		Communication channel
 Employees	Compliance with environmental protection-related laws	Social economic regulatory compliance	Corporate website
	Customer health and safety	Employment	Employee welfare committee
	Customer privacy	Marketing and labeling	Laborer and employer meeting
 Government agencies	Economic performance	Employment	Corporate website
	Social economic regulatory compliance	Labor/management relations	Official document communication
 Customers	Compliance with environmental protection-related laws	Social economic regulatory compliance	Customer satisfaction survey
	Customer health and safety	Employment	Corporate website
	Customer privacy	Marketing and labeling	
 Suppliers or contractors	Compliance with environmental protection-related laws	Social economic regulatory compliance	Supplier audit survey form
	Customer health and safety	Employment	
	Customer privacy	Marketing and labeling	
 Shareholders or investors	Compliance with environmental protection-related laws	Social economic regulatory compliance	Corporate website
	Economic performance	Wastewater and wastes	Shareholders stock affairs mailbox
	Customer health and safety		Annual shareholders' meeting
 Banks	Compliance with environmental protection-related laws	Social economic regulatory compliance	Corporate website
	Wastewater and wastes	Labor/management relations	
	Marketing and labeling	Customer privacy	Spokesman
	Customer health and safety		

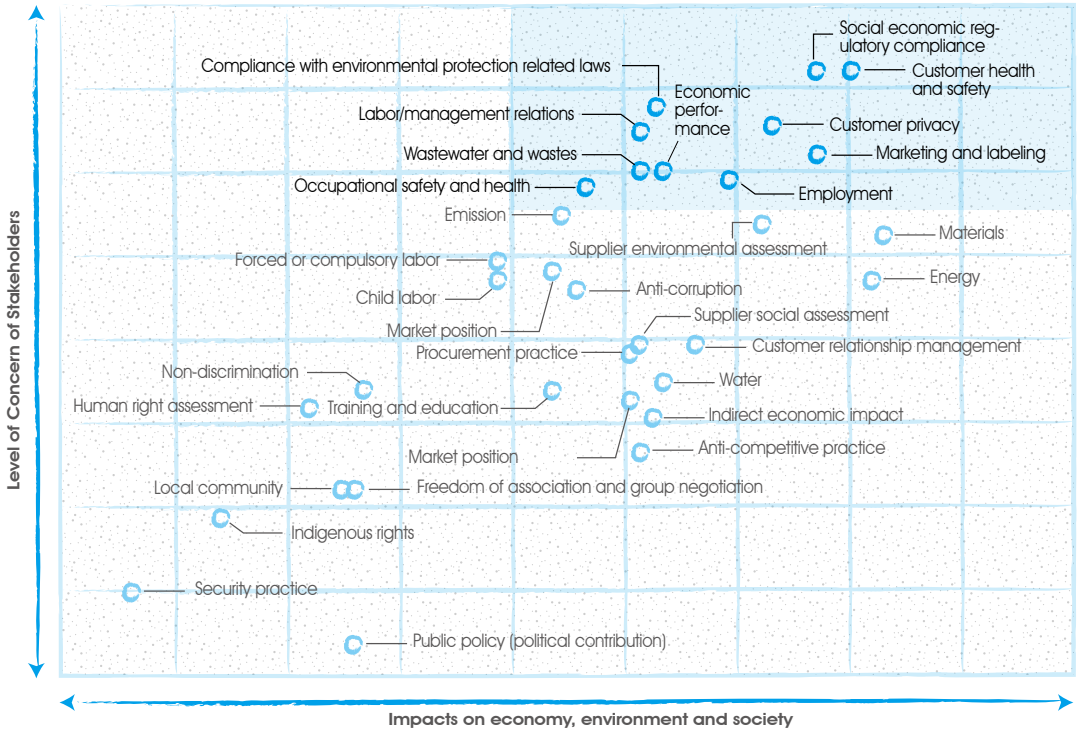
2. Identification of Material Topics

In this report, Ablerex adopts the General Disclosures (GRI102) of the GRI Standard and specific issue standards as the basis for identifying the source of material topics.

To understand the extent of stakeholders' concern on the corporate governance aspect, environmental aspect, product aspect and social aspects of the company, corporate social responsibility organization personnel of Ablerex conduct reviews through internal policies, shareholders' meetings and reviews of each department in order to convene corporate social responsibility meetings annually and to use the method of questionnaire survey to perform comprehensive evaluation and discussion of the aspects of impacts and concerns. From the survey results of 2017, there are 10 material topics, which are social economic regulatory compliance, customer health and safety, compliance with environmental protection related laws, customer privacy, labor/management relations, marketing and labeling, employment, economic performance, wastewater and wastes as well as occupational safety and health, etc. in order to completely disclose all information about the company and to satisfy the concerns and expectations of stakeholders in all aspects. The survey results are as shown in Figure 2.1.1 Materials analysis results map and corresponding results of 2.1.2 Material Topics Sequential Item Table. In addition, the Identified Materials Aspects and Boundaries are as shown in Table 2.1.3.

2.1 (Materials analysis results)

2.1.1 <Materials analysis results map>



2.1.2 <Materials Topic Sequential Item Table>

Materials	High materials topic	Materials	High materials topic
1	Social economic regulatory compliance	6	Marketing and labeling
2	Customer health and safety	7	Employment
3	Compliance with environmental protection related laws	8	Economic performance
4	Customer privacy	9	Wastewater and wastes
5	Labor/management relations	10	Occupational safety and health

2.1.3<Description of Materials Topic Boundary>

Type	Aspect of consideration	Chapter of management approach disclosure	Organization boundary description					
			Within the boundary	Outside of the boundary				
				Government agencies	Customers	Suppliers or contractors	Shareholders or investors	Banks
Corporate governance aspect	➢Economic benefits	Operations management, product development vision	★	★	★		★	
	➢Wastewater and wastes	Environmental Report	★	★			★	★
Product aspect	➢Marketing and labeling	Product labeling	★	★	★	★	★	★
	➢Customer privacy	Respect and protect customer privacy	★	★	★	★	★	★
	➢Customer health and safety	Customer health and safety	★	★	★	★	★	★
Social aspect	➢Labor/management relations	Labor/employer relationship	★	★	★	★	★	★
	➢Worker and employer relationship	Labor/employer relationship	★		★	★		
	➢Occupational safety and health	Social Participation	★			★		
Corporate governance, product, environmental, social aspect	➢Social economic regulatory compliance	Internal control system and risk management, customer health and safety, marketing	★	★	★	★	★	★
	➢Compliance with environmental protection-related laws	Sustainable environment, compliance with environmental laws	★	★	★	★	★	★

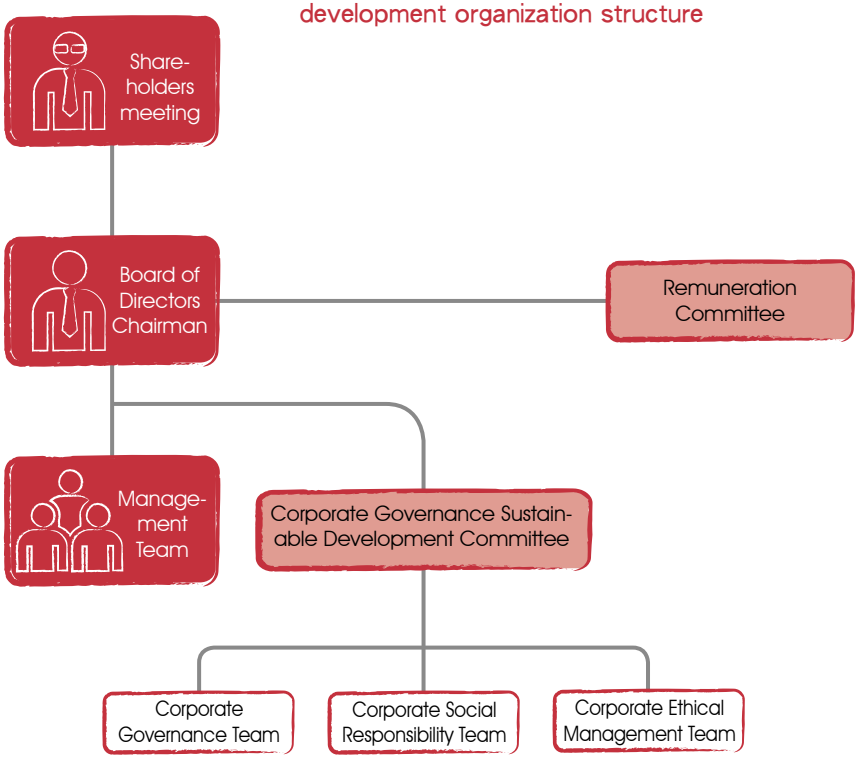
3 Corporate Governance and Ethical Management

1. Corporate Governance

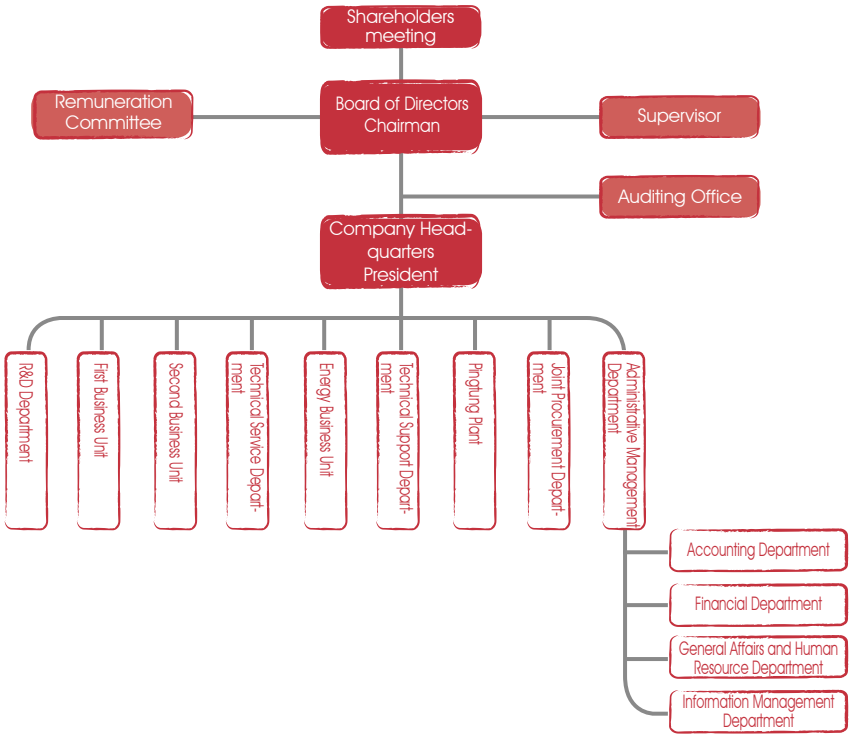
1.1(Organization Structure)

Ablerex has established a complete corporate governance organization and is able to effectively perform company business management operations in order to achieve the goal of sustainable corporate management. The company structure is as shown in the following figure, and it mainly includes the establishment of the Board of Directors, Remuneration Committee, supervisors and other important departments. In 2017, to strengthen various management affairs in corporate governance, the company newly established the Corporate Governance Sustainable Development Committee in charge of the corporate governance, corporate social responsibility and ethics management teams in order to handle increased relevant matters. Except for such committee, there are no obvious changes in the organization or scale of the rest of the departments.

Corporate governance sustainable development organization structure

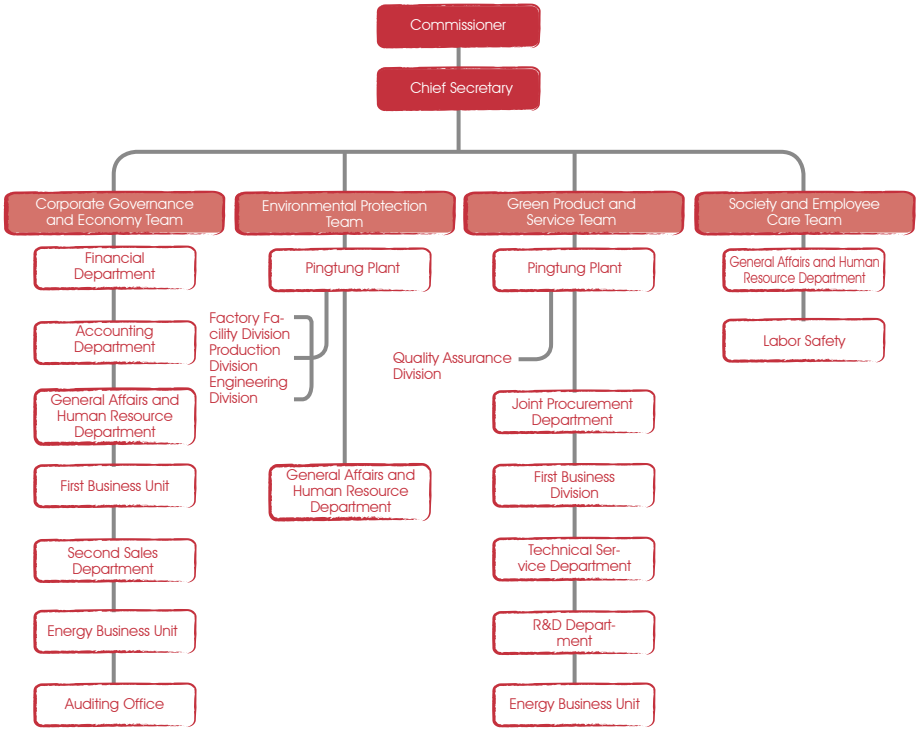


Ablerex Electronics Co., Ltd. Organizational Chart



The company further establishes the CSR Project Team in order to implement the promotion of operations. The position of the commissioner is concurrently held by the supervisor of the Administrative Management Department, and the Chief Secretary is handled by the supervisor of the General Affairs and Human Resource Department:

<CSR Project Team> ◎ Execution Objective: ➢Establish the CSR task divisions according to the organizational characteristics of the company



1.2 (Board of Directors Operation)

The responsibilities of the Board of Directors include the appointment and supervision of the management level of the company, and is in charge of the overall operating status of the company as well as the establishment of proper goals and achievement thereof in its efforts. In addition, the Board of Directors is also committed to maximizing the benefits for the shareholders. The distribution of the remuneration of directors shall be reported to the shareholders' meeting for resolution. In addition, the shareholders approve and decide the management results of the Board of Directors for use as the method for evaluating the management performance of the highest governance unit of the company. In addition, according to the attendance rate of directors disclosed in the annual report, the responsibilities and obligations required to be individually fulfilled by directors are enhanced in order to properly achieve the functions of supervision and management of the company.

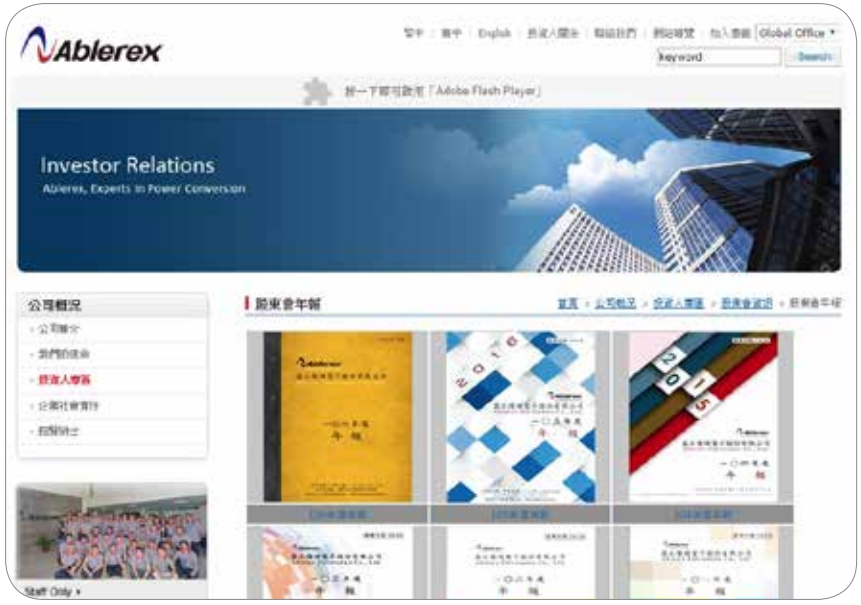
Ablerex specifies the provisions related to the recusal of conflict of interests of directors in the Rules and Procedures for Board of Directors' Meetings. Where there is a likelihood that the Board of Directors' meeting items and individual directors or their representative legal persons are subject to conflict of interest such that the benefits of the company can be damaged, they may attend the meeting to express opinions and make inquiries; however, they shall not be permitted to participate in the discussion and the voting thereof such that they shall

recuse themselves during the discussion and voting. In addition, they shall not act as a proxy for other directors in the exercise of the voting rights of thereof.

Ablerex has established professional independent directors such that during the major decision making of the company, they are able to provide recommendations based on an objective and just position along with the utilization of their profession and experience. In addition, during the discussion of any proposals, the Board of Directors sufficiently considers the opinions of independent directors, and records the reasons or comments of agreement or disagreement thereof into the meeting minutes in conjunction with the consideration of the principle of recusal based on conflict of interest.

The election of independent directors of Ablerex adopts the candidate nomination system, and the shareholders' meeting makes selection from the independent director candidate roster. The Board of Directors' meeting is convened six times per year, and is convened at least once quarterly. In 2017, 7 Board of Directors' meetings were convened in total.

The Board of Directors of Ablerex has a total of 7 seats (including 2 seats for independent directors). The name, educational background and experience of the members of Board of Directors are disclosed in relevant chapters of the annual report of the company (http://www.ablerex.com.tw/ch/about_8-2.php).



1.3 (Remuneration Committee)

1.Function:

The function of the Committee is to evaluate the salary and remuneration policy and system for supervisors and managerial officers based on its professional and objective position in order to propose recommendations to the Board of Directors as references for the decision making of the Board.

2. Formation:

The number of the Committee members is three members, who are appointed based on the resolution of the Board of Directors, and where one of the members is the convener. The professional qualifications and independence of the members of the Committee shall comply with the requirements specified in Article 5 and Article 6 of the Regulations Governing Remuneration Committee Authority.

3. Scope of Responsibility:

Perform the following duties with loyalty based on the due care of a prudent administrator, and submit the proposals to the Board of Directors' meeting for discussion. However, for the submission of the salary and remuneration recommendations related to supervisors to the Board of Directors' meeting for discussion, it shall be limited to the salary and remuneration of supervisors explicitly specified in the Articles of Incorporation or shall be based on the resolution of shareholders' meeting authorizing the Board of Directors for handling thereof.

- ★ Periodically review these rules and propose recommendation on revisions.
- ★ Establish and periodically review the performance evaluation of directors, supervisors and managerial officers as well as the policy, system, standards and structure of the salary remuneration.
- ★ Periodically evaluate and establish the salary remuneration of directors, supervisors and managerial officers.

1.4 (Execution of Supervisor's Authority)

Supervisors are responsible for assisting the directors in the execution of supervision authority and to exercise the authorities specified in the Securities and Exchange Act, Company Act and other laws. In addition, the supervisors shall periodically communicate with the CPA of the company, and shall perform a review on the appointment and independence of CPA. Furthermore, the internal auditors of the Company shall submit the audit report to the supervisors according to the auditing plan execution status and based on the annual auditing plan. Supervisors - periodically performs the understanding and review on the internal control system of the company, internal auditors and working status thereof.

Presently, Ablerex has three supervisors, complying with the profession, working experience, independence qualification criteria according to the "Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies" and the "Regulations Governing Election of Directors and Supervisors" of the Company. When convening the Board of Directors' meetings in 2017, all of the supervisors attended the meetings. In addition, for the name, educational background and experience of supervisors, please refer to relevant chapters of the annual report of the company (http:// http://www.ablerex.com.tw/ch/about_8-2.php).

2. Operations Management

2.1 (Operating Strategy)

2.1.1 Operating Directives

Satisfy various demands of customers with power conversion and utilization as the goal, focus on core business, commitment in the development power electronic products in the industry, and extensive investment in technology researches and product development, uphold the attitude for continuous improvement in order to maintain the position of the company in the industry. Seek reasonable profits in its business operations, use profits as the foundation for corporate sustainable development in order to care for the employees and provide returns to the shareholders as well as consider the interests of all stakeholders along with the fulfillment of corporate social responsibility and continue to achieve the corporate image of "Ablerex, Experts in Power Conversion."

2.1.2 Production and Distribution of Direct Economic Value

2.1.2.1 2017 Business Report

In 2017, the consolidated revenue of the company is NTD (see below) 2,394,838,000, and in comparison to the NTD 2,421,044,000 in last year, it has decreased by 1.08%. The consolidated net income after tax is NTD 80,539,000, and in comparison to the amount of 101,503,000 in last year, it has decreased by 20.65%. (as shown in the table below)

Unit: NTD 1,000

Item	2017	2016	Growth rate
Operating Revenue	2,394,838	2,421,044	-1.08%
Gross profits	561,775	580,672	-3.25%
Operating profits	96,738	123,374	-21.59%
Net income	80,539	101,503	-20.65%
Net income attributed to parent company	79,610	101,536	-21.59%
Earnings per share (NTD)-after tax	1.77	2.26	-21.68%

2.1.2.2 Financial Performance:

Consolidated Financial Performance Analysis Table - Use of International Financial Reporting Standards (IFRSs)

Unit: NTD 1,000; %

Item \ Year	2016	2017	Difference	
			Amount	%
Operating Revenue	2,421,044	2,394,838	(26,206)	(1.08)
Operating costs	1,840,372	1,833,063	(7,309)	(0.40)
Gross profits	580,672	561,775	(18,897)	(3.25)
Operating expenses	457,298	465,037	7,739	1.69
Operating income (loss)	123,374	96,738	(26,636)	(21.59)
Non-operating revenue and expenses	16,612	65	(16,677)	(100.39)
Net income before tax	139,986	96,673	(43,313)	(30.94)
Income tax expenses	38,483	16,134	(22,349)	(58.07)
Net income	101,503	80,539	(20,964)	(20.65)

Where the changes over the last two years reached more than 20%, and the amount of changes have reached more than NTD 10,000,000:
Note 1. Operating income (loss): mainly due to the reduction in the operating revenue.
Note 2. Non-operating income and expense: mainly due to the increase of the net loss in foreign currency exchange.
Note 3. Net income before tax: mainly due to the reduction in the operating revenue and the increase in the net loss in foreign currency exchange.
Note 4. Income tax expense: mainly due to the reduction in the operating revenue.
Note 5. Net income: mainly due to the reduction in the operating revenue and the increase of the net loss in foreign currency exchange.

2.1.2.3 2017 Business Plan Implementation Status and Outcome

Looking back to the year 2017, despite the fact that the company was confronted by the impacts caused by unfavorable factors of competitors competing for orders in the market and the delay of safety certifications in certain regions, nevertheless, the overall economic situation is still beneficial for the growth and development of the company. The export products of UPS and Active Power Filter (APF) of the company and the PV inverter mainly for the domestic market have shown significant sales growth in key markets. However, due to the great appreciation of NTD, despite the increase of the export products in foreign currency, the operating revenue growth in NTD is diluted. Consequently, it is insufficient to compensate for the gap caused by the reduction of the domestic project construction revenue. In addition, due to the unfavorable impacts caused by the foreign exchange, the annual revenue and profit performance is lower than the performance in 2016.

The main operating performance indicators of the company in 2017 are as follows:

Unit: NTD 1,000

Item	2017	2016	Quantity/Rate of Change (%)
Return on asset	2.93%	3.55%	-0.62 ppts
Gross profits	5.01%	6.02%	-1.01 ppts
Operating profits	21.50%	27.42%	-5.92 ppts
Net income	21.48%	31.11%	-9.63 ppts
Net income attributed to parent company	3.36%	4.19%	-0.83 ppts
Earnings per share (NTD)-after tax	1.77	2.26	-21.68%

The sales profit margin (23.46%) of the company in 2017 only slightly declined from the profit margin (23.98%) in 2016, and the operating revenue also only slightly decreased. Nevertheless, as the operating expense increased in comparison to 2016, along with the unfavorable foreign exchange factor encountered, both the annual net profit and net profit margin declined from last year, such that the relevant asset and capital operating performance indicator performance are not as high as the performance in 2016.

2.1.2.4 Payment of shareholders' dividends - Dividend policy and execution status

According to Article 25-1 of the Articles of Incorporation, where there is a profit for a fiscal year, the company shall appropriate 6%～10% thereof as the remuneration of employees, and no more than 2% thereof as the remuneration of directors and supervisors. However, where the company has accumulated losses, such loss shall be compensated. The remuneration of directors and supervisors shall be limited to the form of cash only. The remuneration of employees may be made in the form of shares or cash, which shall be determined based on the resolution of the Board of Directors' meeting attended by more than 2/3 of the directors and with the consent of a majority of the attending directors and a report to the shareholders' meeting shall be made. The recipients for the remuneration of employees of the company include the employees of the company and may also include employees of affiliates satisfying certain criteria.

According to Article 26 of the Articles of Incorporation of the company, where there are surplus earnings for a fiscal year, the company shall make payment for the tax, compensate for the loss of previous years, followed by setting aside 10% as legal reserve, provided that if the legal reserve has been accumulated as to reach the paid-in capital of the company, such requirement may not be applied. Following which, the amount shall be appropriated or set aside for the special reserve according to the laws or requirements of the competent authority, and the undistributed surplus earnings accumulated form previous years shall be counted towards the distributable surplus earnings, and the Board of Directors shall establish the distribution proposal according to the operating status, followed by its submission to the shareholders' meeting for resolution.

For the distribution proposal established by the Board of Directors, when there is no concern for special conditions, it shall

not be lower than 65% of the net profit after taxes of the current year. According to Article 26-1 of the Articles of Incorporation of the company, the shareholders' bonus of the company may be issued in the form of cash or shares. The ratio of shareholders' cash bonus distribution may be lower than 20% of the total amount of the shareholders' bonus.

For the type and ratio of the distribution of such profit, according to the future fund demand and long-term operating plan of the company, the Board of Directors may establish a distribution proposal based on the consideration of the shareholders' rights, dividend balance policy and fund demand planning, etc. in order to report to the shareholders' meeting for resolution on the adjustment thereof.

2.1.3.3 Payment of government tax - Please refer to pages 154~156 of the annual report.

2017 Dividend Distribution Status

Unit: NTD

Item	Amount	Description
2017 Net income after tax	79,609,574	
Deduction: Appropriation of legal reserve (10%)	7,960,957	
Addition: 2017 Retained earning adjustment	197,789	Old system pension actuarial difference
Deduction: Appropriation of special reserve	29,534,754	Other shareholders equity negative value- (Exchange differences on translation of foreign financial statements)
Addition: 2016 Unappropriated retained earnings	91,608,066	
2017 Distributable earnings	133,919,718	
Deduction: Shareholders' cash dividends	72,000,000	Distribution of cash dividend of NTD 1.6 per share
Undistributed earning balance	61,919,718	

Price per share, net value, surplus, dividend and relevant information for the last two years

Unit: 1,000 shares; NTD

Year / Item			2016	2017
Price per share	Highest		53.40	47.10
	Lowest		37.40	37.70
	Average		46.46	42.02
Price-Book Ratio (PBR)	Before distribution		36.29	34.69
	After distribution		33.29	32.19
EPS	Weighted average shares outstanding		45,000	45,000
	EPS	Before adjustment	2.26	1.77
		After adjustment	2.26	1.77
Dividend per share	Cash dividend		2.00	1.60
	Free gratis dividends	Retained shares distribution	-	-
		Capital reserve shares distribution	1.00	0.90
	Retained dividends		-	-
Return on Investment (ROI) analysis	Price-to-Earnings Ratio (PER)		20.56	23.74
	Price-to-Dividend Ratio (PDR)		15.49	16.81
	Dividend yield		6.46	5.95

Price-to-Earing Ratio (PER) = Average stock closing price of current year / Earnings Per Share (EPS)
Price-to-Dividend Ratio (PDR) = Average stock closing price of current year / Cash dividend per share.
Dividend yield = Cash dividend per share / Average stock closing price of the current year.

2.2 (Internal Control System and Risk Management)

The internal control system and risk management is an important aspect of the sustainable development of Ablerex. The company has established the "Internal Control System" according to the "Securities and Exchange Act" and has established the internal audit unit. In addition, the internal audit unit is under the Board of Directors, and it includes one audit supervisor and one auditor. The appointment and dismissal of the audit supervisor shall be approved by the Board of Directors. The Auditing Office executes the audits on various internal management and control loop operations according to the annual audit plan approved by the Board of Directors. In addition, the internal control system autonomous inspection, annual audit plan establishment, audit abnormality and improvement report, audit report submission to the supervisor and members of Board of Directors are implemented according to the "Regulations Governing Establishment of Internal Control Systems by Public Companies." Improvement recommendations are provided to each unit timely, and assist the Board of Directors and managerial officers to reasonably ensure that the internal system can be continuously and effectively implemented in order to promote the proper operations of the company as well as to achieve the goals of effect and efficiency of company operations, reliability of financial reports and compliance to relevant laws etc. In 2017, Ablerex is not subject to any records of violation of laws or sanctions on penalties of large amounts.

Other various types of risk management control measures and responsible units, management measures and directive chapters are as shown in the follow table:

Risk type	Responsible unit	Chapter name	Risk management method
Financial, liquidity, credit risk	Financial and Accounting Department, Auditing Office	Operation Management Ethical Management	Establish various strategies and execution Analysis change and adopt various countermeasures Continuous assessment and control Risk assessment audit model
Legal risk	Administrative Management Department	Regulatory compliance	Establish various strategies and execution Analysis change and adopt various countermeasures Continuous assessment and control Risk assessment audit model
Market risk	All business units Operations core staff	Main production technologies and products Industry development vision	Establish various strategies and execution Analysis change and adopt various countermeasures Perform control and handling of possible market risk crisis
Operations and risks management	All Business Units, Auditing Office	Corporate Governance Internal control system and risks management	Risk assessment prior to strategic operation and post- performance follow-up
Environmental protection risks	Administration Management Department, R&D Department	About Ablerex Product innovations and green products Customer health and safety Sustainable Environment	Risk assessment plan Tracking of potential scope of impact Propose appropriate responsive measures
Labor safety and health risk	Administrative Management Department	Safe working environment Occupational disaster management	Establishment of various strategies according to laws and execution thereof Continuous assessment and control
Labor rights and risks	Administrative Management Department	Employee rights, talent cultivation	Establishment of various strategies according to laws and execution thereof Continuous assessment and control
Moral and ethics, corruption risks	Administrative Management Department, Auditing Office	Ethical Management Respect and protect customer privacy Anti-corruption	Tracking of potential scope of impact Propose appropriate responsive measures

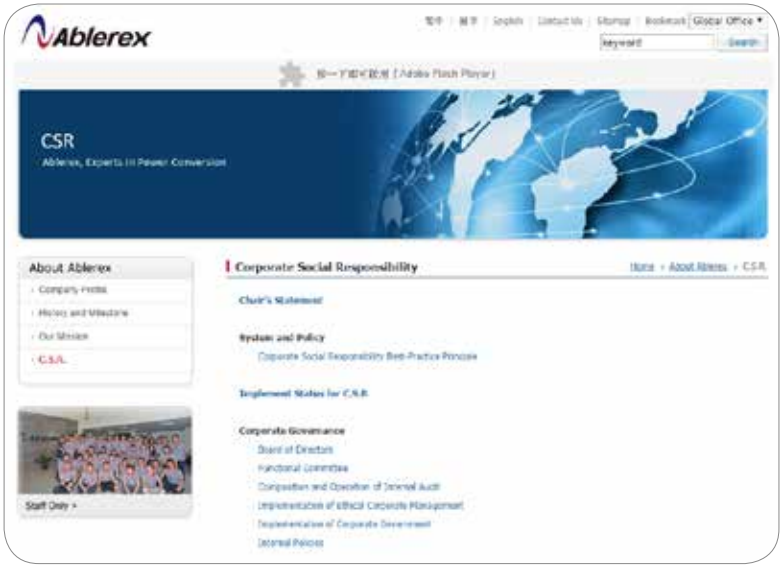
3. Ethical Management

3.1 (Culture of Ethics)

3.1.1 Culture of Ethics

Ablerex has established complete Ethical Management Best Practice Principles, which have been implemented since the approval by the Board of Director on 2014.5.12. During its implementation period, relevant provisions are revised according to the amendments of the relevant laws of competent authority, and its execution status has been disclosed in the Corporate Governance section of the company website according to the relevant indicators of corporate governance accreditation. Through transparent and sufficient disclosure, the company properly executes the internal management and external commercial activities in order to comply with the Ethical Management Best Practice Principles. Furthermore, the company will continue to complete the English version of the Corporate Governance section on the company website in order to sufficiently disclose the company operation status and to allow overseas stakeholders to understand the execution strategies and measures of the company. (http://www.ablerex.com.tw/about_4.php)

The company establishes the "Procedures for Ethical Management and Gudeline for Contact" according to the regulations of the "Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies" and relevant laws. In addition, the company has also established the "Codes of Ethical Conduct for Directors, Supervisors and Managerial Officers" and the "Codes of Ethical Conduct for Employees" in order to define unethical conduct and to specify matters to be cautious about, prohibition and handling operating procedures for personnel of the Company during the execution of duties. Each year, the ethical management operations unit audits items are listed into the audit plan in order to continuously implement the supervision audits, and to report the execution status to the members of the Board of Directors. (http://www.ablerex.com.tw/ch/about_8-4.php)



3.1.2 Policy on Ethics

To emphasize on the promotion of labor and business policy on ethics, the company has established and executed relevant human rights related policies according to the GRI standards and spirit of the Global Reporting Initiative (GRI); in addition the company has also establish the "Work Rules" for regulating the relevant rights and obligations of the human rights of the company and employees according to the "Labor Standards Act" and relevant laws. In addition, to protect the basic human rights and relevant rights of employees, the company believes that each employee shall be treated with fairness and respect. Moreover, the company has also established the "Regulations for Sexual Harassment Preventive Measures and Punishment" and provides reporting channels in order to protect the rights of female employees. The company has established the labor human rights policies in order to provide guidance to the entire company in the handling of social responsibility and labor criteria related to labor human rights. Furthermore, to fulfill the social responsibility, the company established the "Supplier Social Responsibility Rules" jointly with the cooperating partners in order to expand the influence thereof.

3.1.3 Anti-corruption

The company established the "Ethical Management Rules" and the "Ethical Management Operation Procedures and Codes of Conduct" based on the management principles of ethics, transparency and responsibility in order to establish excellent corporate governance and risk control mechanisms, as well as to prevent corruption and bribery behaviors from occurring, which also includes items to not provide any donations to political parties or candidates. In addition, educational trainings and promotions are organized for directors, managerial officers, employees and personnel in substantial controls in order to allow them to sufficiently understand the determination, policies, preventive guidelines of the company in ethical management as well as the consequence of violations and unethical conduct.

The company also provides proper reporting channels (such as company websites - stakeholder communication channels), and thoroughly keep the identity of reporters and the content of reports confidential. After careful investigations by the Administrative Management Department and Auditing Office, it is reported to the President for subsequent handling. In cases where senior management is involved, it is reported to the supervisors directly. Furthermore, the ethical management policy and employee performance evaluation are combined with the human resource policy in order to determine rewards and penalties.

During the execution of audit work, the Auditing Office conducts the investigation according to its professional duties such that attitude of constant awareness and alertness is maintained in order to audit possible frauds, errors, omissions and conflicts of interests, etc. In cases where suspicious or possible corruption incidents occur, they are reported to relevant supervisors directly for appropriate investigation

handling. During the recruitment of new employees, the company always considers the ethics-based personal quality as one of the main criteria, and for senior supervisors, they are requested to make a proper example for their staff. Therefore, since the establishment of the company up to the year 2017, there have been no recurrence of any corruption and bribery incidents in the company.

Since December 2015, the company has started to request suppliers to sign the new version of "Corporate Social Responsibility Declaration" (including the periodic and irregular feedbacks on the ethical status of Ablerex) and to guarantee that suppliers have not engaged in any bribery or payment of other illegal benefits, or any actions seeking illegal profits directly or indirectly. In case of any of the aforementioned matters, suppliers shall report to the company immediately. If any supplier engages in unethical conduct, it is treated as a severe breach of contract, and Ablerex will terminate or rescind the relevant contract or orders signed with such supplier . For serious violation, the company will revoke the qualification of the supplier.

3.2 (Regulatory Compliance)

3.2.1 Ablerex establishes the "Ethical Management Rules" which explicitly specify the requirements for performing business activities according to the relevant competition laws without price fixing, manipulation of tendering, production capacity limit and distribution or use of any methods to distribute products to customers, suppliers, operating areas or business types, etc. in order to share or divide the market. Accordingly, since the establishment of the company up to the year 2017, there have been no incidents of anti-trust actions, anti-trust litigation or monopoly legal disputes, etc.

3.2.2 Ablerex has established the "Work Rules" according to the "Labor Standards Act" of the government laws, and has also performed subsequent relevant government recording and approval according to the latest adjustment of content of laws in order to make internal announcement to all staff. In addition, for departments with greater possibility of extension of working hours, relevant supervisors are requested to perform enhanced educational promotion and to execute preventive actions as well as to review the implementation status periodically in order to ensure the thorough execution of regulations. Consequently, in 2017, there were no incidents where the extension of working hours by workers exceeding the statutory limit on working hours or penalty fines issued by the competent authority.

Sustainable Product and Customer Management

1. Sustainable Products

In recent years, due to the extensive development of the industry, the traditional petroleum energy on earth is consumed rapidly, leading to severe impact on the global environment, such as environmental pollution and greenhouse effect. The question on how to reduce the reliance on the traditional petroleum energy has become an important issue to all countries around the globe. Based on the viewpoint of reducing pollution and developing permanent energy from various types of energies and diversity of sources thereof, the development of renewable energy is an inevitable trend, and it has been listed by governments of various countries as important administrative goals for developing focused projects. Among the most potential renewable energies, there are solar power, wind power generation and fuel cells, etc.

To reduce severe environmental impacts and to contribute efforts to our earth, Ablerex is devoted to the research and development of products with high efficiency Uninterrupted Power Supply (UPS) system, Active Power Filter (APF capable improving power quality, Solar inverter for green energy system equipment and Energy Storage System (EES) for relevant renewable energies, etc. in order to assist customers in the reduction of carbon dioxide emission and utilization of energy.

1.1 (Policy and Concept of Product Innovation Design) Product Innovation and Green Product

1.1.1 Research and Development Strategy

A. Continue to focus on product research and development for the improvement of power quality and increase of power supply reliability
B. Continue to invest in the R&D resources in the fields of new energies, renewable energies, energy recycling and energy saving, and engage in R&D of relevant products for future markets
C. Commitment in technology innovation and actively develop patent portfolio in order to enhance the technical competitiveness

1.1.2 Product Design:

UPS products continue to head toward the design trend of high efficiency, compact size and light weight, while being equipped with the smart, modular and network functions as well as the direction of energy saving and carbon reduction. In addition, the company products are developed to fulfill the responsibility of safe use and health of customer ends as well as the environmental protection in light of ensuring that no violations against the health and safety related laws occur during the lifetime of company products.

Product concept Development Stage	**Guarantee and goal:** Through market information collection/ survey, further product development and development trends are evaluated in order to reduce the safety and health concerns of end users of the products. **Evaluation and technique:** ★ Market survey ★ Customer feedback ★ Academic researches and feedback information ★ Reports of research institutions
Product Research and Development Stage	**Guarantee and goal:** With the information of comprehensive product concept, products complying with the environmental protection as well as health and safety regulations are defined and developed. **Evaluation and technique:** ★ Materials and component parts comply with RoHS/REACH SVHC ★ Define and improve specifications for environmental friendly/safety functions ★ Improve efficiency ★ Patent technology application ★ Environmental friendly packaging design
Product Certification Stage	**Guarantee and goal:** Develop products complying with the environmental protection as well as health and safety regulations based on the safety standards information specified in various countries and customer demands **Evaluation and technique:** ★ USA: FCC/UL/cTUVus/ENERGY STAR ★ Europe: EMC/CE/CGC/G83/39GS&CB /German Grid Connection Specification VDE-AR-N 4105/ ★ Taiwan: VPC/ BSMI ★ Thailand: ETS ★ Australia: SAA

1.1.2.1 Product Concept Development Stage

Through market information collection/survey, further product development and development trends are evaluated in order to reduce the safety and health concerns of end users on the products.

- Market survey
- Customer feedback information
- Scholar researches and feedback information
- Reports of research institutions

1.1.2.2 Research and Development Stage

A. Materials aspect

During the early development and design stage, the company discusses with the suppliers the materials required and requests the suppliers to provide materials test reports in order to determine whether or not relevant component parts contain hazardous substances, and also requests that all materials shall be lead-free manufacturing process.

B. Technical design aspect

a. Specification environmental protection/safety function improvement

- Design the new product structure in order to reduce the harmonic pollution and to improve the grid power quality.
- Product internal is enhanced with sufficient filter in order to block harmonics from interfering the grid power and to prevent long-term grid power pollution affecting the health and safety of terminal users.
- Automatic shutdown during the environmental variable abnormality in order to ensure the safety of terminal users.

b. Increase efficiency

Continuous research products of increased efficiency and energy saving, and integrate various products in order to assist customers to save more energy, costs and harmonic pollution. According to the types of products, the efficiency/energy saving and carbon reduction ratio of various types of products are as follows:

<Efficiency of various types of products >

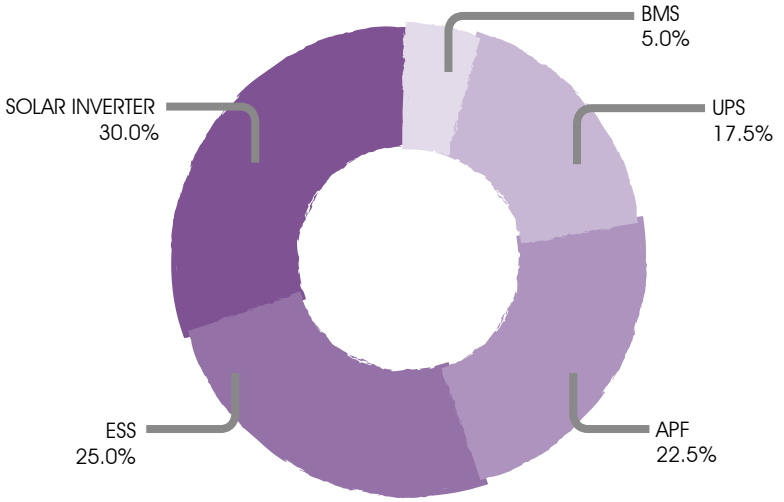
Product type	Efficiency	Benefit
UPS (Uninterruptible Power Supply system)	90%~93%	Capable of reducing losses caused by power interruption and increase efficiency, stabilizing power quality in order to reduce costs of enterprises and to reduce heat dissipation equipment to achieve carbon reduction.
SOLAR INVERTER)	97%	Using the power inverter to transform the solar energy into usable electricity to be used for loads, and to assist enterprises in achieving the objective of energy saving and carbon reduction.
APF (Active Power Filter)	98%	With the use of APF, it is able to reduce the harmonic pollution/virtual power compensation and balance loads in order to stabilize power quality and to reduce the power distribution loss; in addition, it is able to also increase the power factor in order to achieve the objective of carbon reduction.
PDU (Power Distribution Monitoring System)	100%	Through the monitoring of power consumption of enterprises and control of power dispatching, the capacity complying with the contract capacity with the Taiwan Power Company can be achieved; therefore, it is able to not only assist enterprises to control unnecessary penalty fines for exceeding the capacity limit and to prevent waste of energy. In addition, it can further assist enterprises to achieve energy saving and carbon reduction by 10%~15%.
ESS (Energy Storage System)	94%	The power generated from the solar energy and wind energy can be provided for household uses, and the remaining electricity can be stored in batteries for subsequent use or when there is a great difference in the time of electricity use price, the stored electricity can be supplied for its own use while achieving the effect of energy saving, carbon reduction and decrease of power consumption cost.
BMS (Battery Monitoring System)	100%	Through the monitoring of batteries and voltage stabilization, the battery lifetime can be prolonged such that the enterprise cost can be reduced and the number of battery manufacturing quantity can also be reduced along with the reduction of pollution caused by batteries; consequently, the objective of carbon reduction can be achieved.
Cloud Network Monitoring System	100%	Through the collection of various information, data and status of power generation and voltage etc. generated by the SOLAR INVERTER, software can be used for analysis in order to present the solar system power generation status and abnormal errors on the website in order to allow enterprises to timely maintain the equipment and to reduce losses suffered by enterprises. In addition, it also allows the instant monitoring of the power generation benefit and the enterprise profit status.

Ablerex is devoted to the research and development of renewable energy products and to increase the energy usage efficiency of products. Our products, including UPS for solar power and wind power inverters, continue to demonstrate the increased energy conversion efficiency from generation to generation in order to assist customers to reduce the energy usage and emission of greenhouse gas. In 2017, the three main products of Ablerex, including solar inverters, single-phase UPS systems and three-phase UPS systems, have assisted customers to save a total of 4,152,634 degrees of electricity, an increase of 58.75% from the electricity amount saved in 2016. In 2017, for the amount of energy saved, an amount of approximately 2,300 tons of greenhouse gas emission is reduced, equivalent to carbon absorption amount by 8.7 units of the Daan Forest Park in Taipei City in one year.

c. Safety Certification

To cope with the global environmental protection issues, Ablerex is devoted to the improvement of power quality and increase of efficiency. In addition, through integration and development of energy saving/green products and solutions, the company is able to assist consumers to save energy consumed during use in order to achieve the effect of energy and power saving while ensuring the health and safety of terminal users. Our company has established professional safety regulation departments in order to timely collect the latest laws and regulations such that during the product designs of the R&D team, they are able to timely cope with the changes in the standards in order to design innovative products complying with the safety standards. Furthermore, the company establishes the R&D Center in Kaohsiung equipped with an EMI laboratory having testing environmental identical to that of a professional testing and accreditation facility. In addition, the R&D Center also cooperates with laboratories and certification units in order to comply with the international energy efficiency specifications. Consequently, the company is able to ensure that products can be legally sold in various regions worldwide while satisfying the energy saving product requirements of customers and markets.

<Product Energy-Saving Performance Ratio>



Product type	2017 energy saving amount (KWh)
PV inverter	581,589
Single-phase UPS	28,493
Three-phase UPS	3,542,552
Total	4,152,634

Note 1: Calculation for PV inverters: Under the assumption that different generation of products are of the power generation capacity, the energy consumption loss difference value between the ES25600HC model and the previous generation of product is calculated, followed by multiplying the difference in value by the shipping quantity and estimated operating hours in 2017, then summing the total thereof to obtain the energy saving amount in 2017 associated with the contribution of the PV inverters.

Note 2: Calculation for Single-phase UPS systems: Calculate the energy efficiency values of the four types of models of AS+120V RT 1K, AS+120V RT 1.5K, AS+120V RT 2K and AS+120V RT 3K and the power consumption loss difference value under the minimum energy efficiency requirement of ENERGY STAR Uninterrupted Power Supplies Final Version 2.0 Specifications and multiplying by the shipping quantity and operating time in 2017 respectively, and then summing the total thereof to obtain the energy saving amount in 2017 associated with the contribution of the single-phase UPS systems.

Note 3: Calculation for Three-phase UPS systems: Calculate the energy efficiency value of the five types of models of TAURUS 10, TAURUS 20, TAURUS 30, TAURUS 40 and TAURUS 60 and the power consumption loss difference value under the minimum energy efficiency requirement of ENERGY STAR Program Requirements for Uninterrupted Power Supplies, and multiplying by the shipping quantity and operating time in 2017, respectively, and then summing the total thereof to obtain the energy saving amount in 2017 associated with the contribution of the three-phase UPS systems.

Note 4: Carbon reduction amount is calculated by multiplying the number of degrees of electricity saved by the power emission coefficient of 0.554 kg CO2e/degree, and then using the carbon absorption amount of 262 tons per year by the Daan Forest Park (26 hectare, 10.1 tons of carbon absorption per hectare).

<Energy efficiency specification compliance of various types of products is as follows>

Product type	Country of safety regulations	International energy efficiency specification
UPS	U.S.A.	FCC, UL, cTUVus, ENERGY STAR
	Europe	EMC, CE, TUV, GS&CB
	Taiwan	BSMI
PV INVERTER	Europe	EMC, CE, CGC, G83/39, GS German Grid Connection Specifications VDE-AR-N 4105
	Taiwan	VPC
	Thailand	ETS
	Australia	SAA
APF	Europe	EMC, CE
	U.S.A.	FCC, UL
Energy Management System	U.S.A.	FCC, UL

<Current technologies or products successfully developed by Ablerex are described in the following:>

Year	Product type	Technology or product researched and developed successfully	Description of features or usages
2017/2018	UPS	Online interactive single-phase UPS PSA4 500VA~1500VA	Use of new full bridge structure, and the new model has he following advantages 1. Increase of efficiency 2. Reduced size of PCB 3. Low cost 4. Higher power 5. Discharge time longer than Glamor 6. Support simultaneous transmission of two sets of communications (WiFi and RS232 or USB)
		Online interactive single-phase UPS PST4 350VA~850VA	Socket box type 1. Increase of efficiency 2. Reduced size 3. Low cost
		Online single-phase UPS ARES Plus 1K~3K RT / Tower Model for 230Vac System	1. Increase product capacity from power factor of 0.9 to 1.0 2. Addition of WiFi for more friendly human-machine interface 3. Battery quantity (1K: 2-3 units of batteries; 2K: 4-6 units of batteries; 3K: 6-8 units of batteries)
		Online three-phase UPS TAURUS 10K~100K	1. Use of new three-level structure in order to significantly increase the operating efficiency of the entire machine 2. Output power factor design can reach PF = 1.0 3. Addition of accelerated ECO supply conversion mode, and conversion speed< 3ms
		Online three-phase UPS TAURUS MINI 10K~20K	1. Use of new three-level structure in order to significantly increase the operating efficiency of the entire machine 2. Reduce the specification of output power factor to PF 0.9 in order to allow the cost of the entire machine to be more competitive 3. Equipped with fast ECO supply conversion mode, and conversion speed < 3ms
		Online three-phase UPS Voltage Sag	1. Use of new three-level structure in order to significantly increase the operating efficiency of the entire machine 2. Use long lifetime capacitor disk design to replace the batteries; during the abnormality of grid waveforms, temporarily compensate the load power 3. Capacity expandable to 6 parallel units of 360kVA/360kW

Year	Product type	Technology or product researched and developed successfully	Description of features or usages
2017/2018	Power management development	Battery monitoring system BMSIII plus RF Receiver	In addition to the continuation of the wireless transfer function from the previous generation, power voltage stabilization is added in order to more accurately prevent over-voltage of battery. Battery health diagnosis detection and residual time estimation technology Auxiliary battery aging health diagnosis mechanism
		Raspberry Pi smart human-machine interface	Addition of WiFi function and enhancement of APP development for green energy product software
		AC PDU2.0 Power system monitoring	To cope with the DC communication utility room market demands, AC PDU power monitoring system is developed, and its application is similar to the AC PDU of the previous generation. The main difference relies in the measurement precision improvement, and for the monitoring human-machine interface is upgraded from 7 inch touch panel to Raspberry Pi smart human-machine interface.
	APF	Active Power Filter ESD34 150/100A	Use of instant response control method. Such control method is able to optimize the transient response capacity of the Active Power Filter in such a way that at any point of each current cycle, instant compensation can be made, and the product compensation capacity is increased, and IP00/IP20 use demands are also satisfied.
		APF 480V UL	In addition to the breakthrough in the structure and technology utilization of products of the current stage of products, it further complies with the international safety specification such that the scope of the product sales is broader.
		APF 80A Rack Module	New generation of product significantly increases the power density and reduces the installation space requirement New generation of hot swamp technology New controller with the addition of full order harmonic compensation and load balance mechanism Use of Multi-Level conversion structure to reduce IGBT switch loss and to increase the number of times of harmonic compensations; in addition, it is able to compensate the harmonic and correct the power factor simultaneously
		APF 80A Wall Mount	New generation wall-mounting product significantly increases the power density and reduces the installation space requirement
		APF 60A/90A	In addition to the breakthrough of the current stage of product structures and technologies, the product is further added with different capacities parallel connection along with applications in order to allow this product capacity combination to be more flexibility.
	ESS	Single-phase household energy storage system	Energy storage systems (ESS-MET), energy storage inverter (ESS-INV), energy storage battery module (ESS-BAT).

Year	Product type	Technology or product researched and developed successfully	Description of features or usages
2017/2018	ESS	Energy Storage System ESS5000/4000/3300	After the voltage, current and power of the responsible boundary point at the user end are measured by the smart electric meter and calculated by the controller, command is transmitted to the energy storage inverter in order to adjust the power, battery charging/discharging power of the solar power generation in order to achieve the function of self-sufficiency. Users of the time use price can also use the smart electric meter to set the peak and off-peak power consumption time intervals, and the controller is able to perform charging/discharging control at the corresponding time intervals, such that it is able to purchase electricity for storage at the time interval of low price and to sell electricity at the time interval of high price. Consequently, it is able to achieve the objectives of energy saving and maximizing the power consumption benefit. The energy storage inverter (ESS-INV) allows free choice and use of batteries, and it only requires the battery voltage to be within the range of 40～60V. The original manufacturer provides the lithium battery set (ESS-BAT) equipped with built-in battery management system (BMS) for user selection. In addition, it can also use batteries, such as: Lead acid, lithium iron phosphate, tantalum carbide, brine battery etc.
	GPS	Three-phase PV inverter ES 55000	This three-phase 55kW PV product can be connected to a photovoltaic module, and the number of parallel connections can reach the most optimal efficient working points in order to achieve the solar power generation system cost optimization. Smart MPPT tracking is able to effectively increase the solar system overall power generation amount such that the products can be more competitive.
		Japanese specification of single-phase PV inverter ESJ5500	This single-phase 5.5kW PV product complies with the Japanese JET regulatory certification requirements, and it is equipped with fail-safe voltage output loop, such that the product application aspect is broader and can be used for the future expansion of single-phase energy storage system.
		Single-phase PV inverter ES5500H	For existing product of ES5000H, use aluminum material for the chassis and in conjunction with the increase of cooling performance of main elements in order to further increase the capacity by 10%. The overall cost remains unchanged, but the product sales profit is increased.
		Single-phase PV inverter ES7200HC	Develop new generation of 7.2kW PV inverter in order to satisfy the applications of the market trend In addition, with the design of 1000V DC input and single MPPPT, the power density can be further increased/overall unit weight can be reduced.
		Taiwan CNS15382 Grid Connection Regulations	To cope with the national grid connection regulations in Taiwan, the entire series of PV inverter models sold in the region of Taiwan shall comply with the standard requirements.

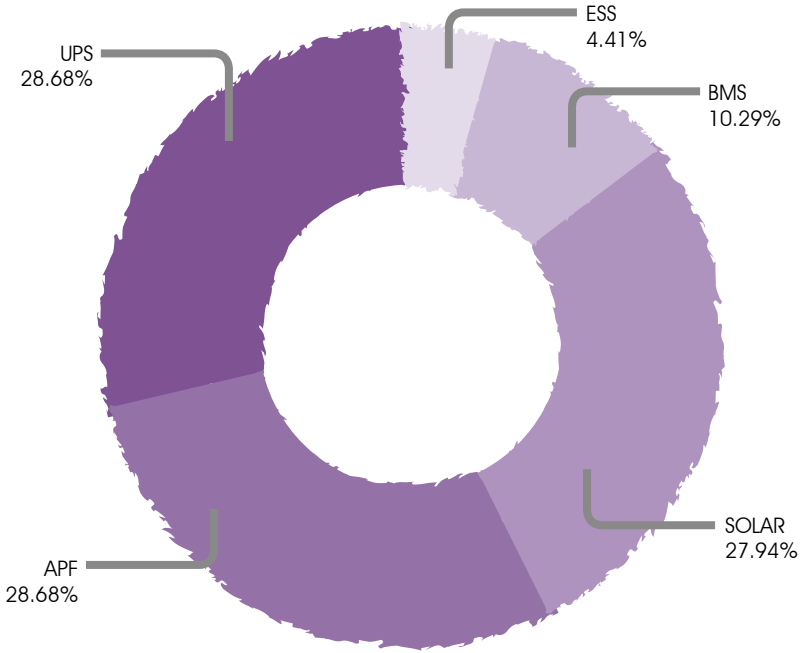
d. Patent Technologies

To enhance the product innovative research and development as well as to increase the competition of the company in the market, the quantity of domestic and foreign patents of Ablerex has increased significantly, which is of substantial effect on the improvement of technologies and increase of efficiency in light of achieving the ultimate goal of energy saving and carbon reduction. Presently, the number of patents applications filed by the company has reached 136 applications, and the granted patents with acquisition of certificates has reached 88.9% (121 granted patents).

<Quantity of Patent Applications for Different Product Types>

Registration region	Application status	UPS	APF	SOLAR	BMS	ESS	Total
Taiwan	Certificate received	13	13	13	2	2	43
	Under examination	0	0	0	1	0	1
	Granted and certificate issuance in process	0	0	0	1	0	1
Taiwan Total		13	13	13	4	2	45
China (PRC)	Certificate received	11	13	8	6	2	40
	Under examination	2	0	4	1	0	7
	Granted and certificate issuance in process	0	0	1	0	0	1
China (PRC) Total		13	13	13	7	2	48
U.S.A.	Certificate received	12	13	9	2	2	38
	Under examination	0	0	1	1	0	2
	Granted and certificate issuance in process	1	0	2	0	0	3
USA Total		13	13	12	3	2	43
Total		39	39	38	14	6	136

<Patent Application Ratio of Different Product Types>



<Recently Developed Patented Technologies Capable of Significantly Improving Product Performance and Efficiency>

No.	Patent Name	Application Summary	Applicable Product Type
1	Method and apparatus for tracking maximum power of solar power generation system	Applied to a solar power generation system, using an active resistive method to provide the maximum power output from the solar panels for load use in order to maximize the utilization of renewable energy.	SOLAR INVERTER
2	Control method for DC/AC power inverter equipped with input DC voltage ripple suppression and apparatus thereof	Applied to the ripples in renewable energies, such as: solar energy, wind energy, fuel cell, caused by unstable power, and the use of such control method is able to suppress such ripple loss in order to achieve the maximum energy output.	SOLAR INVERTER
3	Rechargeable battery charging apparatus of an independent power generation system equipped with maximum power tracking function and method thereof	Applied to remote mountain areas or developing countries, and the use of such technology is able to reduce the air pollution and noise pollution caused by diesel power generators.	SOLAR INVERTER
4	Five-Level DC to AC power circuit	Use five-level circuit structure to increase the converter efficiency in combination with the solar energy, wind energy or fuel cell in order to increase the power generation performance	SOLAR INVERTER
5	Two-way DC/DC converter control method	Applied to household solar energy storage system, and use this technology to store excessive power into the battery set such that it is able to achieve the self-sufficiency during the power consumption at peak times or during power outage in order to achieve energy saving effect.	SOLAR INVERTER
6	Business model, method and system generated from recovering information from testing power energy	Applied to a battery facility, this system is able to recover the power consumed by the equipment pending for testing back to the grid system in order to achieve the energy saving and carbon reduction effects.	UPS
7	Cascading bridge DC/AC power conversion method and apparatus thereof	After the technical integration with the "Multi-level AC/DC power conversion method and apparatus thereof," it can be applied to an UPS system in order to achieve high-efficiency power conversion in order to achieve the effect of reducing the office air conditioner cooling.	UPS
8	Multi-level AC/DC power conversion method and apparatus thereof	After the technical integration with the "Cascading bridge DC/AC power conversion method and apparatus thereof," it can be applied to a UPS system in order to achieve high-efficiency power conversion and to achieve the effect of reducing the office air conditioner cooling.	UPS
9	Solar cell module shielding compensation apparatus	When a solar panel is shielded by external objects such that the power generation amount is reduced, such technology is able to increase the output voltage and power of the solar panel in order to achieve the optimum use of solar energy.	SOLAR INVERTER
10	One-way isolating multi-level DC-DC power conversion apparatus and method thereof	Applied to telecommunication server, base station, and utility room etc.; the use of such high-performance power structure device is able to reduce the cooling equipment in utility room in order to achieve the objective of energy saving and carbon reduction.	UPS/SOLAR INVERTER
11	Two-way isolating multi-level DC-DC power conversion apparatus and method thereof	Applied to the energy storage system; the use of such high-performance power structure device is able to reduce the equipment size in order to achieve the objective of energy saving and carbon reduction.	UPS / ESS
12	Solar panel power generation abnormality testing method and system thereof	When a solar panel is damaged, this technology is able to detect the cause of the malfunction of the solar panel early for replacement thereof such that the solar energy resource application can be maintained at the most optimum state.	SOLAR INVERTER
13	Battery status testing method and system thereof	Applied to the energy storage system, telecommunication server, base station and utility room, etc. Such technology is able to detect the remaining electricity status and health condition of the battery through partial discharge in order to monitor that the system is under the most optimum conditions during the application thereof.	BMS

e. Dissertation

Submission of technical dissertations is able to increase the exposure of the company and to demonstrate the innovative technology level of the company. Through participation in various seminars and paper presentation seminars, greater cooperation opportunities can be achieved.

As there are greater number of competitors in the global market in the future, under the limit of currently available resources, the company shall make greater investments in innovation in order to drive the growth of the business. The company emphasizes the strategy and planning of patents and dissertations in order to gradually accumulate the intellectual property of the company, which is beneficial to the overall competitiveness of the company in the future.

Articles and Papers

Unit: papers

Document Type		Number of publications	Total
Articles and Papers	Domestic	16	37
	Overseas	21	
Seminar papers	Domestic	18	29
	Overseas	11	
Total			66

C. Packaging design aspect

Using green packaging materials and incorporating environmental consideration into the product design

a. Packaging design

The purpose of the packaging is to ensure the safety and appearance of products, and the question on how to achieve the two while reducing the impact of wastes on the environment has always been an issue of concern for the design department. The packaging of our product is mainly carried out in the concise and simple method along with the following aspects of considerations:

- Optimized design to increase the packaging materials strength in order to reduce the usage amount of packaging materials.
- Use of green pancaking materials, such as corrugated cartons, paper boards and wooden boxes, etc.
- Reduce printing on packaging and use of ink with low volatility for printing.
- Packaging design is facilitated for transportation in order to reduce transportation carbon emission.
- Educate consumers about recycling of packaging materials.

b. Appearance design

Ablerex supports the environmental protection issues through actual actions. As the product follows the market trend, the appearance adopts the compact and light weight design, and the company also actively uses recycled plastic materials in the product. During the product design process, the toughness and reliability of the product are considered in order to ensure that the product quality is identical as the ones using virgin plastics. In addition, we follow the principle of low-carbon procurement to purchase from the local suppliers in priority. In addition, we have established iron factories in Suzhou and Pingtung Plants in order to satisfy the mechanical parts production needs, thus we are able to not only lower the product cost but also significantly reduce the carbon emission generated during the materials transportation process in order to achieve the energy saving effect of green logistics.

1.2 Future Product Design Direction

1.2.1 Development of multi-functions of high efficiency, compact, light-weight, intelligent, network and decentralized UBS new technologies.

1.2.2 Three-phase, high frequency and parallel connected Medium and large UPS

1.2.3 APF of high efficient power quality management technology

1.2.4 Grid-connected type of high power SOLAR INVERTER

1.2.5 Power management monitoring software technologies AC PDU, DC PDU

1.2.6 SMART GRIDS and cloud application related products

1.2.7 Wireless battery monitoring system BMS

1.3 Customer Health and Safety

1.3.1 Relevant measures for improving health and safety

1.3.1.1 Qualified suppliers have all undergone the processes of evaluation and screening along with the guidance; in addition, suppliers are requested to sign the corporate social responsibility guarantee in order to request suppliers to comply with relevant requirements in terms of cooperation, environmental protection, safety and health issues. Consequently, the suppliers are able to jointly improve the corporate social responsibility in order to promote the corporate social responsibility together. Ablerex and cooperating suppliers are long-term partners, and regardless of standard product materials or customized product materials, since the beginning when the suppliers are listed as qualified suppliers, they are requested to satisfy the following basic requirements:

1.3.1.1.1 Qualified supplier evaluation:

A. Evaluation and screening processes for new suppliers: The evaluation items are divided into five aspects of quality, management technology, equipment and cooperation, which are confirmed by the professional field departments of R&D, Engineering, Quality Assurance and Procurement. For suppliers with comprehensive evaluation reaching a total score of above 70 points and samples already approved, they can be listed as qualified suppliers of the company. Alternatively, if the total score is above 60 points, after improvement, the company needs to perform re-evaluation work depending upon the needs. If the total score reaches above 70 points, and the samples are also approved, it can then become a new supplier of the company.

B. Suppliers are requested to sign the corporate social responsibility guarantee. Honesty is an essential criterion for suppliers, and suppliers are requested to sign the corporate social responsibility guarantee in order to jointly promote the corporate social responsibility. Up to the end of 2017, there are a total of 219 suppliers who have signed the corporate social responsibility guarantees with the company, accounting for more than 94.39% of the suppliers currently in a business relationship with the company.

C. Suppliers shall comply with the local laws and regulations.

1.3.1.1.2 Supplier field audit:

Each year, regular and periodic field audits are conducted on the key suppliers. In 2017, field audits were conducted on 5 important suppliers, and accounted for approximately 72.47% of the major suppliers in order to ensure that their operations comply with the local laws and regulations.

1.3.1.1.3 Supplier periodic accreditation.

A. Perform accreditation for use as the priority sequence for guidance. For the first half of 2017, the number of suppliers accredited is 196 suppliers, and for the second half of 2017, the number of suppliers accredited is 173 suppliers, accounting for 100% of the suppliers in a business relationship with the company.

B. For disqualified suppliers with the evaluation total score above 60 points but less than 70 points, they are informed of the enhanced guidance for the improvement of failure items in order to allow them to meet the requirements of the company. For suppliers already achieving the criteria, they are controlled rigorously in order to ensure that their cooperation in the quality, price and delivery date continue to improve. Similarly, for suppliers with scores less than 70 points after the evaluation, they are requested to make improvements. In case where a supplier fails to improve to meet the standards for qualified suppliers, they are removed from the qualified supplier list. In 2017, there are no occurrence of such suppliers in 2017.

C. If there is any violation in the local laws and regulations, the most serious penalty is to stop the business relationship with such supplier.

1.3.1.2 Continue to promote local procurement in order to reduce the impact of transportation on the environment.

1.3.1.3 The company has introduced the ISO 9001&ISO 14001 standards in order implement further controls on the quality and environment in order to reduce impacts on the environment.

1.3.2 Legal compliance status

The company products seek to achieve the goal of being environmental friendly, energy saving and hazardous substance free, such as the promotion of RoHS, REACH SVHC, in order to comply with the local laws and regulations. In addition, all of the products shall comply with the RoHS procurement principle. During the evaluation of new suppliers, the component parts or new materials supplied by the suppliers shall incorporate the RoHS related test records or certificates into the specification requirements of the approval sheet, and RD shall provide relevant safety information.

1.4 Product labeling

Since the laws of various countries are different, the approval of electronic products shall be made based on the test reports or certificates submitted according to the relevant local regulations. Prior to selling products to different countries, the company would understand the relevant local laws and regulations first in order to manufacture products complying with the laws and regulations. For example: European Unit's compulsory product safety standard of CE, and the compulsory product safety standard of UL in USA. No violations of regulations of product and service information labeling as well as the voluntary specification were recorded in 2017.

2. Marketing and Service

2.1 Marketing Management

The products and technologies of the company are mostly self-developed by the company or jointly researched and developed with academic institutions. During the R&D and manufacturing process, professional personnel also collect external information related to patent, technology and legal aspects, and also sign relevant contracts with clarified responsibilities in order to ensure the compliance to the relevant laws and regulations. In addition, the company product introduction advertisement published to the external mainly uses the printed journals and magazines, and the proposal completed is submitted to the handling department supervisor for content review, which is also required to be submitted to the senior management or the President for approval in order to be sent to the art editor for creation. Furthermore, for the work completed by the art editor, it is verified by the handling personnel again in order to be submitted to the media end for publication. During the aforementioned review and audit process, deceptive content or infringement are also prevented. As a result, up to the year 2017, there were no prohibited or disputed products sold, and there were no penalties of large amount of fines due to violation of laws and regulations arising from the supply and use of the company products and services. In addition, there are no violations of laws and voluntary standards in relevant marketing and promotion (including advertisement, promotion and sponsorship).

2.2 Respect and Protect Customer Privacy

The company has established non-disclosure related policies according to the "Ethical Management Operation Procedure and Code of Conduct" and has set up dedicated units in charge of the establishment and execution of the management of intellectual property rights of the company, including trade screes, trademarks, patents and copyrights etc., preservation and non-disclosure operating procedures,

as well as the periodic review and result implementation in order to ensure that the operating procedures continue to be effective.

In addition, company personnel shall avoid making any business deals with agencies, suppliers, customers or other parties in a business relationship of the company involving in unethical conducts. In case where the party in a business relationship or cooperation is found to be subject to unethical conduct, the business relationship of such party shall be stopped, and it shall be listed as a rejected party for business in order to implement the ethical management policy of the company.

When the negotiation or discussion content with a customer involves the confidential information of both parties, our company will sign a non-disclosure agreement (NDA) with the customer in order to prevent the disclosure of confidential information and to protect the rights of both parties. According to the contract engagement status in 2017, there are 43 non-disclosure agreements signed with important customers, and there are no complaints or litigations related to the violation of customer privacy or loss of customer information.

2.3 Customer Satisfaction Survey Results

Customer satisfaction has always been the goal sought by Ablerex. Accordingly, the company uses questionnaire survey method every half year to understand the level of customer satisfaction. From the satisfaction survey results, the items and evaluation recommended by the customers can be understood. The salespersons will also make improvements according to the comments provided by the customers. If such matter belongs to the responsibility scope of other departments, a meeting is also held to review the defects. In comparison to the customer satisfaction status in 2016 and 2017, it is found that there were declines in the customer satisfaction, and the total average score showed a range of decrease by 1.86% ~ increasing by 7.34%. The most important reason for the decrease in the satisfaction level is related to the further demand on the quality improvement. In addition, the main reason for the increase of satisfaction level is the customers' recognition in the price and service arenas. In general, the speed for internal cross-department communication and coordination needs to be improved in order to allow the products to be improved timely, and service speed can be accelerated in order to meet the customer satisfaction.

2017 Customer Satisfaction Survey Results

Department	Sales Department 1	Total average score	8.44

Evaluation report
Analysis: According to the customer satisfaction survey for the second half of this year, the result is great, in general; however, discussions on the quality need to be made.
issue: Quality evaluation for the first half of the year is 8.2, and it decreases to 7.6 in the second half of the year; therefore, it is clear that quality needs to be improved.
Improvement strategy: Salespersons and RD as well as the factory end are requested to engage in discussions in order to make improvements on the product timely and to satisfy the market demands.

Department	Sales Department 2	Total average score	9.41

Evaluation report
Analysis: 1. Customer satisfaction level is slightly increased and the price issue is concerned more in comparison to last year.
2. There are 3 customers providing the weighted average score lower than 9 points and the main cause is related to the price and quality issues.

Department	Technical Service Department	Total average score	9.07

Evaluation report
Analysis: The evaluation in all aspects are higher than the target value requiring review and improvement. In general, price is the main factor affecting the customer satisfaction level.

* Scoring standards for evaluation items: Very satisfied for 12.5 points; Satisfied for 8 points; Fair for 6 points; Improvement needed for 3 points. Where the total average score is less than 8 points, a review on such item shall be made.


START
Sustainable
Environment

1. Environmental Report

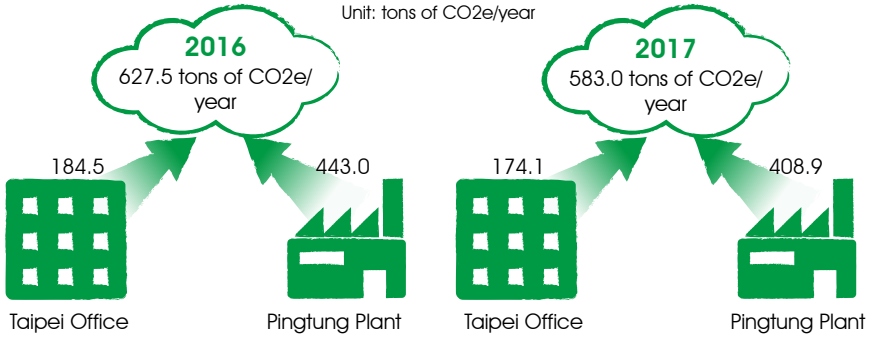
1.1(Greenhouse Gas Audit)

Since 2016, Ablerex has performed the greenhouse gas audit for the Taipei Office and Pingtung Plant according to ISO14064-1. It is identified that the main greenhouse emission sources are electric power, transportation vehicles (diesel), cooling equipment (coolant) etc. For the two years 2016-2017 of greenhouse gas emission, please refer to the table on the right.

1.2 (Wastewater and Waste Management)

The wastewater type drained from each operating location and plant site of Ablerex is mainly domestic sewage. During the drainage of domestic sewage, compliance with Water Pollution Control Act and relevant laws is ensured. The company established the "Energy Resource Usage Management Operation Procedure" in order to ensure that the water quality achieves the drainage standard of the law. The wastewater is drained directly into the sewage system.

Greenhouse Gas Emission



<<2015-2017 Period Water Intake Status>>

Water intake type	Standard/methodology/assumption used	Usage amount Unit: degree			Explanation of usage amount of latest year being less than the previous year
		2015	2016	2017	
City government water supply (tap water)	Water bill	4461	4774	4189	In 2016, increased air conditioning water usage amount and occurrence of water leakage
Total water usage amount		4461	4774	4189	

Scope of statistics: Include Taipei Office and Pingtung Plant.

<<2015~2017 Period Wastewater Drainage Status>>

Drainage unit/equipment	Unit	Into public drainage/ Self-drainage	Emission Destination	Water quality			Whether or not it is re-used by other organizations	Standards, methodology and assumption used for calculation	Wastewater characteristics	Wastewater treatment process introduction	Explanation of reasons of decrease or increase of drainage amount
				BOD	COD	TSS					
Taipei Headquarters & Pingtung Plant	degree	Xindian/ Pingtung industrial site public drainage	Wastewater treatment plant				No	Water bill	The wastewater of the company mainly refers to the drainage of domestic wastewater and there is no use of equipment for recycling wastewater; therefore, the water intake amount is identical to the wastewater drainage amount.	The plant site is installed with the wastewater treatment equipment and the wastewater undergoes the aerobic microorganism treatment using the pressurization method to remove large particles of organics and to reduce the content of Suspended Solids (SS), followed by draining into the biological contact aeration tank and filtered by the continuous filtering unit, followed by drainage.	In 2016, increased air conditioning water usage amount and occurrence of water leakage
Total		-	-	-	-	-	-		-	-	-

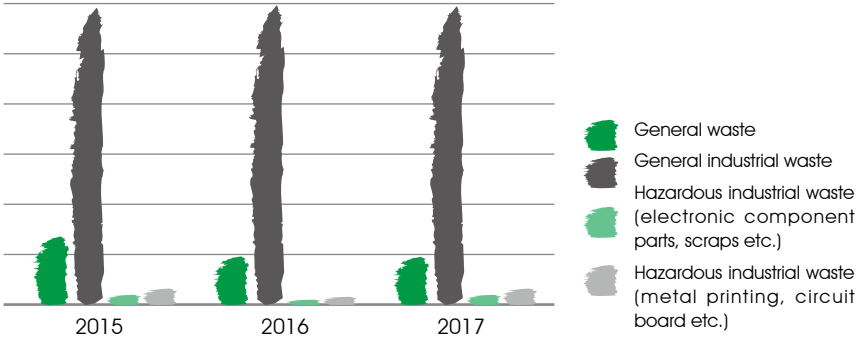
The wastes of all operating locations and plant sites of Ablerex can be divided into two types of the general wastes and general industrial wastes. The general wastes include the consumer waste, metal waste, waste plastic, waste pallets and waste papers/cartons, etc., which are collected through classification for transported to local qualified operator to perform recycling and reuse. The quantity of general industrial waste is small, and it is transported by local qualified cleaning operators to the incinerator plant or landfill specified by the government.

In 2017, there have been no major violations by the contractors.

<<2015~2017 Period Waste Type and Treatment Status Overview Table>>

Waste code	Item	Weight unit	Year			Ratio	Type	Treatment method				Inspection item	How the waste treatment method is determined	Supplemental explanation of waste treatment method	Explanation on the decrease or increase amount of wastes
			2015	2016	2017	2017		Incineration (%)	Landfill (%)	Other methods (%)	Other treatment methods (explanation)	Treatment method % total			
D-0104	General waste	Ton	1,410	0.970	0.997	13%	Slurry		100%			100%	Information provided by oil waste treatment contractor	None	
D-1801	General industrial waste	Ton	6,000	6,000	6,000	80%	Consumer garbage	100%				100%	Information provided by oil waste treatment contractor	None	
E-0217	Hazardous industrial waste (electronic component parts, scraps etc.)	Ton	0.186	0.091	0.167	2%	Waste electronic component parts, scraps and defective parts			100%	Physical treatment %	100%	Information provided by oil waste treatment contractor	None	Product repair/ rework amount increase
E0221	Hazardous industrial waste (metal printing, circuit board etc.)	Ton	0.343	0.165	0.324	4%	Printed circuit board waste and debris containing metal			100%	Physical treatment %	100%	Information provided by oil waste treatment contractor	None	Product repair/ rework amount increase
Total			8.000	7.000	7.000	100%									

Waste amount (ton)



1.3 (Compliance with Environmental Protection Laws)

The drainage of wastewater and disposal of wastes of Ablerex are implemented according to various relevant laws, and there has been no occurrence of violation of laws.

Through the aforementioned policy and actual audit, it is confirmed that the company has not violated any laws related to the products and services during their lifetime having impact on the health and safety and there is no occurrence of violation of voluntary rules in 2017. In 2017, there is no penalty imposed due to the violation of environmental protection laws and regulations, and there is no sanctions including administrative fines from the competent authority.

Employee Care and Social Participation

1. Employee Rights and Benefits

1.1(Employee Welfare and Retirement System)

1.1.1 Employee Welfare

Ablerex considers that employees are the greatest assets of the company, and upholds the principle of looking after and caring for employees in light of creating a fortune enterprise with best effort as the goal. All official or temporary employees are entitled to enjoy the same welfares. For relevant welfares, please refer to the following.

- National health insurance, labor insurance, group medical insurance and casualty insurance, overseas travel insurance.
- Employee periodic physical examinations, hospitalization consolation payment
- Marriage benefit and funeral gift, Dragon Boat Festival bonus, Moon Festival bonus, year-end bonus.
- Annual year-end party and activity.

1.1.2 Retirement System and Implementation Status

The company establishes the employee retirement regulations according to the Labor Standards Act, and the company also appropriates a certain ratio of pension reserve according to the total amount of salary payment on a monthly basis in compliance with the Regulations for the Allocation and Management of the Workers' Retirement Reserve Funds, and the pension reserve is deposited into the Central Trust of China for utilization such that during the actual payment of pension, in case where the reserve account is insufficient for the payment, the deficit part is listed as an expense of the current period.

Since July 1, 2005, in accordance with the implementation of the Labor Pension Act, (hereinafter referred to as the "New System"), the service years of employees with the applicability of the old system for the payment of pension choose the use of the New System, or the service years of employees on board after the implementation of the New System change to use the affirmed appropriation system, then the payment of the pension shall be handled by the company by appropriating no less than 6% of the monthly wage on a monthly basis for saving into the labor pension personal account. For the affirmed appropriation pension part, the company shall appropriate 6% of the monthly wage of the employee to the Bureau of Labor Insurance according to the regulations of the Labor Pension Act, and the appropriated amount is listed as an expense of the current period.

1.1.3 Employee Welfare Committee Execution Status

To guarantee the rights and benefits of workers and to improve the lives of workers, the Employee Welfare Committee provides diverse welfare measures for employees and organizes various types of relevant activities. All members of the Employee Welfare Committee are committed to handling relevant activities planning and execution related to employee welfare with best effort during their non-working time. The budget of the Employee Welfare Budget comes from the appropriation from the operating revenue of the company, employee salary appropriation and other income, etc. In addition, the Employee Welfare Fund is mainly used in the organization of employee incentive trip, holiday bonuses, birthday gift, marriage benefit and funeral gift etc.






1.2 (Employee Diversity)

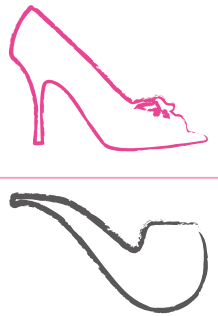
1.2.1 Employee recruit/resignation ratio

For the years of 2016 and 2017, the employee basic structure of new recruit, resignation and age status are as follows:

<Total number of new recruits>

Period: (1/1/2017~12/31/2017)

New recruit ratio	Taiwan	Age
0.67%	0	<30 years old
	2	31-50 years old
	0	>51 years old
8.70%	16	<30 years old
	10	31-50 years old
	0	>51 years old
9.36%	28	Total



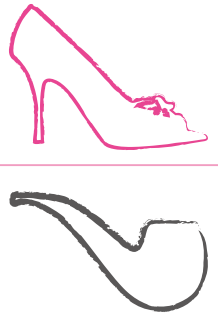
Period: (2016/1/1~2016/12/31)

Age	Taiwan	New recruit ratio
<30 years old	3	2.03%
31-50 years old	2	
>51 years old	1	
<30 years old	19	11.49%
31-50 years old	15	
>51 years old	0	
Total	40	13.51%

<Total number of employees resigned>

Period: (1/1/2017~12/31/2017)

Resignation ratio	Taiwan	Age
1.67%	0	<30 years old
	5	31-50 years old
	0	>51 years old
12.04%	12	<30 years old
	24	31-50 years old
	0	>51 years old
13.71%	41	Total



Age	Taiwan	Resignation ratio
<30 years old	1	1.01%
31-50 years old	2	
>51 years old	0	
<30 years old	4	4.73%
31-50 years old	10	
>51 years old	0	
Total	17	5.74%

1.3(Workplace Human Rights Policy)

Ablerex complies with the government laws and regulations of each region. In case of any major changes in the company operations such that the rights and benefits of employees may be affected or where there is a major change in the duties of employees, the company will provide advance notices and discussions.

If an employment contract is to be terminated, the advance notice period is provided according to the Labor Standards Act as follows:

- Where an employee has worked continuously for more than three months but less than one year, the notice shall be given ten days in advance.
- Where an employee has worked continuously for more than one year but less than three years, the notice shall be given twenty days in advance.
- Where an employee has worked continuously for more than three years, the notice shall be given thirty days in advance.

1.3.1 Freedom of Association and Non-Forced Labor Policy

1.3.1.1 Freedom of Association

The company complies with the regulations of the Labor Standards Act, guarantees the legal rights of employees and respects the basic labor human rights principle recognized internationally such that there are no matters jeopardizing the basic rights of the employees.

The company respects the freedom of association and the collective bargaining right of employees. According to the regulations of "Labor Union Act" of R.O.C., employees have the right to organize and join labor unions. However, the company currently has no labor union organization and a labor-management conference is convened periodically on a quarterly basis in order to discuss relevant major issues for both parties of the employees and employer. In 2017, the labor-management conferences were held 4 times, and the matters of administrative affairs according to the amendment of relevant laws, including company trip, regular day-offs and holiday bonus issuance, etc. were communicated, in order to allow employees

to sufficiently express opinions and to achieve timely communication and create a harmonious working environment. In 2017, there were no violations or major violations of the freedom of association or collective bargaining incidents in the Headquarter or Pingtung Plant.

In addition, for the management of suppliers, in the "Supplier Social Responsibility Rules" established in 2015, the rules also request suppliers to cooperate with the policies of the company in order to respect the freedom of association and collective bargaining of employees. Although, the company has not conduct further investigation on the understanding of relevant violations of suppliers, nevertheless, the company plans to incorporate this into the supply chain code of conduct of the company in the future in order to enhance the management of suppliers. (http://www.ablerex.com.tw/ch/about_8-4.php)

1.3.1.2 Forced and Compulsory Labor

Ablerex specifies that the working hours (including overtime) shall not exceed the regulations of the local laws, and one rest day shall be provided in seven working days. The company establishes the attendance system in order to list abnormal attendance conditions. In addition, dedicated personnel are designated to review records of abnormality. Relevant unit supervisors are informed to understand the working conditions of employees and to make appropriate working arrangements in order to care the health of employees and the quality of their family lives.

Furthermore, suppliers are also valued as important cooperative partners, and the "Supplier Social Responsibility Rules" is established for relevant rights and benefits of employees in light of expecting that the suppliers can also treat their employees fairly and take care of workers properly. The suppliers are requested to cooperate with Ablerex in the proper arrangement of employees such that there shall be no forced or compulsory labor in order to sufficiently protect human rights and to improve social development and stability. In 2017, there are no occurrences of forced and compulsory labor.

1.3.2 Prohibition on Child Labor Policy and Method

The company is committed to fulfill the corporate social responsibility. In terms of respect of social ethics and awareness on the interests of other stakeholders, during the seeking of sustainable operation and profit, the company also emphasizes on the factors of environment, society and corporate governance in order to establish the "Corporate Social Responsibility Code of Conduct" and "Supplier Social Responsibility Rules."

In case where the company and suppliers are subject to the condition of employing child labors (age above 15 but less than 16 years old according to the Labor Standards Act), then it shall be handled according to the relevant regulations of the Labor Standards Act. In addition, it is strictly prohibited to employ child labors in performing works from 8:00PM to 6:00AM of the next morning or performing heavy and hazardous works in order to comply with the No. 138 of the International Labour Convention and the contents of the Convention on the Rights of the Child of the United Nations. In 2017, Ablerex is not subject to any employment of child labor.

1.4 (Maternity Employment Protection)

For 2016 and 2017, the percentages of the required resume of work after parental leave and remaining at job position according to the gender are as follows:

Period: [1/1/2017~12/31/2017]

Item	Number of male employees	Number of female employees	TOTAL
Total number of employees entitled to parental leave in 2017 (A)	39	8	47
Total number of employees who actually took the parent leave in 2017 (B)	1	1	2
Total number of employees required to resume work after parental leave in 2017 (C)	1	1	2
Total number of employees who resumed work onboard after completing the parental leave in 2017 (D)	1	0	1
Total number of employees who resumed work onboard after completing the parental leave in 2016 (E)	1	2	3
Total number of employees completing the parental leave and remaining at a job position 12 months after resuming the work in 2016 (F)	1	2	3
Application rate of parental leave without pay (B/A)	3%	13%	4%
Rate of resuming back to work (D/C)	100%	0%	50%
Rate of remaining at job position (F/E)	100%	100%	100%

Period: [2016/1/1~2016/12/31]

Item	Number of male employees	Number of female employees	TOTAL
Total number of employees entitled to parental leave in 2016	12	2	14
Total number of employees who actually took the parental leave in 2016	1	1	2
Total number of employees required to resume work after parental leave in 2016	1	2	3
Total number of employees who resumed work onboard after completing the parental leave in 2016	1	2	3
Total number of employees who resumed work onboard after completing the parental leave in 2015	0	3	3
Total number of employees completing the parental leave and remaining in the job position 12 months after resuming the work in 2015	0	1	1
Application rate of parental leave without pay	8%	50%	14%
Rate of resuming back to work	100%	100%	100%
Rate of remaining at job position	0%	33%	33%

2. Talent Cultivation

2.1(Educational Training)

2.1.1 Orientation Training

New employees of the company shall accept the orientation training within one week, and its content includes the courses on personnel system, welfare measures, labor safety, health and quality, etc. in order to understand the vision, mission, value and workplace of the company.

2.1.2 External professional training

Department supervisors of the company may assign their staff to participate in external professional trainings depending upon the job needs in order to assist to improve knowledge and technical skills as well as to increase work efficiency and quality. In addition, employees' learning and growth can be linked with the development goal of the company. Employees can also request for learning based on the needs of individual job duties and professional development.

2.1.3 Internal training

When new employees enter the company, they are guided by personnel and the experience is passed on. In addition, educational training on professional skills are also conducted on internal personnel periodically. According to the employee gender and type, the employee educational training status is disclosed in the following,

<According to Employee Gender>

12/31/2017

	Male	Female	Total
Total number of training hours received	1085.5	264.5	1350
Total number of employees (note)	243	51	294
Average hours of training received by each employee	4.5	5.2	9.7

2016/12/31

	Male	Female	Total
Total number of training hours received	2042.0	409	2451
Total number of employees (note)	90	16	106
Average hours of training received by each employee	22.7	25.6	48.3

<According to Employee Type>

12/31/2017

	Senior managerial officer	Intermediate management level	Professionals	Technicians	Total
Total number of training hours received	159.5	286	299.5	605	1350
Total number of employees (note)	36	44	51	163	294
Average hours of training received by each employee	4.4	6.5	5.9	3.7	4.6

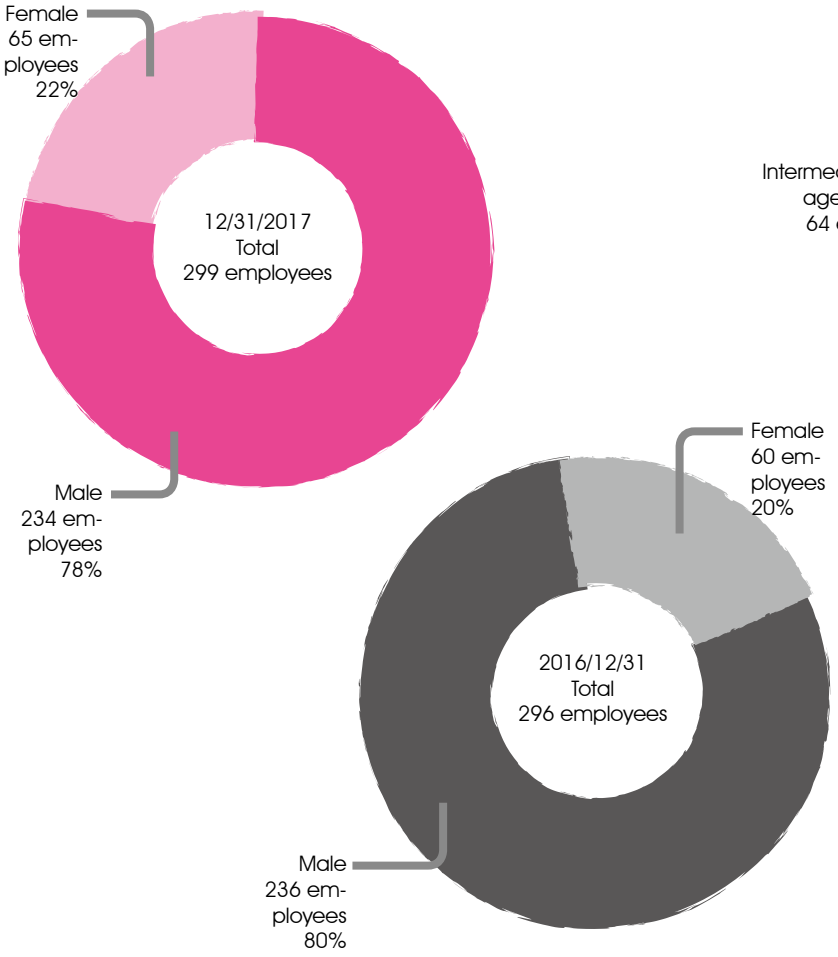
2016/12/31

	Senior managerial officer	Intermediate management level	Professionals	Technicians	Total
Total number of training hours received	148.5	253.5	734.5	1314.5	2451
Total number of employees (note)	3	9	27	67	106
Average hours of training received by each employee	49.5	28.2	27.2	19.6	23.1

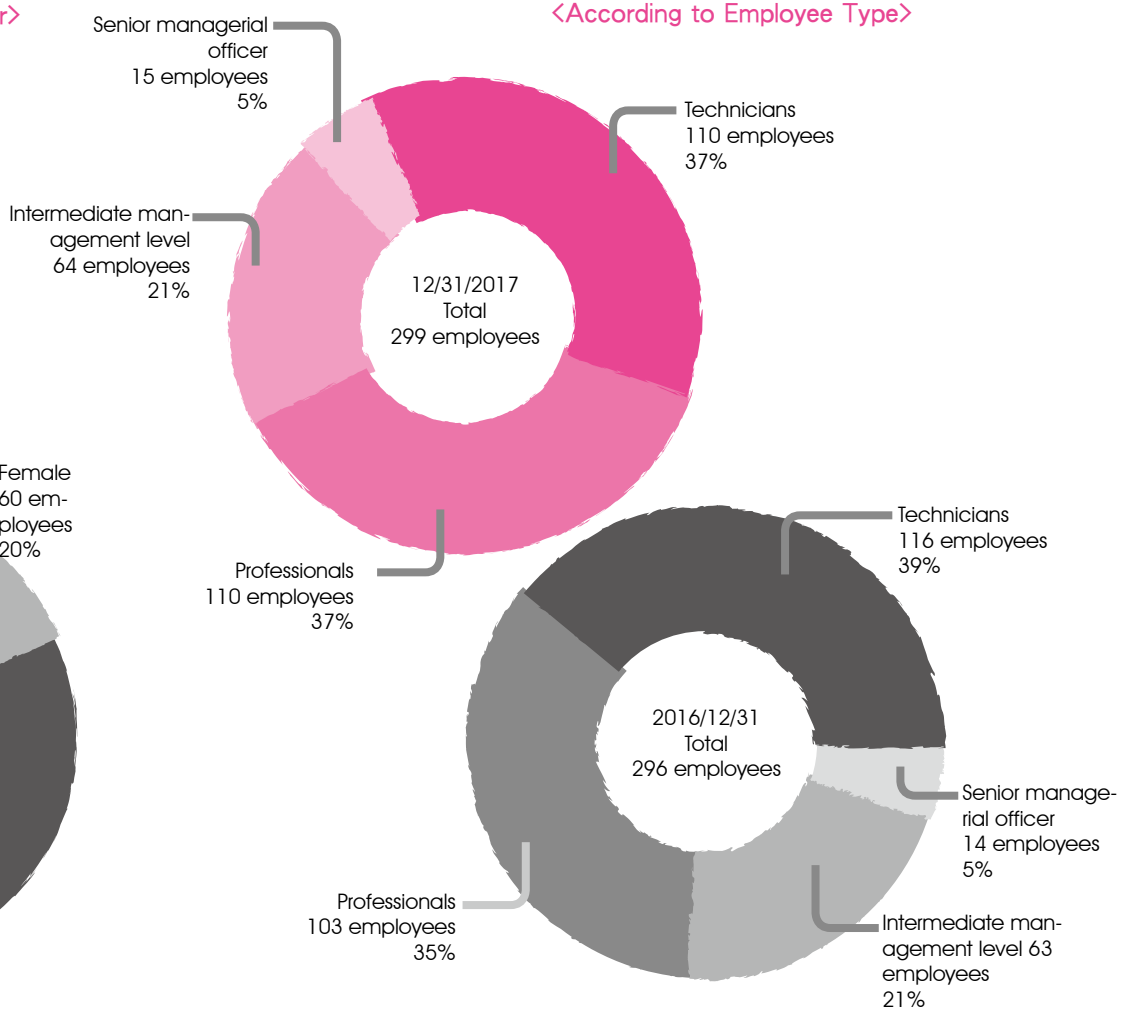
2.2 (Performance Management Regulations)

Each year, a performance evaluation is conducted on employees periodically in order to encourage employees to continue to improve the operating content, to enhance the on-the-job training in order to improve individual's professional skills and to further combine personal career planning with the company growth at the same time. Relevant performance evaluation status is as shown in the following:

<According to Employee Gender>



<According to Employee Type>



3. Healthy and Safe Occupational Environment

Employees' health is the greatest fortune of an enterprise! Regarding the occupational health promotion, the company provides complete health and safety program in order to increase the corporate sense of honor and responsibility, to establish corporate image and to implement corporate social responsibility. For employees, it is more than providing a safe and healthy working environment; in addition, it is able to improve the employee morale, to enhance health and to increase the work satisfaction in order to expand the benefit to families and communities, creating win-win situation.

The company provides gym and bathrooms in order to allow employees to improve physical strength during their free time. In addition, the company also provides general physical examinations to all of the employees once every three years, and the cost for such examination is borne by the company. As for safety, the company organizes on time labor safety, health and fire safety training once every half year. To monitor the office environment quality, we implement office area cleaning and maintenance according to the annual plan in order to perform environmental disinfection operation. We also periodically appoint professional institutions to perform the water quality testing on the drinking water of the drinking machines. In view of the above, the company provides a healthy, safe and sanitary environment to employees.






3.1(Occupational Safety and Health Management)

Although Ablerex has no official labor health and safety management committee, the company greatly values a safe and healthy work environment for employees. In addition to the periodic employee physical examination, we also require new employees to accept physical examinations during their initial entrance to the facility, and we also apply for casualty insurance and medical insurance for employees. In addition, the company also encourages employees to raise questions during the communication in labor-management conferences in order to timely understand the occupational safety and health related issues that employees may have.

At the workplace, personnel accesses and various tools and machines placement areas are clearly specified in order to prevent industrial safety accidents, such as collisions. In addition, fork lift machine and protective gear necessary for employees are provided. For example, safety shoes are provided in order to achieve preventive effects and to minimize the occurrence of industrial safety accidents Furthermore, the environmental issue integration management has also qualified the ISO 14001 certification.

In recent years, there have been some incidents of occupational injuries, and the company has enhanced the education, supervision and monitoring management measures each year in order to reduce the number of injuries and incidents. Nevertheless, there were still 5 injured persons in 2017. There are employees had traffic accidents during their way home after work, and such accidents are relatively serious. In the future, education on such operations will continue to be provided in order to improve the situation such that the goal of "zero occupational injuries" can be reached.

To achieve the goal of zero occupational injuries, in case of occurrence of occupational injury and accident, the safety and health personnel are able to be accompanied by the relevant units to perform cause analysis in order to jointly establish improvement measures and to report to relevant personnel to increase their awareness as well as to adopt corresponding measures. Furthermore, we also perform occupational injury and accident statistical analysis in order to increase the safety and health inspection content in light of preventing the recurrence of similar types of incidents.

In 2016 and 2017, there was one occupational injury incident due to an object falling and collapsing. In 2017, the incident was due to the malfunction of roller gate in the factory, and an employee was injured due to the falling cover from the gate during the repair of the malfunction after shutting down the power. For such incident, the company has established improvement solutions:

a. Enhance inspection of roller gate maintenance operations in order to prevent repeated occurrence of a similar type of malfunction.

b. Education on the reporting to the repair/utility personnel for handling during the occurrence of similar incidents in order to prevent personnel injury from occurring due to errors in non-professional judgment.

For the period of 2016~2017, the total number of occupational injuries, occupational injury frequency, occupational disease, ratio of number of days lost and absence rate and the number of deaths due to job duties according to the region and gender are as follows:

<Disability Injury Status of All Employees in 2016 and 2017>

Taiwan - Male

Period: [1/1/2017~12/31/2017]

Month	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	TOTAL (Male + Female)
Total number of working hours (Sum of working hours of all employees)	36288	34704	44344	35568	39040	43240	39144	42872	40304	35112	41536	39984	472136	601368
Number of injuries	0	0	1	0	1	0	0	1	0	0	1	1	5	5
Number of deaths	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of number of disability injuries (number of people)	0	0	1	0	1	0	0	1	0	0	1	1	5	5
Number of occupational disease (number of cases, not number of people)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of days lost (starting from the injury date)	0	0	33	0	30	0	0	1	0	0	30	3	97	97
Ratio of number of days lost (Number of days lost×1,000,000÷Total number of working hours)	0	0	744	0	768	0	0	23	0	0	722	75	205	205
Rate of injury	0	0	23	0	26	0	0	23	0	0	24	25	11	11
Rate of occurrence of occupational disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Taiwan- Female

Month	1	2	3	4	5	6	07	8	9	10	11	12	TOTAL
Total number of working hours (Sum of working hours of all employees)	9360	9648	12328	9360	10720	11592	10752	12144	11616	9880	10912	10920	129232
Number of injuries	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of number of disability injuries (number of people)	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of occupational disease (number of cases, not number of people)	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of days lost (starting from the injury date)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ratio of number of days lost (Number of days lost×1,000,000÷Total number of working hours)	0	0	0	0	0	0	0	0	0	0	0	0	0
Rate of injury	0	0	0	0	0	0	0	0	0	0	0	0	0
Rate of occurrence of occupational disease	0	0	0	0	0	0	0	0	0	0	0	0	0

Non-commute road traffic accident×1 case (person)+Commute road traffic accident×3 cases (persons)+Object falling and collapsing×1 case (person)=5 cases (persons)

Region 1-Male

Period: [2016/1/1～2016/12/31]

Month	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	TOTAL (Male + Female)
Total number of working hours (Sum of working hours of all employees)	37296	26760	41400	34200	38470	38808	37120	42504	33552	34848	42944	40992	448896	572096
Number of injuries	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Number of deaths	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of number of disability injuries (number of people)	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Number of occupational disease (number of cases, not number of people)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of days lost (starting from the injury date)	0	0	0	0	7	0	0	0	0	0	0	0	7	7
Ratio of number of days lost (Number of days lost×1,000,000÷Total number of working hours)	0	0	0	0	182	0	0	0	0	0	0	0	16	16
Rate of injury	0	0	0	0	26	0	0	0	0	0	0	0	2	2
Rate of occurrence of occupational disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Region 1-Female

Month	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Total number of working hours (Sum of working hours of all employees)	10752	7680	11776	9880	10584	10416	9920	11408	9216	9216	11264	11088	123200
Number of injuries	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of number of disability injuries (number of people)	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of occupational disease (number of cases, not number of people)	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of days lost (starting from the injury date)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ratio of number of days lost (Number of days lost×1,000,000÷Total number of working hours)	0	0	0	0	0	0	0	0	0	0	0	0	0
Rate of injury	0	0	0	0	0	0	0	0	0	0	0	0	0
Rate of occurrence of occupational disease	0	0	0	0	0	0	0	0	0	0	0	0	0

Object falling and collapsing×1 case (person)

<Absence Rate of All Employees in 2016 and 2017>

Type of leave	Working hours of all employees			
	Male (Taiwan)	Female (Taiwan)	Total	Total
Sick leave	2,397.5	975.0	3,372.5	3,372.5
Menstrual leave	0.0	24.0	24.0	24.0
Pregnancy leave	0.0	112.0	112.0	112.0
Occupational sickness leave	548.5	0.0	548.5	548.5
Total	2,946.0	1,111.0	4,057.0	4,057.0
Calculation of number of days of absence	368.3	138.9	507.1	507.1
Total of number of working days required (including absence days)	58,776.0	15,376.0	74,152.0	74,152.0
Rate of absence	1%	1%	1%	1%

3.2 (Educational Training)

New employees are required to participate in the occupational safety and health training. In addition, the fire drill and emergency countermeasure practice are performed annually. Furthermore, the labor safety personnel also periodically perform inspection on the safety of the workplace in order to use it as an important reference basis for continuous improvement of working environment safety.

3.3 (Analysis and Prevention of Occupational Injury Incidents)

To achieve the goal of zero occupational injuries, in case of occurrence of occupational injury and accident, the safety and health personnel are able to be accompanied by the relevant units to perform cause analysis in order to jointly establish improvement measures and to report to relevant personnel to increase their awareness as well as to adopt corresponding measures. Furthermore, we also perform occupational injury and accident statistical analysis in order to increase the safety and health inspection content in light of preventing the recurrence of similar types of incidents.

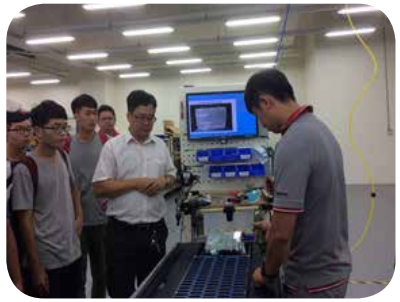
4. Social Participation

4.1(Industry and Academic Cooperation)

The company not only provides excellent products and services in light of seeking a greater energy quality worldwide but also actively participates in various social charity events. In recent years, through the concept of integrating the corporate core technologies and social charity events, Ablerex has actively participated in the environmental energy education and cultivation of green energy leading talents etc. with great human resources and financial investments. In addition to the great amount of R&D personnel and investment in research and development each year, in 2017, the company also invested an amount of NTD 1.42 million to support various industry-academic research projects in order to sponsor and entrust the National Kaohsiung University of Applied Sciences to conduct researches on cascading power converters and micro-grid application technologies as well as research on solar power energy system conversion technologies. Consequently, the research and development of the company product and the university academic practice can be promoted with mutual benefits. Furthermore, through such researches, the domestic and foreign industries can be driven to upgrade. Moreover, the company also provides monetary rewards for each individual project in order to promote the application of patents for the project outcome and to implement the technology achievements.

4.1(Social Care)

To cultivate smart grid talents for in the industry and to enhance the knowledge and education on smart grid, the Bureau of Energy, MOEA, entrusted the Industrial Technology Research Institute to organize the "Smart Grid Knowledge Education Seminar and Corporate Visit Activity" at the National Kaohsiung University of Applied Sciences in October 2016, and the senior management staff of Ablerex were invited to provide speeches on the energy saving, power generation and energy storage technologies and applications in order to allow students to have a greater understanding on the latest technologies related to smart grid industry. In the future, cross-field subject studies can also be planned with schools in order to assist students with interest to join the smart grid industry to start the development of core professional skills. In addition, at the tradeshow, the company also demonstrated the manufacturing process of the Active Power Filter, PV inverter, wind energy inverter and the storage system application characteristics in order to guide the students in the visit of various technologies.



Appendix

Appendix GRI Content Index Table

GRI Standards	Disclosing item	Corresponding chapter	Page No./URL
	GRI 101: Basics 2016 [No disclosure corresponding to GRI 101]		
	General Disclosures		
GRI 102: General Disclosures 2016	102-1 Name of organization	About Ablerex	5
	102-2 Activities, brands, products and services	About Ablerex	5
	102-3 Location of headquarters	About Ablerex	5
	102-4 Location of operations	About Ablerex	5
	102-5 Ownership and legal form	About Corporate Social Reasonability (CSR) Report	
	102-6 Markets served	Industry Supply Chain	10
	102-7 Scale of the organization	About Ablerex	5
	102-8 Information on employees and other workers	Employment status of employees	9
	102-9 Supply chain	Main product supply chain	13
	102-10 Significant changes to the organization and its supply chain	Main product supply chain	13
	102-11 Precautionary Principle or approach	Internal control system and risks management	33
	102-12 External initiatives	Presently, no external advocacy has been signed	
	102-13 Membership in associations	External association participation status	19
	102-14 Statements from senior decision-makers	Message from the Chairman	
	102-16 Values, principles, standards and norms of behavior	External association participation status	19
	102-18 Governance structure	Corporate Governance	26
	102-40 List of stakeholder groups	Stakeholder Communication	21
	102-41 Collective bargaining agreements	Public association not yet established	
	102-42 Identifying and selecting stakeholders	Stakeholder identification	21
	102-43 Approach to stakeholder engagement	Stakeholder Communication	21
	102-44 Key topics and concerns raised	Customer satisfaction survey results	49
	102-45 Entities included in the consolidated financial statements	About Corporate Social Reasonability (CSR) Report	
	102-46 Defining report content and topic Boundaries	Description of Material Topic Boundary	24
	102-47 List of material topics	Material Topic Sequential Item Table>	23
	102-48 Restatements of information	Not applicable	

GRI Standards	Disclosing item	Corresponding chapter	Page No./URL
GRI 102: General Disclosures 2016	102-49 Changes in reporting	Not applicable	
	102-50 Reporting period	About Corporate Social Reasonability (CSR) Report	
	102-51 Date of most recent report	About Corporate Social Reasonability (CSR) Report	
	102-52 Reporting cycle	About Corporate Social Reasonability (CSR) Report	
	102-53 Contact point for questions regarding the report	About Corporate Social Reasonability (CSR) Report	
	102-54 Claims of reporting in accordance with the GRI Standards	About Corporate Social Reasonability (CSR) Report	
	102-55 GRI content index	Appendix GRI Content Index Table	
	102-56 External guarantee/assurance	Voluntary disclosure - without guarantee/assurance	
Material Topics			
Economic performance			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Financial Performance:	30
	103-3 Evaluation of the management approach	Financial Performance:	30
GRI 201 Economic Performance 2016	201-1 Direct economic value generated and distributed	Financial Performance:	30
Social economic regulatory compliance			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Regulatory compliance	36
	103-3 Evaluation of the management approach	Regulatory compliance	36
GRI 419: Socioeconomic Compliance 2016	419-1 Non-compliance with laws and regulations in the social and economic areas	Internal control system and risks management	33
Customer health and safety			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Customer health and safety	46
	103-3 Evaluation of the management approach	Customer health and safety	46
GRI 416: Customer Health and Safety 2016	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	Product Design Legal Compliance Status - Product Compliance with Environmental Protection Laws	38

GRI Standards	Disclosing item	Corresponding chapter	Page No./URL
Marketing and labeling			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Marketing and Service	48
	103-3 Evaluation of the management approach	Marketing and Service	48
GRI 417: Marketing and Labeling 2016	417-2 Incidents of non-compliance concerning product and service information and labeling	Safety Certification, Product labeling	40, 47
Customer privacy			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Respect and protect customer privacy	48
	103-3 Evaluation of the management approach	Respect and protect customer privacy	48
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints regarding breaches of customer privacy and losses of customer data	Respect and protect customer privacy	48
Wastewater and wastes			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Wastewater and Waste Management	51
	103-3 Evaluation of the management approach	Wastewater and Waste Management	51
GRI 306: Effluents and Waste 2016	306-1 Water discharge by quality and destination	Wastewater and Waste Management	51
	306-2 Waste by type and disposal method	Wastewater and Waste Management	51
Compliance with environmental protection related laws			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Compliance with Environmental Protection Laws	52
	103-3 Evaluation of the management approach	Compliance with Environmental Protection Laws	52
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	Compliance with Environmental Protection Laws	52
Employment			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Employee Rights and Benefits	54
	103-3 Evaluation of the management approach	Employee Rights and Benefits	54
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees (excluding temporary or part-time employees)	Employee Rights and Benefits	54

GRI Standards	Disclosing item	Corresponding chapter	Page No./URL
Labor/management relations			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Workplace Human Rights Policy	57
	103-3 Evaluation of the management approach	Workplace Human Rights Policy	57
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Workplace Human Rights Policy	57
Occupational safety and health			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Description of Material Topic Boundary	24
	103-2 The management approach and its components	Healthy and Safe Occupational Environment	61
	103-3 Evaluation of the management approach	Healthy and Safe Occupational Environment	61
GRI 403: Occupational Safety and Health 2016	403-2 Hazards identification, risks assessment and incident investigations	Occupational Safety and Health Management	61


Ablerex
Experts in Power Conversion