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Executive Summary

A switchgear is a combination of devices designed to control, regulate, meter and protect electric generation, transmission and distribution equipment, and electric motor control systems. The global market for switchgears is anticipated to do well in the coming times as demand is likely to be driven by medium and high voltage types of switchgears. Revenues in the switchgears market are closely tied with the demand for transformers, therefore, any increase in demand for transformers will lead to a rise in demand for switchgears and vice versa.

The global gas insulated switchgear market is expected to show impressive growth in the future. The market for switchgears will continue to evolve globally, led mainly by escalating demand for renewable sources of energy, growth in construction and industrial sectors especially in developing countries, and government efforts to upgrade and modernize electricity transmission and distribution systems. Although environmental regulations offer scope for expansion, volatile oil prices, rising raw material prices, and restricted flow of investments in the electricity sector act as immediate stumbling blocks.

Rising investment in alternative sources of energy is expected to contribute to the growth of Medium Voltage and Low Voltage switchgears used for switching and general protection. Moreover, this application area will also trigger demand for miniature circuit breakers (MCB) and molded case circuit breaker (MCCB).

Key players reigning over the global switchgears marketplace include ABB Ltd, AREVA T&D, Eaton Corporation, General Electric Company, Mitsubishi Electric Corporation, Powell Industries Inc., Siemens AG, Schneider Electric SA, amongst others.

Against a backdrop of tough economic climate, corporate success will critically hinge upon the ability to research and develop new innovative products at competitive prices and validate new applications for existing products to distinguish themselves from that of competitors. Several technological developments such as arc-resistant technology and magnetic actuation have been undertaken by various original equipment manufacturers (OEMs) focusing on enhancing the reliability and efficiency of switchgear equipment. Growth in switchgears will also be sustained by government directives to replace older redundant systems to achieve operational safety, and security in industrial establishments.
In this industry scenario, Taiyou Research analyzes the Global Switchgear Industry in its latest research offering. The report, divided into seven chapters, analyzes the global switchgear market through in-depth analysis of the major regions as well as through three major segments of the market, that is, the high voltage switchgear market, the medium voltage switchgear market, and the low voltage switchgear market.

Chapter 1 of the report analyzes the global switchgear market, and it covers the following:

- An in-depth industry definition, defining not only the global switchgear market, but also high voltage switchgear, medium voltage switchgear, and low voltage switchgear.
- The market size and market profile of the global switchgear market.
- Factors impacting the global switchgear market such as the aging power transmission and distribution equipments in many countries, the increase in capital spending as well as the increase in electricity generation worldwide.
- Challenges facing the global switchgear market such as the global economic recession, the increase in the cost of raw materials for switchgears, the impact of price-based competition, and many other issues.

Chapter 2 of the report analyzes the Switchgear Market in Asia Pacific. The section covers the following:

- An analysis of the switchgear market in Asia Pacific through a market profile, factors impacting the market and challenges facing the industry. Impacts on the industry analyzed include factors such as T&D reform programs in many Asia Pacific countries, the replacement of aging infrastructure, and the important role China has to play in the industry. Issues facing the industry include factors such as macroeconomic issues, fierce price competition, and many others.

The Switchgear Market in Australia is analyzed through the following:

- An analysis of the market profile and market size, including a look at the industry costing patterns.
• An analysis of the Australian market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares.

• An analysis of the distribution channels through which switchgears in Australia are marketed.

The Switchgear Market in China is analyzed through the following:

• An analysis of the market profile and market size, including a look at the industry costing patterns and the investment by the Chinese Government into the country's power industry.

• An analysis of the Chinese market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares, and a look at the market trends.

• An analysis of the distribution channels through which switchgears in China are marketed.

The Switchgear Market in India is analyzed through the following:

• An analysis of the market profile and market size, including a look at the industry costing patterns.

• An analysis of the Indian market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares.

• An analysis of the distribution channels through which switchgears in India are marketed.

Chapter 3 of the report analyzes the Switchgear Market in North America. The section covers the following:

• An analysis of the switchgear market in North America through a market profile, factors impacting the market and challenges facing the industry. Impacts on the industry analyzed include factors such as the replacement of aging infrastructure, the expected growth in the economy in this region, and the growth in urban density. Issues facing the industry include factors such
as macroeconomic issues, the financial condition of utilities in the region, regulatory uncertainties, and many others.

The Switchgear Market in Canada is analyzed through the following:

- An analysis of the market profile and industry trends.
- An analysis of the Canadian market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares.
- An analysis of the distribution channels through which switchgears in Canada are marketed.

The Switchgear Market in the US is analyzed through the following:

- An analysis of the market statistics.
- An analysis of the US market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares, and a look at the market trends.
- An analysis of the distribution channels through which switchgears in the US are marketed.

Chapter 4 of the report analyzes the Switchgear Market in Europe. The section covers the following:

- An analysis of the switchgear Market in Europe through a market profile, factors impacting the market and challenges facing the industry. Impacts on the industry analyzed include factors such as the emergence of the Smart Grid in Europe, the growth in generation from renewable sources, and the concept of total grid automation. Issues facing the industry include factors such as macroeconomic issues, the high cost of raw materials, fierce market competition, and many others.

The Switchgear Market in Germany is analyzed through the following:

- An analysis of the market profile and industry trends.
• An analysis of the German market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares.

• An analysis of the distribution channels through which switchgears in Germany are marketed.

The Switchgear Market in Italy is analyzed through the following:

• An analysis of the market statistics.

• An analysis of the Italian market for high voltage switchgears, medium voltage switchgears, and low voltage switchgears. For all the three segments, we analyze a market profile, the major players and their market shares.

• An analysis of the distribution channels through which switchgears in Italy are marketed.

In Chapter 5 of the report, we include the industry forecast for the Global Switchgear Market. Outlook for each region covered in this report is included, that is, Switchgear Market in Asia Pacific, Europe, North America, and for the Rest of the World.

Chapter 6 of the report analyzes the major industry players through a company overview, and analysis of the business segments they operate through, a financial analysis and a SWOT analysis. We analyze the leading 20 players in the industry including ABB, Alstom, AREVA, Siemens, Schneider Electric, GE, and many others.

Chapter 7, the conclusion of the report, includes a glossary of terms, major abbreviations used the report are explained, and a research methodology.
Chapter 1: Global Switchgear Market
1. Industry Definition

Definition

The global switchgear market is categorized and segmented by the main product groups, as defined by the industry. This report considers high, medium, and low voltage switchgear, both together and separately, by the constituent product categories of each sector. Switchgear is a switching/interrupting device used in connection with generation, transmission, distribution, and conversion of electric power for controlling, metering, and protecting devices.

Important components of switchgear are:

- "Switching and interrupting devices" used to turn the power on or off
- "Controlling devices" check and/or regulate the flow of power
- "Metering devices" used to measure the flow of electric power
- "Protecting devices" used to protect power service from interruption, and to prevent or limit damage to equipment

High Voltage (HV) Switchgear

Globally, voltage above 40.5 KV is labeled as high voltage. The various system voltages used in the HV switchgear categories are 72.5 KV/126 KV/252 KV/363 KV/550 KV and above. HV switchgears are mainly used by utilities and large industries to control the electric power supplied to various equipment, such as transformers, motors, and capacitors or to other distribution feeders. Within the market for high voltage (HV) switchgear, we have assessed the following three segments:

- Gas insulated switchgear (GIS)
- Air insulated switchgear (AIS)
- Sulfur hexafluoride circuit breakers (SF6 CBs)
Medium Voltage (MV) Switchgear

Globally, voltage ranging from 3.6 KV to 40.5 KV is labeled as MV. The various system voltages used in the MV switchgear categories are 3.6 KV/7.2 KV/12 KV/24 KV/40.5 KV. Within the market for medium voltage (MV) switchgear assemblies, we have assessed the following five segments:

- Indoor GIS
- Indoor Non-GIS
- Outdoor switchgear closed-kiosk type
- Outdoor switchgear open type (without any enclosures)
- Ring main units (RMUs)
2. Global Switchgear Market

Market Profile

In spite of being a mature market, revenue growth is expected to increase in the world switchgear market during the forecast period, with a CAGR of [X]. The market is expected to reach a maximum size of [Y] in 2020. From 2005 to 2007, the world switchgear market experienced a healthy average annual growth rate of [Z]. However, the economic slowdown of 2008 had a debilitating effect on the growth momentum of the market. The manufacturers are likely to find it difficult to regain the momentum until 2011 due to a host of factors, such as decrease in demand and lack of availability of liquidity and credit. This would have a direct impact on the companies’ expansion, modernization, and maintenance programs.

Nevertheless, transmission and distribution network upgrades and replacement of aging switchgears is expected to boost growth in the market over the medium and long terms of the forecast period. As a mature market, world switchgear market is highly competitive and dominated by the large multinational companies. Due to the matured nature of switchgear products, the level of innovation in the switchgear market is low.

On the technology front, switchgears offer less scope for innovation. Most of what is happening in the research and development in switchgear industry focuses on improvements rather than outright innovation. Much of these are limited to the use of various materials, high grade steels and monitoring capabilities. However, most of the top companies in the market are seen to invest sizeable amounts in research and development activities denoting the commitment in the industry. New regulations on energy efficiency and safety, act as additional incentives for the manufacturers to improve the performance of their switchgears.

Switchgear pricing plays a key role in the determination of the total market in terms of revenues. The market growth in revenues for the different switchgear types discussed in this research such as high, medium and low switchgears market, takes into account the price increase of switchgear equipment since 2000. This has contributed to the increase in the size of the market, even though volumes of switchgears have not shown similar growth. Since 2008, there has been a decrease in the price of raw materials such as copper, steel, and aluminium. Although this is good news for the market, the reduction in raw material costs is not expected to bring down the costs of switchgears in the short term.
3. Factors Impacting the Global Switchgear Market

Table 1: Drivers and their Impact on the Global Switchgear Market

<table>
<thead>
<tr>
<th>Driver</th>
<th>1 - 2 Years</th>
<th>3 - 7 Years</th>
<th>8 - 9 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aging equipment provides opportunity for replacement market</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Increased electricity generation and upgrading of transmission and</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>distribution infrastructure promotes demand for switchgears</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital spending and investments in industries expected to boost</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>growth of the market</td>
<td></td>
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</tr>
</tbody>
</table>

Source: Misc.

Ageing Equipments in Many Countries

The installed base of switchgears in many countries either has exceeded or is nearing their recommended operational life. Such conditions provide good prospects for the replacement market. There are possibilities for switchgears to explode if at all they fail, causing potential damages to other equipment, facility and environment. This may involve liabilities such as compensation, environmental clean-ups, and legal action. Presently, the nature of the load has changed to a large extent, mainly due to growth of electronic equipment that is being used. Therefore, in order to ensure high power quality, improved efficiency, and to meet the load demands, the existing aged switchgears should be replaced with new ones.

A catastrophic failure of switchgears will end up in a disastrous situation for the utility. The low investment in recent years in transmission and distribution is expected to be short lived, as there is a growing concern among power generating companies and utilities regarding switchgear failures. The impact of the driver is expected to be high in the short and medium term and medium in the long term of the forecast period.
Increase in Electricity Generation

The world electricity installed capacity is expected to grow by a CAGR of **XX**% over the forecast period. In regions such as Asia Pacific, the growth rate is expected to be more than **XX**%. There has been a trend of increasing relocation of industrial activity from developed economies to emerging economies such as China, India, Eastern Europe and Latin America.

Such a trend arises because of two reasons. Firstly, the low-cost advantage that the companies can derive out of shifting some of their operations in these countries. Secondly, there has been a growing domestic demand in these emerging economies for increased industrial and commercial production. To meet the growing demand for more power, countries will require increased investments in electricity infrastructure.

Such growth in the installed capacity would require additional infrastructure investments in switchgears. Additionally, the upgradation of transmission and distribution infrastructure to meet the federal and state level energy efficiency mandate is likely to boost the demand for switchgears. The impact of this driver is expected to be medium in the short term and high in the medium and long term of the forecast period.
Chapter 2: Switchgear Market in Asia Pacific
1. Switchgear Market in Asia Pacific

Market Profile

The total switchgear market in Asia Pacific generated $17,231.3m in 2010, growing 14.1% when compared to 2009.

The total switchgear market in Asia Pacific is poised to grow due to strong drivers such as economic growth, electricity consumption growth, and government interests in developing and renovating the power infrastructure. These capacity addition estimates include new infrastructure developments, replacement of systems due to aging, and capacity augmentation across the utilities and industrial end-user segments.

Since new investments on power infrastructure developments are planned in 2010-2015, growth estimates are likely to be higher during this period when compared to 2016-2020. The foundation to the rapid growth in the Asia Pacific switchgear market is the rapid growth of the Chinese power industry. The correlation between power growth and switchgear sales is strong. Since 2001, with the sustained and rapid economic development, electricity consumption growth rate has risen from 11.6% in 2002 to 15% in 2003.
11. Schneider Electric SA

Company Overview

Schneider Electric SA is a France-based company that specializes in electricity distribution, automation management and produces installation components for energy management. The Company has five divisions organized by business: Power, which includes medium and low voltage, installation systems and control, renewable energies and includes customer segments in Utilities, Marine, residential and oil & gas sector; industry, which includes automation & control which includes water treatment and mining, minerals & metals industries; IT, which covers critical power & cooling services, whose customers are data centers and financial services; Buildings, which includes building automation and security, whose customers are hotels, hospitals, office and retail buildings and Custom Sensors & Technologies division whose are customers in the automotive, aeronautic and manufacturing industries. In August 2011, the Company acquired Telvent GIT SA.

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Business Segments

Schneider Electric SA (Schneider Electric) is an energy management company with operations in more than 100 countries globally. Through its range of integrated solutions, the company makes energy safer and more reliable, efficient and productive for residential, buildings, data centers and networks, industry and energy and infrastructure markets. Its principal business units comprise automation and control, building automation and security, customized sensors, power, renewable energies, critical power and cooling, services and projects, and installation systems and control.
Schneider Electric operates through six reportable business segments namely, Power, Industry, IT, Buildings, Customized Sensors & Technologies and Areva Distribution. The company’s Power segment’s range of products includes medium and low voltage, installation systems and control, and renewable energies. The products are offered in the areas of utilities, marine, residential and oil and gas sector. The segment’s installation systems and control division offers a range of products, including building management system, sensors and RFID system, switches, sockets and boxes and universal enclosures. Renewable energies division’s products portfolio includes, circuit breakers and switches, power monitors, solar backup and off-grid systems, solar grid tie systems and surge arresters. During the fiscal year 2010, the segment reported revenue of €10,318m, representing 52.7% of the company’s total revenues.

Schneider Electric, through its Industry segment, offers automation and control devices. The segment offers a range of products, including boxes, cabling and interfaces, building management systems, bus, networks and communication, circuit breakers and switches, fuse switches, Human-Machine Interface (HMI), and motion and drives. It also provides motor starters, interface, measurement and control relays, Process Automation and Controls (PAC), Programmable Logic Controller (PLC) and other controllers, panel-boards and switchboards, power supplies and transformers.

Further, the company offers protection relays and contactors, pushbuttons, switches and pilot lights, control stations and joysticks, sensors and RFID systems, signaling units, software and universal enclosures. Its products are offered in the area of water treatment and mining, minerals and metals. During the fiscal year 2010, the segment reported revenue of €3,551m, representing 18.1% of the company’s total revenues.

The company’s IT segment offers critical power and cooling services. IT segment’s range of products includes building InfraStruXure, Uninterruptible Power Supply (UPS), power distribution, racks and accessories, cooling, security and environmental monitoring, surge protection and power conditioning, management software and audio-video solutions. The segment’s products are offered in the areas of data centers and financial services. During fiscal year 2010, the segment reported revenues of €2,646m, representing 13.5% of the company’s total revenues.
The company, through its Buildings segment, offers building automation and security systems. The company offers HVAC, access control, video security management, lighting control and energy efficiency solutions. The company’s building efficiency solutions use less energy, tighten security, speed response times and maintain optimal environment for occupants and save about 36% on operating costs over time. The segment’s products are offered in the areas of hotels, hospitals, office buildings and retail buildings. During the fiscal year 2010, this segment reported revenue of €1,402m, representing 7.2% of the company’s total revenues.

The Custom Sensors and Technologies segment, a technological business, focuses mainly on customers in the automotive, aeronautical and manufacturing industries. During fiscal year 2010, this segment has reported revenue of €433m, representing 2.2% of the company’s total revenues.

Following the acquisition of Areva Distribution in July 2010, its results were integrated as a separate segment during the fiscal year. It would be merged with the existing medium voltage business in 2011 to form a new business of the company, named, Energy. During the fiscal year 2010, the segment reported revenue of €1,230m, contributing 6.9% of the company’s total revenues.

Geographically, the company operates its business in four segments, namely, Western Europe, Asia-Pacific, North America and Rest of the World. During fiscal year 2010, Western Europe contributed 33.5% of the company’s total revenue, followed by 24% from North America, 24.5% from Asia-Pacific and 18% from Rest of the World. The company’s products and services are offered to various markets such as energy and infrastructure industry; data centers and networks; buildings; and residential.

In the energy and infrastructure market, the company provides safe, reliable power supply and helps in controlling operating costs. The company’s solutions related to its products and services cover areas such as process control and supervision; power supply and distribution; energy monitoring and control; and utility management (lighting, ventilation, elevators, and intruder alert). It also includes smart electrical networks management; single site or multi-site production data management; and critical power.

To the industrial markets, the company offers products and service solutions that address process automation, machine control and monitoring, power supply and distribution, utility management, energy monitoring and control, single site or multi-site production data management.
In data centers and networks markets, it provides a range of solutions, which include electrical distribution, energy monitoring and control, architecture design and installation audits, UPS systems, electrical switchgear, generators and cooling systems. It also provides online supervision and analysis, training and maintenance, and security solutions. The products and services solutions include power supply and distribution, utility management, data exchange (voice-data-image and radio technologies), multi-site remote management, energy monitoring and control and critical power security. These are offered to the Buildings market.

In the Residential market segment, the company’s solutions related to its products and services address areas such as power supply and distribution, home automation, voice-data-image networks, critical power, and security. Schneider Electric is engaged in research and development (R&D) activity to develop innovative products. It is pursuing research on possible changes in the plastics used in its electrical products as a part of its Green Plastics program.

Additionally, the company is in R&D partnership with prestigious institutions including Shanghai Jiao Tong University in China; the MIT Media Lab and Georgia Tech in the United States; Ecole des Mines ParisTech, Institut National Polytechnique de Grenoble and Universite Joseph Fourier in France; and Monterrey Institute of Technology in Mexico. In June 2011, the company entered into an agreement to acquire Leader Harvest Power Technologies Holdings Limited.

In April 2011, Schneider Electric acquired Lee Technologies, a US-based leading services provider for data centers. In March 2011, the company acquired assets of DigiLINK, a leading structured cabling systems provider in India, and Summit Energy, strengthening its position in energy management services. In January 2011, Schneider Electric acquired APW President Systems Ltd., reinforcing its position in India for data center racks and enclosures. In December 2010, Schneider Electric SA acquired two French-based software companies, Vizelia and D5X. Further, the company announced its plans to acquire majority stake in Luminous Power Technologies. In 2011, the company has plans to acquire majority stake in Luminous Power Technologies and Energy Conservation Systems.

**Financial Analysis**

For the six months ended 30 June 2011, Schneider Electric SA's total revenue increased 21% to EUR10.34B. Net income for the period increased 9% to EUR802M. Total revenue reflects increased demand for the Company’s products and services in all business and geographic segments. Net income was partially offset by deteriorated both gross and operating margins due to the higher selling and general expenses.
SWOT Analysis

Schneider Electric is an energy management company with operations in more than 100 countries. It has presence across multiple market segments including energy and infrastructure, industrial processes, building automation, data centers/networks, and residential applications. The company’s diversified business operations and strong business performance are its major strengths, even as pending litigations remain an area of concern. Going forward, the company’s exposure to current economic slowdown and increasing competition may impact its performance. However, the company’s strategic alliances and rising demand for electricity could present new growth opportunities to the company.

Strengths

Strong Research and Development: Strong research and development (R&D) activities help in developing exceptional and competitive products. As of December 31, 2010, around 8,600 employees were directly involved in R&D or technical engineering in 25 countries and at more than 70 sites, representing growth of almost 15%. Schneider Electric has internationalized its R&D activities by starting research centers in China and India. The company’s expertise enables it to make the most of its innovations to meet customers’ current and future needs. Schneider Electric introduced a Boost Patents program to encourage the filing of patents in technology. In 2010, Schneider Electric filed for 386 patents, an increase of almost 20% over 2009, moreover, the number of patents filed doubled in the space of four years.

In 2009, the company launched a group-wide R&D program, named, EcoStruxure. The program aims at combining the company’s electrical distribution, critical power and cooling services, automation and industrial and building control systems with solutions encompassing complete energy management. The research phase of the program completed in 2010 and it entered its development phase. The company reported R&D cost of €450m in 2010, as compared to €403m in 2009, representing an increase of 11.7%. The company’s focus on research and development activities helps it improve its product innovation and provides a source of future revenues.
Leading Market Position: Schneider Electric is a global specialist in energy management with operations in more than 100 countries. It offers integrated solutions to make energy safe, reliable, efficient, productive and green across multiple market segments. The company holds a leadership positions in energy and infrastructure, industrial processes, building automation, data centers and networks and oil and gas, as well as a broad presence in residential applications. The company has more than 200 production sites and 140 distribution centers worldwide. The company sells its products under various brand names including APC, Clipsal, Feller, LK, Merlin Gerin, Merten, Pelco, TAC, Telemecanique and Square D. In the power business, the company held no. 1 position in low voltage distribution and no. 2 position in installation systems and control. In the energy business, Schneider Electric held no.1 position in the medium voltage market, and in the IT business, it was no. 1 worldwide in critical power and cooling services. The company was no. 4 worldwide in building automation and video security systems in its IT business. The leading market position of the company enables to expand its market share and foster revenue growth.

Diversified Operations: The company’s operations are well diversified, both in terms of businesses and geographies. Schneider Electric offers a wide array of products through its broad business portfolio with over 120 brands and operations spanning manufacturing and selling products, solutions and services for electric distribution, and automation and control. It develops products, equipment and systems covering all phases of transmission and electrical distribution. Schneider Electric is engaged in offering a range of products in the area of detection, machine safety and mounting systems, as well as wiring devices, cable management systems and voice data image. In addition, the company is engaged in providing integrated solutions for building management and energy solutions; as well as Restriction of Hazardous Substances (RoHS) Compliance program. Schneider Electric is engaged in the elimination of banned substances in electric products.
It serves various markets, such as energy and infrastructure, industry, data centers and networks, buildings and residential. The operations of the company are broadly classified under five segments, namely, Power, Industry, IT, Buildings and Customized Sensors & Technologies (CST). Following the acquisition of Areva’s Distribution in June 2010, it reported its results as a separate segment. During fiscal year 2010, the company generated 52.7% of its revenues from the Power segment, followed by 18.1% from Industry, 13.5% from IT, 7.2% from Building, 2.2% from CST and 6.3% from Areva. The company’s operations span four regions, namely, Western Europe, North America, Asia-Pacific and Rest of the World. During fiscal year 2010, Western Europe contributed 33.5% of the company’s total revenue, followed by 24% from North America, 24.5% from Asia-Pacific and 18% from Rest of the World. The diversified operations provide new avenues of growth to the company besides limiting the risks associated with a particular market.

Weaknesses

Legal Proceedings: The company has been subject to various claims, administrative notices and legal proceedings concerning issues such as contractual demands, counterfeiting, bodily harm and work contracts. On May 21, 2010, EDF Energy UK launched a claim for damages of €15 million at the High Court in London with regard to an alleged agreement concerning gas insulated switchgears. In 2007, the European Commission and the competition authorities in New Zealand filed legal proceedings against Schneider Electric. The company was one of the 2,000 companies based all over the world that were mentioned in the Volcker Oil for Food report published by the UN in October 2005. According to the investigation by the French judicial system in 2010 Schneider Electric entered into agreements with Iraqi government bodies between 2000 and 2004, under which it made surcharge payments of around $450,000 to the Iraqi government, violating the provisions of the embargo in force at that time. Such legal proceedings could impose fines and penalties increasing Schneider Electric’s operating costs and eventually having a negative impact over its net earnings and reputation.
Opportunities

Rising Demand for Electricity: The demand for electricity is growing on a year-on-year basis, which will open new growth opportunities to the company. As per Energy Information Administration, the global electricity demand is expected to increase by 26% from 2007 to 2030, with significant 38% increase in commercial sector and 20% in residential sector. As per the forecast, the world’s net electricity demand is expected to increase from 18.0 trillion kilowatt-hours (kWh) in 2006 to 23.2 trillion kWh by 2015 and 31.8 trillion kWh by 2030. Non-OECD countries are projected to account for 58% of world electricity use in 2030. Over the next 25 years, the world will become increasingly dependent on electricity to meet its energy needs, and electricity is expected to remain the fastest-growing form of end-use energy worldwide through 2030. The company is well positioned to capitalize on this rising demand for electricity through its widespread network as well as leading position in electrical distribution.

Growing Smart Grid Market in China: China is expected to be positioned as a global leader in smart grid development and implementation. China is the No. 2 consumer of electricity after the US and used approximately 3.4 trillion kilowatt-hours in 2008 and its energy needs are expected to double in 10 years. One of the leading power distribution company, State Grid Corp. in China, declared to build a smart grid by 2020, initiating a monumental smart grid project, estimated to spend more than USD 10 billion a year through 2020 to build a modern grid. In the course, General Electric partnered with the City of Yangzhou, to build a smart grid “demonstration center” in the city of four million populations. Moreover, IBM realigned its operations in China by moving its Energy & Utilities Sales personals from Texas to Beijing. It also expects to generate a minimum of USD 400 million in smart grid revenues in China over the next four years of period.
**Strategic Acquisitions:** Schneider Electric emerged as one of the leading players in energy management space with its strategic acquisitions. During 2002-2010, the company doubled in size through organic growth and by making nearly 25 acquisitions. In April 2011, Schneider Electric acquired Lee Technologies, a US-based leading services provider for data centers. In March 2011, the company acquired assets of DIGILINK, a leading structured cabling systems provider in India, and Summit Energy, strengthening its position in energy management services. In January 2011, Schneider Electric acquired APW President Systems Ltd., reinforcing its position in India for data center racks and enclosures. The most significant acquisition of 2010 was Areva Distribution. The acquisition builds Schneider Electric as a global leader in the medium voltage segment. Areva Distribution was integrated in the group since June 7, 2010 and it would be merged with the existing medium voltage business in 2011 to form the fifth business of the company, named, Energy. These acquisitions could help the company to strengthen its position in the market and could also allow the company to gain better revenues by expanding its product portfolio.

**Scope for Smarter Grids Technology:** Schneider Electric launched its EcoStruxure solution which unites its power, data centers, process and machines, building control, and physical security to enable intelligent energy management solutions for customers seeking to optimize energy efficiency across their businesses. In addition, the HOMES (Homes and buildings for Optimized Management of Energy and Services) which is financed by France’s Industrial Innovation Agency and led by Schneider Electric in cooperation with 13 partners, has made number of achievements. Schneider Electric will see numerous opportunities arise in energy efficiency, systems for renewable energies, electric vehicles, demand response (DR), and carbon management services. Additionally, the company could benefit from the emphasis by governments worldwide on developing smarter grids to save energy, reduce cost and increase reliability. The European Union initiated European Technology Platform for the development of smart grid technologies based on the SmartGrids Technology Platform. The platform is expected to establish a two-way flow of information between suppliers and users. According to the American Recovery and Reinvestment Act of 2009, the US government provides a stimulus package of $32 billion for improving the country’s transmission grid of which $4.5 billion is directed at smart grid programs and grants for utilities and their customers. The funding would help the upgrade of meters and two-way communication for cutting peak usage and the management of power loads.
Threats

Security Vulnerabilities – Smart Grid: Smart Grid, an integrated electric network, incorporates advanced digital functions into the electrical infrastructure to enhance reliability, efficiency, flexibility, and security. However, the Smart Grid’s crucial function is to identify and respond to the disruptions caused by sabotage. Its security vulnerabilities exist on three main fronts – physical, cyber, and open-source information. On the physical security front, there are at least four layers that must complement each other in the Smart Grid: environmental design; mechanical and electronic access control; intrusion detection and video monitoring. The Electric Power Research Institute (EPRI) and a number of US utilities are discussing the possibility of monitoring transmission lines by satellite. Currently, this security measure is not practical because satellites with high-resolution imagery do not pass overhead often enough to pick up sabotage attempts, and those satellites passing by more frequently lack the necessary imaging capability. On the cyber security front, the Smart Grid’s digital communications could make protecting the power grid from a cyber-attack a far more complicated mission – extra nodes on a network can become new openings for intruders. In the world of open-source information, the growing ability of terrorists to readily collect intelligence and identify infrastructural weak spots makes electrical grids more susceptible to sabotage. For a Smart Grid to be successfully deployed, physical security and cyber security must succeed together; otherwise, both will fail. Security issue is one of the major threats concerning Smart Grids.

Uncertain Market and Economic Conditions: The global economic slowdown and vague recovery scenario are likely to create challenges for the company over the next few years. Though economic recovery continued during the first half of 2010, the global economy was affected by the turmoil in sovereign debt markets during the second quarter of 2010. The world economy expanded at an annual rate of approximately 5.25% during the first half of 2010 and is expected to grow 4.2% in 2011. However, the Euro region is expected to grow at 1.5% and the US is expected to grow at 2.3% in 2011. In early 2010, fears of a sovereign debt crisis developed concerns for some European countries, including Portugal, Ireland, Italy, Greece and Spain. In November 2010, the IMF warned about a possible full blown sovereign debt crisis in rich nations. The continuing uncertainty over economic recovery and the sovereign debt crises could adversely affect Schneider Electric’s earnings, and could continue to exert pressure on its equity returns.
Highly Competitive Markets: The industrial goods and equipment industry is highly competitive, which may impact the sales volume of the company. The company competes on factors such as price, quality, service, and product innovation. The company’s key competitors include Siemens AG, and ABB in low and medium voltage segment; Legrand and Panasonic in installation systems and control; Emerson and Eaton in critical power and cooling services; Siemens, Rockwell and Mitsubishi in industrial automation and control; Honeywell, Siemens, JCI in building automation and security; and SMA and Fronius in renewable space. It also competes with Chint and Legend in low voltage products, and in the areas of energy efficiency in buildings and data center, the company competes with IBM and HP. Additional factors affecting competition include short-term profit objectives, short-term market share objectives, exchange rate fluctuations, technology, product support and distribution strength. The competitors may reduce their costs or introduce innovative products, which could harm company’s sales, profit, and market share.
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