

Taking The Switch  
around the world

**Annual review 2010**

**\_03**

Taking The Switch around the world

**\_04**

Chairman's greeting

**\_06**

CEO's review

**\_08**

CFO's financial review

**\_10**

Wind power business report

**\_12**

Solar power business report

**\_14**

The Design Switch

**\_16**

The Production Switch

**\_18**

The Proactive Switch

**\_20**

Environmental and social responsibility

**\_22**

The Switch people

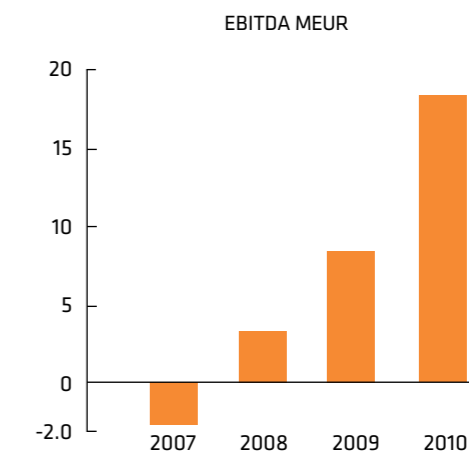
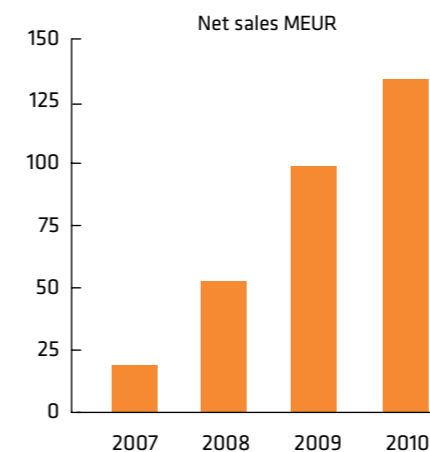
## Taking The Switch around the world

We have all heard tales of the unlikely hero that takes on the whole world. Perhaps one of the most famous is Phileas Fogg in the Jules Verne story, *Around the World in 80 Days*. It is difficult to find a story more compelling and gripping than that of the underdog achieving extraordinary results in a short period of time against all odds.

The Switch, much like Phileas Fogg, set out on a perilous journey towards success in what could be considered a short while ago in the business world. The journey that began in 2006 has taken us, and especially our technology, to many exotic and extreme locations around the world. Despite of all the risks and the turbulent economic climate, The Switch stuck to the plan and stayed on course. We can now see that the route we chose and decisions we made along the way have been the right ones.

While we are truly happy to be where we are today, our sights are set once again towards the future.

—“Our chosen path has taken us to many extreme places around the world.”




### Highlights 2010

- Net sales grew 36% to EUR 134.6 million with good profitability
- Installed wind power capacity now close to 5 GW
- New products for wind power, solar power and other New Energy applications
- New sales offices in Denmark, India and Korea
- Conversion to International Financial Reporting Standards (IFRS)

### Outlook 2011 and beyond

- Continued emphasis on growing together with our partners
- Global market shift to permanent magnet generators and full-power converters
- Internal focus on product quality, reliability and competitiveness
- Building up a platform to get closer to our customers
- Shift from 1 - 2 MW turbines into multi-megawatt turbines of 3 - 7 MW
- Utilizing both tailor-made solutions and customer-specific designs to reach a wide product range



— “We can see that our business strategy and technology choices have been correct.”

## Chairman's greeting: A journey with determination

When we began this journey, we mapped out our course knowing well that it would not be smooth sailing all the way. We stayed true to our plan. And as we stand here today, we can see that the decisions we made regarding business strategy and especially our technology choice were the right ones. At the time when double-fed induction generators were the industry norm, we decided to focus on technology we expected to go mainstream in the future. We now know that one of the cornerstones of our success in the New Energy industry has been the decision to concentrate on permanent magnet generators (PMG) and full-power converters (FPC) for wind power generation. Today, The Switch is the market leader in FPCs. Despite the unpredictable and volatile economic climate, The Switch has reached and exceeded the original goals we set in 2006.

We may have started off in remote Finland, but through rapid growth, determination and hard work, we have become an international success. We strive to be where our customers are. So it is not surprising to know that The Switch products are all around the globe, from the heart of urban New York City to rural and remote locations in China via the stormy shores of Norway.

As we look to the future, we see The Switch moving on a path of continuous growth. Energy is a rapidly expanding industry and wind power as a renewable source is still relatively untapped. We see potential in developing network models and a shift toward the demand for local input in numerous markets. This means that the generators and converters we engineer will be manufactured by independent specialists. As we head towards the next generation of wind turbines, The Switch is in a strong position.

**Veijo Karppinen**  
Chairman of the Board



“In addition to concentrating on the world’s two largest wind energy markets, China and the US, we will continue to work towards securing our position in Europe.”

## CEO's review: Growing in our field

While the global economy has been slow to show signs of recovery, we have been able to grow. The Switch has placed considerable efforts on penetrating the Chinese market, and the company's growth mirrors the positive development in China, the largest global market for wind energy with a share of approximately 35%.

New markets we entered during 2010 include Denmark, India and Korea. All three exhibit great potential and have governments that actively support sustainable energy solutions. In addition to focusing on these markets, we will continue to work during 2011 towards securing our position in Europe and the two largest wind energy markets: China and the US.

As a result of our sound business strategy and an investor base that is able to support development, our net sales grew by 36% to EUR 134.6 million and the road ahead looks positive.

Our forward-thinking strategy means that we provide our customers with drive train packages featuring PMGs and FPCs for maximizing the energy yield from wind turbines and inverters for solar energy. The market for both PMGs and FPCs is predicted to grow over the next three years. There are strong signals that a majority of new turbines will be adopting PMG-based technology. We are preparing our solar inverters for the next big wave in utility-grade applications. The key to our future success will be to increase volume as well as maintain and develop customer service.

We have taken on the best possible people to facilitate the changing needs of our customers. In the past year, we hired over 80 new persons for various positions to strengthen everything from management to technical expertise.

During 2011, we will see eight new turbine models with The Switch drive train components inside. These turbines represent the latest development trends, bigger powers, and medium-speed and direct-driven generators. In total, there are now 20 turbine models in the market powered by The Switch modern multi-megawatt drive trains with PMGs and FPCs. Our Model Factory concept has proven itself in practice, and it will play an important role in the future to guarantee increased production capacity and reliable delivery times.

### Strategic highlights

- Continued focus on China with 35% of global market share
- Net sales grew 36% during 2010 to EUR 134.6 million
- Development of several drive trains with over 3 MW capacity has been initiated

**Jukka-Pekka Mäkinen**  
President and CEO



— “Our net sales grew by 36% and operational cash flow remained positive.”

## CFO's financial review: Balance through discipline

Financially, The Switch is in a good position. With net sales of EUR 134.6 million in 2010, the company's growth has exceeded our own expectations and profitability is good.

Despite the volatile global investment climate, our performance remained positive and our operating profit increased to EUR 16.6 million. This is reflected in our cash flow, and our balance sheet is strong. We expect our profitable growth to continue.

The Switch business model, with the Model Factory concept at its heart, is not capital intensive. This special production concept allows us to manufacture large volumes through our partner network. In turn, this enables us to respond quickly and effectively to our customers without the need to invest heavily in production facilities and personnel.

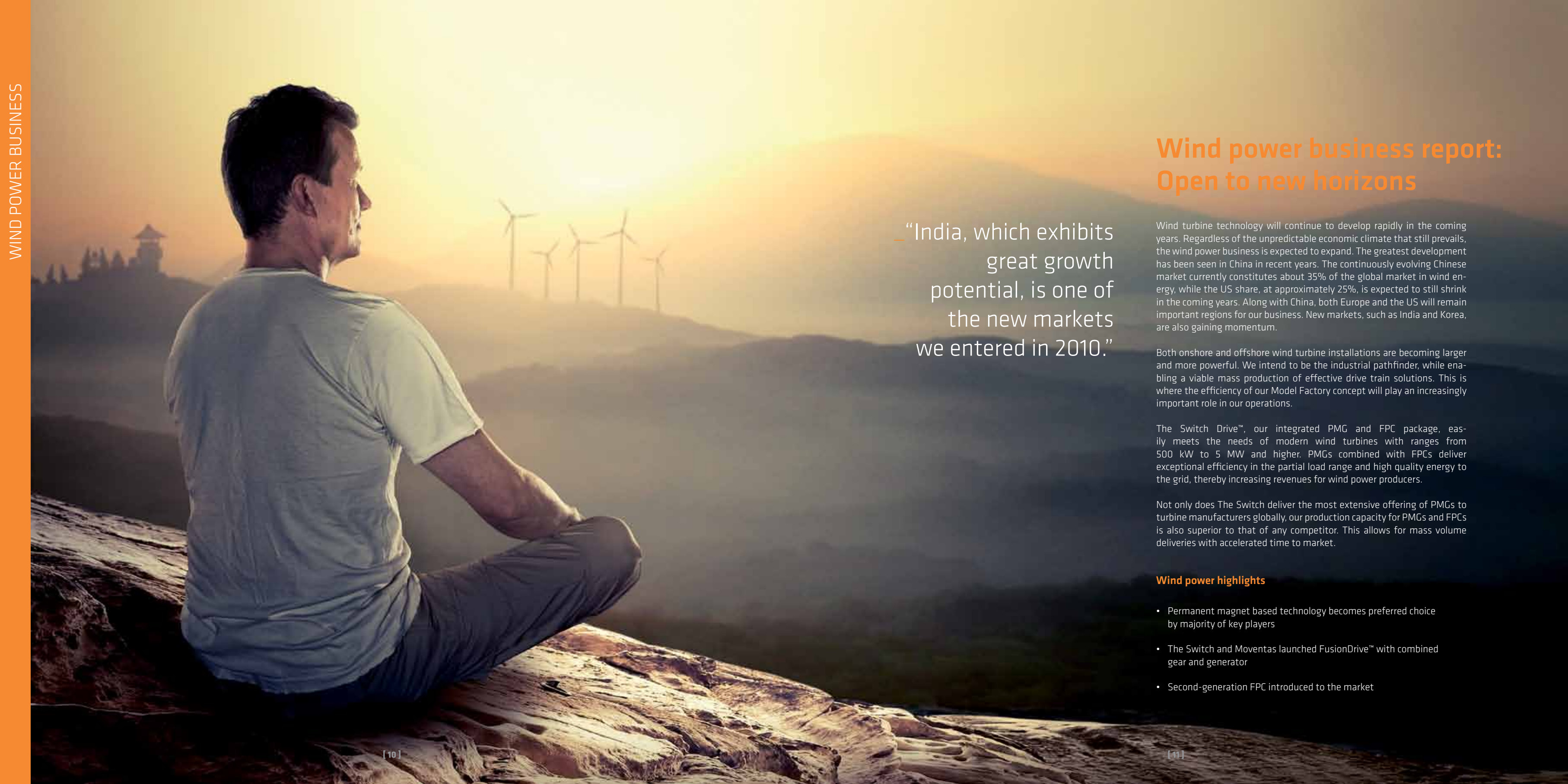
Continuous effort will be put into achieving better stability in our processes and documentation, which will grow in importance as the company keeps evolving.

The 36% growth<sup>1</sup> we have experienced has been completely organic, and we recognize that similar figures will become increasingly challenging to achieve over time. As the markets develop, these growth percentages simply cannot continue without taking action. For this reason, even if we have done extremely well so far, we cannot afford to become stagnant. The financial future of our company looks positive, but we must stay hungry.

### Financial highlights

- Good profit level exceeds expectations
- Strong cash flow and balance sheet; business model is not capital intense
- Organic growth has led to extraordinary performance figures

<sup>1</sup> Due to a change of accounting policy from Finnish Accounting Standards (FAS) to International Financial Reporting Standards (IFRS), figures for 2010 and 2009 are not comparable with previous years.

A man in a light blue t-shirt and dark pants is sitting on a large, textured rock in a meditative pose, looking out over a vast landscape. In the distance, a line of wind turbines is silhouetted against a bright, hazy sunset sky. The overall mood is serene and contemplative.

—“India, which exhibits great growth potential, is one of the new markets we entered in 2010.”

## Wind power business report: Open to new horizons

Wind turbine technology will continue to develop rapidly in the coming years. Regardless of the unpredictable economic climate that still prevails, the wind power business is expected to expand. The greatest development has been seen in China in recent years. The continuously evolving Chinese market currently constitutes about 35% of the global market in wind energy, while the US share, at approximately 25%, is expected to still shrink in the coming years. Along with China, both Europe and the US will remain important regions for our business. New markets, such as India and Korea, are also gaining momentum.

Both onshore and offshore wind turbine installations are becoming larger and more powerful. We intend to be the industrial pathfinder, while enabling a viable mass production of effective drive train solutions. This is where the efficiency of our Model Factory concept will play an increasingly important role in our operations.

The Switch Drive™, our integrated PMG and FPC package, easily meets the needs of modern wind turbines with ranges from 500 kW to 5 MW and higher. PMGs combined with FPCs deliver exceptional efficiency in the partial load range and high quality energy to the grid, thereby increasing revenues for wind power producers.

Not only does The Switch deliver the most extensive offering of PMGs to turbine manufacturers globally, our production capacity for PMGs and FPCs is also superior to that of any competitor. This allows for mass volume deliveries with accelerated time to market.

### Wind power highlights

- Permanent magnet based technology becomes preferred choice by majority of key players
- The Switch and Moventas launched FusionDrive™ with combined gear and generator
- Second-generation FPC introduced to the market

—“Our long-term goal is to leverage our proven power generation expertise in solar solutions.”

## Solar power business report: Powering up new opportunities

The solar energy industry continues its growth as a cost competitive source of power generation. Recent technology and installation innovations have helped solar power increase its share of the electricity market. It is expected that solar energy will eventually surpass wind energy as the business develops. This balance shift will however be slow, and it may take time before we see solar energy at the top of the list for sustainable energy solutions.

The Switch is fully committed to the inevitable success of solar. Our long-term goal is to leverage our proven power generation expertise and become the best in solar inverter solutions as well. We have applied our proven technology for large-scale wind power generation to our inverter solutions. For the solar industry, this results in outstanding performance and reliability.

Every feature of The Switch inverter has been designed to match the rigorous new grid requirements and maximize the energy produced from the sun, even with partial or uneven radiation. This allows the inverters to harvest more power from the photovoltaic (PV) panels and produce more high-quality energy to be fed into the grid.

In addition to solar power, The Switch actively continues to invest in the development of its emerging business portfolio, which includes electrical machines, energy storage and variable speed gensets. Here too, increased cooperation with leading universities of technology and OEMs enables The Switch to capitalize on technological breakthroughs and make new solutions commercially available.

As an example of such a solution, New York City's One Penn Plaza installation reduces carbon footprint with the use of five 1.6 MW converters from The Switch.

### Solar power highlights

- Introduction of The Sun Switch, a fully integrated inverter and controller package complemented with a transformer for reliable utility-scale PV DC-to-AC stations
- The Switch solar solutions comply with both local and international standards, as well as the latest industry requirements
- Compatibility and compliance with the latest grid codes ensure reliable power delivery and grid support

A man with glasses, wearing a grey jacket with orange accents, is pointing towards a large industrial machine. The machine has various panels and components visible. The background is dark, suggesting an industrial setting.

— “Our latest direction for innovation is towards larger MW sizes and offshore-class generators.”

## The Design Switch

Our customers value our leading innovation, our flexible cooperation philosophy and our willingness to reach new heights together. The Design Switch gives you extra resources for application know-how and engineering intelligence.

One of the latest directions for innovation is towards larger MW generator sizes, from 3 MW upwards, and offshore-class generators. During 2010, we continued to strengthen our portfolio by adding drive trains with increased power. To date, The Switch has produced an entire fleet of modern drive trains for wind turbines. Currently there are close to 20 turbine models powered by The Switch PMGs and FPCs. Eight of these include PMG models over 3 MW, which will be delivered in spring 2011 to customers in the major wind power markets. Additionally, a 5 MW high-speed PMG is in design stage.

The Switch has the widest portfolio of PMGs available. Wind turbine manufacturers can simply choose the best model with any power and any speed. This gives newcomers a fast-track opportunity to enter the market with The Switch standard PMG models, which have already been proven in use. In just a short time, wind industry players have seen the advantages of PMG-based solutions and have placed their trust in The Switch as a partner for new turbine technology developments.

In September 2010, The Switch launched its second-generation FPC, which allows turbines to keep generating power without tripping and standing still. The fault ride-through (FRT) and other special built-in protective components comply with the strictest international regulations in the industry today.

### The Design Switch highlights

- Continued development of drive train portfolio with 3 MW upwards and offshore-class generators
- A 5 MW high-speed PMG is in design stage
- Second-generation FPC excels in FRT testing

“Our Model Factory concept allows us to react quickly and effectively to our customers’ needs around the world.”

## The Production Switch

When building large wind farms today, fast on-time deliveries are key. Thanks to The Production Switch, we are able to very rapidly adjust our production volumes according to customer needs.

The Switch Model Factory concept enables us to be ready to manufacture and deliver sufficient quantities of multi-megawatt generators. This special production concept is based on a truly networkable approach that ensures a nearly limitless capacity to serve the needs of wind turbine manufacturers.

The Model Factory approach gives The Switch the ability to do fast prototyping, zero series and multi-site rollout production for volume growth and variations. What’s special about the concept, however, is that every product model can be tailored to the specific requirements of our customers.

We are easily able to set up production in new locations with our Model Factory concept. One reason is because series production is already planned in the proto-type phase. By combining our expertise with that of our partners, we meet the demand for large volumes with the speed and efficiency you would expect from an industrial heavyweight.

Through production sites in Europe, China and the US, the current theoretical capacity of The Switch totals 5,500 MW per year. In China alone, the theoretical annual capacity is 1,000 FPCs, 1,500 to 2,000 medium- or high-speed PMGs and 20 to 50 direct-drive PMGs. Our direct-drive capacity in particular can be easily and quickly adjusted. Additional theoretical capacity is also available through the established partner network of The Switch.

### The Production Switch highlights

- The Model Factory concept enables fast prototyping, zero series and multi-site rollout production for volume growth
- Production sites onstream in Europe, China and the US
- Theoretical capacity of The Switch totals 5,500 MW per year



“We offer support for the entire lifetime of our equipment, and direct access to our top specialists.”

## The Proactive Switch

Once our products are delivered, we continue to support our customers over the entire lifetime of the equipment. Customers can look to us to respond through The Proactive Switch for a wide range of services and agreements.

The Proactive Switch services include field services, spare parts services, training services and care services. Field services cover commissioning and preventive maintenance. Spare part services encompass the management of all genuine spare parts. Training services can be tailored to the specific requirements of every customer and always include comprehensive onsite training. Our customers have direct access to our top specialists through our care services, and also benefit from our 24/7 online support. Care services also include online monitoring and performance reports. We are actively developing our after-sales capability on a global basis and are backed by a service partner network that spans 44 countries.

Today, The Switch has an extensive network of training and after-sales operations in several locations throughout China, enabling our Chinese customers to be served in their own local language.

In 2010, The Switch signed a new PMG service agreement specifically customized for Dongfang. The agreement covers service for products in China, Hong Kong, Macao and Taiwan, and can be extended to other Asian countries. The next steps include training of Dongfang service personnel. The key idea behind this agreement is to provide Dongfang with the highest achievable reliability and productivity.

By the end of 2010, we had nearly 5 GW of installed capacity around the world, with extensive onsite testing and analysis in all environments.

### The Proactive Switch highlights

- Customer support includes field, spare parts, training and care services
- New PMG service agreement with Dongfang in China
- Nearly 5 GW of installed capacity by year-end

“Care for the environment is one of our core values. We have a strong interest in ensuring that future generations grow up in a healthy environment.”



## Environmental and social responsibility

The Switch is a company with a strong focus on creating a brighter tomorrow. That is not only evident in our chosen business, sustainable energy solutions, but in everything we do. Care for the environment is one of our core values and our cutting-edge technology is our contribution to combat climate change. We are committed to preserving the world's energy resources. A 1.8 MW turbine can produce more than 5.2 million kWh in a year – enough to power more than 500 households.

Every The Switch production facility is fully compliant with ISO 9001 standards. And our next immediate aim is to reach ISO 14001 standards, starting with our Chinese operations.

As part of our environmental policy, we make sure that our production minimizes the load on the environment. We use all our resources efficiently, we use high-quality raw materials, and we provide end-of-life treatment recommendations for our products. Through our membership in REITA, Rare Earth Industry and Technology Association, we take an active approach to create standards of excellence when it comes to using rare earth materials.

We also have a strong interest in raising the next generation because our future is in the hands of today's youth. That's why we've chosen to support youth sports clubs – to ensure that our children can grow up and be active in a healthy environment.

### Environmental highlights

- All The Switch production facilities are now ISO 9001 certified
- The Switch joins REITA, Rare Earth Industry and Technology Association
- Youth sports clubs have a big fan in The Switch



— “We are all forerunners in New Energy.”

## The Switch people: Leading hearts and minds

A company is only as good as its people. As our business has grown, we have made great efforts in finding the right people to strengthen our organization on all levels. From the 22 people that worked for The Switch when it started operations in 2006, we have now grown to a group of over 270 professionals from 13 different nationalities. The average age is 36. Many positions that were previously outsourced have now been filled in-house to ensure that we have the capacity to continue on a path of controlled and sustainable growth.

In 2010 alone, we recruited over 80 new persons to posts in various locations around the world. Our staff of ambitious and flexible individuals creates a strong foundation for our business. Due to the fast and continuously changing nature of our company and line of business, it takes a certain kind of person to succeed at The Switch. We have carefully selected people who are motivated, ready to adapt to changes quickly and have the drive to make independent decisions and create processes. Our employees are not daunted by the fact that they might not know where each new day will take them...

Being truly invested in your own work creates a kind of commitment that is otherwise hard to achieve. This is why each employee has the opportunity to personally invest in The Switch. A true indicator of the commitment of our employees is our very low personnel turnover rate. Everyone, regardless of his or her job description, knows to take personal responsibility for providing the highest quality that we promise in everything we do.

The success of The Switch is not only based on what we do, but equally on who we are.

### Personnel highlights

- From 22 to over 270 employees in four years with 80 new faces in 2010
- Personnel represent 13 different nationalities
- Average employee age at The Switch is 36



[www.theswitch.com](http://www.theswitch.com)