

# Sustainability performance 2015

UN Global Compact  
Communication  
on Progress  
GRI G4 Report

[lmwindpower.com](http://lmwindpower.com)

**LM** WIND  
POWER

# Content

## **Introduction & formalities**

Message from CEO	3
About LM Wind Power	4
Organizing Sustainability	8

## **Reporting 10**

About this report	11
Material issues and boundaries	12
Stakeholder engagement	14

## **Environment 17**

## **Safety 21**

## **People 25**

## **Technology 29**

## **Sustainability performance at a glance 33**

## **GRI G4 content index 40**

## **Appendix 45**



# Message from CEO

---

Wind power offers the solution to some of the world's most pressing challenges. Access to clean, affordable energy is an important component to breaking the cycle of poverty. Thus, wind power is not just about power supply, it's about providing opportunities to less privileged people who strive for a better life. At LM Wind Power, we feel privileged to contribute to that development through delivering the most efficient and competitive rotor blades, and in the process we create economic development and jobs in the areas where we operate. Being a global company facing increased demand and exploring opportunities in places where we haven't been operating before further emphasizes the need for working according to clear standards and principles. We are committed to running the business ethically and fairly at all times, following the principles set out in our Code of Conduct and the UN Global Compact which we signed up to six years ago. It won't always be easy but it is not up for discussion if we want to ensure the long term value creation and sustainability of the business.

LM Wind Power entered an exciting period of growth in 2015. It marked a turning point for the company in terms of improved financial performance which has improved even further going into 2016. The achievements on the sustainability side in 2015 built to a large extent on efforts that were initiated the year before or even prior to that. It was about ensuring cost and energy efficient operations, reducing waste both in terms of materials and processes and strengthening the focus on health and safety even further to remain at the highest industry standard and still improve. We forged stronger ties with our suppliers, innovated with our materials and processes to reduce the environmental impact and cost, and implemented stricter programs to train employees in anti-corruption and anti-bribery. All of these measures are linked to the commitment to the UN Global Compact and have laid a good foundation for implementing larger programs in 2016. We will be looking specifically on ways to reduce the emissions from our operations and the life cycle impact of LM Wind Power blades. I look forward to being able to share more from these programs which will provide the basis for specific sustainability targets and improvements, helping to make LM Wind Power an even greener and sustainable business.



**Marc de Jong**  
Chief Executive Officer

# About LM Wind Power

---



With over three decades of experience, we have established ourselves among the preferred global suppliers of wind turbine blades. We develop, manufacture, transport and service the wind turbine blades worldwide. In fact, almost every fifth turbine in the world is fitted with LM Wind Power blades.

With headquarters in Kolding, Denmark and a global business office in Amsterdam, The Netherlands, our global manufacturing organization spans four continents and nine countries. All our 13 factories are strategically located at the heart of key markets for wind power to better serve our customers.

The principal shareholders of LM Wind Power are the partnerships managed by Doughty Hanson & Co. Managers Ltd, a company incorporated in England and Wales and headquartered in London. Doughty Hanson's principals have many years of experience in the successful management of international private equity funds and have led and arranged a number of large acquisitions, sales and IPOs.

Shortly before the publication of this report in October 2016, GE announced intentions to acquire LM Wind Power for an enterprise value of EUR 1.5 billion. The deal is subject to regulatory approvals and is expected to be closed in first half of 2017. As this report covers 2015, any reference to 'our owners' refer to Doughty Hanson & Co. Managers Ltd.

LM Wind Power produced 9,474 blades in 2015, which contributes to a total of more than 185,000 blades since we began blade operations in 1978. This corresponds to approximately 77 GW of installed wind power capacity which each year effectively replaces approximately 147 million tons of CO<sub>2</sub>.

LM Group Holding A/S (LM Wind Power) is a limited company based in Denmark. The Consolidated Financial Statements for 1 January – 31 December 2015 includes the consolidated financial statements for LM Group Holding A/S and its subsidiaries (the Group).

The full Group structure is available on page 67 in the 2015 annual report.

(G4-3), (G4-4), (G4-5), (G4-6), (G4-7), (G4-8), (G4-9), (G4-17)

# Organization profile

---



Headquarters  
Kolding, Denmark

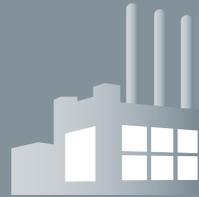


Factories and  
service locations  
Brazil, Canada, China, Denmark,  
India, Poland, Spain, USA



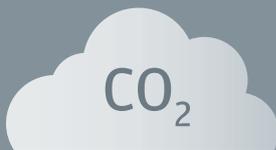
---

**6,332** People  
worldwide



---

**13** Blade  
factories



---

**147** Million metric tons  
of CO<sub>2</sub> mitigated



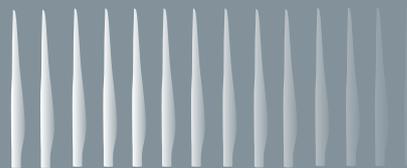
---

**77 GW** Installed  
capacity



---

**1/5** Turbines in the world  
have LM Wind Power blades



---

**9,474** Blades  
produced  
in 2015

# Values & ethics

---



## Case study

### Ethics hotline

In 2015 LM Wind Power started to roll out its SpeakUP hotline- an externally hosted integrity line, allowing employees to anonymously report serious concerns or violations to the company's Code of Conduct or core values. In place since May 2015, the SpeakUP line was first implemented in Brazil with training given to all employees on the background and functionality. Since implementation, a number of reports have been received, relating to minor violations to the core values and the health, safety and environment rules. These reports have been investigated, in some cases with disciplinary actions enforced by local HR and plant management, based on the company's Zero Tolerance policy. The SpeakUP line will be implemented in the rest of LM Wind Power's locations during 2016.

## Values

With a global presence and multinational work force, we have our fair share of differences. But our values are the same everywhere: Focus on customer and market, Work as one team, Trust and respect, Take ownership and Innovate for excellence. Installed almost a decade ago, these values create a common language for our colleagues worldwide, transcending differences and shaping our culture.

## Code of Conduct

Our values are the foundation for the company's culture but it is our Code of Conduct, revised in 2015, that ensures our integrity and commitment to doing business legally and ethically. The Code of Conduct articulates fundamental ethical principles, outlining the responsibilities of both managers and employees in a wide range of topics from human resources, human rights, anti-bribery, anti-corruption and environmental protection. This core document also reflects our continued commitment to

the UN Global Compact (UNGC) Principles. LM Wind Power signed up to the UNGC in 2010.

## Ethics training

New hires receive training on our Code of Conduct as part of their onboarding process and the course is repeated for all office staff at regular intervals. In 2015, all office employees were requested to go through recertification. More than 90 % had completed it by the end of the year with the remaining colleagues completing the training in the first half of 2016.

Compliance with the Code of Conduct extends beyond our employees to also cover business partners and suppliers as a prerequisite for cooperation. We expect them to follow all applicable laws and regulations, conduct business with integrity, promote fair employment practices, safe workplaces and protection of the environment, as well as avoid conflicts of interest between personal and work affairs.

# Our values

---



## Focus on customer and market

This value helps us become our customers' preferred global working partner.



## Work as one team

This value helps us become 'One Company' by driving integration and collaboration across the LM Wind Power organization.



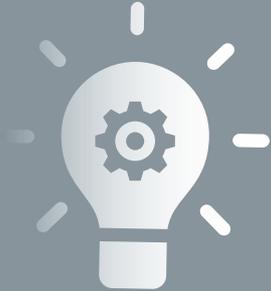
## Trust and respect

This value helps us create a workplace we enjoy and are proud of.



## Take ownership

This value ensures that we do what we say we will do.



## Innovate for excellence

This value helps us to develop and produce class leading, reliable products and services.

# Organizing Sustainability

LM Wind Power committees responsible for decision-making on economic, environmental and social impacts in 2015:



## Coalition of the willing

Our first structured sustainability initiatives date back to 2010, when a group of passionate employees across different departments and functions – a so-called ‘coalition of the willing’, decided to stretch beyond their job titles to collaborate in achieving an even greener and more sustainable business. Today, they evolved into a cross-functional Core Team, responsible for pushing the sustainability agenda and taking steps to ensure top management “buy-in” and support strategic sustainability activities and initiatives.

## Sustainability anchored at the top

Towards the end of 2015, the company formalized its organization around Sustainability with the establishment of the Global HSE & Sustainability Council, chaired by the CEO and including the VP Communications, HR & Sustainability, VP Quality & HSE, Director of HSE & Sustainability as well as two senior managers from the Core Team. The ambition is to further strengthen the sustainability focus, endorse and oversee strategic sustainability initiatives, and set new commitments and clear targets, directly related to the business performance.

(G4-34)

# Supplier dialogue as a foundation for success

---

With manufacturing facilities across four continents, we draw on a global network of over 200 suppliers, primarily producers of raw materials and core components. Many commodity suppliers are well established, global brands with certified quality management systems. We perceive them as our business partners and value their contribution in helping us provide quality and more sustainable products at competitive prices. One of the areas in which we have very close supplier collaboration is our drive to improve safety and reduce the use of hazardous chemicals in our manufacturing environment. This has led to the development of innovative materials and a close relationship, based on mutual learning and communicating to improve together – an approach which we aim to expand to even more suppliers.

## **Supplier relationship management process**

### 1) Supplier selection

Assessing a potential supplier's performance and capability of controlling safety, quality, delivery, cost and features

### 2) Quality and Sustainability Requirements

Setting requirements for all suppliers to meet quality standards by complying with ISO 9001:2008 (and preferably ISO 14001:2004 and OHSAS 18001:2008) as well as sustainability criteria by signing the LM Wind Power Code of Conduct and adhering to our Supplier Quality Agreement

### 3) Appraisals- supplier qualification process

Conducting scrutiny checks via the Supplier Quality Assessment, audits, training and quality awareness programs, regular supplier reviews and HSE assessments

### 4) Dialogue

Hosting yearly supplier conferences to foster engagement, dialogue and collaboration.

100% of LM Wind Power's core commodity suppliers (Class A suppliers – around 70 out of 180 in total) are covered by a Supplier Quality Agreement which includes requirements for sustainability practices. These suppliers account for 90% of the company's global spend. Furthermore, 90% of the Class A suppliers are covered by framework agreements which require them to sign the LM Wind Power Code of Conduct and commit to living up to the standards described therein. This practice is being expanded to cover Class B and C suppliers as well.

Although we screen and audit our suppliers, we are aware of the limitations of such programs. These programs alone will not drive supplier compliance or develop a shared mindset about sustainability issues. Dialogue will. More frequent contact and engagement have improved our understanding of our suppliers' maturity level and we will build on this with further supplier visits and exchange of knowledge and feedback.

With renewed growth in the whole wind sector, demand for key commodities is increasingly tight with significant pressure on supplies. Our goal is to maintain our high standards of ethical sourcing and apply our leverage as a customer in instances where full compliance with our standards is not yet achieved.

# Reporting



## Content

About this report	11
Material issues and boundaries	12
Stakeholder engagement	14

# About this report

---



This is our third annual Communication on Progress (COP) developed in accordance with the Global Reporting Initiative (GRI) G4 guidelines, at the Core level. Due to the steep learning curve, with each reporting cycle, we have gained a better understanding of what is material to our business and what is important to our stakeholders. We will continue to develop our reporting to reflect the intensified focus on the activities that link sustainability, innovation and profitable business, keeping a sharp lookout for what is truly material for the company.

The data and information provided cover our global business operations for the 2015 calendar year, supplementing the non-financial highlights in the LM Wind Power Annual Report, published in March 2016. Since the previous report, published on October 9, 2015, LM Wind Power acquired the remaining interest in LM Wind Power do Brasil S.A from its joint venture partner taking full ownership of the Brazilian entity. The previous report only included very limited data for Brazil. In this report, Brazil is included in all data sets on the total group.

This report has been approved by LM Wind Power's VP Communications, HR & Sustainability, the VP of Quality & HSE and the CEO as the executive management members of the Global HSE & Sustainability Council.

For questions about this report, please contact:  
Lene Mi Ran Kristiansen  
Senior Manager Communications & Sustainability  
[lmrc@lmwindpower.com](mailto:lmrc@lmwindpower.com)  
+45 7984 0236

Mette Pedersen  
Senior Manager, Global Performance and Sustainability, HSE  
[mpe@lmwindpower.com](mailto:mpe@lmwindpower.com)  
+45 7984 0552

Marta Wisniewska  
Reporting Assistant  
[wisniewskam@hotmail.com](mailto:wisniewskam@hotmail.com)

# Material issues and boundaries

We've always worked hard to carefully balance profitable growth, integrity and caring for people as well as for the environment. This is our commitment and we are constantly raising our game and ambitions. The formalized sustainability program started when we joined the UN Global Compact in 2010. We entered into a process of identifying key stakeholders, mapping their interests and expectations and assessing bottom line impacts. The process helped us define specific performance

indicators based on the GRI G3 framework which were transitioned into the G4 framework with our 2012/2013 report. Our current sustainability headlines - Environment, Safety, People and Technology - are a direct outcome of this initial mapping exercise. Subsequent workshops with the sustainability Core Team and top management representatives have confirmed that the basic structure is right.

## Environment

Material aspects	GRI aspects	Aspect boundary
Reduce carbon footprint through reduction of material use, energy consumption and waste generation	Energy, water, emissions, effluents and waste. Supplier Environmental Assessment	<p>The company is mapping its carbon footprint in its global manufacturing operations from material consumption, energy consumption and transportation of people. We are in the process of including waste in the metrics in more detail and ultimately moving towards a full Life Cycle Assessment (LCA) approach.</p> <p>Environmental protection is one of the targets of our HSE policy, which requires commitment to and accountability for preventing pollution and promoting sound environmental practices from all employees and suppliers.</p> <p>Various projects, primarily local, focus on reducing energy consumption in the plants e.g. by upgrading or replacing ventilation systems and machinery, sourcing electricity from renewable energy where possible and installing energy management systems. We also work internally and with our suppliers on optimizing our material consumption to reduce waste and cost. This includes implementing initiatives to reduce, re-use and replace hazardous materials in our manufacturing.</p>

(G4-18), (G4-19), (G4-20), (G4-21), (G4-23)

## Health & Safety

Material aspects	GRI aspects	Aspect boundary
Towards zero injuries	Occupational Health and Safety	With the overarching idea that 'Safety is everyone's responsibility and managements accountability', we make sure that all personnel in our plants worldwide are aware of risks and motivated to make safety a priority. It is instrumental if we want to get to our target of zero accidents and achieve world class standards. Aiming for improvements on safety also requires reliable and certified suppliers as an assurance of high level quality. We review health and safety implications in the early stages of product development and when introducing new materials or processes in our manufacturing.
Building safety culture	Occupational Health and Safety	Building a successful safety culture takes commitment at the top with global and plant-level managerial accountability. But the most important stakeholders are the employees. With our targeted HSE campaigns and training we make sure that all personnel are made aware of dangers inherent in their jobs, and are equipped with essential protective equipment, skills and competences to perform their work safely.  It takes everybody to live our safety slogan: Think, Act, Keep safe and Arrive home safely and it takes leaders to live safety and build trust in the fact that decisions are taken with health and safety in mind.
Building safety culture	Customer Health and Safety	One of our core values is Focus on Customer and Market, applying a mindset that strives towards continuous improvement. Both LM Wind Power and our suppliers develop processes and systems required by our customers to meet their demand for high quality and safe products.  Thus, we review health and safety implications in the early stages of product development and when introducing new materials or processes in our manufacturing. If the health and safety implications of a certain substance or material are not sufficiently documented, we prefer working with materials that have well-documented and known risks so that we can take precautions. We do recognize, however, that in order to continuously improve the production environment, we will also need to introduce new innovative materials and substances. These have always gone through our comprehensive qualification process and do not represent any known health effects.

## People

Material aspects	GRI aspects	Aspect boundary
Compliance & integrity	Investment. Non-discrimination. Freedom of association and collective bargaining. Child labor. Forced or compulsory labor, Supplier human rights assessments. Supplier assessment for labor practices. Anti-corruption	We recognize the challenges inherent in managing a diverse and multicultural workforce as well as having a global network of suppliers. We need to remain vigilant for human rights abuses, unfair employment and discriminatory practices, and corruption. We try to manage these challenges through safeguarding compliance with our Code of Conduct. We expect all our employees and suppliers to adhere to our Code of Conduct. We have a 'zero-tolerance' policy with regards to Health & Safety violations as well as to the rules regarding anti-bribery and anti-corruption.  The integrity with which we conduct our business is also important to our customers, who not only emphasize quality and safety aspects of the products we deliver but also our sustainability and ethical performance.
Developing competences	Training and education	Our success comes from the knowledge, competence and integrity of our workforce, so our focus is on improving their skills and developing their careers through targeted training and appraisals. We have built a comprehensive employee development scheme, based on individual assessments for both salaried and hourly paid employees. These include HR programs, talent and career initiatives, appraisals and reward systems as well as various schemes for on the job training in a combination of local and global initiatives.
Contribute positively to the communities in which we operate	Local Communities	As an international company with plants in remote parts of the world, we strive to have a lasting positive impact on the communities in which we operate, ranging from job creation and economic development to employee driven charity work. Involving employees in charity initiatives also has a positive effect on our organization and our people's commitment. The community outreach activities are particularly strong in India, the US and Canada.

(G4-14), (G4-19), (G4-20), (G4-21), (G4-23), (G4-PR 1), (G4-HR 4), (G4-HR 5), (G4-HR 6)

# Stakeholder engagement

Our collaborative approach to stakeholder engagement is deeply rooted in our vision: “Together, we capture the wind to power a cleaner world”. LM Wind Power stakeholders include employees, customers, suppliers, governments, industry peers

and research institutions, policy makers, and communities in which we operate. Proactive stakeholder engagement and responsiveness facilitates empowered teams, innovation, strategic cooperation and better informed business decisions.

Stakeholder group	How we engage	How we responded to key topics and concerns in 2015
Employees	<p>Every second year we conduct a global Employee Engagement Survey (EES) for all employees to measure the workforce’s perception of LM Wind Power and to ensure the management receives constructive feedback and follows up.</p> <p>We offer ongoing training and development programs to boost competence, motivation and retention of talented employees.</p>	<p>The 2015 EES showed improvement on all parameters for motivation and satisfaction among employees. The 2013 EES indicated a need for more training.</p> <p>In response, the company launched the global ‘Grow Plant Leaders’ initiative to boost the plant leaders’ leadership capabilities and continued focus on safety, quality, work environment and performance. More than 700 leaders were trained in three of the planned five modules in 2015 and in the two last modules in 2016. This initiative was followed by an equivalent ‘Grow Functions Leaders’ program for the staff functions during 2016.</p> <p>In parallel, we introduced the ‘Center of Excellence’ training concept for new plant workers ensuring that everyone gets a thorough introduction to LM Wind Power and that they are all properly trained to produce blades in a safe and efficient manner. It is a training program over 30 days and ends with a certification of each employee. Initiated in India, the concept is now being rolled out in all LM Wind Power plants.</p>
Customers	<p>With our customers we have a shared interest to deliver the most efficient products at the lowest cost. In addition to daily contact, we engage through response to surveys and documentation for the customers’ supplier assessments, continuous dialogue on lobbying efforts in key markets and the prospects of developing a potential blade disposal solution, which is a key challenge for the industry to solve. We also send out an annual Customer Satisfaction Survey to secure wider feedback on the collaboration.</p>	<p>In one of the supplier assessments from a major customer at the end of 2015, we achieved a silver rating in the company category ‘Manufacturer of general purpose machinery’. This puts LM Wind Power in the top 9% of companies assessed in this category and in the top 12% of all companies assessed. On environmental measures alone, LM Wind Power ranked in the top 1%.</p>
Suppliers	<p>Our suppliers are key to our success and we have intensified engagement with them to identify and reduce risk, and to build stronger partnerships.</p> <p>Every year, LM Wind Power hosts a global supplier conference to foster engagement and create an even stronger platform for dialogue and collaboration.</p>	<p>There could be potential sustainability issues in our supply chain that cannot necessarily be discovered through random audits and screenings. That is why, we have intensified the dialogue with our key suppliers to assess their maturity level on sustainability and to build collaborative partnerships and accomplish common goals.</p> <p>The first round of supplier dialogues focused on the suppliers of balsa and those representing the majority of our spend. They are based in various locations across the US, Turkey, Papua New Guinea and Ecuador and differ in size and sustainability performance.</p> <p>LM Wind Power’s positive trend on quality performance continued, facilitated by increased levels of supplier reliability and engagement. Over the past few years, LM Wind Power has worked systematically and focused on implementing quality improvement programs and the efforts have materialized in significantly reduced quality issues as well as improved supplier performance on incoming material.</p>

(G4-12), (G4-14), (G4-24), (G4-25), (G4-26), (G4-27)

Stakeholder group	How we engage	How we responded to key topics and concerns in 2015
Communities	<p>We rely on local communities for employees, and provide economic activity with our operations. We actively engage through partnerships with NGOs and community groups as well as with various philanthropic activities. Our global plants contribute to charities and causes important to local communities.</p>	<p>In 2015, LM Wind Power's employees once again engaged in a wide range of community activities across the world and supported several causes and organizations.</p> <p>One example is from January 2015 where our team in Beijing, China donated more than 200 books and some second-hand computers to Chongli "Hope" Primary school, in an effort to improve the school's educational facilities and resources.</p> <p>In 2016, there will be an even greater focus on activities that support the UN Sustainable Development Goals - particularly Quality Education, Diversity &amp; Gender Equality, and Affordable and Clean Energy. This is in line with the newly introduced Global HSE &amp; Sustainability Council objectives.</p>
Governments and policy makers	<p>We actively engage with local governments in legal matters related to e.g. employment, work environment, waste management, and seek cooperation and support. At a regional and national level, we interact with decision makers on issues related to energy and environmental policy, affecting the long term future of wind energy.</p>	<p>Our plant in Gaspé, Canada has been particularly active to collaborate and influence the local policy environment through continuous dialogue and an 'open plant' approach, aiming to ensure long term visibility for the factory. The efforts have established the plant as a leading industry voice, vocal on key topics that directly affect the future of the wind industry in Quebec. The strong position, built up by the plant, has helped ensure real influence, high visibility and a reputation as an attractive employer in an area with few industrial workplaces.</p>
Owners	<p>For the past 15 years, we have enjoyed the benefits of having supportive and forward thinking owners who continuously push the Core Team and top management to further embed Sustainability into our business processes to drive value creation. We expect this to continue also under new ownership.</p>	<p>We have always communicated continuously with our owners on Sustainability which they refer to as ESG (Environment, Social, Governance). In 2015, one of the main events was a workshop in Amsterdam with the Head of Sustainability at Doughty Hanson and the Core Team on investor requirements to sustainability reporting and documentation of performance.</p>
Industry peers and research institutions	<p>To keep the rapid pace of technological innovations, we join forces with external collaborators/research institutions and exchange knowledge and expertise in a shared ambition to reduce cost of energy.</p>	<p>Testing of critical components, like wind turbine blades, often lasts several months to simulate 20-25 years of lifetime. In 2015 LM Wind Power together with ORE Catapult, a world-class research and test institution, embarked on an innovative partnership aiming to develop shorter and more cost effective blade tests, reducing fatigue test time by up to 50%.</p> <p>This new test method will also have significant benefits in terms of time reductions and cost advantages, not least for the larger blades for offshore.</p>

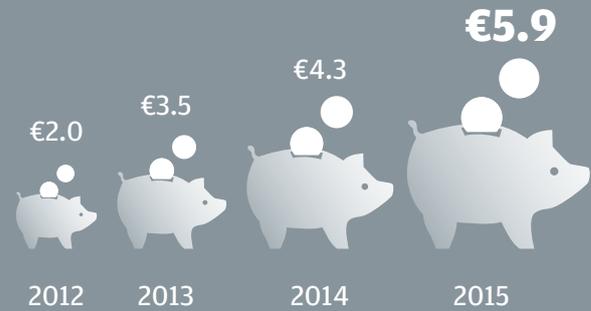
# Non financial highlights

---



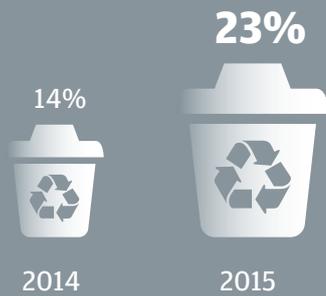
## Low Lost Time Accident (LTA) rate

The LTA rate has decreased steadily and today tracks at the best industry level



## Waste reduction saves money

Highest waste reduction savings ever achieved in 2015



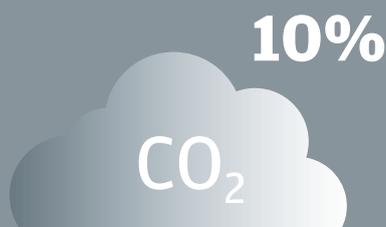
## More waste for recycling

23% of total waste went to recycling in 2015, up from 14% the previous year



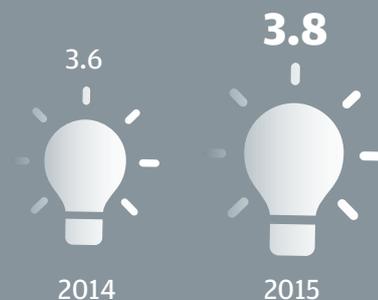
## A highly diverse workforce

We were 32 nationalities in 2015



## Carbon footprint reduced

Significant reduction in carbon footprint per kg blade produced, compared to the previous year



## Inventive employees

More savings ideas per employee implemented, compared to the previous year

# Environment



## Content

Why it matters	18
Our Commitment	18
Energy	18
Waste, Carbon footprint, Water	19

### Why it matters

As concerns about climate change and air pollution continue to grow, wind power offers obvious advantages over traditional energy sources. Wind power has little environmental impact, a strong potential to expand all over the world and displace fossil fuels, contributing greatly to reducing greenhouse gas emissions, thus leading to a more sustainable planet. LM Wind Power alone, with more than 185,000 blades produced since the late 1970s, which corresponds to 77 gigawatts (GW) of installed wind power capacity, has helped avoid approximately 147 millions of tons of CO<sub>2</sub> every year.

We are green, but are we green enough? All stages in the life cycle of a blade – from raw materials extraction and processing, through blade manufacturing and transporting to product disposal at end of life – leave an imprint on the ecosystem. Managing these environmental externalities and innovating to use resources more efficiently and reduce costs can only help us reinforce a reputation of wind energy as an environmentally beneficial and an economically viable alternative.

### Our commitment

We are committed to reducing our environmental impacts in all aspects of the product's lifecycle, through reducing the consumption of material, energy, waste and water, as well as to continuously introducing efficiencies and innovative solutions in our manufacturing processes and supply chains.

### Our HSE management system for driving good environmental performance

Our integrated HSE management system provides an essential framework for common policies, objectives and requirements to promote and measure environmental performance across all LM Wind Power sites.

- All company sites (except Suape in Brazil and Vadodara, India) were certified according to ISO 14001:2004 and OHSAS 18001:2008 standards by end 2015. At the time of this reporting, Suape and Vadodara have completed certification too.

- Each workplace is covered by a common HSE policy, comprising environmental protection and setting requirements to both employees and contractors to prevent pollution and promote sound environmental practices. The policy is accompanied by an HSE Management System Manual, describing HSE program implementation (from impacts identification, legal compliance, strategy and goal setting, training, communication, document control, emergency preparedness and response to performance and control measures).
- It is the responsibility of each local manager to govern compliance, ensure communication and successful implementation as well as routine HSE inspections whereas yearly management review meetings take place to follow up on pertinent aspects and take action to drive improvement.
- Every time we introduce new material, equipment or processes, both managers and employees perform an HSE risk assessment taking into consideration potential hazards for the people involved in doing the job or for the environment. The job/change cannot start before clear plans for controlling assessed risks and appropriate work methods are developed.

### SoFi system – monitoring and improving our environmental performance worldwide

SoFi is our dedicated sustainability reporting software, in which people from various functions within each plant, primarily HSE and Facility Managers, insert data on a monthly basis. The data, which reflects our global operations, is heavily affected by the blade manufacturing business accounting for the largest material, energy and water consumption as well as waste generation. The data is presented and reviewed along with other core performance indicators at the monthly Business Operations Review chaired by the VP Operations. The carbon footprint reported in the annual report is a reflection of this data. Currently, the company is mapping its carbon footprint from materials and energy use in the operations, which represent the vast majority of our activities, and is in the process of including waste. It is the ambition to map the full life cycle impact of the blade and we kicked off a pilot project in September 2016.

### Energy

In 2015, LM Wind Power completed a large project to map energy consumption across all sites and identify areas for optimization and improvement. The challenge differed across the locations with some being highly advanced and already utilizing advanced energy management systems and others in need of support to start a structured approach. Globally, heating, cooling, ventilation and air conditioning are the most important applications which represent 76% of the total consumption. The project aimed to deliver a detailed understanding of the potential savings and necessary investment to ensure all plants

operate in the most energy efficient way possible. The recommendations are included in the efficiency programs that the plants work on and continuously expand.

The energy consumption is proportional to tons of blades produced, outside temperature and volume of the production hall but it became clear from the project that the plants could also learn from each other and that they could improve performance by being more aware of how energy is consumed and how equipment is operated. The total energy consumption in 2015 increased in line with increased output in blade production.

Looking at the energy use per kg blade produced, however, there's a clear trend of improvement, reflecting partly that the blades become bigger but also that we have taken steps to optimize our energy consumption.

**Energy use per kg blade (MJ)**

2012	2013	2014	2015
0.93	0.94	0.62	0.46

The company is currently looking into a much more ambitious approach to managing its carbon footprint, including energy sourcing and consumption. This will be further described in the 2016 report.

**Waste**

A renewed focus in 2015 on waste management to boost recycling paid off as we continued to keep more waste out of landfill, which in many locations is close to zero. Targeted awareness campaigns led by the Global HSE function and strong engagement from the plants, resulted in increased recycling, from 14% of total waste recycled in 2014 to 23% in 2015. Waste to landfill reduced from 50% of total waste in 2014 to 35% in 2015.

**Huge environmental and economic opportunities in waste reduction**

The company's waste reduction program running in its sixth consecutive year shows substantial cost savings and a positive trend of exceeding yearly targets. The 2015 target of EUR 3.7 million savings were exceeded considerably with an actual waste saving of EUR 5.9 million, and since the program inception, over EUR 25 million saving has been generated.

As in previous years, the saving initiatives came to life mainly through the creative ideas of shop floor employees dedicated to working smarter and reducing the amount of waste in the manufacturing process. On average, each LM Wind Power employee generated 3.8 ideas that were implemented, up from 3.6 in 2014 and exceeding the target of 3.

Building on the successful efforts to replace various materials and chemicals with more sustainable alternatives in 2014, the Materials & Process department continued global implementation of innovative solutions to remove HSE-related risks, eliminate waste and drive down cost. Some of the most notable examples were the replacement of PVC with PET (Polyethylene terephthalate) - an alternative to PVC based on recycled plastic bottles. According to one supplier, this change reduces CO<sub>2</sub> emissions from the resin production by 25%. The various initiatives that were kicked off in 2014 and implemented to a wider part of the business in 2015 are expected to generate annual cost savings of almost EUR 8 million.

**Carbon footprint**

The total carbon footprint has increased in line with the increased activity in the business. The Brazil plant became fully operational and plant expansions across the board ensured the highest number of blades produced in four years. Despite this increase in output, the carbon footprint per kg blade produced is showing a decrease. This is due to the intense focus on utilizing materials in the optimum way and targeted efforts to optimize energy consumption throughout the business in 2015.

**Water consumption (m³)**

Wind energy is one of the power generation industries that consumes least water because we use very little water in our production facilities. However, we recognize that water is and will be an increasingly scarce resource in certain parts of the world and we all need to take responsibility for preserving it. The general trend in LM Wind Power's water consumption is positive, with a 12% reduction from 2013 to 2014, despite having ramped up production and increased the number of employees. Water usage is primarily for sanitary purposes and cleaning at the sites.

In some countries, like India, water consumption is a highly material aspect due to the severe water scarcity issues in that region. Our Indian plant established a rainwater harvesting system in 2010, which collects enough water to cover the majority of the consumption of the plant. Excess water is discharged to the ground again. Setting the standard for all other local companies, this initiative has resulted in a 5-8% increase in the underground water table.

Only our India site has a large-scale water recycling system. India accounts for the vast majority of the data under Onsite Water Withdrawal, together with a site in Spain. The total water consumption of the group in 2015 reflects the growth of the business and particularly the inclusion of Brazil in the data.



“Local government officials come by LM Wind Power’s Tianjin, China plant quite a few times during a year. They are keen on understanding how sustainability is embedded in our operations. And they are particularly interested these days when promoting their latest initiative, ‘Cleaner Production.’ ”

## Case study

# Award for cleaner production

---

To promote increased sustainability in the local business community, the Tianjin government recently established the ‘Cleaner Production’ certification and award scheme. The concept is a preventive environmental protection initiative and intends to minimize waste and emissions from the beginning of the production process, promoting use of cleaner material and maximizing product output. It is very different from the most prevalent production method in China which, instead of eliminating waste from the outset, focuses on getting rid of the waste generated to minimize the harmful effects on the environment.

This year was the first time the Tianjin government handed out the award, and the honored recipients were a small group of seven companies out of a population of 1000 operating in the Tianjin area. LM Wind Power Tianjin was one of the winners to enjoy the 100,000 (EUR 14,000) RMB bonus that comes with the award. Health, Safety and Environment (HSE) Manager, Rick Li, said: “Our company’s vision is to power a cleaner world and Tianjin plant is of course no exception. We have done a lot to improve over the years, among other things replacing acetone with oth-

er less harmful alternatives and our external emission of gas pollutants is lower than the National Discharge Standard. Generally, we try to avoid waste and pollution before it is generated, and eliminate toxic and harmful raw materials before it enters production.”

### Cleaner production is the path to sustainability

Rick is determined the cash bonus from the government should be used to continue improvement on cleaner production, including strengthening environmental monitoring, looking for new waste disposal methods to reduce cost, maintain good environmental performance and so on. “We will focus on the environment and people, health and safety. Driving towards the objective of ‘cleaner production’ will lead us to sustainability,” he said.

# Safety



## Content

Why it matters	22
Our commitment	22
A strong safety culture	23

### Why it matters

There are potential health and safety risks associated with working on wind projects. However, due to the relentless push in the industry to perform any kind of work from manufacturing, installation to maintenance, under the safest possible conditions, the occupational hazards (e.g. trips and falls, ergonomic injuries) have reduced significantly and are not necessarily higher than in other sectors. Keeping workers safe and responding to regulatory demands is a key activity along with continuously building a strong safety culture. Safety in our understanding extends beyond the company's boundaries to also ensure safe materials as well as reliable and quality oriented suppliers.

### Our commitment

We want to maintain our focus on ensuring world class health & safety standards and nurturing a company-wide safety culture.

### Our strategic goals to improve workplace safety until 2017

1. Injury and Incident Free (IIF) workplace - Total Recordable Injury and Illness Rate (TRIIR) top tier performer
2. Strong risk assessment culture, fully permeated in everything we do, i.e. in all Management of Change
3. Change processes and in day-to-day activities on the shop floor
4. Full visibility and clarity on the company's expectations vis-à-vis sustainability - towards employees and towards contractors. Full regulatory compliance
5. Strong ownership of HSE matters by Operational Line Management
6. Strong sense of urgency with Senior Management - zero tolerance attitude towards accidents and incidents, critical safety rules and repeat offenders
7. True Learning Organization - robust performance with regards to "closing the loop and not having repeated accidents"

The company has continued to drive down the Lost Time Accident rate per million work hours to perform at the top of the industry. The aim is to continue the downward trend to come as close to zero as possible.



(G4-14)

### Global Safety organization

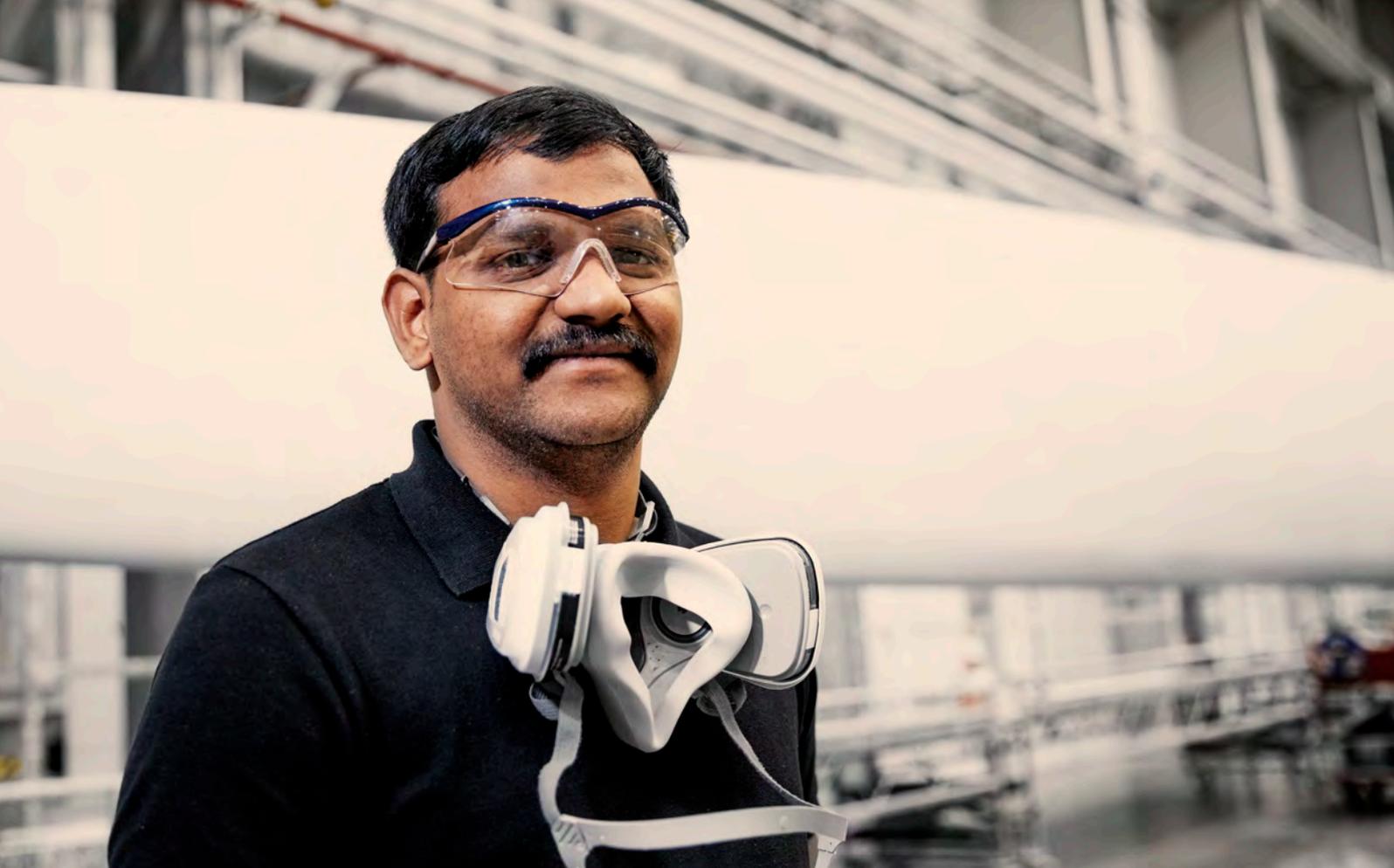
**Certification:** All LM Power sites (except Suape in Brazil and Vadodara, India) had obtained the certification of its systems for managing Health and Safety according to OHSAS 18001 by end of 2015.

**Safety Leadership:** In place since 2010, our Global HSE Council, led by the CEO, promotes and coordinates the implementation of safety policies and procedures across the group. At the end of 2015, this body took on the stewardship of wider Sustainability topics as well.

**Safety Culture:** Sound HSE performance depends as much on strong safety leadership as on company-wide commitment and discipline. Installing a mindset for safety starts with our Global HSE Policy which requires active commitment from all employees and contractors to prevent harm, including injury and ill health. With our global HSE Management system, we ensure that we have processes in place to identify hazards prior to the commencement of any project, comply with applicable health and safety legal requirements as well as establish yearly goals and strategies to deliver continuous improvement. The system includes control measures, focusing on Personal Protective Equipment (PPE), equipment and operational instructions necessary to reduce or eliminate risks and emergency plans for employees. The effectiveness of the implementation is measured through ongoing internal audits, and in the event of incidents or non-compliance, corrective and preventive actions are taken. Our health and safety performance is reviewed annually at management review meetings with local representation to monitor the compliance with standards and certifications.

**Safe processes and products:** The LM Production System based on LEAN principles helps to provide safety in the workshops, organizing workflows to ensure quality production with the most efficient utilization of people and resources. Our managers and employees make regular safety assessments in the manufacturing environment, quickly identifying safety hazards and checking the status of equipment for safety standards during 'safety observation' walks through the production areas. Good ideas are systematically shared between our manufacturing facilities and each plant has a target for idea generation and implementation.

**SoFi:** Key performance indicators related to Health, Safety, Environment and Climate are tracked on a monthly basis and reported through the company's sustainability reporting software, SoFi.



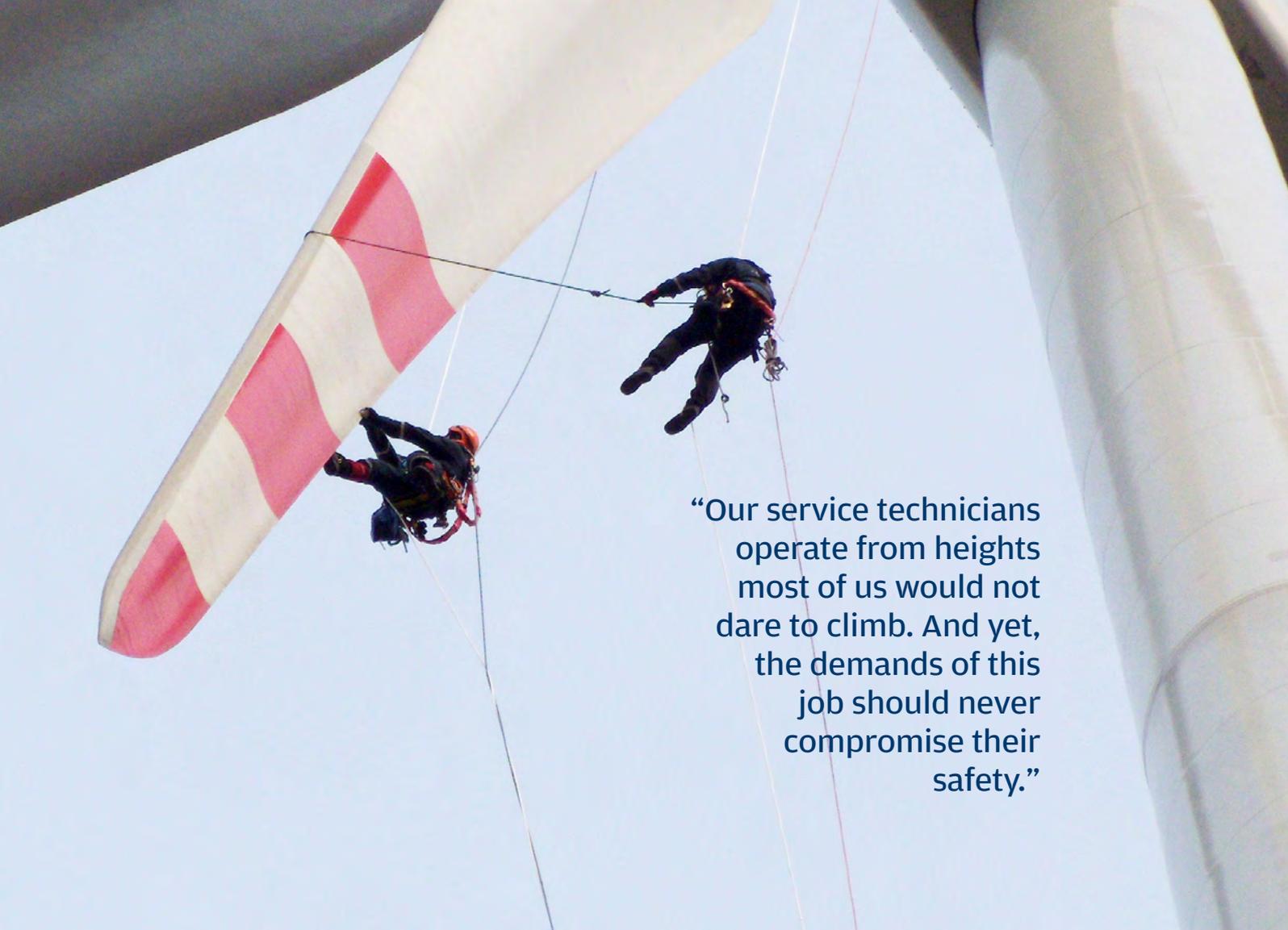
The core metrics for Health and Safety and work environment are the Lost Time Accident (LTA) and Absentee rates which have generally decreased year on year for the past five years. In 2015, however, the Absentee rate for hourly paid employees increased, primarily driven by performance in Brazil. The Lost Time Accident (LTA) rate per million work hours ended at 1.9 in 2015. This is the lowest rate in the company's history. The target for 2016 is an LTA rate of 1.8.

#### **Building a strong safety culture**

Our continuous cooperation with safety experts DuPont over the past six years has helped us in the process of building a strong safety culture. The progress ranges from specific initiatives to improve procedures and standards for key activities like chemical handling, fire safety and working in confined space to comprehensive training in Root Cause Analysis (RCA) incident investigation and change management e.g. when developing and introducing new products, setting up new factories and introducing new materials.

Driving a successful safety organization has a lot to do with promoting and achieving a safety mindset in the workplace, through ongoing communication and training. LM Wind Power has embarked on this journey towards excellence by increased awareness, more rigid enforcement of rules and procedures, as well as intensive training for key personnel, fostering behavior change and safety dialogue. A large proportion of our employees - 25-50% at various levels - are also represented in Health & Safety committees, either at plant level or regional level (under the Global HSE Council) ensuring another level and forum for ongoing dialogue between management and employees.

As part of the company's wider efforts to take care of its people, all locations have initiatives or programs in place to encourage a healthy life style among the employees and their families, from attractive fitness memberships, fruit arrangements in the offices, to flexible work hours etc. Health is not only about keeping fit, watching your diet and getting enough sleep, it's also having a good working environment and a positive social atmosphere with colleagues. Therefore, all plants went through health workshops in 2015 focusing on stress prevention, how to keep fit even on a busy schedule, and highlighting the importance of nurturing good relations at work.



“Our service technicians operate from heights most of us would not dare to climb. And yet, the demands of this job should never compromise their safety.”

## Case study

# From sites, to factories

---

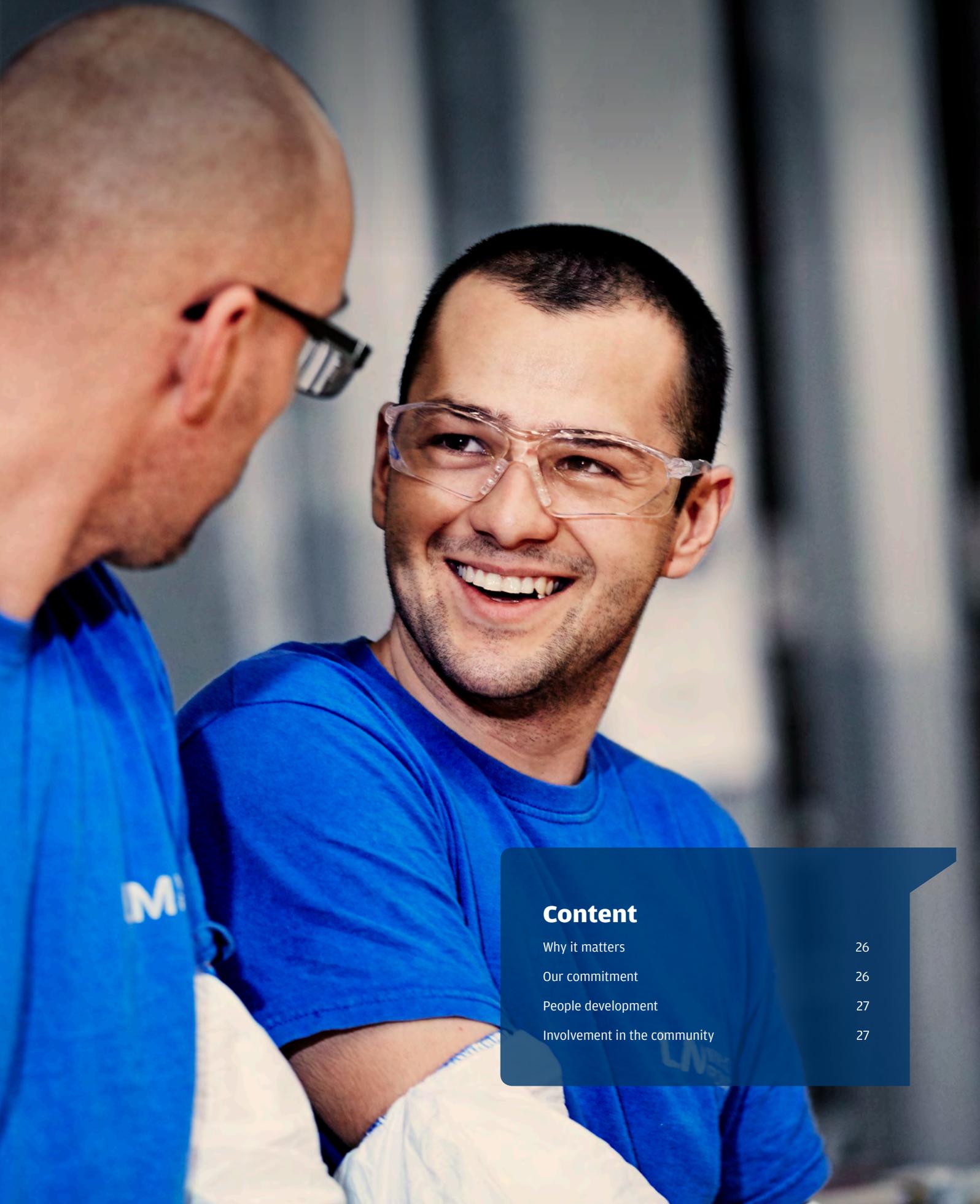
When the LM Wind Power Service team in South Europe (SE) saw Lost Time Accidents (LTAs) increase from 2012 to 2013, they faced the challenge head on. Health, Safety and Environment (HSE) managers realized a trend: LTAs occurred most frequently when service technicians worked in the factories during the “low season” for wind turbine onsite work.

In response to the new hazards presented by this change of scenario, the HSE team defined action plans to focus on processes, tools and people. All SE Service technicians and supervisors participated in training at As Pontes and Castellon plants, focused on specific hazards at the workshop in addition to blade repair onsite risks (i.e., 5S, ergonomics, preventive maintenance of tools or use of forklifts and overhead cranes).

All these actions appear to be a success: achieving a new record for the SE Service team of more than 400 days without an LTA!

“Safety is crucial to a sustainable business,” said Juan Carlos Rivas Rego, HSE Manager, Service SE. “For employees and their families, our HSE commitment promotes a culture where harm to our people or the environment is unacceptable. Also the impact of an LTA reflects directly in the customer satisfaction and our visibility within the wind energy business.”

# People



## Content

Why it matters	26
Our commitment	26
People development	27
Involvement in the community	27

### Why it matters

The importance of having an engaged and diverse talent pool cannot be underestimated. Our wide project portfolio requires highly skilled, empowered and creative people at all levels, starting from business leaders and engineers to supervisors and operators on the shop floor. Our robust HR management practices focus on employee engagement, diversity management, incentives and compensation programs, with the aim of making our company a preferred employer and lay a solid foundation for sustainable growth.

### Our commitment

We strive to provide a fair and respectful, interesting and inspiring work environment with ample opportunity for career development.

### Organizational Integrity

Our Code of Conduct states the overarching principles for doing business ethically and legally, covering among other things the requirement to respect human rights and observe ethical labor practices. These principles are firmly anchored in our HR processes for recruitment, development and fair remuneration, as well as in our cooperation with suppliers based upon a commitment to avoid any illegal practice, e.g. related to child labor, forced labor or discrimination.

The shared ethical standards in combination with our corporate values are important for our ability to meet the ambitious targets of the business, helping us navigate effectively in the many markets where we operate under the same high standards and principles.

### Commitment to diversity

At LM Wind Power we are a culturally diverse team encompassing as many as 32 different nationalities. Our underlying belief that diversity is our strength and a great source of innovation, encourages us to strive for diversity at all levels. Our Code of Conduct clearly states our non-discriminatory hiring practices with regard to gender, race, religion, age, disability, sexual orientation, nationality, political opinion, union affiliation, social or ethnic origin. Still, to strengthen our proactive diversity position, and in particular improve the proportion of women employed across all levels, we have established a Diversity Policy. With this policy we would like to ensure that female talent is not overlooked when conducting structured career reviews and designing and re-designing the organizational set up. The policy goes hand in hand with our Diversity Committee, reporting to the Global HSE & Sustainability Council. The Diversity Committee will set clear targets for diversity and oversee progress for the short and long term, as for instance, our current efforts at addressing imbalance at the top of the organization and matching the aspirations of our current and future female employees.

For instance, at the management level, the company still has a target to further promote gender diversity in its highest governance body, the Supervisory Board. In 2015, this body consisted of two representatives from our owners Doughty Hanson, one of whom is the Chairman, and three members who are also in the executive management team of LM Wind Power. They are all male. The company has set a target to also have one female member of the Supervisory Board by 2017.

## Diverse teams improve performance

As in many manufacturing and engineering companies, our gender split shows a predominance of male employees. There are various examples of initiatives to achieve a more balanced representation, for example in China where our plant in Qin Huang Dao designed a specific initiative to recruit women for the plant. Manufacturing work is not widely perceived as being attractive to women in China but with a focused campaign from plant management and Human Resources, a group of women joined the team. Apart from delivering consistent high quality work, the increased diversity in the team has improved collaboration and the general atmosphere among the employees. It is the aim of LM Wind Power to further increase gender- and other forms of diversity in the business, building on the existing practices of promoting talent through individual performance and career reviews as part of the company's Performance Management Process, and through structured talent reviews of all salaried employees looking at capabilities and mobility

### Promoting good working conditions and responding to challenges of discrimination & corruption

Operating across many different countries and cultures can pose certain challenges of having to deal with unfair working conditions, discrimination and corruption.

We help ensure the necessary protection of our employees by acknowledging their freedom of association and employing people worldwide according to local law and collective bargaining agreements. The unions are particularly well represented in countries such as Brazil, Spain, Denmark, Canada and India where 25-90% of our employees are covered by collective bargaining agreements. This applies primarily to the hourly paid employees. The number of weeks' notice typically provided to employees in relation to significant operational changes are governed by local regulations in all the areas where we operate. In the absence of local legislation or agreements, the gen-

eral guidance provided in our employee handbook is a minimum of two weeks.

In regard to preventing discrimination, we have clear internal guidance and processes for handling of incidents and harassment claims and always conduct a thorough investigation, where applicable with involvement from the union representatives to ensure workers' rights.

We have implemented a number of anti-corruption and bribery prevention measures. Since 2012, all salaried employees have received training in the Code of Conduct and the anti-bribery and corruption provisions from the UK Bribery Act 2010, aligned with our commitment to the UN Global Compact principles. The online training program is not limited to a fixed timing and the employee can take the time they need. In general our employees spend between 30 - 45 minutes for one session. In Q4 of 2015 it was decided to request all staff to retake the e-learning training and pass the test. 96% had completed the training by end January 2016 with the rest following suit in the following weeks.

There were no complaints regarding corruption and active bribery in 2015.

#### **SpeakUP line roll-out and training**

As part of the roll out of LM Wind Power's SpeakUP line, an externally hosted integrity line, all staff are trained on the scope and functioning of this service as one of the elements in the company's anti-bribery and anti-corruption program. Wider compliance topics are covered in this training as well. In May 2015, the SpeakUP line was implemented in Brazil and is now in the process of being implemented to all LM Wind Power locations.

#### **People development**

At the heart of our people development strategy is the HR initiative called "Get, Keep, Grow". This framework aims to create an environment for attracting, retaining and developing the best talent. Knowledge is after all our most important raw material and we make every effort to cultivate it, through trainings, career development, challenging work as well as regular feedback and performance appraisals. In an effort to achieve high performance and keep pace with accelerating change in the business environment, we also give space to personal initiative and innovative thinking.

For the salaried employees in staff functions, the framework for our development activities is based on the 70-20-10 model. 70 refers to the proportion of development that comes from focused efforts to provide opportunities for people to grow through exposure to challenging tasks in the day-to-day job; 20 refers to the proportion of development that comes from feedback and support given to and provided by others; and 10 refers to the proportion of learning and development that comes from formal training and courses.

We systematically analyze and upgrade the scope of our development activities with our Performance Management System (PMP), which follows a cycle of annual objective setting, performance review and development planning. Around 20% of the total population of employees are covered by the PMP system and follow the process for tracking performance and development. This corresponds to all salaried employees (i.e. not hourly paid workers). In some of our plants, we have structured performance and development reviews for all employees and we have initiated a project to develop a common global Performance and Development Review Process for hourly paid employees to be implemented during 2017.

We place high importance on providing quality training to both hourly paid and salaried staff, especially to the employees working in our manufacturing facilities to get them familiar with our global processes, detailed work instructions, Lean practices, quality management as well as health and safety issues. We also offer training to improve language skills, project management and leadership. One of the most wide ranging programs was the global 'Grow Plant Leaders' initiative that was kicked off in 2015 to strengthen plant leaders at various levels, and boost their capabilities in ensuring safety, quality, work environment and delivering high performance. So far more than 1,400 managers, supervisors and team leaders have been through the 'Grow Plant Leaders' training which consists of five modules.

#### **Involvement in the community**

LM Wind Power's plants and offices around the world operate primarily in dedicated industrial areas and under all applicable local laws and regulations. None of them are assessed to have any significant negative impact on the local communities. Waste, emissions and other impacts from the plants' activities are managed actively, in accordance with our global HSE Management System and local regulations. And the employment and economic development following the establishment of a plant is highly valued. Our community engagement is meaningful, albeit it is mostly local and ad hoc. Some locations, however, as Dobaspet and Little Rock have dedicated teams to identify, prioritize and manage community activities, in line with our corporate values, the most acute local needs and, if possible, in connection with a strategic framework of our business. In India, the stricter requirements for companies to manage and report spending on CSR have been instrumental for a more advanced approach with policies, priorities and dedicated teams to manage the activities.



Our people solve challenging tasks every day. When they have reached their potential in one area and need new challenges, we do what we can to give them new opportunities, exposing them to new tasks, colleagues or cultures.

## Case study

# A job at the top

---

It was the highest they had ever climbed. Janusz Wałęsik, Paweł Bylewski and Tomasz Dadas usually work in low altitudes as operators in the Goleniów, Poland plant, but that was soon about to change.

In October 2015, three LM Wind Power operators accepted an invitation from the Service team to join a working in heights test - exchanging their comfortable routine in the workshop with a 45 meter climb up the plant chimney. The result? Sore arms and exhaustion but permission to continue service training which will eventually allow them to perform work on a real wind turbine in the field.

Allowing people to expand their perspective and step out of their comfort zone is not only an investment in their personal motivation and job satisfaction, it keeps our talent in the organization longer, increases understanding across the business and creates better results.

### **Flexibility and variation**

Manager, Service Operations, Marcin Majdzik, is the man behind the untraditional recruitment of service technicians in the plant. Over the past couple of years, he and his colleagues have worked hard on the integration of Service back into Operations - contributing to a more sustainable service organization, by increasing flexibility and utilizing the talented employees that already work for LM Wind Power.

“Training operators to also perform service tasks in the field is a good example of a synergy,” Marcin explained. “Our service business is growing and the tasks require a high level of skills in blade maintenance and repair. The operators in the plants already have those skills, so it is easier to equip them to work in the field - provided that they are not afraid of heights of course!”

Marcin has seen his share of aspiring service technicians who panicked during the climb up a turbine. This can be a very costly affair not to mention highly unpleasant and unsafe for those working in the crew. “Working as a service technician requires quite a lot of training, like rescue at height, firefighting, working with electrical tools, etc. There are also a number of certifications. All that training will be wasted if people are afraid of heights. So we’ve learned from bitter experience that we need to test that first,” Marcin smiled.

Luckily Janusz, Paweł and Tomasz passed the test and look forward to the adrenalin kick of going up and down a real turbine! They are now ready to go through the rest of the training and start working in the field which Marcin assesses is realistic to achieve before the season ends.

# Technology



## Content

Why it matters	30
Our commitment	30
Better blades	30
Improved production environment	30

**Why it matters**

Our main sustainability challenge and opportunity lies in promoting the progress and growth of renewable energy as an attractive and affordable alternative to traditional energy sources. This can be accomplished with more efficient and cost effective products, processes and services, which are achieved through technological innovations. With a focus on innovation, we strengthen our competitive positioning and growth opportunities while contributing to the expansion of sustainable and clean energy. Innovation is indeed at the heart of our sustainability efforts. We can only enhance our social, safety and environmental assets with our ability to innovate.

This belief is underpinned by consistent, firm investments in R&D even in financially challenging years. Between 2011 and 2015, the percentage of revenue spent on R&D has been stable between 3.5 and 5.4 percent, reflecting our commitment to innovation.

**R&D investment as % of revenue**

2011	2012	2013	2014	2015
5.4	4.2	5.4	4.1	3.5

**Our commitment**

We want to continue the strong progress on innovation to improve reliability and performance, while reducing environmental impact of our processes and activities to maintain industry leadership

**Better blades**

Over the years, we have launched several enhanced designs of lighter and longer blades that are even more effective and we continue to boost and develop our designs and manufacturing processes to increase output and reduce cost. Simply put, we strive to make the most efficient and reliable rotor blades at the lowest possible price.

LM Wind Power has a strong engineering, manufacturing and quality 'DNA' and it is clear that we need to continue our investment in research and development in order to maintain our position as a technology leader. 2015 was another strong year of innovation, with our talented engineers delivering significant progress on longer, lighter wind turbine blades and new approaches to manufacturing, including eight prototypes - a record for one year. These blades are the result of close collaboration with a wide range of customers and will be applied all over the world. In addition to the new blade types, we also introduced a number of new technologies to enhance Annual Energy Production, reduce noise or improve the reliability of our blades.

**Improved production environment**

While developing and launching new technologies, we also had a firm eye on quality improvements and implementing more sustainable material solutions or more cost effective processes in manufacturing. The quality improvement initiatives led to progress on key metrics. LM Wind Power has worked systematically and focused on implementing quality improvement programs over the past years and the efforts have materialized significantly as measured on the supplier performance on incoming material. The improvement from 2013 to 2014 was tremendous with 12,700 PPM (Parts Per Million) in 2013 to 2,220 in 2014. Nonetheless the company achieved a further reduction to 1,050 PPM in 2015 - a 48% improvement - effectively addressing and even eliminating repeated quality issues on incoming material.



Building on the successful efforts to replace various materials and chemicals with more sustainable alternatives in 2014, the Materials & Process department continued global implementation of innovative solutions to remove HSE-related risks, eliminate waste and drive down cost. Some of the most notable examples were the replacement of PVC with PET foam in a number of blade types as well as changing the formula in the polyester resin to include a higher percentage of recycled materials. PET is used on some of the blade components and has a lower environmental footprint and lower cost than PVC. The supplier is in the process of switching to 100% recycled PET, an initiative that we welcome. According to the supplier, this change reduces CO<sub>2</sub> emissions from the resin production by 25%. The various initiatives are expected to generate annual cost savings of almost EUR 8 million.

We are determined to do anything possible to better understand and manage the risks in our business and at the same time we have pioneered alternative solutions. We already introduced low styrene gel coat in our global operations some years ago, which we developed with a key supplier. Such innovations are now widely available to all manufacturers using similar materials. The company is currently in the testing phase on newly developed resins and gelcoats without styrene, supporting our ambition to further minimize any risk from styrene exposure, to ideally create a styrene free production environment. This will benefit the employees who will experience improved working conditions, and can potentially bring savings through elimination of the need for some personal protective equipment and ventilation in work spaces.

## Examples of initiatives in materials and technology that improved sustainability performance in 2015:

- Implementation of PET instead of PVC for all smaller components and non-structural parts. Implementation for structural parts ongoing.
- Development of a hybrid carbon technology, which enables longer and lighter blades at a competitive cost compared to full carbon blades. The hybrid carbon material was implemented in the world's longest blade, launched in 2016.
- Leading edge de-icing technology developed and tested full-scale and in the field. By heating the blade's leading edge to melt ice, the system for de-icing boosts the output from the wind turbines, further increasing the competitiveness of wind power in cold climates. The technology will allow a wind farm to increase its power generation by 5-7% on average, with an increase as high as 20% for some specific turbines.
- Implementation of glass optimization measures that reduce glass waste by 80%
- Noise serrations developed and tested. These features help address one of the challenges for the expansion of wind power, namely the resistance to have them installed close to residential areas due to noise.



## Case study

# Launching Canada's longest blade

---

Every day, our engineers work hard to create longer and lighter blades that extract more energy from the wind and reduce the cost of energy. It never stops. We develop add-ons, new materials, and innovative solutions that increase blade reliability and performance, while reducing the environmental impact of our processes and activities. In every aspect of the blade life cycle, we carefully consider how we can protect them better and find new ways to enhance their performance. The seemingly simple, white structures embody more than 35 years of knowledge and continuous research and development, and we are determined to be the leader in this field for many years to come through further scrutiny of our technology platform and innovation.

Sustainability for our business depends on stability in the markets in which we operate. Showing that we are here to stay in Canada requires a combination of innovation and communication: inviting politicians, customers and the local community to celebrate our latest technology, such as our de-icing system.

In October our Gaspé plant celebrated the launch of Canada's longest blade in serial production – LM 55.8 meter blades for Senvion that will power the 150 MW Mesgi'g Ugu's'n (MU) wind farm. This wind project involves a 50-50 partnership between the three Mi'gmaq Nations of Quebec (Gesgapegiag, Gespeg et Listuguj) and the developer Innergex.

On the day of the launch celebration, co-hosted with Senvion, the LM Wind Power Gaspé plant was filled with politicians, guests and journalists with microphones and rolling cameras. The team was very well prepared – benefiting from previous

experience with high level visits and effectively delivering a message on the importance of continuing to develop wind power in Quebec. “We are building a strong relationship with the native community, Senvion and Innergex,” said Plant Director Alexandre Boulay, who gave several interviews for both TV and print.

### Speaking up for wind

Alex and the Gaspé team regularly open the plant for visitors to increase awareness of the wind industry's contribution in Quebec. The political framework is a decisive factor influencing the future of the plant; our colleagues in Gaspé work hard every day to prove that wind energy needs to play a prominent role in the energy policy for 2016 and beyond.

“We need to do everything we can to make decision makers aware of the value we bring in terms of clean and affordable energy, economic development and highly qualified local jobs,” Alex said. “Our technical innovations, including a state-of-the-art de-icing system and the launch of new blade types, are examples of how the industry works to constantly lower the cost of wind energy.”

Senvion issued a press release at the event, featuring thorough statements from each of the parties involved. It ended with the words: “With the serial production of the 55.8 meter blade with anti-icing, LM Wind Power and Senvion are contributing to Quebec's growing expertise in cold and complex terrain wind technology and in turn positioning Quebec as a leader in wind energy across Canada and internationally.”

An aerial photograph of a paved road winding through lush green fields and forests. A yellow truck is pulling a long, large-diameter pipe on a multi-axle trailer. Other vehicles are visible further down the road. The sky is clear and blue.

# Sustainability performance at a glance

## Content

Environment	34
Working environment	36
Human rights & anti-corrupcion	39

# Environment

The data on environment is reported as a total for the group with the blade manufacturing business representing the vast

majority of material consumption, energy, water consumption and waste generation.

	2015	2014	2013	2012
<b>Blades produced</b>	9,474	8,262	7,173	8,856
Raw material used (tons)	89,270	65,758	59,097	93,135
<b>Energy consumption (GJ)</b>				
<b>Non-renewable fuel</b>				
LPG	15,361	16,297	16,065	16,753
Diesel	42,197	38,624	62,542	168,030
Gasoline	139	212	160	194
Natural Gas	179,342	209,011	256,573	218,269
Heating Oil	0	0	190	367
<b>Total fuel not used for transport (GJ)</b>	237,039	264,144	335,631	403,612
<b>Electricity (GWh)</b>	103	97	80	97
Total electricity consumption (MJ)	370,577,538	347,974,598	288,631,814	348,598,869
<b>Total energy consumption</b>	607,616,712	595,021,985	635,722,624	752,211,102
Energy use per kg blade produced (MJ)	0,46	0,62	0,94	0,93
<b>Waste</b>				
Total waste for landfill (tons)	9,210	10,616	6,364	9,259
Total waste for incineration (tons)	10,982	7,710	7,399	9,758
Total waste for recycling (tons)	5,874	2,934	2,348	3,031
<b>Total waste (tons)</b>	<b>26,066</b>	<b>21,260</b>	<b>16,111</b>	<b>22,048</b>
Waste / per kg blade produced (kg)	0.305	0.378	0.347	0.362
<b>Carbon footprint</b>				
<b>Scope 1</b> direct emissions (activities owned or controlled by the organization that release emissions direct to the atmosphere e.g. emissions from owned or controlled boilers, furnaces, process equipment, vehicles etc.)	106,074	118,290	70,185	274,649

(G4-EN3), (G4-EN23), (G4-EN15)

	2015	2014	2013	2012
<b>Scope 2</b> Energy indirect emissions (emissions released into atmosphere that are a consequence of our activities but which occur at sources we do not own or control e.g. emissions associated with our consumption of electricity, heat, steam, cooling)	72,560	70,185	65,633	76,992
<b>Scope 3</b> other indirect emissions (all other activities that release emissions as a consequence of our activities, but not indirect energy sources and which occur at sources beyond our control e.g. business travel, use of sold products or services, waste disposal)	360,246	247,805	247,034	370,103
<b>Carbon footprint (kg) / kg blade produced</b>	5.9	6.5	6.9	8
<b>Water consumption</b>				
<b>Ground water/municipal water (m³)</b>	168,286	143,069	173,340	188,721
<b>Water use, on site (m³)</b>	43,750	41,794	37,450	50,061
<b>Total</b>	212,036	184,863	210,790	238,782
<b>Water recycled and reused in India- % of water withdrawal (m³)</b>	26	23	18	18
<b>Efficiencies &amp; savings</b>				
<b>Savings from waste reduction program (EUR million)</b>	5.9 (exceeding the target of 3.7) (more than 20 since the program inception)	4.3 (exceeding the target of 2.7)		

# Working environment

	2015	2014	2013	2012
<b>Total number of employees and breakdown by employment type, contract, gender and region*</b>				
Number of employees (end of year)	6,332	4,505	4,844	5,803
* The employee number now includes Brazil which was fully integrated into the LM Wind Power Group as of December 2015. Contractors and trainees were included in the employee numbers up until 2014 but will be reported separately as of 2015 to ensure consistency with the annual report.				
<b>Total workforce by employment contact and gender</b>				
Blue collar	Male: 4,513 Female: 586	Male: 3,331 Female: 422 Gender not registered: 220	Male: 3,231 Female: 377 Gender not registered: 242	Male: 3,461 Female: 358
White collar	Male: 911 Female: 322	Male: 747 Female: 259 Gender not registered: 14	Male: 745 Female: 248 Gender not registered: 1	Male: 773 Female: 264
<b>Total</b>	6,332	4,993	4,844	4,856
<b>Total number of permanent employees by employment type and gender</b>				
Fixed term contract	Male: 2,298 Female: 291	Male: 1,819 Female: 174 Gender not registered: 178	Male: 1,671 Female: 136 Gender not registered: 239	Male: 2,001 Female: 191
Permanent contract	Male: 3,126 Female: 617 Gender not registered:	Male: 2,220 Female: 491 Gender not registered: 32	Male: 2,305 Female: 489 Gender not registered: 4	Male: 2,233 Female: 431
<b>Total</b>	6,332	4,914	4,844	4,856
<b>Workforce by employees, supervised workers and gender</b>				
Employees	Male: 5,062 Female: 853 Gender not registered:	Male: 3,773 Female: 630	Male: 3,680 Female: 579 Unknown employees: 243	Male: 3,939 Female: 575
Managers	Male: 362 Female: 55 Gender not registered:	Male: 305 Female: 51	Male: 296 Female: 46 Gender not registered:	Male: 295 Female: 47
<b>Total</b>	6,332	4,993	4,844	4,856

\* indication of 1) job stability 2) the organization's contribution to the economic development 3) sustainability of the workforce 4) gender representation across the organization, and 4) the optimal use of available labor and talent.

	2015	2014	2013	2012
<b>Total workforce by region and gender</b>				
China	Male: 1,550 Female: 134 Total: 1,684	Male: 1,376 Female: 129 Unknown: 33 Total: 1,538	Male: 1,214 Female: 103 Total: 1,317	Male: 1,401 Female: 128 Total: 1,529
Europe	Male: 1,614 Female: 393 Unknown: 6 Total: 2,007	Male: 1,044 Female: 270 Unknown: 19 Total: 1,333	Male: 1,137 Female: 278 Unknown: 14 Total: 1,429	Male: 1,452 Female: 328 Total: 1,780
India	Male: 745 Female: 23 Unknown: 6 Total: 768	Male: 773 Female: 28 Unknown: 6 Total: 807	Male: 808 Female: 19 Total: 827	Male: 844 Female: 19 Total: 863
North America (USA+CAN)	Male: 835 Female: 243 Unknown: 6 Total: 1,078	USA+CAN Male: 886 Female: 254 Unknown: 176 Total: 1,316	Male: 817 Female: 225 Unknown: 229 Total: 1,271	Male: 537 Female: 147 Total: 684
South America (Brazil)	Male: 680 Female: 115 Unknown: 6 Total: 795			
Total	6,332	4,993	4,844	4,856
<b>Percentage of the contractors compared to the entire workforce</b>				
Contractors	433	-	461	192
Permanent Employees	6,332	-	4,383	4,664
% of the total workforce	6.2% of 6,965	10.5 % of 4,953	10% of 4,844	4 % of 4,856

	2015	2014	2013	2012
<b>Employee training</b>				
<b>The average hours of training provided to employees by gender and region</b>				
LM Wind Power has reported detailed data on this in the past, but has decided to only report at an overall level on this going forward. The records of time spent on training are not consistently maintained across all locations and the process of collecting the data and validating it does not correspond favorably to the value of reporting it.				
There is, however, no doubt that training is an absolutely crucial activity in the company to ensure product and process quality, develop our people all over the world and grow the business sustainably. The level of training activity has only increased in 2015 in line with the rapid growth and continuous maturing of the company. Basic blade manufacturing skills training to new operators in the plants, leadership training both in the plants and support functions, HSE and Quality management training, Lean Six Sigma training, crisis management training, Code of Conduct and SpeakUP line training were just some of the examples of training conducted in 2015 both at the local and global level, summing up to thousands of hours of training worldwide.				
<b>Performance reviews</b>				
Percentage of employees receiving at least annual performance reviews				
Total %	20.0	25.2	21.4	20.2
These numbers reflect the fact that all salaried employees are covered by LM Wind Power's Performance Management Process (PMP) which follows a cycle of annual objective setting, performance review and development planning. The PMP system is designed to ensure that our people know and agree to what they need to contribute and how, and we help them obtain the right competencies to pursue the career that adds value for them and LM Wind Power as a whole.				
Employees represented in formal Health & Safety committees				
Total : approximated (% reported in intervals of 0-25, 25-50)	Between 25-50			
Accident rates (involving lost time)				
Total, per million work hours	1.9	2.0	2.9	4.0
The company continued to improve on key performance indicators on health and safety with a Lost Time Accident (LTA) rate per million work hours ending at 1.9 in 2015. The target for 2016 is 1.8.				
Absentee rates				
Salaried employees (% of absent days out of planned workdays per year)	0.4	0.6	0.5	0.7
Hourly paid employees (% of absent work hours out of planned work hours per year)	1.6	1.3	1.2	1.5
The absentee rates for hourly paid employees increased in 2015 primarily driven by the performance in Brazil where we see significantly higher absentee rates than in the rest of the world. Several measures are continuously introduced to retain employees, including training and development programs, attractive benefits, social events and teambuilding activities.				
Certifications: percentage (%) of sites certified by end 2015				
ISO 9001:2008	95	94	100	100
ISO 14001:2004 and OHSAS 18001	89	82	-	-
LM Wind Power had 14 blade manufacturing sites in 2015, two addresses in Little Rock, which both need individual certification and five main office locations in Denmark, the Netherlands, India and China. The company has combined the ISO 14001 and OHSAS 18001 requirements in one integrated Health, Safety & Environment (HSE) Management System with all external audits being conducted under a combined audit set up for improved efficiency.				

# Human rights & anti-corruption

	2015	2014	2013	2012
Incidents of child labor identified at LM Wind Power sites (G4-HR5)	0	0	0	0
Incidents of child labor identified at suppliers' sites (G4-HR5)	0	0	0	0
<p>The company's Code of Conduct clearly states that we support and respect the protection of internationally proclaimed human rights and that we ensure we do not endorse or allow human rights abuses. We train our employees in the requirements and expectations to them and the Code of Conduct is an integrated part of the framework agreements with suppliers. The majority of the LM Wind Power workforce is employed in China and India and we have many young applications. We have a clear policy that we do not hire people under the age of 18 and applicants are required to show their ID card or birth certificate as part of the recruitment process.</p>				
<b>Community involvement</b>				
Charitable donations (EUR)	104,955	75,812	63,335	20,000
Community work (hours provided)	6,476	12,155	3,127	n/a
<p>LM Wind Power is an active corporate citizen in the local communities in which we operate. Our employees and local subsidiaries contribute both time and money to support charity, improve local welfare and health and to promote the power of wind in creating a more sustainable world.</p>				
<b>Training in anti-corruption policies and procedures</b>				
Percentage (%) of employees eligible for training	96	75	75	n/a
<p>Since 2012, LM Wind Power has trained all salaried employees in the Code of Conduct, anti-corruption and UK Anti-Bribery Act aligned with our commitment to the UN Global Compact principles. All new office staff employees go through this e-learning program as part of their onboarding, and recertification was repeated in 2015.</p>				

(G4-S01), (G4-S04)

# GRI G4 content index



## General Standard Disclosures

GRI Indicator	Report Section	Page / Comments	UNGC Principle	External Assurance
<b>STRATEGY AND ANALYSIS</b>				
G4-1	Message from CEO	3		
<b>ORGANIZATIONAL PROFILE</b>				
G4-3	About LM Wind Power	4		
G4-4	About LM Wind Power	4		
G4-5	About LM Wind Power	4		
G4-6	About LM Wind Power	4, 5		
G4-7	About LM Wind Power	4		
G4-8	About LM Wind Power	4, 36		
G4-9	About LM Wind Power Sustainability Performance at a glance	4 36		
G4-10	Sustainability Performance at a glance		6	
G4-11	People	26	3	
G4-12	Supplier dialogue as a foundation for success Stakeholder engagement	9, 14		
G4-13	About this report	11		
G4-14	Material Issues & Boundaries (Customer health and safety) People	13, 22		
G4-15	Message from CEO Values & Ethics Sustainability Performance at a glance	3, 6, 38		
G4-16	Appendix	46		
<b>IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES</b>				
G4-17	About LM Wind Power	4		
G4-18	Material Issues & Boundaries	12		
G4-19	Material Issues & Boundaries	12, 13		
G4-20	Material Issues & Boundaries	12, 13		
G4-21	Material Issues & Boundaries	12, 13		
G4-22	About this report	11		
G4-23	Material Issues & Boundaries	12, 13		
<b>STAKEHOLDER ENGAGEMENT</b>				
G4-24	Stakeholder engagement	14		
G4-25	Supplier dialogue as a foundation for success Stakeholder engagement	9, 14		
G4-26	Stakeholder engagement	14, 15		
G4-27	Stakeholder engagement	14, 15		

GRI Indicator	Report Section	Page / Comments	UNGC Principle	External Assurance
<b>REPORT PROFILE</b>				
G4-28	About this report	11		
G4-29	About this report	11		
G4-30	About this report	11		
G4-31	About this report	11		
G4-32	About this report	11		
G4-33	About this report	11		
<b>GOVERNANCE</b>				
G4-34	Organizing sustainability	8		
<b>ETHICS &amp; INTEGRITY</b>				
G4-56	Values & Ethics	6, 7	10	

**Category: Environmental**

GRI Indicator	Report Section	Page / Comments	UNGC Principle	Comments
<b>ASPECT: ENERGY</b>				
G4-EN 3	Sustainability Performance at a glance Environment (Energy)	34	7, 8	
<b>ASPECT: WATER</b>				
G4-EN 8	Environment (Water Consumption) Sustainability Performance at a glance Environment (Water consumption)	19, 35	7, 8	
G4-EN 10	Environment (Water Consumption) Sustainability Performance at a glance Environment (Water consumption)	19, 35	8	
<b>ASPECT: EMISSIONS</b>				
G4-EN 15	Sustainability Performance at a glance Environment	34		
G4-EN 16	Sustainability Performance at a glance Environment	35		
G4-EN 17	Sustainability Performance at a glance Environment	35		
G4-EN 19	Sustainability Performance at a glance Environment	35		
<b>ASPECT: WASTE</b>				
G4-EN 23	Environment (Waste) Sustainability Performance at a glance	19, 34	8	
<b>ASPECT: TRANSPORT</b>				
G4-EN 30	Data not available		8	
<b>ASPECT: SUPPLIER ENVIRONMENTAL ASSESSMENT</b>				
G4-EN 32	Supplier dialogue as a foundation for success	9	8	
G4-EN 33	Supplier dialogue as a foundation for success	9	8	

**Category: Social**

GRI Indicator	Report Section	Page / Comments	UNGC Principle	External Assurance
<b>LABOR PRACTICES AND DECENT WORK</b>				
<b>ASPECT: LABOR/MANAGEMENT RELATIONS</b>				
G4-LA 4	People (Promoting good working conditions and responding to challenges of discrimination & corruption)	26		
<b>ASPECT: OCCUPATIONAL HEALTH AND SAFETY</b>				
G4-LA 5	Safety Sustainability Performance at a glance	23, 38		
G4-LA 6	Sustainability Performance at a glance	38		
<b>ASPECT: TRAINING AND EDUCATION</b>				
G4-LA 9	Sustainability Performance at a glance	37	6	
G4-LA 10	People (People development)	27		
G4-LA 11	Sustainability Performance at a glance	38	6	
<b>ASPECT: SUPPLIER ASSESSMENT FOR LABOR PRACTICES</b>				
G4-LA 14	Supplier dialogue as a foundation for success	9		
G4-LA 15	Supplier dialogue as a foundation for success	9		
<b>ASPECT: INVESTMENT</b>				
G4-HR 2	People (Promoting good working conditions and responding to challenges of discrimination & corruption)	27	1	
<b>ASPECT: NON-DISCRIMINATION</b>				
G4-HR 3	People (Promoting good working conditions and responding to challenges of discrimination & corruption)	26	6	
<b>ASPECT: FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING</b>				
G4-HR 4	Supplier dialogue as a foundation for success Material Issues & Boundaries People (Promoting good working conditions and responding to challenges of discrimination & corruption)	9, 13, 26		
<b>ASPECT: CHILD LABOR</b>				
G4-HR 5	Material issues and boundaries Supplier dialogue as a foundation for success People (Organizational Integrity) Sustainability Performance at a glance	9, 13, 26	3	
<b>ASPECT: FORCED COMPULSORY LABOR</b>				
G4-HR 6	Supplier dialogue as a foundation for success Material Issues & Boundaries People (Organizational Integrity)	9, 13, 26	4	

GRI Indicator	Report Section	Page / Comments	UNGC Principle	External Assurance
<b>LABOR PRACTICES AND DECENT WORK</b>				
<b>ASPECT: SUPPLIER HUMAN RIGHTS ASSESSMENT</b>				
G4-HR 10	Supplier dialogue as a foundation for success	9		
G4-HR 11	Supplier dialogue as a foundation for success	9		
<b>SOCIETY</b>				
<b>ASPECT: LOCAL COMMUNITIES</b>				
G4-SO 1	People (Involvement in the community) Sustainability Performance at a glance	27, 39		
G4-SO 2	People (Involvement in the community)	27		
<b>ASPECT: ANTI-CORRUPTION</b>				
G4- SO3	People (Promoting good working conditions and responding to challenges of discrimination & corruption)	27		
G4- SO 4	People (Promoting good working conditions and responding to challenges of discrimination & corruption) Sustainability Performance at a glance	27, 39		
G4- SO 5	People(Promoting good working conditions and responding to challenges of discrimination & corruption)	27		
<b>PRODUCT RESPONSIBILITY</b>				
<b>ASPECT: PUBLIC POLICY</b>				
G4- PR 1	Material Issues and Boundaries (Occupational Health and Safety) Safety	13		

# Appendix



# Appendix 1

---

## Memberships

**CWPM** - China Wind Power Manufacturers

**DWIA** - Danish Wind Industry Association

**Brazil membership** (ABB Eolica)

**AWEA** - American Wind Energy Association

**CANWEA** - Canadian Wind Energy Association

**UK Renewable**

**International partnering forum**

**VDMA** (Verband Deutscher Maschinen- und Anlagenbau, German Engineering Federation)

**EWEA**

**EWEA** Offshore working group

**SER** (Syndicat des Energies Renouvelables)

**FEE** (French Wind Energy Associationv )