More than just a number

Why are 100 gigawatts so significant?

100,000 megawatts or 100 gigawatts – it’s an impressive amount! But why does this mean so much to us? Why is 100 GW of delivered gearbox capacity such an important milestone for Winergy that we are publishing a magazine to celebrate it and to look back on our 33 years of history in producing wind turbine gearboxes?

First of all, it’s a number which fills us with pride. We are the first company in the wind industry to exceed the 100 GW mark in terms of installed capacity. And this mark is even more impressive if you compare it with total worldwide installed wind turbine capacity. According to the Global Wind Energy Council (GWEC), there were wind turbines with a total capacity of approximately 318 GW in operation around the world at the end of 2013. So the proportion of wind turbines using Winergy gearboxes is just under 30%. That means almost a third of the wind turbines in the world use our gearboxes! When we became aware a few months ago of what milestone we were approaching, we wondered what would be the best way to celebrate this event and also to thank all the people who have been part of this achievement.

You are holding the result in your hands. It’s a magazine that serves as a commemorative publication, a chronicle and a customer and company magazine. It’s a document that records this success for everyone and offers an insight into Winergy as it is today – with pride and satisfaction, and also with a wink. But most of all with the awareness that it was all only possible with a huge team of passionate employees.

Because that’s what we are!
Dear friends, business partners and Winergy team,

We have been manufacturing special products for the wind turbine since more than 30 years. The wind energy industry is still very young compared to many other manufacturing industries such as the automotive and aerospace sectors, and only comparatively recent to the pioneering phase a few years ago. A mature wind energy industry has only existed for about ten years.

Our first wind turbine gearbox was a standard industrial model from a catalogue that we used in a test turbine in 1977. It was a Modulwind 100 with a power output of 45 kW and weighing only 1.4 t, giving it a power density of 65 W/kg. We started to develop our own gearbox specifically to meet the needs of the industry in the early 1980s. Today, the gearbox power densities are now as high, meaning just half the material is needed for the same power output. Winergy has had a major influence on the development.

Setting aside a brief boom in California in the mid-1980s, business developed slowly at first, but then picked up again during the 2000s and became much more global. We have kept pace with this growth and in some years now have manufacturing plants around the world. And with our many co-workers in these countries, the Winergy team has naturally become more international.

Many of the people who make us what we are today have stayed with us for a long time – long enough to remember the pioneering phase. Others have moved on over the years. All others identify with and are excited about what we make. Winergy is all about decades of experience and the search for continuous improvement. We combine with a high level of commitment and a focus on constant development technology. And this is something we can be proud of! This also the only exploration is as to why we are so ahead of our competition, with 40,000 MW of wind turbine capacity around the world and constant innovations. That shows how much confidence customers have in our products and in the people behind them. And we have maintained working closely with some of them for decades.

Looking ahead, I would like first of all to thank all of you – our friends, business partners, but also all the Winergy team – for making this possible.

Stefan Teobock, CEO

Dear Winergy employees,

100 GW of supplied wind turbine capacity fills us with satisfaction and pride – not only the sheer scale of the amount, but also the success story behind it, which you, the entire Winergy team, have made possible by the way in which you have worked with our customers and suppliers.

This 100 GW mark represents a long-term strategy and technological progress, and our constant customer relationships and trusting cooperation are a source of our success. They are also built on a great passion for the idea of manufacturing the best gearboxes for what we believe is a team with the absolute drive to succeed.

With this drive, you have, over time, installed power equal to about 100 large power plants and have therefore played an important part in the success of wind power and made a major contribution to the energy transition.

We would therefore like to see our 100 GW contribution to the energy transition as an opportunity to thank you, our workforce personally. With your technical expertise, your team spirit and your absolute customer orientation, you gain the trust of our customers anew every day, thus laying the foundations for our ongoing and future successes.

Winergy is a successful company segment within Siemens and makes a major contribution to the success of our business unit. You can be justly proud of what you have achieved and of your years of great work. Because reaching 100 GW of wind power has quite often meant 100% more commitment and effort. We have been following your success story with great appreciation for some time now and would also like to express the thanks and respect of our business unit and of Siemens AG as a whole.

Theo Maas, CEO,
Siemens AG/Winergy AG

Dear Winergy team,

To date, wind turbine capacity of about 300 GW has been installed around the world. And with a gearbox capacity accounting for 40% of that, Wind Energy can be proud of having made a significant contribution to the international development of wind energy by providing a high level of power, to be expanding renewable energy in general.

Following nearly 40 years of work in wind energy, Winergy was made a separate, independent entity within the Siemens Group in 2001 in order to be able to better address the technical and commercial challenges as well as the dynamics of this new industry to success even with its supplying technically sophisticated, competitive gearboxes solutions to the wind power industry around the world. Winergy quickly rose to the challenges of the market, becoming a global player in all continents. And with its innovation, investment and the commitment of its employees, it actively contributed to increasing the acceptance and competitiveness of the wind industry.

During my time as a Chairman of the Supervisory Board, I found the international Winergy team to be extremely resilient, flexible, capable and responsible. It remains to today one of the successes and the market honours that. Today’s position and performance are the basis for tomorrow’s motivation.

For me, the thing that sets the wind business apart has always been the people in it. I have found motivation of working with the “people” of this industry and at some personal highlights with them. In this context, the customers, suppliers or the house staff.

With a few regional variations, the wind energy sector is on course for positive growth over the next decade. Relative growth will be lower than in the previous 25 years, but is still solid, continuing with a high level of absolute demand. In the future, we must focus on competitiveness achieved by means of technological developments and efficiency improvements, while bearing in mind the fact that the external factors that have driven decisions in favour of wind and Winergy in the past have lost some of their validity, namely having a positive impact on catastrophic global climate change and reducing the political risks in some markets.

To sum up Winergy all the best for the next 100 GW!

Manfred Egelwisse,
Siemens AG/Winergy AG

Foreword
Constructing a turbine with today’s power output simply wouldn’t have been possible with the turbine technology of 10 to 15 years ago with that of today, modern turbines are larger, but they are also more productive, more efficient and more reliable, not to mention cheaper. Not only has there been a clear increase in capacity factors, i.e. the percentage of full-load hours at a wind farm, the costs of generating energy are also continually falling year after year.

In the 1980s and 1990s, onshore wind turbines achieved capacity factors of between 10 and 20%. Today’s turbines achieve 50% and more in the offshore sector, the difference is even more striking. Whereas the first offshore wind farms had yields of up to 25%, the yield figures are now around 50%. The cost of using renewable wind energy to generate one MWh has fallen from around 107 euros in 1985 to 52 euros in 2014. By way of comparison, nuclear power currently consumes 50% more and produces only 54 euros and gas roughly 50 euros/MWh. This has been achieved by continuously developing all of the components, by high investments and by optimising the supply chain, and has made wind power one of the most attractive sources of power generation on our planet today.

As an aside, with every new Winergy gearbox we deliver each day, we make a contribution to reducing carbon emissions and thus protecting the environment. Some things may well have been better in the good old days, but certainly not everything.

<table>
<thead>
<tr>
<th>Gearbox solution</th>
<th>1984</th>
<th>2014</th>
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<td>Load test on the test bench</td>
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*Energy generation costs according to MAKE Consulting, 2014.

A REDUREX gearbox from the 1980s would have needed to be disproportionately large in order to generate an output of 1 MW. Crane technology also still had a long way to go. Only with the systematic development of drive technology for wind turbines and the progressive geopolitical evolution in favour of alternative energy sources did the impossible quickly become possible.
The wind is up offshore

The long journey of the offshore pioneers

For more than 20 years now, the cost-effectiveness and feasibility of offshore wind farms have been a matter of intense debate. While we do not intend to continue this debate here, we believe it is worth noting that 15 GW of offshore capacity had been installed around the world by the end of 2013.

Winergy has been a pioneer in this field too, and has been involved since 1991 with the first offshore wind farm in Vindeby. Denmark. Winergy’s product range has changed significantly since then. Whereas gearbox capacity back then was 450 kW, it has now increased well over tenfold to 6 MW and more. The London Array – currently the world’s largest offshore wind farm with a power capacity of 608 MW – went online in 2013, and all 175 turbines have Winergy gearboxes. This means that the capacity produced by Winergy for offshore generation has increased from 4.5 MW in the early days to some 600 MW per year today. Our offshore market share of 60% speaks for itself.

“Just” another car

Every generation of cars comes with new, and often spectacular, innovations – including ABS, air conditioning and the current move towards self-driving cars. Yet hidden away beneath the bonnet, the vehicle’s heart is still the same – and that’s its slow system. It has been continuously improved in countless ways, yet this fact is often overlooked by the more spectacular external changes.

While advertising focuses on xenon lights and intelligent voice recognition, the power density of a two-litre engine in a typical series production car has more than doubled, while its fuel consumption and emissions have been sharply reduced.

If we take a look at wind energy in recent years, it is not only the capacities of the wind turbines but also the technologies used that have changed in a similarly visible and dramatic fashion to the features on offer in the automotive industry. And the innovations, which is tucked away out of sight in the nacelle, has developed just as stealthily and continuously into the high- ly efficient heart of every wind turbine.

Offshore wind farms with Winergy gearboxes

Planetary gearboxes were already in use in the first offshore wind farms in Vindeby back then. A turbine had a rotor diameter of 35 metres and a capacity of 450 kW, and increased in a gearbox weighing 1,200 kilograms. Today, a 4 MW offshore wind turbine with a 135-metre rotor diameter is fitted with a planetary gearbox weighing 30,000 kilograms.

Based on the aerodynamic characteristics of the rotor, a modern gearbox can only be operated at a greatly reduced speed. As a result, off- shore gearbox comparisons based on turbine capacity are not meaningful.

For example, a 4 MW turbine was operated at the same speed, the gearbox would be able to achieve nominal power output of approximately 164 kW. This means that a modern gearbox has already already this degree than those based on a high-speed comparison, coupled with improved injection behaviour and greater reliability.

In the care of all engines and our wind tur- bine gearboxes, there advance could only be achieved by means of countless minor improvements that aren’t visible when you look at a modern gearbox or engine. Seen from then, a plan- etary gearbox, even though it represents a highly complex torque converter on the inside...
“Winergy is a part of my life. If Winergy is the engine, I’m one of the molecules in the fuel that keeps the engine ticking over nicely.”
Yunfeng Gao, Customer Project Management, Voerde

“I am extremely proud and honoured to be a part of Winergy. Let’s work together to make greater progress in the future.”
Xing Bin, Production and Assembly, Tianjin

“The whole package is just right for me: I have a fantastic team, good working conditions and an area of work that I enjoy. There’s also the satisfaction you get from working in the wind energy sector and therefore from doing your bit to make the world perhaps just a little bit better.”
Ilka Schneider, Sales, Voerde

“I have personally had the liberty and freedom to explore new initiatives to make the Winergy brand stronger in the Indian market. I really feel proud to be associated with the brand name Winergy and, of course, with the whole Winergy family the world over.”
M. T. Rao, CEO, Chennai

“I have extremely proud and honoured to be a part of Winergy. Let’s work together to make greater progress in the future.”
Xing Bin, Production and Assembly, Tianjin

“For me, the most important thing is the sense of belonging that Winergy has given me – it’s not a brand or a department, but a family!”
Dong Qun W, Warehouse, Tianjin

“It’s about making a difference while you’re making a living!”
John Hayden, Production, Elgin
What are you up to these days, ...

... Gerhard Reisse?

A real wind pioneer!

Like Don Quixote, he fought windmills on behalf of sustainability – and the idea of renewable energy. Winergy probably wouldn't exist in its present form if not for Karl Brun and his commitment to Flender's wind energy business. Despite the many ups and downs in the business, he and his sales team led the way in the new technology and believed in the future of wind energy. In the early years, Karl Brun was especially important for Flender's management board with industry-wide projects. In his approach, the wind turbine gearbox business was often a risky undertaking. “But it was always a team effort. Our sales team and the salesmen worked together with their colleagues and the customers,” Brun says.

A great example, with his heart in the right place. “Karl was always a model of commitment and dedication, and he expected the same of others. This really helped me in my own development,” says Udo Holdschlag, who worked with Brun for many years. “For me, Karl Brun is one of the fathers of Winergy.”

Today, 14 years after his retirement, it is still clear to him that it was always a team effort. “It was always a ‘we’ thing, never a ‘me’ thing. We never worked on the basis of a hierarchy. Employees were given the freedom to work independently within an inspiring way.”

Reisse: “Control is good, but trust is better.”

Two of his long-standing colleagues confirm that these aren’t just empty words. Paul Bollwerk, chairman of the board of Flender, and Werner Tappertzhofen, who worked with Gerhard Reisse in promoting the wind energy business decades ago, when wind turbines were often being built in customers’ converted cowsheds. Both are grateful to have the chance they were given to develop into experienced salespeople in such a promising new industry.

Bollwerk: “I wouldn’t be here if I were without the trust and guidance I received from Gerhard Reisse.”

Reisse now enjoys catching up on the things he didn’t have the time for during his busy career. This includes going to concerts and the theatre with his wife – and also the simpler things, like reading My Song by Harry Belafonte. “It’s quite relaxing,” says Reisse, who lives in Bocholt. Although he’s no longer in the sales business, he is happy to have the freedom to work independently within an inspiring way.

... Karl Brun?

A great example, with his heart in the right place.

Karl Brun always took a hands-on approach to his role as global Vice-President of Production. No single person has left such a distinct mark on Winergy’s production sites as he did over the years. From 2001 when Winergy was founded, he was in charge of production at the plant in Inderfurth and later also assumed responsibility for the overseas plants in India, the USA and China. He rolled up his sleeves and handled matters quickly and simply. “No matter how much responsibility I had, I never left a job undone,” Brun says. And as if that wasn’t enough, he helps out around his home too, and tends his garden in addition to his three grandchildren. He also enjoys a break in the Ruhr region. And all the strains of work are, of course, long forgotten when he sees the right eyes of his three grandchildren.

In his personal life, Brun remains devoted to earth and hard-working. “I was finally able to tackle some repairs and expansions around the house that I had kept putting off. And I did it myself,” shares Brun. And as if that wasn’t enough, he helps out around his home too, and tends his garden in addition to his three grandchildren.

Winergy stands for ...

Maximum experience in wind energy

Market and technology leadership

Reliable partnership

Investment security

Top quality

Reliability

Fairness

Zero defect tolerance

A clear sense of identification

A global service network

4 assembly plants on 3 continents

Skilled and motivated employees
Unimaginable today!

There were times when a simple handshake was enough. But that’s now little more than a short – perhaps even – memory, since in 1998, I received a call from the head of procurement of one of our long-time customers. We needed to arrange a meeting at short notice regarding some important projects in Spain for their wind turbines. During the meeting with the customer, it quickly became apparent that the project involved supplying up to 1,000 gearboxes at a rate of 80 to 80 a month. I don’t know whether the procurement head was especially perspicacious, but he immediately started my presentation at the one o’clock in the corner and quickly sat down at his computer to draft a contract for 520 gearboxes with the option of 1,000, corresponding to their demand at the Federal Bank, the company that had the high need for gearboxes for a total of 100, corresponding to their demand date from the Federal Bank. After three weeks, we were sitting in front of a single sheet of paper containing everything that my customer deemed important, and bearing his signature in ink. After a meeting of just two hours, I was holding in my hand the largest wind turbine gearbox order that had ever been placed. And so I thought, well, what an exciting way to start the new millennium! Now whenever I see the many turbines operating on the hills surrounding Sargossa, it is this unexpected business transaction that always springs to mind.

Paul Bollwerk, Vice-President of Sales

How we define partnership

The partnership is always a relationship on equal terms and is critical for proper understanding in all technical and financial matters. Alongside it is a commitment that you don’t enter into every day. Such a commitment is a moral heart - and this doesn’t come for free. Such trust has to be earned, and it is this element that makes real partnership viable and desirable.

There is also a human element to partnership: we associate it with good conversations, controversial discussions, economic successes and technological depth, honesty, responsibility and a great understanding of the other partner’s interests. To put it simply, a partnership on equal terms means we could even call it a friendship.

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Paul Bollwerk, Vice-President of Sales

The customer advocate

The editorial team asked me to write an article entitled “The customer advocate”. Maybe that’s what we sometimes are, but I would say it only reluctantly and would be even less inclined to put it in writing. We are happy to do the things we do, and we do them as a matter of course, frequently, and again and again. And if that involves our occasionally having to explain incredibly short-notice changes in the delivery schedule and adopting a position of defence for our customers because the wind market is still so difficult to plan in, due to the involvement of politicians, that hardly makes us an advocate – I would hope that at best it serves to strengthen our partnerships. We all know that we don’t have many customers, but the ones we do have are near and dear to us. So challenges that our customers present us with – assigning them the right levels of priority at all times. We are therefore delighted if this means we are seen as a strong team.

Approximately 74,000 gearboxes with total power output of 100 GW – we can’t deny that this figure makes us, the sales department for the Winergy family, just a little bit proud of the part we have played in this success. At the same time, we have to thank our customers for having made this possible in the first place by choosing our products and a partnership with us. And we won’t let up in our efforts to make sure they continue to do so.

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Paul Bollwerk, Vice-President of Sales
Voerde, Germany

Extract from the company magazine MOVE, 2/2001

Inauguration of the new Flender assembly plant in Friedrichsfeld

On 11 May 2001, the Chairman of the Board of Management of A. Friedr. Flender AG, Dr Winfried Weilandt, officially inaugurated the new assembly plant in Voerde-Friedrichsfeld in an opening ceremony. A look back at Flender’s situation in mid-1999 explains the importance of the new Friedrichsfeld facility.

Back then, there was a need for the assembly process to be reorganised, and the approximately 2,000 square metres of office space in Bocholt were no longer sufficient – the assembly and test bench equipment and their operating staff had to be relocated. Flender had two options: it could either build a new factory in the Ruhr area or sell the facility in Voerde-Friedrichsfeld.

That was 14 years ago…

... and now the Voerde site is one of the most state-of-the-art wind turbine gearbox production facilities in the world. Significant new investments were made just three years after the 2000 move, as the wind energy boom reactivated the addition of 6 MW, 7.5 MW, 8.3 MW and 14 MW test benches. The additional halls K, L and M were renovated and re-equipped. Today, crane lift capacity totals 150 tonnes; this alone necessitated investments to the tune of many hundred million euros.

The new assembly plant, which currently has 300 employees, produces about 1,200 to 1,600 gearboxes a year, which corresponds to a revenue of around 200 million euros. In particular, the new plants for test benches with installed test power totaling 6 MW and the largest test bench for mass-produced gearboxes with up to 4 MW test power, giving Flender rating-edge test capabilities unparalleled anywhere in the world. The move to Friedrichsfeld started in April 2000 with about 150 employees. The first wind turbine gearboxes underwent testing on the new 2 MW test bench in July 2000. In October 2001, the first 100 assemblies were fitted, followed by Friedrichsfeld. The entire relocation took place while production was under way, without a downtime in revenue – an outstanding achievement by all concerned. The market for wind turbine gearboxes will continue to enjoy strong growth in the next two years. The Friedrichsfeld assembly plant gives us a stable basis for further growth, in wind turbine gearboxes as well as in conventional drive technology.

For more than a job

Jay Johnson, Winergy’s first employee in the US site, is one of the eleven people who were part of the starting crew of Winergy Energy Systems Corp. in Elgin, Illinois. “We were such a small group and so everyone. Did everything around the factory to help each other.” He says about the “old days”. “The old days,” those are his words for the time around 2000 when all bets were on for Winergy in Elgin. Only two employees had to be relocated. The company had two options: it could either build a new facility at a total cost of $65–70 million or it could accept the Voerde site. Flender had two options – it could either build a new facility in the Ruhr area or sell the facility in Voerde-Friedrichsfeld. In the very mid-1999 explains the importance of the new Friedrichsfeld facility.

In 2000, the Winergy team with Fred Treadwell, CEO of Reagan Developments Ltd, purchased the 2.8 MW test bench from Flender. “It was a 2.8 MW test bench from Flender, Fred, and some basic capacity in new 3 MW gearboxes. Jay Johnson is proud of all the improvements that the pair made. “It helped Winergy to grow worldwide.” For him, it is the passion of the people and the feeling of belonging that make the difference: “This is a 25th year with the company and we feel like a part of something. We have always known to do our work.” And at Winergy, we have the feeling that we create something that lasts, something which is our responsibility. It’s more than just a job!”

It all started with $900,000. That was the investmentmanagement’s idea to set up Winergy in Elgin. And indeed, the 100-kilowatt test bench was the first 0.1-megawatt test bench to be commissioned at Flender. The new facility encompassed 2,000 square feet of space, a 1,000 horsepower traction motor from Sauer-Danfoss and a fully hydraulic lubrication system, and was built up by the Winergy staff on that site. To the early years, it was even more like getting the ball under way and getting things done, “as members Johnson. With this spirit, Winergy had to establish a strong market presence through customer service and to develop new applications and to support the Winergy brand. We now need to maintain and extend this, so that Voerde goes to Elgin. Chicago, Tianjin and Winergy’s worldwide service organizations can lay the foundations for the next 100 GW.

Elgin, Illinois, USA

Jay Johnson witnessed Winergy’s first steps in the US market. Winergy commissioned a new production facility at Malden Lane, which meant another huge investment was achieved. This new facility included a 2.8-megawatt test bench, and another 3-megawatt test bench was added in 2011. Together with the 3.5-megawatt test bench from Flender, the team was ready to put 12 new 4-megawatt gearboxes on the market. Jay Johnson is proud of all the improvements that the pair made. “It helped Winergy to grow worldwide.” For him, it is the passion of the people and the feeling of belonging that make the difference: “This is a 25th year with the company and we feel like a part of something. We have always known to do our work.” And at Winergy, we have the feeling that we create something that lasts, something which is our responsibility. It’s more than just a job!”

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Nine years at Winergy Tianjin

I have worked at Winergy for almost nine years now and have experienced the unique and dynamic culture and working environment at the company. I have seen the company grow significantly in terms of its product range and customer base. Over the years, Winergy has diversified its product range and has been able to develop itself well here. I feel satisfied and grateful for the support, suggestions and sincere advice. I feel at home and loved in the headquarters.

As the assembly manager at Winergy Tianjin, I have been responsible for assembling wind turbine gearboxes. As the assembly manager at Winergy Tianjin, I have been able to develop myself well here. I feel satisfied and grateful for the support, suggestions and sincere advice. I feel at home and loved in the headquarters.

During these nine years, I have had a strong belief that we can get along well with each other like a family and can move towards our common goals, regardless of our positions, age, gender, race, national origin, language or culture. Everyone colleague, be it in the assembly, quality or production department, always offers us sincere greetings, sincere support, sincere advice and suggestions. We have also been able to develop myself well here. I feel satisfied and grateful for the support, suggestions and sincere advice. I feel at home and loved in the headquarters.

Tianjin, China

Is China really so important?

For years, we have been working in a company that has been growing and expanding. The Chinese market has been growing at a rapid pace, and the need for experienced gearbox suppliers is increasing. As the assembly manager at Winergy Tianjin, I have been able to develop myself well here. I feel satisfied and grateful for the support, suggestions and sincere advice. I feel at home and loved in the headquarters.

Chennai, India

A mango plantation becomes a modern turbine-gearbox production facility

The driver of the modern truck pulled us to the winery's gate to the smaller winery. This was the beginning of the story of the mango plantation. As the assembly manager at Winergy Tianjin, I have been able to develop myself well here. I feel satisfied and grateful for the support, suggestions and sincere advice. I feel at home and loved in the headquarters.

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Approved wind capacity

in acc. with the twelfth Five-Year Plan (2011–2015)

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Chinese electricity generation by technology

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Source: WINDA

Building a production plant from scratch in a foreign country—challenges and solutions
The drivetrain architecture is a critical design choice faced by wind turbine manufacturers, as the drivetrain represents a significant portion of the turbine cost and weight. Furthermore, design choices made in the powertrain have lasting impacts on life cycle reliability and operating costs.

MAKE expects that both geared and direct-drive turbines will coexist for the foreseeable future, as each technology possesses inherent advantages. The level of revolutionary innovation in the drivetrain is highly dependent on the target market and the associated risk profile, as the figure below shows.

The US market has been slow to adopt radically different drivetrains featuring direct drives or medium-speed geared systems, as financiers place a premium on track record, established supply chains and proven aftermarket solutions. MAKE expects that geared drivetrains will continue to dominate the Americas market for the foreseeable future.

Alternatively, the European offshore market is an intrinsically risky environment, and experimentation with revolutionary drivetrains has flourished. Newly announced offshore products are all departures from the classical high-speed geared drivetrain architecture. Oshores, growing demand for 3 MW+ turbines favour the adoption of hybrid medium-speed systems. MAKE anticipates that medium-speed and direct-drive systems will continue to increase their penetration levels in Europe, but that the majority of installations up to 2020 will continue to be geared systems.

China has become an incubator of drivetrain innovation, with many OEMs offering direct-drive or hybrid drivetrains. This is fuelled primarily by competitive pressure and Goldwind’s presence as a technically differentiated market leader. MAKE anticipates that this technology trend will continue, and direct-drive or medium-speed systems will constitute nearly 50% of China’s installations by 2016.

For more insights into other emerging technology trends, visit the MAKE website: www.consultmake.com
For me, Winergy means: 

Sister and Brother 

Winergy means all the friendships created over the years 
We have had lots of victories and, yes, have shed some tears 
We must respect each other, my sister and brother 
We sometimes have problems in our travels, but somehow we never unravel 
We will work through the night and never ever give up this fight 
We trust each other, my sister and brother 
We created jobs and worldwide brands, something to be proud of in all the lands 
For Winergy is more than a job, a pay cheque, or a position; it is our heart, our soul, and our mission 
We lift up each other, my sister and brother 
We went from small kW to mighty MW test benches, from looking for a hammer to standardised wrenches 
From the days of no parts and bad heat lots, to the days of full production and no stomach knots 
Think of each other, my sister and brother 
Some will say we are crazy, but none can say we are lazy 
It is this man’s opinion that we are one in a million 
Give thanks to each other, my sister and brother 

It is a company and family we made together, through all kinds of weather 
I could not think of doing something different or anything better 
Monitor each other, my sister and brother 
It is all the help and support that you are giving, to keep Elgin healthy and living 
We all owe each other thanks and gratitude, for without any of us we would be subdued 
Hug each other, my sister and brother 
Remember each other, my sister and brother 
Here’s to the wind and let’s hope it blows, we need to be clear so everyone knows 
Work at what we cherish and these times shall never perish 
Some of us shall row and some of us shall steer 
For all of our sakes, please bring us a beer 
Celebrate each other, my sister and brother 

Jay Johnson, Technical Service, Elgin 

“Winergy is a place where teamwork and collaboration are the key to success and where hard work does not go unnoticed. It is a place where employees are empowered to suggest and drive improvements. It is a place where people have passion for their work.”
Tina Wilcoxen, Planning, Elgin 

“Small things accumulate and amount to considerable results: drips become an ocean and individuals become part of a team. We treat our plants like our homes – we encourage them to grow and therefore generate value.”
Li Ting Xing, Logistics – Warehouse 

“Winergy is an attractive employer in a sector that’s constantly evolving. Every day is exciting and presents new challenges! And the focus is on the interests of our customers.”
Kai Föcking, Sales, Voerde 

“Winergy is an attractive employer in a sector that’s constantly evolving. Every day is exciting and presents new challenges! And the focus is on the interests of our customers.”
Kai Föcking, Sales, Voerde 

“With approximately 300 GW of wind turbine installations worldwide, 100 GW of gearboxes delivered by Winergy means that we are really making a major contribution to renewable wind energy. Winergy is therefore not just an employer for me, but also a brand which I’m really proud of!”
Lu Yang Yao, Application Engineering, Tianjin 

“Winergy means that my phone is often already ringing when I arrive at the office in the morning. With my coat still on and my bag over my shoulder, I speak to a co-worker on the phone who has a problem at the test bench. … After I have solved his problem, he thanks me for helping so quickly, I go back to my office and see my bag still on my desk. I then switch my computer on, sit down and check the time. It’s nearly 10 a.m. already and I have loads of e-mails to read. I decide it doesn’t matter too much, because having solved the problem, that test bench is now generating a lot of turnover again. What’s more important is that I have co-workers who know what time I get to work and who call me when they need my help because they appreciate what I do. That’s invaluable and it speaks for the employees. In the mornings, I’m cursing under my breath as I reach for the phone, wondering what somebody wants from me this time. But by the end of the call at the latest, my bad mood is gone and I get down to work.”
Marc Bruckmann, Production, Voerde