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Careers at Siemens Gamesa Renewable Energy

SIEMENS Gamesa
RENEWABLE ENERGY

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It takes bright minds to make a difference

Siemens Gamesa is a global leader in the wind power industry. A key player and innovative pioneer in the renewable energy sector, we have installed products and technology in more than 90 countries all over the globe; with a total base capacity of over 99 GW.

Today more than ever, our work has a direct impact on the ongoing transformation of the energy industry. Our global reach opens new horizons for professional opportunities and growth, and we recognize that it takes bright minds to make a difference. At Siemens Gamesa, we are constantly looking for the world's best talents to help us fight against climate change, and we consider our people to be our most important resource. Our diverse team of 23,000 passionate employees hailing from close to 100 nationalities works hard every day to make real what matters – clean energy for generations to come.

Read more at [siemensgamesa.com](https://www.siemensgamesa.com)





Siemens Gamesa Renewable Energy:

A dynamic workplace full of opportunities

To understand what Siemens Gamesa Renewable Energy is about, there are few better people to speak to than Steffen Frydendal. Steffen is passionate about technological development and making a difference, which is why he has spent 18 years with the same company.



As you read about the many people at Siemens Gamesa, a pattern will emerge. Employees tend to stay with the company for a long time – and new employees plan on doing so – because of the many opportunities offered within the organization. Steffen began his employment with Siemens Gamesa in 2001, and the constant challenges and exciting developments have kept him here ever since.

Finding your path

Steffen completed his MSc in Building Technology and had a particular interest in the structure of wind turbines. This led to a job at Bonus Energy (later to become Siemens Wind Power and then Siemens Gamesa Renewable Energy).

“I started as a specialist, working in development. I quickly moved towards more of a coordinating role, then became a team lead, and even tried my hand at a position supporting sales. I enjoyed the variety of challenges and the many opportunities to expand my knowledge base.”

Working in different departments is encouraged at Siemens Gamesa, and it certainly helped Steffen figure out that management was the path for him:

“In 2004, the company began its first development of a dedicated offshore turbine, and I was the chief engineer on this

exciting project. I also acted as the project manager, and after four years, I really wanted to test myself more in the role of a manager. One thing led to another: I thrived in the managerial position and am now Head of Technology Development – a global department with over 300 engineers. Most of our people are based at our technical headquarters in Denmark. In addition, we have competence centers in the UK for electrical drive trains, in Boulder, Colorado for blade design, in France for loads and control, and we have a design center in India. We are truly a global company nowadays.”

Passion is key

Steffen has been with the company for a long time. He did not stay merely to advance his career, but also to make a difference.

“I think it’s amazing to have a job that makes a difference. Climate change is in the news a lot these days, and we are part of the solution.”

Being a part of the solution means that a lot is demanded of companies that work in this industry. The market appetite for wind turbines is enormous, which pushes Siemens Gamesa to be as dynamic as possible and to be ready to scale. All solutions must be scalable and contribute to ambitious time-to-market targets. The dynamic work environment, fueled by

ambition, is also a major part of why Steffen is so passionate about his work.

Innovation, a desire to improve, and specialist competencies are not native to a single place in the world.

“We look for the competencies we need across the globe, and we find the environments best suited to innovate within a particular area, such as bearings or aerodynamics. If a strong enough concentration of skills exists in one place, we may even set up a competence center to take advantage of synergies.”

The approach has led to a multicultural work environment.

Global collaboration

Siemens Gamesa has offices all around the world, a fact that highlights the need for robust communication channels.

“We must be able to nurture and respect different cultures within the same company, and it is therefore the responsibility of every employee to learn how best to communicate with our various locations,” says Steffen. Openness to the cultural

Steffen Frydendal Poulsen



differences that influence and govern diverse approaches to work is essential, he explains.

Trust plays a big role. Once upon a time, project managers would hand out tasks, and then constantly follow up on team members to ensure completion. Now, it is more a case of aligning responsibilities and goals for longer periods, and learning to trust one another and thereby avoid wasting time on micro-management.

Siemens Gamesa wants wind turbines to be the cheapest source of energy

In terms of process, Technology is the development department that precedes product development. Technology teams find new solutions and smarter ways of building offshore wind turbines, with the goal of making them generate more power or become more efficient at generating power at a reduced cost. Technology is constantly working towards Levelized Cost of Energy (LCOE) – the end goal is the production of the cheapest power possible, as defined by markets and society.

“We look at the requirements for blades, generators, etc., and for each of these technological domains, we set goals for our engineers to find solutions. We also tie these technical domains together, to make sure the one does not majorly outperform the other. In such a case, we look at how to shift focus slightly to create balanced designs – you see, people in Technology are also involved in implementation,” says Steffen.

For further improvements, the department looks towards solutions in digitalization. For instance, data from the more than 1,000 wind turbines in the North Sea is used to measure their design and evaluate if they operate as expected; do the turbines show areas that need upgrades, or are there parts that outperform the rest?

Why work at Siemens Gamesa?

“We take responsibility for the world we live in, and we are a big and diverse global family. Show us that you are passionate about your work, and we will take care of you and invest in your competencies and development.”

“We must be able to nurture and respect different cultures within the same company, and it is therefore the responsibility of every employee to learn how best to communicate with our various locations.”



Working with the world's largest test bench for turbine blades

Dennis Boejesen and Rasmus Ladevig in front of the world's biggest blade test rig.

"You never know what tomorrow might bring" – Rasmus Ladevig

In Aalborg, Denmark, Siemens Gamesa has the world's largest test bench for wind turbine blades, and this is where both new and old blades are tested to continue improving and innovating the company's designs.

The blades are placed in the bench and tested flapwise and edgewise in both static and fatigue test scenarios. To date, more than 50 blade types have been tested at the facility, which also includes eight different smaller test benches.

The Blade Test Center is a department that balances long-term planning with daily curveballs and challenges. No one does just one thing; people work at

many different types of tasks and get to test out their abilities in different areas.

Rasmus and Dennis both work at the facility and share their impressions on working at Siemens Gamesa and the Blade Test Centre.

Dennis chose Siemens Gamesa immediately after finishing his degree

"Siemens Gamesa is this big, interesting company. You hear a lot about it in the outside world, and why wouldn't you want to work at one of their amazing test facilities?" says Dennis.

"Thanks to having the world's largest test bench and various testing facilities at our disposal, we enjoy a unique mix of theoretical work at a PC and the freedom to go out and work on our projects in the field."

Dennis gives the example of knowing exactly how large a 500 mm bolt is and how much it weighs: “Not everyone has a sense of this. It’s cool.”

Dennis quickly understood that internal collaboration is vital to the success of local and global teams at Siemens Gamesa. The company’s approach to work is not too different from what he was used to at university, where the engineers are taught to work together in projects much of the time.

With a hands-on approach, work as a Blade Test Engineer can present many new challenges. For instance, you may be asked to look at how a new surface treatment affects the bolts, and you may not know how to do so immediately, but then that is the task of the day – figuring it out and expanding your competencies.

Blade Testing is the place for Rasmus

Rasmus has been at Siemens Gamesa for 12 years. He is Head of Blade Testing and an excellent example of the opportunities the company offers.

“My job descriptions have changed a lot over time. First, I worked with quality and production, then cost-saving, and I also tried some more commercial positions.”

Moreover, Rasmus has travelled a lot, and one of his major tasks that included globetrotting was opening a blade factory in Brazil. He found the expatriation support good in terms of helping him relocate to a new place; he received cultural training and assistance with settling in.

“The Siemens Gamesa operations around the world are clearly locally anchored. Siemens Gamesa in the United States is American, and Siemens Gamesa is Brazilian in Brazil. There is a local identity.”

Rasmus has now spent the past four years as Head of Blade Development and has found that there are rarely two days that are alike. After 12 years, he still finds new ways to test his abilities and new ways to improve on blade design based on the facility’s comprehensive testing environment.

Developing and improving materials

Want to work with X-rays to measure residual stresses in metals, or perhaps employ a scanning electron microscope on a daily basis? These are just a couple of examples of the equipment you will find at Siemens Gamesa’s Materials Lab.

Karl Martin Pedersen kept his eyes and ears open for opportunities during his PhD study in Solidification and Microstructure of Thin-walled Ductile Cast Iron, and he found the right place for himself at Siemens Gamesa.

Karl Martin works in Lab M, investigating, developing, and improving the metal components used for Siemens Gamesa’s wind turbines. A product owner may, for instance, have found a new supplier for a component; this component needs to be tested and verified in the lab in terms of processing, hardness, and surface finish. Karl Martin describes what’s involved in his role:

“This job is very hands-on. We look at the physical product to understand what has happened with the material. It’s one thing to look at something in a new state, but we also examine the component after installing it on a functioning test turbine. We see that even the best calculations and virtual simulations aren’t 100% exact.”



Karl Martin Pedersen in the lab with X-ray equipment for measuring residual stresses.

Diverse working life

Lab M is in constant dialogue with other departments. So even specialists like Karl Martin, who works in a very specific field, experience a diverse working day talking to people from Siemens Gamesa's many other global departments with the common goal to improve wind turbine technology. This was also a major reason why Karl Martin chose to come to Siemens Gamesa after finishing up his PhD.

"I wanted to work with wind. The huge turbines are very fascinating to me. I met people who worked at Siemens Gamesa during my studies and thought the company sounded interesting. There are a lot of paths you can choose from. Some become project managers, others aim for management, and others like me choose a specialist path. I am very happy that I can be a specialist here and focus on the technical details."

About Lab M:

The lab has a large variety of equipment for analytics and measurements. Two examples are:

The scanning electron microscope (SEM)

Using an electron beam to scan and visualize a material's surface, the SEM can enlarge the material by 1,000,000. An enlargement of 100,000 times is, however, usually more than enough.

It can, for instance, be used to detect and identify non-metallic inclusions in a metallic material, which would alter the metal's properties.

Residual stress measurements using X-rays

With this newer piece of equipment, residual stresses, formed from production and operation of the part, can be measured to determine the material's risk of being damaged.

The lab is still discovering new ways of utilizing the equipment's potential.

Pushing the boundaries of technology

Mahsa and Søren, both from the Onshore Technology Department, are engaging, earnest, and comfortable in conversation, fueled by the passion they both have for the technological development they work with daily.

Søren: “I have been here for nine years. I work with development, as a Chief Electrical Engineer, but for the first five years I worked as an Electrical Design Engineer. I do electrical engineering development and technical project management for the onshore business unit.”

Mahsa: “And I have been here for a little over three years. I started out as an intern at Siemens Gamesa, and am now a Thermal Design Engineer, working with the cooling systems for electrical components.”

What are the most interesting aspects in your work, from an engineering angle?

Mahsa: “Well, our work involves both simulation and modeling. You see, the output of our cooling design impacts the output of



Søren Kirkeby is fueled by his passion for technological development.



the turbine. More efficient cooling systems allow us to push power production limits or may have a positive effect on cost-out. More efficient cooling can, for instance, reduce the size of other parts in the turbine or reduce the demands on parts to affect the cost of that part – to give an example of cost-out.”

Søren: “Basically, this is what we do in most teams. We determine design limits, we take historical data from our diagnostics centers, and we use this information to define the expected load for components.”

Mahsa: “What we do involves a lot of steps and a lot of collaboration with other teams.”

Søren: “Right. For instance, a development process usually starts when a Platform and Portfolio Manager requests a new turbine based on the market. This request is broken down to a Product Requirement Specification [PRS] to define limits.”

Mahsa: “We then create the concepts for our designs based on the PRS.”

Søren: “And explore ways to decrease the cost.”

Mahsa: “So what happens is that during a project we develop a lot of ideas on how to reduce cost and increase performance, to meet our targets.”

Søren: “This is also where multi-suppliers come into play. Apart from collaborating with our own departments, we also do a lot of work with various suppliers. Previously, we typically worked with one supplier for a given component, but now we work with multi-suppliers from day one, which enables us to optimize quality and cost of the components.”

Mahsa: “Talking to them, we clearly state what our interface is, define spatial limits, and the performance we want from the component, and then the suppliers compete to win the bid. Without strong engineering skills, we couldn’t do this efficiently or precisely.”

Søren: “We work a lot closer now with Procurement, compared to years ago, to push down prices and/or find the best product for our requirements. This requires good dialogue with Procurement throughout the development process.”

What motivates you to go to work every day?

Mahsa: “Green energy matters a lot. I feel proud about being in an industry that contributes to clean energy.”

“I really enjoy the cycle of creating models for a design, testing, and reviewing the results. Based on previous knowledge, we develop models and simulations and establish specifica-



tions for the tests. Then we validate to reflect on the models. We tune and improve our models for next time, always aiming towards slightly improved accuracy.”

“The collaboration really motivates me as well. In my team, we are in contact with so many different people, cross-functionally and globally, and all our interactions are structured around the shared goal of creating a product that does well in the field.”

Søren: “I love challenges; receiving a specification for a solution you need to develop. Looking at the existing data and combining them with new solutions. We go beyond creating standard solutions, and working with a group of specialists is so interesting.”

“There is also a great possibility to boost and change your career here. This is just a part of the culture – the management wants you to advance, push your boundaries, and become better. That is something I have personally benefitted from.”

Mahsa and Søren have together with their department just crossed the conceptual gate for the next-generation platforms. They describe this as a fascinating phase, as they should be moving into active prototyping of the platform within a year.

We work to improve our deliveries every day

Different approaches, same goal

While Patrycja and Andrei may have very different roles in Offshore Operations, their goal remains the same – to improve the production of offshore blades for wind turbines, making them longer and more cost-efficient.

Patrycja works with digital transformation in a small group called Smart Manufacturing. They are developing Siemens Gamesa’s approach to data acquisition, data understanding, visualization, and its modeling and structuring. Andrei, on the other hand, manages the equipment that goes into the factories that supply Siemens Gamesa with components – equipment that produces data for Patrycja and her team.

We collaborate to become better

In developing new products, Andrei explains that having the production close by is a great help; the experienced technicians can teach you a lot. In Siemens Gamesa, however, one does not solely work with other departments locally, but globally. Andrei may for instance run the development of a tooling product, then send the iteration to a location in the UK and have them look at the tool for ways to improve and

reiterate it. It’s a learning-by-doing approach across departments and borders.

To improve, you need feedback both in production and in digital development. Patrycja uses data to find new ways of improving a product, and the people using the improvements are the technicians in production. It is therefore key to ask production what they think about an idea before following through with it – this is also a way of keeping the company together culturally.

Enjoying the work culture

“You quickly get used to this environment. You have many different tasks and colleagues to work with. I find that there is usually a good bit of knowledge sharing at Siemens Gamesa – you can always ask for help,” says Patrycja Debska.

“I liked getting into a global department that gave me the chance to work not only with local colleagues but also people from around the world. People from places like China, Morocco, the US, and the UK. We have a lot of contact with each other here,” says Andrei Sava-Stefanescu.

Andrei

Has a BSc in Mechanical Engineering, works in Technical Project Management. Has been with Siemens Gamesa since 2016.

“We are often challenged to think outside of the box. We love finding new ways of doing things – even if it takes us slightly out of our comfort zone.”

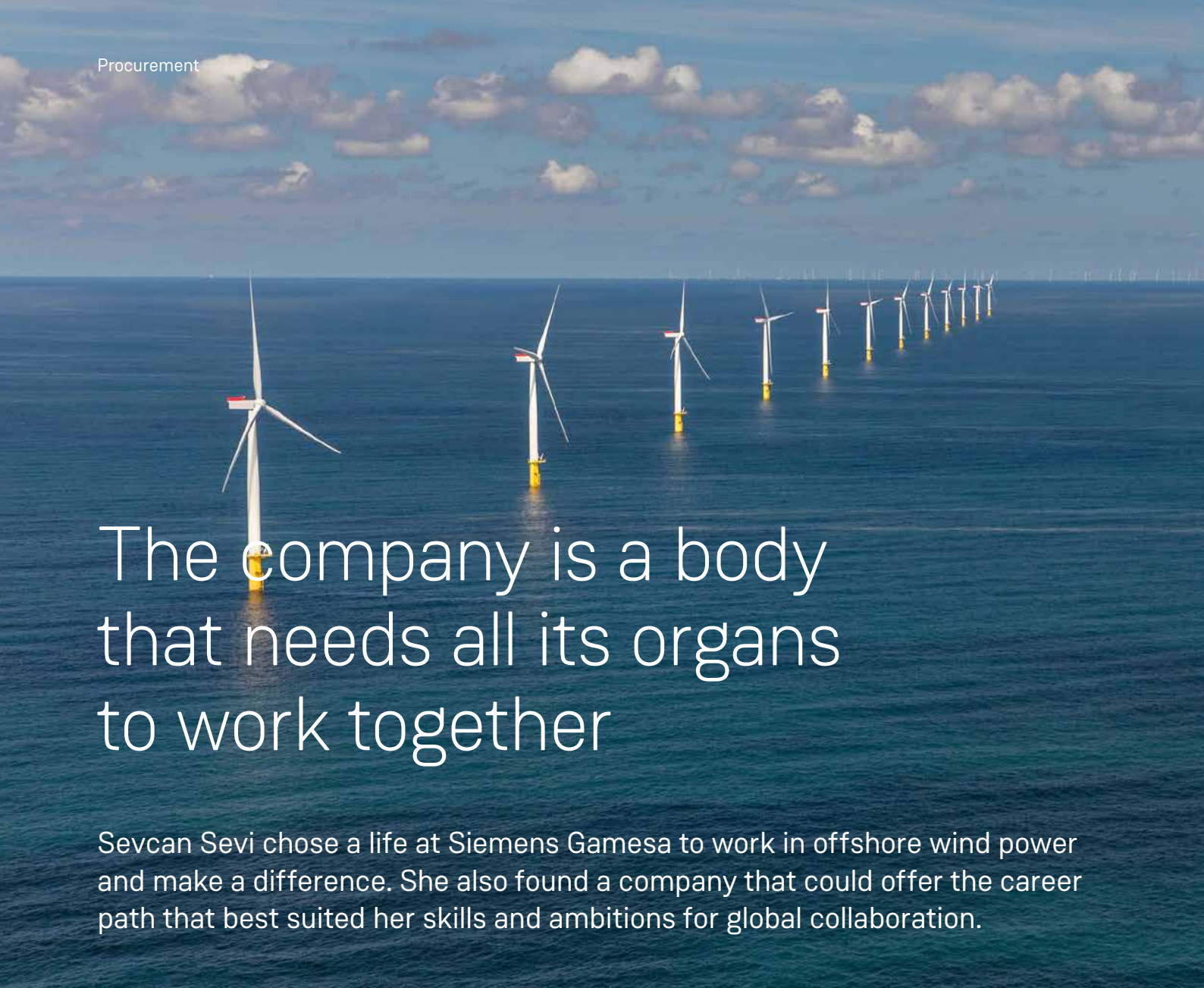
Patrycja

Has a BSc in Engineering, Robotics and a MSc in Manufacturing Technology. Works as a Digital Manufacturing Engineer. Has been at Siemens Gamesa since 2016.

“Over merely three years, digitalization has increased. This distinguishes us from other industries. Everything, including product and process, changes quickly.”

Andrei Sava-Stefanescu and Patrycja Debska visit a blade production facility.





The company is a body that needs all its organs to work together

Sevcan Sevi chose a life at Siemens Gamesa to work in offshore wind power and make a difference. She also found a company that could offer the career path that best suited her skills and ambitions for global collaboration.

Sevcan works in Procurement, where she as a Supplier Quality Engineer is responsible for ensuring that products delivered by suppliers live up to Siemens Gamesa standards – both in terms of quality and product maturity level.

Making a difference was an active choice

Sevcan worked within Quality for a different company in Turkey for almost six years when she chose to apply for a position at Siemens Gamesa a year ago. Siemens Gamesa has a strong presence in offshore wind power, and for Sevcan, the prospect of working with one of the largest global renewable energy companies was exciting. It spoke directly to the part of her that wanted to contribute towards a greener future.

“You are a part of reducing global emissions every day through your job here – this I find very motivating,” she says.

“Being new in a large company can at times be daunting, but that feeling soon disappears at Siemens Gamesa. Colleagues and managers are happy to answer questions and get you off to a good start.” Sevcan is especially impressed by the way that busy managers will take their time to answer questions and help you in your new role.

Sevcan also notes that the positive approach to collaboration is integral for the company to function: “I see Siemens Gamesa a bit like the human body where the departments make up the various organs – they must all function and support each other for the entire system to work. Our output in Offshore Procurement is the input somewhere else, and vice versa.”

For instance, Sevcan connects suppliers to Siemens Gamesa by ensuring that each supplier knows what is required of

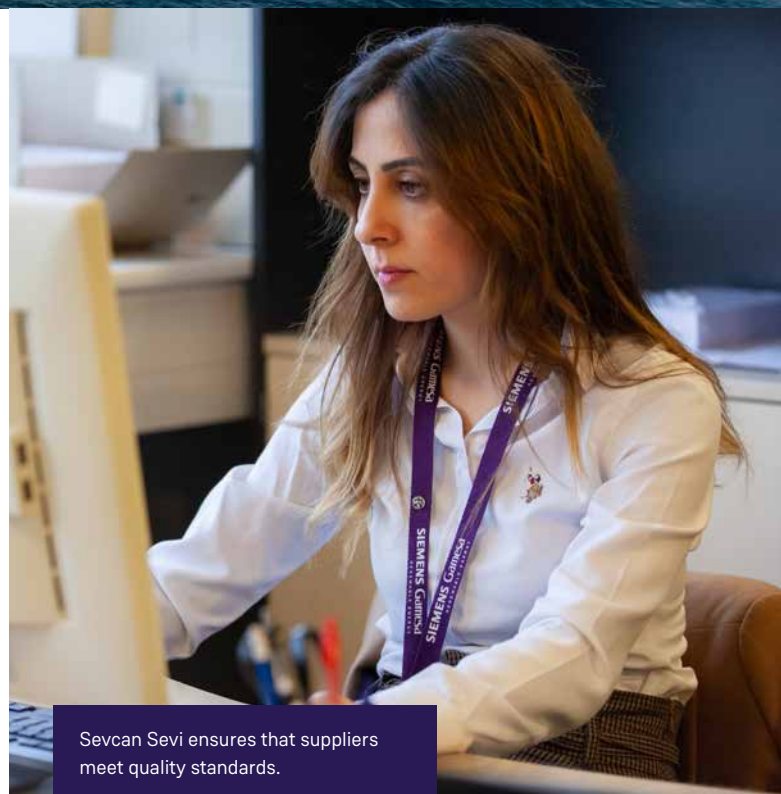


them. In this way, she plays an important linking role between Technology, Procurement, and suppliers.

Finding the role that suits you best

At Siemens Gamesa, your education does not necessarily define which path you follow in the company. Sevcan has a BSc in Mechanical Engineering and worked as a specialist in other companies. While she sees how becoming a specialist within a single field appeals to many people, Sevcan has sought an alternative path.

“In my position as a Supplier Quality Engineer I learn about suppliers on a global scale, work with a vast amount of processes, and learn from a large range of professional fields. The opportunities here are nothing short of exciting.”



Sevcan Sevi ensures that suppliers meet quality standards.



Joachim B. Winther controls the cost of blades.

Cost controlling has many interfaces

What does working with cost controlling entail?

“Well, I work with cost controlling in Procurement, and more specifically I am tasked with controlling the costs of blades.”

“I negotiate with operations, I get the bill-of-materials on their blades, and then talk to our buyers to get prices on the materials – and I do this on four different blade types, for our offices in Aalborg, Hull, and Lin Gang.”

“I also do global headcount controlling in the Procurement Department, and budget, control and forecast the expenses Offshore Procurement has by having people employed.”

“Finally, I forecast on these controlling areas, talk with the heads of departments, and deliver statements of actual costs to them.”

“As a specific example, I can mention that we have since May 2019 been planning for the 2020 financial year, which for Siemens Gamesa started in October 2019. To be ready, we had to update all the prices on every single part, which meant a lot of talking to our buyers and ensuring that they had concluded all negotiations on these parts with the suppliers on time. September was a busy month, but it is incredibly satisfying when you’ve finished and kept your deadlines.”

Does this mean a lot of interaction with other departments within Siemens Gamesa?

“Yes, and I love that my role requires me to speak to different departments, factories, and stakeholders. It is fun to work with our operations departments to push forward R&D and save on future costs. And, of course, I gather as much information as possible in my daily work and deliver this to management. I don’t sense much of a hierarchy in my contact with the heads of departments, but a mutual respect is of course in place, and that is a really positive thing in such a big company.”

How do you see your opportunities within Siemens Gamesa?

“I’ve only been here a year after finalizing my Master’s in International Economic Consulting, and my manager has already said that he hopes to see me stay at Siemens Gamesa for a long time.”

“It is of course preferred that we stay within Siemens Gamesa, but at the same time, we are encouraged to change positions within the company. If we want to seek new opportunities and strive for something different, it is also supported by management.”

“There are so many offices around the world. It’s exciting to be aware of all the opportunities. If you want to work in another country, that isn’t a problem.”



Rikke Pazyj, Tender Manager in Offshore Sales.

I chose Siemens Gamesa and was not disappointed

Siemens Gamesa is Rikke's first workplace after completing an MSc in Strategy, Organization, and Leadership. She chose a company where she could have a positive impact on the world.

"I wanted to work somewhere that makes sense, where I can contribute to those around me, and make the world a better and more sustainable place. I often meet people at Siemens Gamesa that are very passionate about the work they do, and I think it is because we inherently want to do better, leave a positive footprint, and drive this positive change together."

"I don't have a technical background, but when I started working here I found I really enjoyed working with the complex and technical elements of a wind farm. What I appreciate here is that there is space to continuously learn, and I wasn't expected to know everything from the first day."

"We are a very diverse group of employees and therefore doing things 'the usual way' isn't an option – I believe this has a positive effect on the development of creative solutions and on the company as a whole."

Rikke continues, explaining more about her work and how it contributes to green energy:

"In Offshore Sales we establish teams of different experts who are responsible for creating and offering our best solutions to meet the customer's varying needs. It is exciting because we always look for new, efficient, and creative ways to meet the industry's changing demands."

"In working on our proposal to the customers, I create the solutions and plan for how to get all the turbine parts from the factories to the platform, both on land and at sea, and look at how best to install them offshore."

"My first project was an exciting one, where we developed new procedures for installing wind turbines on floating platforms."

It is easy to feel proud when you work for a market leader

Sales is the place to be if you want to work globally
and actively drive green transformation.





Sasha Trumic

Sasha Trumic has spent over 10 years at Siemens Gamesa, starting as a specialist and transitioning into different roles within Sales and Project Management, including team leadership. He doesn't doubt that he is making an environmental difference in his daily work.

"You want to feel proud about your workplace, and it is easy to feel proud when working for a wind turbine company – not least a market leader."

Sasha has a degree in Global Business Engineering, which gives him the strong technical and commercial knowledge necessary to assume the overall responsibility of Sales projects. In the several-hundred-strong Offshore Sales Department, there are specialists and generalists performing commercial, technical, and back-office functions – creating a diverse workplace in terms of age, nationality, gender, and educational background.

Making a difference

To give a sense of working in Sales for Siemens Gamesa, Sasha reflects over the projects he has worked on recently:

"During the past year alone, I have worked on offshore wind projects in Taiwan, Poland, France, and currently the US, managing the preparation of Siemens Gamesa bids and talking to customers around the world. When constructed, these projects will generate clean electricity for several million households! Thinking about this is what motivates me the most when I get up in the morning and go to work."

Siemens Gamesa vs. the competition

Sasha explains why customers should buy from Siemens Gamesa and not from a competitor:

"To answer that, you have to understand the Sales process and the overall risk our customers are facing when procuring, constructing, and operating an offshore wind farm. Selling wind turbines is unlike many other products. We don't just focus on individual features of a product, since, simply put, most of our turbines and those we compete with, will basically do the same thing – convert the kinetic energy of the wind into electricity."

"There is, however, a lot of money on the line for our customers. Mistakes are expensive. So one of our strongest arguments is that we're the market leader with the most experience. We have already installed more than 1,000 units of our Direct Drive wind turbines, which is our current offshore technology. This gives us a solid track record, and the knowledge gathered goes into our product and delivery – minimizing customer risk."

"We are seeing more growth in the market and more competition, and we must be able to scale. That also applies to our competitors. Growth always comes with growing pains – we have been through ours – and it has made us well prepared for the future. We are a much stronger company now."

"Siemens Gamesa is ready for what comes next."

In the middle of the spider's web:

Platform and Portfolio Management

Four young professionals follow and manage products through their entire life cycle. But how?

Muhunthan: Siemens Gamesa since 2011. Works as a Team Lead in Product Management. Tasks include ensuring that products are developed and produced within time and on budget.

Sandra: Siemens Gamesa since 2012. Works as a Product Manager. Tasks include requirement specifications on products to ensure they are developed within chosen parameters.

Frederico: Siemens Gamesa since 2016. Works as Senior Commercial Analyst. Tasks include commercial life cycle management.

Darikha: Siemens Gamesa since 2015. Works as a Product Specialist. Tasks include looking into technology performance, finding issues, and implementing solutions in future products.

Tell us about product development and your role as part of PPM

Frederico: "Well, we are involved in the entire life cycle of products."

Muhunthan: "You can see us as product owners. The success of a product is our overall responsibility."

Frederico: "Exactly. I recommend our line of work to those who thrive in a dynamic working environment. Our actions



Muhunthan Nagendram, Darikha Kulbaeva, Sandra Svan Them, and Frederico Goncalves De Barros are looking at a product they scoped two years ago, now seeing it coming to life.

help shape the company's future. For instance, in scoping a new product, we will look at how to compete with and beat our competitors in the future."

Darikha: "We develop the strategy, you see."

Frederico: "And become the glue between functions and departments."

Sandra: "In addition, we work with special requirements for the products. A customer may, for instance, need turbines for a wind farm in a country with specific requirements regarding safety or around the transfer of energy. We are involved in implementing company strategy in these cases."

Muhunthan: "Yes, and we implement a strategy because our span of stakeholders is so comprehensive. They include departments, managers, suppliers, and even customers. This necessitates many different approaches. Through all steps of development, we gather feedback and compile it for the next loop of redevelopment."

Darikha: "Because Fleet Management entails gathering feedback from installed turbines, learning from their performance, and using the data to improve future products. One of our main interfaces for collecting data is the Service Department, and we implement what we learn in Technology."



Muhunthan: “We like to see ourselves as being in the middle of the spider’s web.”

What’s it like to work in your department?

Muhunthan: “We have a great mix between younger and more experienced team members. We complement each other in terms of skills and approaches to create a good dynamic.”

Sandra: “The dynamic environment has been evident ever since I started working in our department.”

Darikha: “And I can say that as an international employee not working in my home country, the size of the company is a huge advantage. For one, the company language is English, and recruiting globally also means a much stronger, more ambitious workforce.”

Can you describe a particularly interesting challenge you face in your daily work?

Sandra: “Portfolio Management in itself is such an interesting challenge. You are interfacing with technological challenges and solutions, and we have processes for these, but at the same time you rely on other people to get the job done – and no process can guarantee this 100%. In our work with development, we simply never have all knowledge available from the get-go, but we make sure we get a good overview, which helps

us make decisions that will get the product delivered to the customer as planned.”

Darikha: “From a fleet performance point of view, we used to be a one-to-two-project-a-year industry. Now, the industry is booming, and we are supplying at a much higher capacity. This increases the complexity of stakeholder management; how do we address issues and implement improvements in the best possible way? The answer to this question is what I see as a particularly interesting challenge, and it is an area where we can become even better, where we can really improve.”

Frederico: “We have a bunch of short-term tasks, but we must always align these with our long-term challenges. This requires various approaches and an excellent overview. That alone is quite a fine exercise that makes work fun every day.”

Muhunthan: “As a product owner, the great challenge is getting everyone to work towards the common goal. Our main objective is producing products at the right quality and cost. This is where I see our stakeholder management as important. And seeing something you scoped two years ago as a product today is just hugely satisfying.”



Room for innovation and creativity in diagnostics

If you like working with data and the mathematical algorithms required to analyze the data, the Model-Based Diagnostics Department could be something for you.

With 12,000 turbines that have more than 450 sensors each, the Model-Based Diagnostics Department crunches through huge amounts of data using their more than 650 analytical and diagnostics models.

Anne Sofie Vinther, who has a degree in Biomedical Engineering, is one of the Data Engineers working in the department.

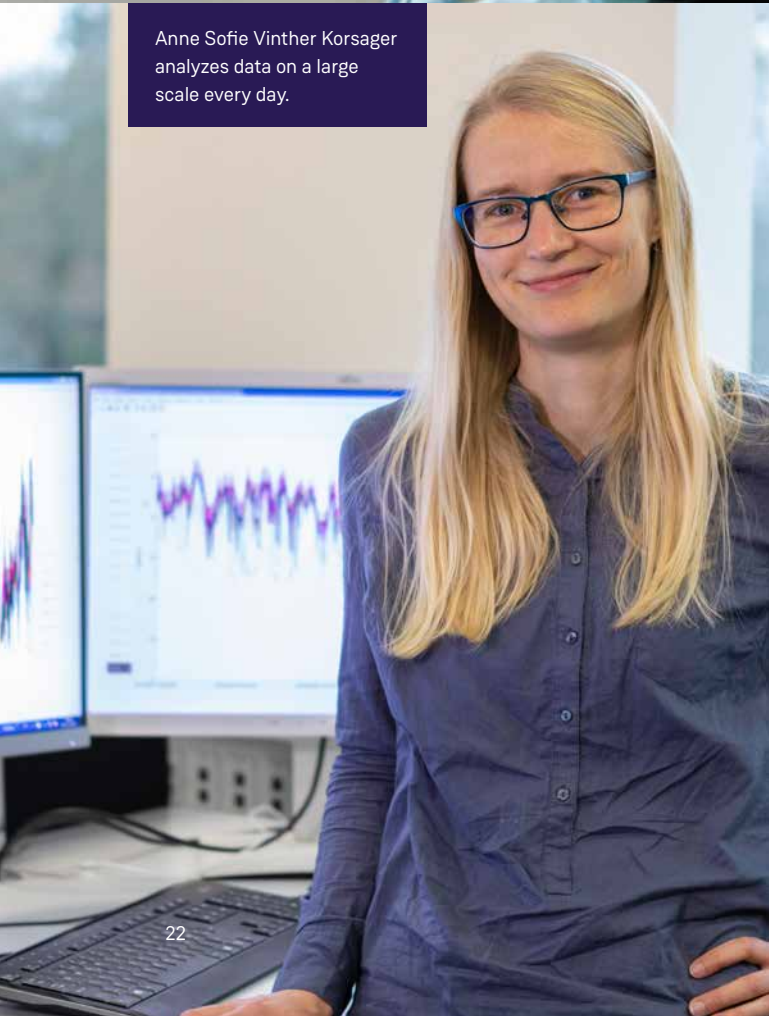
“This job just makes sense. The things I work on, the models I create, and the data I respond to are all used every single day to ensure that the turbines operate with minimal downtime.”

The models alert the Data Engineers if data from a turbine falls outside of ordinary parameters, and this information is then passed on to the service department that can add the necessary measures to the relevant turbine’s bundle of required maintenance.

Because of the data-based work, Anne Sofie and her colleagues get to work with the entire value chain and all parts of the turbine, which creates a diverse set of challenges.

“We use rule-based machine learning and have done so for 12 years. If there is a method you want to try out, you can do so. This is our department’s system and so we can try out new ideas quite freely. We have a lot of space to be innovative and creative in our mission to discover newer, smarter solutions.”

Anne Sofie Vinther Korsager analyzes data on a large scale every day.





Galya Krasimirova Petkova works with the commercial aspects of maritime vessels and helicopters in Service.

Quick-fire facts:

Galya is a Senior Commercial Project Manager for Maritime & Aviation Solutions.

Galya has been at Siemens Gamesa for six years and has risen quickly through the ranks via passion, hard work, and managers that encouragingly pushed her outside of her comfort zone.

Galya wants to become better at contract negotiation, and Siemens Gamesa has given her the opportunity to study Maritime Law at the Marine University in Sweden while also working.

I found my place at Siemens Gamesa

“With my Master’s degree in Finance, I began my career at Siemens Gamesa as a Junior Business Controller at Service Technology.”

“It only took me a year before I got promoted to Business Controller in Product Line, which provides global support to sites worldwide. In this position, I did management accounting reports for people at CEO and COO level. This meant compiling forecasts and actuals – mistakes here could have a major impact, so the job required a lot of focus and structure.”

New challenges

“Two years ago, I joined Maritime & Aviation Solutions [MAS] and one year in, I went Senior. I am aware of my rapid development and I can thank my managers for this. Taking me out of my comfort zones and challenging my weaknesses could be hard at times, but I knew they did it to help me. And they did help me. I think this is one of the things I appreciate the most here; management actively played a part in developing me.”

“So, you may have guessed that I get excited about my job. I mean, on Sundays I start looking forward to work – almost can’t wait for Monday to come around. This enthusiasm has increased over the past two years with my current occupation, the chance to become a specialist, and the challenges it offers me.”

Tasks at MAS

“In MAS we find the offshore logistics solutions necessary to perform Siemens Gamesa’s service obligations. We use different vessel types such as the crew transfer vessels (CTV) and service operation vessels (SOV) to perform our scheduled service, and also jack-up vessels to perform major component

exchanges on wind turbines. We also work on designing new vessels for our long commitment contracts.”

“I should probably also mention the aviation part. We also use helicopters for added flexibility in our operations, particularly when we cannot use the CTV to go to site.”

“Siemens Gamesa is not a vessel owner; we charter the logistics we need to perform our operation. This is where I come in with commercial project managing. A lot of contract negotiation goes on, and we need to be aware of various factors related to risk and liability.”

“Simply put, our department delivers the logistics that the rest of Service needs for their operations.”

Pacific Orca

“A great example is the most complicated asset that we have; the jack-up, and one of the biggest out there is the Pacific Orca. It can operate and perform tasks for our entire fleet. This is our Swiss army knife for major component exchange. The vessel is chartered for two years to work for Siemens Gamesa. It has six legs for the platform, a crane capacity of 1,200 tonnes, deck area of 4,300 m², and deck loading 15 tonnes/m².”

“I am already looking forward to the next step. I found my place now and am happy that I can develop here.”

MAS is Siemens Gamesa’s Maritime and Aviation center of competence for Service operations. Ensuring that we have the most effective offshore logistics requires a high level of expertise, competence, and dedication.

What newcomers say about working in Denmark



“People are more equal, no matter what job they do.”

Patrycja Debska, Poland



“The work-life balance is embraced more here than in the USA.”

Kristen Larsen, USA



“In Denmark, the flexibility of the working hours reduces daily stress.”

Hind El Bouhachemi, Morocco



“The Danes are very efficient at getting things done.”

Lisamarie Qunying Yang, China



“The flat hierarchy here allows for less complexity to get things done.”

Youness Chennaoui, Morocco



“In Denmark, people keep their calm when things get tough.”

Irune Maya Legarra, Spain



“The diversity here allows us to hear different points of view.”

John Moon, USA

“Siemens Gamesa respects and is tolerant of a diversity of cultures.”

Wenhui Cui, China



“I can experience a sense of independence, adventure and confidence.”

Imane Taheri, Morocco



“It’s good to be a part of Siemens Gamesa.”

Aivars Mukans, Latvia



“The cold weather makes you ride your bike faster to work.”

Sebastian Diaz, Venezuela



“In Denmark, there is a good balance between work and private life.”

Joanna Panowicz, Poland



“People challenge each other in a healthy way across all org. levels.”

Lasse Eisgruber, Germany



“In Denmark you honor the agreements you make.”

Mahmoud El-Hajj, Palestine



“There is a more efficient work method here in Aalborg.”

Liying Sun, China



“There is a trust, satisfaction, and feeling of unity here.”

Maciej Kmita, Poland

Construction: We make things happen, safely!

Samantha has been in Siemens Gamesa for 22 years, and her career shows that with a will to succeed and develop, you can achieve great things, and work with one of the most challenging and dangerous parts of the Wind Power industry, Offshore Construction.

Samantha began her career in Bonus as a temporary receptionist, but found a way to stay at the company and work many different jobs, including accounting and service. In time, she got involved in the construction of turbines and has been involved in the construction of most of them, ever since the 600 kW versions.

“Back when I was involved in building the first offshore project in the UK, as a Construction and Site Manager, we were just five people in the core team. Nowadays, our core team is closer to 30. I have lived through the growth of this industry.”



Samantha Tidmarsh

Samantha may have worked for Siemens Gamesa for a significant amount of time, but says:

“You don’t get bored in this industry. There is always something new happening. It’s one of the wonderful things about Wind Power, and especially offshore. If you are bright, interested, and willing to do the work, then there are opportunities everywhere you look!”

A strong people’s culture

When a new turbine type is commissioned or designed, Construction is involved from the very beginning to ensure that it is possible to build it.

For instance, with the upcoming wind turbine generation, only a single vessel exists that can construct the wind turbines in the way Siemens Gamesa wants as the ideal configuration. Construction is involved in ensuring that Siemens Gamesa suppliers develop more suitable vessels.

A job in Construction can include involvement in wind turbine concepts, sales, development of equipment, land and sea logistics, project management, commissioning technicians, handover, and service.

“When we say that we are involved in the entire supply chain, we mean it,” Samantha adds.

“What we do is incredibly dangerous. Offshore construction is a high-risk environment. We are far away from shore, and far away from aid. Looking after our people when they are out at sea is our number one priority. We care about these people – they are our professional family.”

Protecting and looking after the technicians working offshore is part of the culture in Siemens Gamesa. There is a strong people’s culture. Voicing concerns is encouraged and taken seriously by colleagues and managers alike.



“Construction is the pointy end of the stick,” Samantha explains.

“Any issue that slips through the design and development stages will have very direct and real consequences in Construction.”

Safety measures are in place, Construction is present to ensure high-quality deliverables, and residual risks are always documented and communicated.

Company careers

“There are many opportunities here, and we are saving the planet – it doesn’t get cooler than that. It is a bonus in our daily work when you remember just how much good you are doing.”

The workforce in Construction is both broad and dynamic, including roles such as project managers, technicians, business developers, coordinators, managers, and people in financial positions.

Construction also uses engineers in different ways, for instance to work on the construction tools or as commissioning technicians. Samantha mentions that the opportunities do not always seem straightforward in Construction, but they are ever-present, not least for software and electrical engineers to work with the platforms, sites, and future technology.

“If you are not energized by your current role, we will support to find other opportunities to develop – happy, energized people perform the best. We want you to be successful, and we can afford to develop people in different directions. I feel very proud seeing employees that I’ve developed achieve success. It’s just such a great feeling.”

What makes working at Siemens Gamesa special?

“I may be Head of Construction, but I am also the mother of a six-year-old. There is space in this company to do both. I love my work here, and I put a lot of time into my work, but I still put my daughter to bed every night.”

Susanne makes safety training efficient and agile

From Team Assistant to TWI Program Manager, Susanne Svenningsen exemplifies that you do not have to be fresh out of university to join Siemens Gamesa and establish a career for yourself in a big company.

Siemens Gamesa emphasizes the opportunities to grow and develop your career within the organization, which Susanne found out very quickly.

“Even though I started here at the age of 46, my managers believed in me and my abilities. I think they sometimes believe in you more than you believe in yourself, which is amazing. It got me out of my comfort zone,” says Susanne.

Discovering Training Within Industry

For several years, Susanne ran and developed the competence framework for the offshore project wind technicians. Defining the various technician profiles allows for more precise safety training, management, and up-skilling. She investigated ways of optimizing and minimizing errors in construction work when she discovered the Training Within Industry (TWI) approach.

“I began to think that there may exist even better ways of training our technicians in quality and safety procedures. TWI focuses on people, doing one-to-one training of tasks. We introduced this hands-on approach last year, and the feedback from the technicians is extremely positive.”

Making safety a priority

One of the challenges for Susanne in managing the TWI program was convincing the sub-suppliers of the importance of the training, but they welcomed the initiative. Siemens Gamesa follows some of the highest standards in safety to minimize the risks involved in working on offshore construction sites. Work conditions on the sites are hard, and the technicians need to be prepared for this. The TWI trainers, therefore, travel to the sites themselves and carry out training in the real-world environment.

“By actively working with the training and tasks, the technicians begin to understand the importance of safety. This can really make a difference,” Susanne adds.

The TWI program embodies the idea of agility; when a new challenge in safety or quality arises, the TWI trainers can quickly implement the training on-site.

Susanne will subsequently expand the scope, starting in 2020, when the modules TWI Job Relations and TWI Job Safety are introduced alongside the already active TWI Job Instruction program. Job Relations will train managers in better management of the individual, and Job Safety will work on identifying and eliminating the conditions that may lead to safety incidents.

Amazing experiences at Siemens Gamesa

One of the best things about being a TWI trainer is performing your job on-site, as Susanne explains:

“You see how everything fits together – you experience the world. Seeing a ship being loaded with all the turbine elements is fascinating, it is all so very big. You feel really proud being a part of all this. You have a real understanding of what we are achieving with wind turbines in the world.”

Susanne Svenningsen took herself out of her comfort zone when she began working at Siemens Gamesa and has, largely on her own initiative, helped establish a new high-quality training program in Offshore Construction.

The TWI programs will see much development from its Program Manager in the years to come – there is nothing to indicate that Susanne is slowing down with her proactive attitude towards work and developing methods any time soon.



Susanne Svenningsen

TWI in numbers:

- 500 TWI training sessions completed in one year.
- 200 sub-contractor technicians from three companies trained so far – and Siemens Gamesa technicians will follow.
- 20 minutes per training session.
- Seven times repetition per training – long-term retention of knowledge.

Caring about employee well-being

Siemens Gamesa is known for its technological developments and advances in wind energy, but as Andrew MacMartin exemplifies, it is also a company that is constantly developing its leadership and internal culture.

Speaking with Andrew, you quickly get a sense that this is a man who is at ease talking about Siemens Gamesa and its value propositions. It is also clear that his time at the company, five years now, has given him time to scrutinize these propositions and discover that the company delivers on them.

“I would encourage people to come to Siemens Gamesa because it is a dynamic workplace. For many today, choosing a workplace is about the environment. It is about meaningful employment, and this is what Siemens Gamesa provides for every single employee. It is an organization that actually cares and wants to make a difference,” says Andrew.

Andrew knows what it is like to feel the support of the organization, as he explains how he is offered a good deal of flexibility in his work to care for a child with special needs. Receiving this kind of trust means you also reciprocate, by being more flexible yourself at other times concerning work and travel.

Management for a people’s culture

In his work, safety and quality is the focus during leadership training. This training reflects the values and the support he himself feels in the organization, as he, in his instructions, helps leaders understand and support not only the physical well-being of their people, but also the mental well-being.

To have a well-functioning organization, people skills in leadership are increasingly important, and so Andrew has been



Andrew MacMartin

providing instruction in communication, conflict solution, being a role model, and cultural awareness. He explains: “Your behaviors create micro-cultures, especially as a manager or lead. It is Siemens Gamesa’s policy to explicitly talk about healthy psychological environments. With training, we establish a proactive approach.”

In their work, Andrew and his colleagues, such as the TWI instructors, emphasize safety and implement organization-wide initiatives that show the employees, not least the people working offshore, that they can trust their organization to care and do as much as possible to create safe, positive working environments.

The many paths in software engineering

Paulo Miguel Jesus Fontes
Project Manager

“I am a technical project manager on several R&D projects and product owner on some of the outcome products coming from this project. Also, I am responsible for the cybersecurity and DevSecOps on the software turbine control.”

At first, Paulo was a Software Developer, but he found out that he enjoyed project management. He now spends most of his time coordinating his products while also doing a small amount of coding to support the team or creating proofs-of-concept to demonstrate new ideas. As a product owner, it is Paulo’s responsibility to make the technical decisions at meetings, to bring the best value to the product.

He highlights the fact that there is a full software house placed in the middle of the company, involved in central tasks that ensure the turbines operate as expected.

Without the software that they provide in Turbine Controlling, the turbines would not run, or would not do so safely. This is also why there is a major focus on cybersecurity in Siemens Gamesa’s software departments. Paulo even says they actively set aside time to hack their test turbines to identify vulnerabilities and patch any found issues before any software updates.

“I would say that failing is incentivized here. You can fail but fail fast, learn from your failings, and implement the necessary corrective measures. Our management wants us to try new things and see how they work out – see if they can bring new value.”

Yu Guo
Advanced Engineer

“I provide design and improve data exchange between turbines in the wind parks. The exchange allows the park controller to control the entire park and allows SCADA to collect runtime data.”

Yu explains how the data communication protocol at Siemens Gamesa is unique and advanced – placing him in a field where he is working with cutting-edge data communications technology.

Developing efficient data exchange is complicated because the team is supporting various operating systems from traditional desktop to advanced real time operating system, and they also work in several coding languages and scripts. This is the place to come to challenge your skills, as you will most likely have to pick up a new language or two along the way.

Yu and his team support the park controllers, as it is Siemens Gamesa that controls the wind farms where the turbines are installed. If the communication is broken, the park does not function. The individual turbine might work, but it would not be properly connected to the grid.

“What I am doing is quite unique. Even though we are a small team, we are important, which makes the work here very satisfying. And should I want to try something else, then I see a lot of opportunities here. It is all about how much of an effort you wish to invest.”





Søren Riis
Embedded Software Developer

“I develop wind turbine applications. For instance, we create the software that points the turbine into the wind, controls for the lubrication system, and decides how the blades should be positioned to make the turbine operate.”

Apart from programming software for the turbines, Søren is also a scrum master for one of the six scrum teams – each of which is responsible for a specific area of the turbine.

Being a scrum master means spending time assisting the team in meeting their delivery goals. That could be by eliminating impediments which blocks the team from delivering on time.

For instance, when the team receives a task, they start by defining the requirements together with the customer (internal or external) before beginning development. The features can be tested on turbine simulators before being tested in the real world. When the software has been tested in the simulators, it undergoes integration tests with the rest of the sub-systems. Sometimes the developer also participates in the field-test in a real turbine to validate that his/her feature works as expected.

A year can pass from function request to delivery because the tests are vital for operations. In a worst-case scenario, bad software could wreck the entire turbine and cause it to collapse. And as safety always comes first at Siemens Gamesa, these testing procedures are never rushed.

“In the past year, we started up a new group in Spain to work on software and platform development. This gave me four months in Madrid to help get this department underway. Just one example of the many opportunities that a position at Siemens Gamesa can offer.”



Robin Kendrick
Development & Operations Engineer

“I am a software developer with eight years of experience in embedded development, and now I handle the team’s CI/CD [Continuous Integration & Continuous Delivery] processes and automation. From software developer to a DevOps engineer brings a whole new set of challenges to the table.”

With 45 developers pushing 20 commits each day, it is an impossible task to manually validate them. There is enormous scope for automation. That is why Robin, who has a passion for automation, is placed in a position where he could implement and maintain the CI/CD process.

With CI/CD in place, Robin empowers his team to focus on the more important stuff. Ensuring the CI/CD tools work is in part also a task of ensuring that the team can achieve zero-downtime deployment.

Robin highlights that Siemens has very diverse career opportunities, even within the software department: “We have a very diverse pool of engineers, which makes everyone on the team challenge their thinking more often. And flexible work hours is the icing on the top.”

“Throughout the year, we get numerous opportunities to be innovative during hackathons and code camps within the company. This lets us get creative with our code and think of very different, alternative solutions. I especially enjoy this time.”

Passion for data and opportunities to advance

Samir Bico is a Solution Architect in the Diagnostics Center Department. His primary task is getting the data from the wind turbines and making sure it can be utilized by the other departments. Working in software was always his passion, and Siemens Gamesa gave him a chance to explore all the opportunities.

Samir's advancement

Having spent 18 years with the company, he has worked in a few different roles, all relating to software.

Samir started out creating turbine control systems in SCADA and then moved on to working with turbine test systems. He spent time as a Program Manager and as a Project Manager before he got the chance to develop software designed to collect data from the turbines. In this field, he gets to work with data products, systems, and designing pipelines for acquiring and distributing the data.

"I find that taking initiative is great when working at Siemens Gamesa. Management really supports initiatives for new projects and ways of improving."

"I am passionate about technology and developing technology, and I've experienced this support. I have been given space to develop my technical skills, which makes me a better employee but takes a bit of your time away from work."

"Now, as a Solution Architect, I work with big ideas for data handling and must convince others that my ideas are right and that they should be invested in. It is an interesting challenge."

Using digitalization to adopt new ways

Gathering data from the turbines is nothing new, but the amounts of data collected are massive. More than two billion rows of data points are transmitted from the turbines every day, and Siemens Gamesa can still only collect and manage a part of this.

As a Solution Architect, Samir Bico finds it an interesting challenge to convince others to invest in his ideas.



Samir explains that they use both SQL and NoSQL systems for gathering and categorizing the data.

“We analyze the data and find ways of presenting it. By doing so, we democratize the data and make it available to everyone in the organization.”

Adopting digitalization also means adopting new ways of thinking and working with data. To keep pace with the data, the department has investigated cloud storage and its obvious advantages. Cloud can give Siemens Gamesa flexibility and scalability in a short amount of time, as well as aid infrastructure and the SQL setup for platform services.

Samir also says that Siemens Gamesa is “hoping to see artificial intelligence integrated in the future for systems that can

predict and forecast events based on data. If we want to be the best, this is something we need to look into.”

The experience of working in Siemens Gamesa

Helping each other with challenges, finding solutions, and having transparency in the company’s solutions are just a few of the things Samir highlights about working for Siemens Gamesa.

“In Siemens Gamesa, I can find challenges, unknown factors, and fun things to work with. A highly paid job without challenges wouldn’t be fun. The wind industry is a tough industry, but it rewards you and you feel a sense of achievement.”

Protecting Siemens Gamesa against cyber threats



Rija Shibu travelled from Bangalore to Denmark to work closely with her colleagues.

“It’s been nine wonderful years, and I am continuing my journey with Siemens Gamesa. I started my career as a software developer and now I am a System Architect. Siemens Gamesa is a great place to work. Everybody here is really interested in technology and is passionate about what we do for the climate. Also, when we come across a challenge, the way we work as one team to solve the challenge is amazing,” says Rija Shibu.

As a System Architect, Rija supports a lot of Siemens Gamesa’s teams by defining and managing the system architecture and contributing to cybersecurity solutions. She is a part of the Global System Architecture Team, which consists of six highly specialized people, each supporting different projects.

Because the team members are not in the same location, they meet up every so often:

“I am currently in Denmark on a three-month delegation. It can be challenging to develop ideas efficiently when I am in Bangalore and my colleagues are in other parts of the world. So, we meet up as part of work. I enjoy the traveling and getting to know my colleagues face-to-face. I am happy that Siemens Gamesa is willing to bring us together like this.”

Working with cybersecurity is one of the most vital jobs you could assume at Siemens Gamesa today. Protection against threats directed towards turbine functions is critical for operations. Moreover, the System Architects also protect Siemens Gamesa’s data from getting compromised or stolen.

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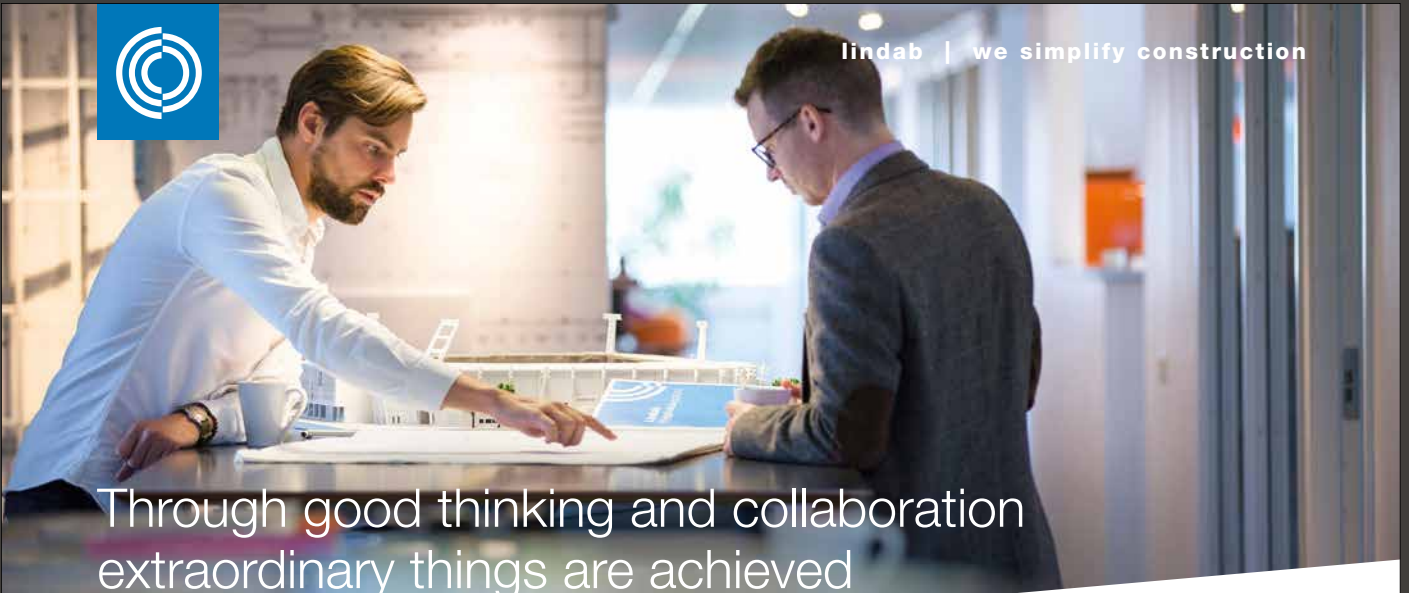
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TÜV NORD is one of the world's leading accredited certification bodies for on- and offshore wind turbines. We ensure safe plant operation, provide support in complex approval procedures and provide decision-making support for the financing of planned projects. For example, our services include:

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- LiDAR wind measurement campaigns, wind potential studies and yield reports according to DIN EN/ISO IEC 17025 including site quality certification according to EEG 2017
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- Assessment and verification of the lifetime extension of wind turbines beyond the design lifetime
- Damage investigation and cause analyses
- Periodic inspection of the entire system, the access system and the crane systems as well as the component subjects according to the BetrSichV (ZÜS)

- Inspections at transfer of risk, end of warranty and start / end of full maintenance contracts as well as construction supervision

Certification of Wind Turbines

- Type Certification, Project Certification and Component Certification for On- and Offshore Wind Turbines according to all recognized Certification Schemes (IECRE, IEC, DNVGL-SE 0441, Danish Type Certification and Chinese GB standards)
- TÜV NORD is one of only three certification bodies world-wide that has gained approval by IECRE to perform certification according both of their wind certification schemes OD-501 and OD-502
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Reference

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Susy L. Nielsen, Construction Resource Planner,
Siemens Gamesa Renewable Energy A/S

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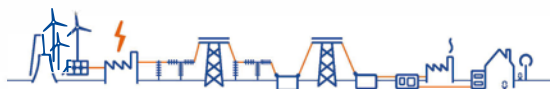
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