Strong civil work for Wintrack III

Steel: functional & artistic

July 2021
This year didn’t start all that well. We had 2 accidents in our work houses and a ‘near accident’ in Hoboken. We sympathise with those involved and it is a clear reminder for all of us: the actions we do for safety, we take very seriously as a company. We have to be careful down to the smallest details.

However, there is also a lot of good news. Freedom is looming on the horizon. The world is about to change. Our government and society are focusing on actions to get the economy back on track. We now see that the current situation is creating tensions, such as longer delivery times for materials and rising prices. Forewarned is forearmed, so we anticipate.

The market looks bright in the future. Our commercial staff is working on large and challenging projects, good for several opportunities up to 2025 and beyond. The wind industry is booming because of the sustainable investment plans of various governments, and we are not neglecting the opportunities within the civil sector either. The renovation of our heritage of bridges and locks will also be part of the overall economic revival plans.

We are used to building foundations for 12 megawatt turbines. Windmills are getting bigger: 15 and 18 megawatts are on the design table, 25 megawatts are also being discussed. No limits, and our installation must follow suit. We are brainstorming about the best options to strengthen our cranes and make them last for the next 10 years. Our teams work very well. Most projects are running according to expectations. In the preparations for the complex structures we create, we remain alert not to make any mistakes.

Speaking of vigilance: corona made us, together with countless companies, work more digitally than ever. Parallel to this global digitalisation, cybercrime is on the rise. Bad boys are looking over our shoulder. That is why we are all stepping up our efforts to secure accounts and networks.

Also for you: keep it safe. Happy summer!

On behalf of the entire management,
Raf Iemants
Managing Director Smulders
A new bicycle bridge in Mechelen

In the loop of the R6 in Mechelen, Smulders installed a new bicycle bridge in April. The bridge, consisting of three parts of 5 metres wide and 18 to 20 metres long, was produced at our site in Balen.

Together with a new tunnel, the new bicycle bridge should make the new Malinas shopping park accessible to cyclists and pedestrians.

First TP installed in France

On May 7, 2021 the first transition piece for the Saint-Nazaire offshore wind farm was successfully installed. Together with Eiffage Métal and DEME Offshore, we are making history because it was the first foundation to be installed in the very first commercial offshore wind farm in France!

In total we are building 80 transition pieces for Saint-Nazaire.

Topside fabrication of Hollandse Kust (west Alpha) officially kicked off

In the beginning of June, representatives of Smulders, ENGIE Solutions and our client TenneT officially kicked off the steel fabrication for the Hollandse Kust (west Alpha) topside. The steel fabrication will now continue at the Smulders’ sites in Arendonk, Balen and Hoboken.

Assembly of the topside will start this month. At the end of the year, the topside will be transferred to ENGIE Solutions for the final assembly.

20 years Offshore Wind!

2021 is a special year for Smulders. Exactly 20 years ago we took on a new challenge and made our first steps in the offshore wind industry.

We look back on 20 years of offshore wind on page 14.

Customer
TenneT
Timing
March 2019 – April 2022
Assignment
130 pylons – 65 mast positions
Length
54 m per pylon

Delivering pylons or high-voltage pylons – our cup of tea. Even if the concept is a new type of mast such as Wintrack III, good for 4 circuits 380 kV. A civil engineering project commissioned by TenneT, which is building a high-voltage connection from Eemshaven to Vierverlaten near Groningen to reinforce the existing grid. After a remarkable process, TenneT chose Iemants to execute 130 pylons (65 mast positions), and we are very happy with that.

The connection will ensure that more electricity can be transported from the Eemshaven energy hub to Groningen and further to other parts of the Netherlands.
Never give up

Work in progress now, after a long preliminary process with pre-qualifications since 2014. We participated in the tender in December 2016 to be precise – design & build. We had worked intensively on it with the team, but we ended up in second place. The winning party then failed in the design and their contract was cancelled in 2018.

Second time lucky? TenneT started a new tendering procedure in which they took charge of the design. It was an intensive period of tender management for our Tender Director Geert Vennekens and Tender Manager Dennis Borgers, strengthened by our ambitious Managing Director who always says: we don’t give up. Therefore...

Geert: “We had learned a lot from the first tender round. TenneT had made adjustments and divided the contract into four lots in order to spread the risks. We could now offer ourselves separately for the masts. Our proposal had to be SMART – specific, measurable, acceptable, realistic and time-bound. The approach was to build 100% of what TenneT had prescribed. That’s how we started writing out the plan contractually.”

Dennis: “In addition to the price, there were other award criteria, such as action plans with management measures. We provided a ‘transport and assembly’ action plan to demonstrate how we would deal with permits and obstacles on the road. I can still see us sitting around the table studying the roadmap in detail, which is quite unique. We have analysed, weighed and evaluated everything. We also drew up a ‘planning and milestones’ action plan. Because what do you do when a supplier is late? Or how to scale up if necessary? In terms of flexibility and buffer, I think we are strong as a group. We scored points and we won lot 4 for the execution of 130 pylons.”

Everything under control

The effective start for implementation was March 2020, and immediately with 2 Project Managers, Michel Vos to steer the contractual, financial and process-related part in the right direction. Hans for the production and assembly. A match that to this day is synonymous with ‘everything under control in technical and process terms’.

“We have an important connecting role to play.”

What are pylons?

Electricity at high-voltage level is often transported on land by lines suspended from high masts at a safe distance above the ground. TenneT constructs new high-voltage connections, such as the one in Groningen, using the Wintrack pylon. A mast location consists of 2 pylons – a high construction tapering into a point as a carrier for cables.
Hans: “There were also strict guidelines for the technical implementation, such as geometry, flatness of the flanges and tightening of bolts and anchors. We have learned from the earlier test pylons, so we now have better control of these requirements. The design also prescribed a lifespan of 50 years. This means that the pylons will have a duplex system, i.e. metallisation and painting. Even though we used to build lattice towers, the complexity of such an atypical tower was not unknown to us.”

Michel: “One of the contract requirements is the best for project approach. We are obliged to coordinate with all parties. That implies a lot. The civil engineering work for this connection will be carried out by BAM Infra and the Strukton Civiel-Mobilis combination, with Spie being contracted for the conductor assembly. And don’t forget the complex transportation. So we have an important connecting role to play here.”

By mid-2021, production should be running like clockwork. Most of the production work is done in Arendonk, the arms are made by a Polish subcontractor and we have increased capacity by external preservation. We do serial production. This allows us to constantly accelerate and optimise. “It’s a huge learning curve”, adds Hans. “You see the efficiency increase, both in the production of the pylons and in the assembly. We are building increasingly faster and we want to feed the assembly team as much as possible with an output of two pylons a week. We are also going to monitor that cadence closely in the time ahead.”

What helps: the fact that we had foreseen a 3-month capacity buffer which, by the way, was a contractual provision. What also helps is that, together with TenneT, we accelerated the material procurement at the very beginning of the project. It was the start of the pandemic and we did not want to have any delivery problems. That turned out to be a smart move. Today, 1/3rd of the production is ready, we are ahead of schedule.

Pilot project
This project was the impetus for larger investments in machines that we can also use for other tasks. A focus on sustainable materials, efficiency and savings is never far away. “For example, a roller to make conical tubes, a welding and metallizing robot. Feel free to call Wintrack III a pilot project. And of course we hope to be able to produce more similar masts in the future”, concludes Hans.

“Despite the strict process requirements, the cooperation is very pleasant, both with TenneT, our team and the other executing parties. We look forward to the sequel and to building on a success story together. May there be many more similar civil projects.” Says Michel.

After the summer of 2020 TenneT started the construction of the connection which is scheduled to be commissioned in 2023. ■

What does the assembly of such a Wintrack III mast look like?

Lower and upper masts are delivered on site. The arms are assembled on the ground. After the pre-assembly, a 400-tonne crane comes and lifts the four large parts to become two units. This is a very precise task with extra safety guidelines, as it is all done quite close to the existing line. Another challenge: getting to the site with these ‘giants’ via limited access roads and then assembling them in the fields... can you imagine?

The atypical factor is the conical tube. Wintrack pylons – innovative bipole tube pylons for 380 kV – carry the conductors inwards, as close together as possible. This provides a very narrow magnetic field at ground level and saves valuable space. Compared to traditional lattice towers, the round-conical towers have a smaller impact on the landscape.

200,000 production hours
Within the contract, more than 200,000 production hours are planned, as well as some 20 milestones. If they are not met, substantial fines will be imposed. “We demonstrate that we comply”, Michel continues. “We have set up a requirement management system for this, in which the requirement is described in detail, how we make it SMART and how we have achieved it. We then use this information in our management reports to TenneT.”
Interview

Lammert Oldenburger
Project Manager
TenneT

With over 22,000 km of high-voltage connections, European grid manager TenneT ensures a reliable and secure electricity supply to 41 million end users. The need for (sustainable) electricity is constantly increasing and TenneT is building for tomorrow with Wintrack III, a new 380 kV high-voltage connection between Eemshaven and Vierverlaten (near Groningen). Iemants is responsible for the production and delivery of 130 pylons.

First of all, what is a Wintrack?
“A few years ago TenneT developed a new type of high-voltage pylon: the Wintrack pylon, a futuristic-looking bipolar tube pylon for 380 kV. This innovative design replaces the existing lattice mast and reduces the magnetic field zone. Wintrack responds to social and technological developments and will allow to make optimal use of the available space in an environment. This type has already been used in the Randstad South and North Ring and Doetinchem-Wesel projects, also known as Wintrack I.”

Meanwhile, the Wintrack III era has arrived – why the III?
“Wintrack II was the initial tender or programme for the current project, which was completely awarded to another party and then cancelled for design reasons. Wintrack III is what has effectively implemented. We did the design internally and then put it on the market so that steel companies could bid to build the pylons. Wintrack III was split into 4 lots, so that we could spread the risk. The best action plans on top of the price got a discount and so it happened that lot 4 was awarded to Iemants.”

What makes these masts so special?
“For the first time, these are W6 masts with two 380 kV circuits on the inside and outside, the heaviest Wintrack masts ever built for TenneT projects. After all, Groningen is an area that is susceptible to wind and earthquakes. We have taken this into account in the design. A non-techie may not see the difference with W2 or W4 masts, but it is definitely there.”

What characterises the cooperation with Iemants?
“You were well prepared with a work file that met our high standards. For example, flatness tolerances is a given that you did not underestimate. And further: we find that steel suppliers are generally very good at building in the factory, but there is much more to it. We are very happy with Iemants.”

Speaking of challenges – is the timeline one of them?
“We have drawn up a detailed timeline with intermediate milestones. The mast suppliers – including you and Valmont – deliver faster than agreed. We suspect that your work will be completed by the end of April 2022 with the installation of the last mast. We want to be operational by 2023. We can say that we haven’t had many setbacks so far.

What do you think of the result so far?
“The first pylons were installed in January 2021, meanwhile 62 are standing up, which is about 25% of the pylons (situation in May). Compliments to Hans and Michel. The project is evolving well. There are, of course, the other lots and parties. If something goes wrong somewhere, we share it with each other. That is also the reason of the division. Learning from each other and avoiding further risks.”

Is it too early to raise a glass?
“Starting the project with bubbles was out of the question because of the pandemic. So, that’s a toast we still have coming. I’ve seen Michel and Hans in the north for the construction, and our lead engineer has visited Arendonk. There are no contract issues at all, things are going quite well. Also the assembly and erection. We have reduced the two-weekly consultation to a monthly meeting. It’s going smooth. Let’s not raise a glass now, let’s do that after our continued efforts.”
“We are building increasingly faster and we want to feed the assembly team as much as possible with an output of two pylons a week.”
“Steel: functional & artistic”

Interview
Ria Van Dooren
Employee paint hall

Let’s go back to the beginning. How did you end up at Smulders?

“I used to be a self-employed chip shop owner, but I was ready for something new. I ran that business with great passion for 14 years, although it became increasingly difficult to find good staff. I heard through an acquaintance that there was a vacancy for the paint hall and I decided to take my chance. Something completely different, very exciting. I was eager to start.”

What a career move. What do you do on the shop floor?

“On the one hand, I am in charge of warehouse management: keeping track of the paint, calculating the consumption, ordering paint, etc. This involves a lot and, above all, the calculations have to be correct. I am alone in the shop and I keep all the information in a programme. On the other hand, I do the touch-up for the projects, i.e. for all the constructions that leave Iemants in Arendonk. You could say that the steel industry opened up a whole new world for me.”

Touch-up, what is that exactly?

“That is the final work of the paints. I check to see if there are any mistakes and take them out. I am the only one who does touch-up, but I work closely with the other colleagues in the paint shop. In total, there are about 30 team members spread over the spray hall. I absolutely love being one of the guys.”

Does your past work experience as a self-employed person have an impact today?

“Well, there is a proactive side to my DNA. I have the same commitment in my current job. If you live by the motto ‘where there’s a will, there’s a way’, you can achieve a lot. Hard work and honest communication are the best. Also in this context, I try to use my knowledge of people, my eye for perfection and my drive for efficiency to the best of my ability. The latter is needed in the warehouse. I try to encourage my colleagues to clean and reuse materials whenever possible, so we can save money. And if I ask them respectfully not to leave anything lying around, I think the men don’t really mind. That feminine touch, right?”

What challenges do you see?

“I am convinced that it is necessary to bring more efficiency into paint management, especially now that the number of projects is increasing. In terms of touch-up, there is not much to grow because of physical aspects. As you get older, it becomes more difficult to sit on your knees. It is a funny sight sometimes: me sitting in a mast, fully equipped with a lamp and glasses. I also like to think together with our foreman and offer ideas on how to improve our work, so we can fulfil customers’ wishes.”

What do you do when you are not working in the paint hall?

“Well, I like to be creative... with steel! Together with a colleague, I recently welded a beautiful tree. It is finished and I put it in the garden, so I now have time for the next work of art in steel. I get my inspiration from Pinterest. This hobby is an ideal outlet, in addition to cooking and enjoying life with my husband and 2 children.”

Are you also this passionate at home?

“That’s the least you can say. I am an inquisitive person and I want to try everything. From the chip shop to the steel industry... it is perfectly possible. The right job combined with a cozy home, some relaxation and nice chats with friends make me a happy woman.”

Is there anything you want to try in the future?

“A tandem skydive! The older, the crazier. No, I mean it, a jump like that is bound to give you a feeling of absolute freedom. It is not rash. It is a matter of letting go of less pleasant things you have experienced. I think it’s great.”

Finally, what do you think about seeing your own story here in Passion magazine?

“Special, a bit awkward because I don’t really like being in the spotlight. Maybe it can inspire other ladies to start working in a similar job. Pretty cool, right, in our work gear? In case you have any doubts, at the weekend I’m all about elegance.”

Who knows, maybe you will run into Ria in Arendonk soon – recognisable by her protective helmet and paint-splattered outfit. It will definitely be a great chat!”

Yes, women can! The ladies at Smulders are quite capable, no doubt about that. Ria Van Dooren, employee in the paint hall in Arendonk, is living proof. She has been standing her ground since November 2019. Modest, respectful and committed, that is how she makes her mark.

My job, my passion
2021 is a special year for Smulders. An anniversary year because we are not only building our 2,000th TP, but also celebrating our 20th anniversary in the offshore wind industry. Exactly 20 years ago, we took on a new challenge with Smulders. We rented part of a former shipyard in Hoboken and made our first ever transition pieces there: 80 pieces for Horns Rev 1. Over the past 20 years, we have celebrated many milestones. Check it out.

01
Horns Rev 1 was our very first offshore wind project.

02
In 2009 we wrote history again with our first substation project for the Belgian offshore wind farm Belwind.

03
The new production hall in Hoboken was started up immediately for the serial production of 48 jackets for Thornton Bank.

04
The first transition piece for the Gemini offshore wind farm was also our 1,000th TP! We made the 150 transition pieces and 2 substations.

05
In 2014, DONG Energy (now Ørsted) awarded the Smulders - ENGIE Solutions joint venture the contract to build 5 substations. It was the largest contract ever awarded in the sector. We built 2 substations for Race Bank and Walney and 1 substation for Burbo Bank.

06
In 2016-2017 we built our first gravity base foundations for Blyth.

07
In 2016-2017 we put tremendous effort in a true ‘tour de force’, accomplishing a series of jackets for Beatrice. We delivered a jacket every week for 28 weeks!

08
Deutsche Bucht was the first substation project that we carried out entirely on our own in a joint venture with Eiffage.
Offshore Wind

2019-2020

09

Triton Knoll was our first offshore wind foundations project where we were also responsible for the design.

2019-2020

10

We built 5 Offshore Transformer Modules® for Siemens Energy, 2 for Triton Knoll and 3 for Moray East. The OTM was developed by Siemens Energy and is significantly smaller and lighter than a normal substation.

2020-2021

11

Moray East, a great example of teamwork! The production of the 55 jackets was divided between the various sites of Smulders, Eiffage and subcontractors.

2020

12

In 2020, we expanded our offshore wind market to Asia. For the Yunlin offshore wind farm in Taiwan we made 40 transition pieces and 80 e-cages, for Akita-Noshiro in Japan 33 transition pieces.

Civil & Industry

2019-2020

13

With Saint-Nazaire we took our first steps in the French offshore wind market. The project is extra special for Smulders because one of the Saint-Nazaire TPs is also our 2,000th TP!

There is still a lot of business in offshore wind! For Hollandse Kust (south) we are making 140 pieces of secondary steel for the foundations, later this year we will start with the TPs for Dogger Bank. We are also working on 4 substations: Hollandse Kust (north) and (west alpha), Saint-Brieuc and Baltic Eagle and with Eiffage, we’re currently building 3 floating wind foundations.

2019-2020

TenneT

14

We must not forget our civilian branch either. In addition to the pylons for TenneT, we are also making 45 high-voltage pylons for Avelin Gavrelle in France and we have a number of nice bridge construction projects in Germany (Darmstadt and Leverkusen) and Belgium.

You can read more about this in the next Passion.

2020

15

Avelin Gavrelle

16

Leverkusen

17

Hollandse Kust (south)

18

Dogger Bank

19

Saint-Brieuc

20

Baltic Eagle

21

Darmstadt

22

Leverkusen

23

Belgium
An exercise in crisis management

A perfect world does not exist. There is always some kind of normal chaos. In that world, despite countless initiatives and unremitting efforts, incidents do happen. All we can do is continue to anticipate what will happen. Time for structured crisis management.

Hazard / Chance

We look forward to leaving the pandemic behind us, although it has also taught us to sharpen our crisis management skills. We set up a working group to see where we could make adjustments and what information we should share. With some Operational Managers, Project Managers and Representatives from HR and QHSE, we tried to engage in high-level crisis management.

A strong, negative word, you say? We should at least not be afraid to mention it. We are not an SME any more. We are working on a more structured communication towards internal and external stakeholders. Because we have to and because we feel our employees need it. And then crisis stakeholders. Because we have to and because a dedicated working group works on an emergency plan. This set the trend of embedding sustainability more and more firmly in our DNA.

“Every crisis is an opportunity to shrink or expand.”

We are on the eve of a CO₂ neutral plan, with very concrete targets for 2035. It is a question of embedding sustainability in our DNA, which we have been doing systematically for years. An evolution that deserves to be in the picture.

Back to 2015. Sustainability had been rather fragmented until then, mainly supporting local initiatives. Then came the CO₂ Performance Ladder and we opted for a structured approach. We put a lot of effort into environmental aspects and achieved level 5, the highest level on the ladder. This says something about how climate-conscious we are in our business operations and projects. This set the trend of embedding sustainability more and more firmly in our DNA.

“2017 was a milestone”, says our QHSE Manager Tim Balcaen. “We achieved 100% green energy in our Belgian offices and participated in the Voka Charter for Sustainable Entrepreneurship (VCSE), which goes beyond merely reducing CO₂ emissions. Companies which have achieved the VCSE for at least 3 years and set up actions for each of the 17 United Nations Sustainable Development Goals are awarded the UNITAR SDG Pioneer certificate after a positive evaluation. Some initiatives contribute towards no hunger, no poverty, quality education, gender equality, dignified work, etc. In 2020, we received our first Pioneer certificate.”

The sustainability train has been unstoppable ever since. After Belgium, we succeeded in getting the Polish and UK branches run on 100% green electricity in 2020.

PS: The crisis team is going to happen. It will allow everyone to focus on their own tasks, while a dedicated working group works on an emergency plan.

We need even more actions. It will be a bit more difficult, but the effort will pay off. “We want to go to 0 kg emissions, with a neutral plan. We are participating in the next phase of the VCSE, the so-called SDG Champion process. At the end of 2021 and 2022, we have to present the interventions that will make our organisation’s operations more sustainable in the long term. The energy transition that we have initiated, is one of them. To be continued”, says Tim.

“Sustainability takes forever. And that’s the point.”

By the way: Our QHSE Manager is assisted by colleagues and sustainability ambassadors Birthe Priem and Evelien Dockx for all internal and external communication. A question or a tip? sustainability@smulders.com
How did you end up at Smulders?
“At my previous employer, the work came to a complete standstill because of the corona crisis, so I had to look for something else. I was a maintenance technician and welder in that company, and I wanted to continue in welding. On LinkedIn I saw a vacancy at SPB. I called immediately and was invited for an interview. It turned out positive. A stroke of luck, so to speak, because I did not sit at home for long. I am very happy that as a 25-year-old I can now pursue my passion for steel.”

Could you describe your work place?
“I am a welder in the Albert Hall at the Hoboken site, a production hall of almost 15,000m² along the river Scheldt. A special location that allows finished structures to be shipped directly to places across the globe. In this hall, we mainly weld jackets, platforms and other constructions for the wind industry. Currently, I am working on visual repairs after welding to ensure that the welds meet all standards. Every day is different. Yesterday, for example, I was assembling.”

What are the points of attention?
“Every day we start with a briefing, a kind of toolbox meeting where our supervisor distributes the work. For each project, we get an overview of the customer’s requirements. Furthermore, we focus a lot on safety, since we really have to aim for a 0 error rate. I think these guidelines are very important. People do not always see the danger and need to be reminded of it regularly. That is only natural in our sector.”

What do you like most about your work?
“It’s not just working on an assembly line, it is never boring. Sometimes welding those special connections makes it extra challenging, but it is still fun. I think it is unique to be able to work on very large constructions, such as the parts for the offshore transformer station for the Hollandse Kust (noord) wind farm zone. When the result is finally installed at sea, we get to see a video. It allows you to show people who are not in the industry something powerful. I would actually like to experience it live, when a platform leaves.”

What do you appreciate about Smulders as an employer?
“You are one of the team. They look after you, also in terms of safety. The supervisors ensure that we get home safely. In my team, our supervisor always takes the time for a good talk. He is a good listener and everything can be discussed. I feel an enormous flexibility.”

How do you see your future with us?
“I was told that you have to seize opportunities and I certainly want to do that. I am eager to learn and helpful towards colleagues. I want to grow further: in my knowledge of our company, of welding and the types of techniques. For example, ‘Orbital welding’, a system which allows various diameters of pipe to be welded automatically, at high quality (TIG). Welding 8 to 9 metres of wire per minute becomes 20 metres per minute, or only 5 minutes of welding instead of 10 minutes. In consultation with my supervisor, I will look into this, so that we can also keep this expertise in-house.”

Who is Ken when he is not at work?
“A family man who likes a good balance between work and family. There is also plenty to do at home. I bought a house together with my wife who works in the customs sector. We have already done a lot of odd jobs and the large garden is neat and tidy – also for our dog. The best thing of all: we are expecting our first child (June 2021).”

What message would you like to pass on to other (young) talent?
“Be motivated and eager to learn. If you show what you can do and want, you will have a bright future and be able to earn a good living. With Smulders you have a great prospect. There are many jobs in the sector. And if you are working and you feel that the situation is not safe enough: STOP THE JOB, and discuss with your supervisor how to do it better.”

Young, but not rash... this Ken Joos!
Keep it safe, happy summer!

Raf Iemants
Managing Director Smulders