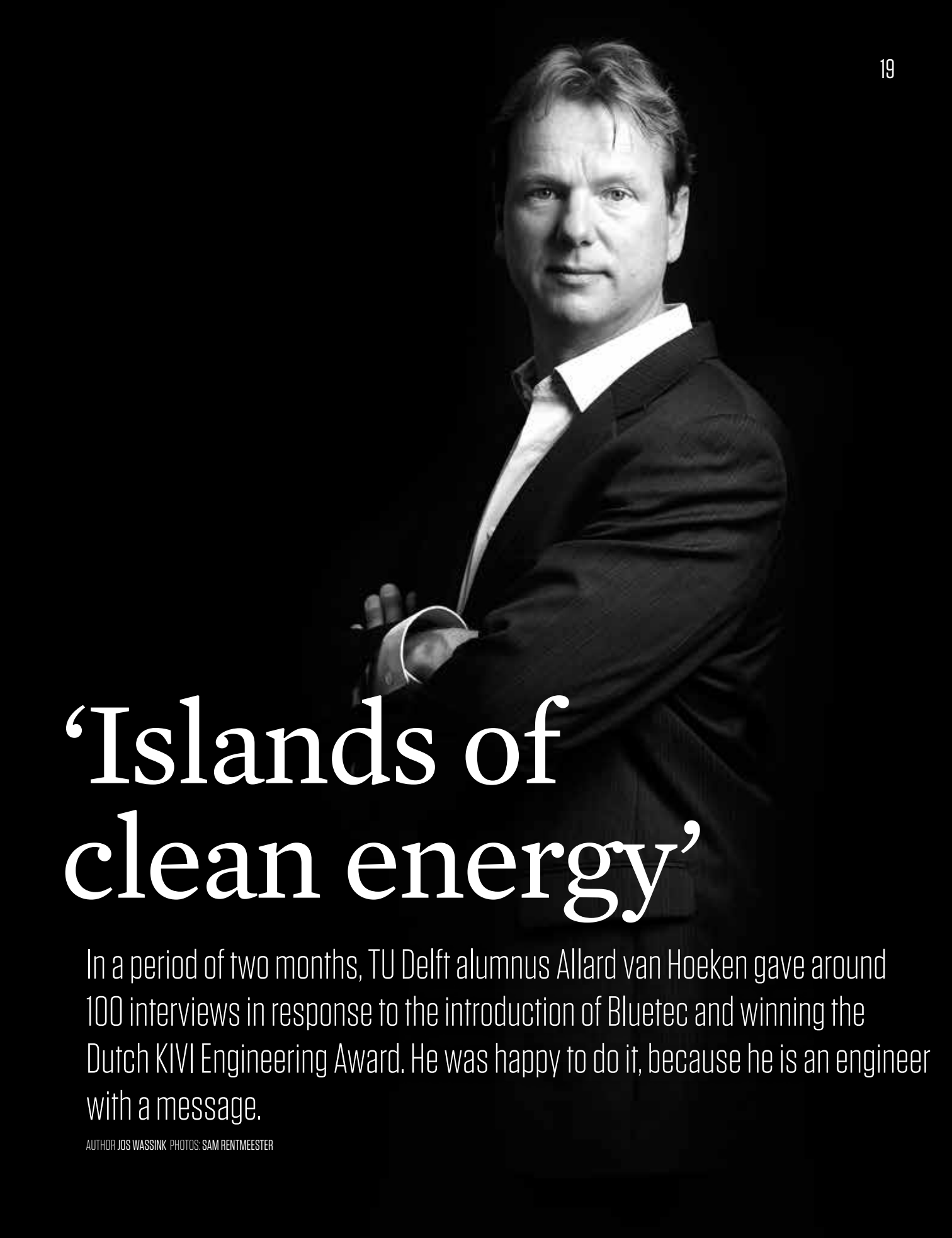

‘Islands of clean energy’

In a period of two months, TU Delft alumnus Allard van Hoeken gave around 100 interviews in response to the introduction of Bluetec and winning the Dutch KIVI Engineering Award. He was happy to do it, because he is an engineer with a message.

AUTHOR JOS WASSINK PHOTOS: SAM RENTMEESTER

Last spring, you were in the news because of Bluetec, the floating tidal turbine. How is it coming along?
'It's really taking off. In March, we presented the platform at Damen Ship Repairs in Amsterdam. On 11 May, we witnessed the launch in Den Helder. After years of preparation, the installation will be anchored and start producing energy before the summer. We will be setting more and progressively larger turbines in motion beneath the same platform. Moreover, we are offering the 200-kilowatt version for sale as a ready-to-use product. This is another breakthrough in tidal energy. Isolated turbines are being offered, but no complete systems. The larger turbines are only prototypes.'

This spring, you received the Prins Friso Engineering Award from the KIVI Engineering Society. What kind of impact did this have?
'Although we'll have to wait and see what effect it's going to have this year, the number of interviews has increased dramatically. Because of Bluetec and the Engineering Award, we've had more than 100 publications in a two-month period.'

What do you tell people in these interviews?
'My message is about deploying engineers for clean energy. For secondary-school students, engineering is a rather obscure career choice. People can remember the Delta Works as an engineering feat, but apart from that they come up empty-handed. Then again, everything we see around us was designed by engineers. How can such an important profession remain in the shadows for so long?'

Perhaps they are just too modest.
'Yes, that's a possibility. They don't seek attention, but I think that positive attention for the profession is a good thing. Without it, we'll never get young people excited about engineering, because they are not even aware it exists.'

Now you're a leader in your profession. What will you do to get this attention?
'My research priority is clean energy, because it offers an excellent opportunity for the profession to do something good for the community. Our current system of generating energy is hopelessly outdated. We're still doing the same things we were doing more than a century ago: burning coal, oil and gas. Our technology has advanced quite a bit beyond that. One hour of solar radiation is enough to provide the entire planet with a year's worth of energy. Other sources of energy include wind and tidal power. New energy is clean, local and never runs out. That last feature is the best of all. Engineers can make clean energy feasible, both technically and economically.'

And what about climate change?
'I do use the word 'clean': clean, local and inexhaustible. Clean isn't about CO_2 emissions only. It also refers to air quality and water quality.'

With regard to feasibility, we're now being told oil and gas prices are so low that clean energy has become too expensive by comparison.
'First of all, these low oil prices are only temporary and notoriously hard to predict. The fact is that there will be less and less of it, while clean energy is inexhaustible. According to the newspapers, the United States has granted permission to Shell to start drilling in the North Pole region. It's not cheap to work there. The very fact that people want to do it anyway is a sign that inexpensive sources are being exhausted. I also have another answer: if you want to make clean, non-polluting sources compete with dirty energy sources, you need to assess them in the same way.'

Do you mean that no charge for environmental impact is included in the consumption of fossil fuels?
'Yes, for example. There have been attempts to adopt emission rights that could be traded, but they've not been successful. What I mean is that it doesn't make sense to require clean energy to be less expensive than polluting energy. At home, it's also cheaper to throw your rubbish in the back yard than to have it disposed of. Alternatively, you might include clean-up costs in the price of polluting energy sources, or ensure that there are no emissions at all. That would make clean energy less expensive: there's nothing to clean up because there were never any emissions in the first place. In my opinion, a healthy society should be willing to invest more in clean forms of energy than in polluting energy.'

The jury report for the Engineering Award hails you as 'a source of inspiration for sustainable energy in a conservative world.' This is because Bluewater primarily serves the oil and gas industry, and you are trying to achieve sustainability within this company. How are you doing this?
'It's a lot of fun and very challenging. It's simply

CV

Allard van Hoeken (1969, Groningen) graduated from TU Delft in 1994 with a degree in mechanical engineering. After a brief stint at Heerema, he worked for the offshore company Bluewater between 1995 and 1999. In 2000, he completed his MBA in France. Between 2001 and 2004, he ran his own market research company in Barcelona, but he missed the offshore work. For this reason, he returned to Bluewater in 2004, with the idea of developing new energy technologies. Between 2005 and 2009, he worked for Bluewater in Houston. In 2010, he returned to the Netherlands to develop tidal energy with the Bluetec floating generator. This spring, KIVI presented him with the Engineering Award. Van Hoeken was married in June, and he has a daughter.

a matter of persistence and perseverance. In my previous job at Bluewater, I was responsible for Latin-America. There, I learned about the three P's: paciencia, persistencia and perseverencia (patience, persistence and perseverance). These traits are indispensable. I'm not opposed to fossil fuels - I use them just like anyone else. Nevertheless, I would like to see us use only a small portion of this type of fuel to develop something that will eventually be inexhaustible. That's what I'm doing at Bluewater.'

Did it take a long time to achieve recognition for that?
'Not really. In 2005, I suggested doing something with wave energy, floating wind turbines and tidal energy. When I was in Houston, one employee was playing around with the idea. He believed that the tidal turbine would be the most promising option. In 2009, they invited me back to set it up. I found that a corporate restructuring was underway because several customers had been lost due to the crisis. Bluewater had to make budget cuts, and my renewable energy group was at the top of the list. At that time, I had to engage in intensive discussions with consultants and banks to keep my promising little group on board. It was a difficult period.'

Even though it could be argued that clean energy is the most promising route to growth?
'That is absolutely true, but if bankers only want to see their loans repaid, they will care little about the distant future. That's the way things are.'

Did your MBA help you in these discussions?
'Without my MBA, I wouldn't have been able to carry on those discussions. They asked for discounted cash flow and details on future implications. I was able to use models to show them the potential. I wouldn't have been able to do this without my MBA.'

What made you decide to take this degree programme?
'That had always been my idea. I'm a commercially oriented person. At TU Delft, I was keenly interested in technology, but I lacked the financial-economic knowledge required. I wanted to master that as well. On the advice of my thesis supervisor in Norway, I started in technology – first at Heerema and then at Bluewater. After four years, I started the MBA programme at Insead in France.'

Would you recommend engineers to pursue an MBA?
'Yes. Absolutely. I really liked the dynamics of the programme. It wasn't just the knowledge, but also the people you met there: a lot of consultants, bankers and lawyers - and each of them brings a different perspective.'

'My research priority is clean energy, because it offers an excellent opportunity for our profession to do something good for the community'

Did the results meet your expectations?
'Yes. Absolutely. At Bluetec, we bring technology and sales under the same umbrella. I'm comfortable with that, because now I can take on the challenge. I know about finance, marketing, market knowledge and market data interpretation. I'm not sure if I would have felt so comfortable without an MBA. With any new development, it's essential to stay in touch with both market contacts and technological developments. If you separate them, sales and technology will take on lives of their own, and then you're bound to fall behind in the market.'

Based on your age, you're about halfway through your career. What are your plans for the latter half?
'I want to stay committed to clean energy. Right now, I hope to make tidal energy a technological and economic success. My dream is to expand it to include storage. Because tides are predictable, you don't need much storage. I could use this to help small, remote Pacific islands with their energy supply, like those of Indonesia and the Philippines. My speciality is ocean energy, supplemented by storage and solar and wind energy to create a clean-energy portfolio for those regions. As a sailor, I've visited these places. And then you hear the generator start up at six in the morning, even though they have an abundance of sunlight, and often waves and currents as well. It seems to me that this would be a fantastic place to start. And if it works on an island, it could be applied in a village too.' <<