Online VR training for offshore excellence

Words: Mads Troelsgaard, CEO, SynergyXR

Global wind capacity is set to grow to a staggering 1,400 GW by 2026, and the need for a skilled and experienced workforce is urgent. So much so that the industry needs to look outside of internal sources to find candidates. But how does the industry recruit effectively and sustainably, while ensuring that the skill levels are advanced enough to install and maintain this vast power grid, safely and efficiently? The answer might lie in Virtual Reality (VR) technology, where online simulation training can fully re- or upskill the offshore workforce of the

In many cases, where delicate equipment, sensitive materials or even human life are at stake, VR simulators are used to train, hone and perfect skills before any actual flight, maintenance work or a serious operation.

The reason for this is that the level of success in saving lives or reducing costs, as well as upskilling employees is significant. For instance, a study of laparoscopic surgery found that surgeons who trained using simulations had a 29% increase in speed, and they were five times less likely to cause patient injury.[1]

Now, why is this relevant to the global onshore and offshore wind energy industry?

Well, in offshoring, and in onshoring for that matter, there is a lot of risk involved, not only in terms of on-the-job safety or even human life, but also in terms of technology, efficiency and effects on the environment.

In the UK alone, 532 safety incidents were reported for wind farms in 2020, of which 77 were 'high potential' incidents, with the potential to cause a fatality and 126 happened during so-called routine maintenance[2].

So, there is quite literally no place for mistakes in safety, or in poor installation and maintenance.

However, with a limited offshore workforce, these risks will likely increase, if the people who are recruited from outside the industry to make up the numbers do not receive extensive training.

This is where cutting-edge VR technology and platforms come into play. No need to install a flight simulator. Instead, let the Corporate Metaverse provide you with an online simulator, where the offshore workforce of the future can be recruited, trained and fully upskilled.

The Metaverse went mega-opportunity by 2023

Since the COVID-19 pandemic made distancing a must, the development of technology to connect from afar went into overdrive. This meant that in just a few short months everyone knew of and used Zoom or Teams.

Furthermore, it meant that VR technology became the next big technological revolution, not least because of Mark Zuckerberg, who in late 2021 decided to bring the concept of the Metaverse into the mainstream.

By 2022, many companies had caught on to the massive business potential these digital communications platforms offered, and many even saw the added potential and value of being able to lower CO_2 emissions, from business and work-related travel, in general, while optimizing remote work and training.

Pretty quickly, CitiGroup even came to value the Metaverse's potential worth at a whopping $13 Trillion[3].

Naturally, this generated a lot of investments to go into developing even better VR solutions, VR gadgets, and VR-based platforms, or Metaverse platforms. And in 2023, these investments have already paid off.

The technology is now so advanced that even intricate workflows, processes, or safety

1 Source: National Library of Medicine

2 Source: Energy Voice

3 Source: Fortune

measures can be taught in a Metaverse-based platform using VR or even so-called Augmented Reality (AR), a technology perhaps best known from your children's or grandchildren's Pokemon Go game.

More than half a million technicians wanted

According to the Global Wind Energy Council (GWEC), more than a half a million wind technicians are needed by 2026 to accommodate the need for construction and maintenance of a wind energy grid that is expected to grow to a staggering 1,400 GW. So, for a global wind energy-industry in serious need of more skilled workers, VR training technology is some much-needed wind beneath their energy generating wings.

But perhaps more importantly, it is a unique opportunity for the industry to access and train a whole new group of potential employees from all over the globe, anytime and anywhere. Already, some of the world's most prolific wind energy companies have embraced the technology, including Danish industry giants Vestas, and Swedish energy company Vattenfall.

In fact, Head of Secondary Structures & Hydrodynamics, Victor Moor, and CAD Designer, Michael Kjaer Mukendi, from Vattenfall Wind recently expressed their enthusiasm for the technology, when SynergyXR introduced them to and helped them build up a Vattenfall-virtual world.

They commented, 'Vattenfall develops state-of-art tools for the design and operation of wind farms and found that XR

offers quite a few use cases to enhance the design phase, safety-related assessments, and improvement during the O&M-phase.'

Many other global energy companies, such as Grundfos and MAKEEN Energy, have also embraced the potential of VR technology for training and onboarding presentations. Even virtual tours of offshore facilities are now conducted separately and remotely in the metaverse. The only question now is, who will take the lead in the global wind energy industry and benefit the most?

A virtual race to be the safest, most efficient and most sustainable preferred provider

The race is on, and the quest for excellence is what is likely to set the best companies apart, as a provider, as an employer and as a responsible company.

Offshore wind energy is still a somewhat specialized and experience-based profession. But with VR technology, the ability to recruit, integrate and upskill even the most unlikely of candidates is within the industry's hands. Or on their heads, as it were, with the help of i.e., Oculus or Meta Quest Virtual Reality-headsets.

Not only that, but clear business cases and studies show how companies are able to optimize their existing, trained, and skilled workforce. To this point, in 2019 VR training was shown to improve table tennis players' actual table tennis skills, both in terms of quantitative and quality of skill assessment[4]. Furthermore, the power of VR training has shown clear benefits, overall, in terms of both operations, management, employee engagement as well as processing and even their carbon footprint.

4 Source: doi.org

In short, a virtual training platform allows for a vastly improved workflow throughout the entire value chain, with much less waste, operational downtime, or even excess man hours[5].

In the current, global political climate, where companies are expected to carry out responsible business, to contribute to a functioning society as well as lower its carbon emissions, a veritable 'triple-bottom-line situation', VR technology can enable the global wind energy industry to meet these targets, all at once.

In the end, it will be the companies that first embrace this tech, business and recruitment revolution, who will become true industry leaders, both online and offshore. Get set. Go!

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5 Source: Turbomachinery Magazine

Key facts and figures

- 532 safety incidents were reported for wind farms in 2020 in the UK, 126 during routine maintenance.
- 29% speed increase and 5x less likely to cause patient injury, when surgeons undertake VR simulation training.
- 1,400 GW is the expected global wind capacity by 2026, according to The Global Wind Organization.
- 0.5 million wind technicians are needed for construction and maintenance by 2026 according to the GWEC.
- $13 trillion is the estimated value of the Metaverse, according to CitiGroup.

About the author

Mads Troelsgaard is the Co-Founder and CEO of SynergyXR, one of Europe's leading XR software developers and platform providers.

With more than 10 years of industry experience, including being the CEO of Unity Studios, he's regarded as one of the world's most knowledgeable XR executives and a prolific thought leader.

Mads has dedicated his corporate life to bridging the real and virtual worlds!

About SynergyXR

SynergyXR sees a present and a future, where extended realities, like augmented and virtual reality, will continue to revolutionize the way we work, live, and play.

With extensive expertise and experience within the manufacturing and energy sector, and specialized solutions for technical training and onboarding, they are committed to helping these technologies become the norm.

By designing and building people-first solutions, they help bring XR technology, such as Virtual Reality and Augmented Reality, to the people today, not tomorrow.