



GLOBAL WIND  
ORGANISATION

# Building a Community of Safety and Training

GWO Annual Report 2021



# Contents

Chair's Statement	3
CEO's Statement	4
From the Regional Committees	5
A Year in Numbers	6
Governance for Training Quality	8
Workforce Training Standards	10
A Global Training Community	12
Round Up 2021	14

# Chair's Statement



**Paul Robbins**, Chair  
GWO Executive Committee,  
Chief H&S Specialist, Vestas

It is with a mixture of great pride and gratitude to the many people involved with Global Wind Organisation, that I share with you our 2021 Annual Report.

Our association has matured and established a lasting position within the wind industry's workforce and industrial supply chain. Together with our membership, training provider and certification body network, we have continued to advance standards for safety so that our colleagues who construct, install, operate, and maintain wind energy assets can return home to their families wherever they are in the world.

Our shared confidence in the value of safety standards has been vindicated during 2021 on several levels. Rapid growth in training capacity across the Americas and Asia Pacific has seen the global share of training in markets outside Europe increase to 31% of the total.

However, we remain humble, and accountable to the fact we have fallen short of our end of year target, defined in the 2020-2022

Strategy 'Safety without Borders', to train 150,000 people by the end of 2021. Instead the GWO trained workforce grew by 22% to 122,000. Nevertheless, we keep our eyes on the road ahead with a stretch target of 200,000 by the end of 2022.

With that challenge in full view, it is reassuring GWO can call upon a deep well of experience from the champions and experts at our respective member organisations. Together, they collaborate in our four committees: Audit & Compliance, pushing quality assurance to new levels; Training prioritising new standards and keeping existing courses fit for purpose; while the North American and China Committees stimulate demand and global recognition, ensuring safety standards are for everyone.

We continue to welcome new members who share our values. In the past twelve months, Chinese manufacturer CRRC Windpower and owner/operators Enel Green Power and Cubico Sustainable Investments have joined. Their participation drives new certifications in the training provider community and assures

all stakeholders that GWO standards will be universally recognised. I call upon all potential members to join GWO and show your support for safety.

Now, having completed my term as Chair of the GWO Executive Committee, this commentary is one of my final responsibilities. Following a vote at our Annual General Meeting on 24th March 2022, we will welcome a new Chair and I would like to offer my very best wishes to whomever succeeds me.

On a personal note, I step down on what I consider to be a pinnacle. I was part of the original handful of individuals behind the first GWO standards who little imagined that we would be celebrating the organisation's 10th anniversary in 2022. I reflect on my decade in GWO with great pride. We have been on an incredible journey together building the strength of squad in place today. GWO has stayed true to its principles, its mission and is in safe hands ready to look forward to its second decade of success.

# CEO's Statement



**Jakob Lau Holst**  
CEO  
Global Wind Organisation

If the shock of the pandemic in 2020 showed us how resilient the wind industry can be, 2021 only emphasised the strengths of the GWO community. The total numbers of individuals taking GWO training increasing by over 20% to more than 80,000 individuals, who during 2021 received a total in excess of over 316,000 training certificates, delivered by more than 440 training centres in more than 45 countries and territories. All those figures are all time high.

Progress against the ambitions of our three-year strategy 'Safety without Borders' continued apace during its second year. For example, we welcomed 82 newly certified GWO training providers from across the world with firsts in Colombia, Croatia, Egypt, Russia and Ukraine.

Led by the Audit and Compliance Committee, we also boosted the skills levels of our audit community through our Audit Qualification Training programme which became mandatory from April 2021, while the

mid-year update of our WINDA platform cemented new accountabilities in training provider, auditor and certification body relationships. New standard templates for audit reports means we have yet another tool to monitor appropriate assurance of quality.

Sterling work by our Training Committee and standards development team in further strengthening our portfolio of standards unfortunately suffered from the effects of the pandemic with cancelled pilot tests delaying the full launch of our Control of Hazardous Energies and Lift User standards until April 2022. Five existing standards received full review and our new approach to standards writing, the GWO taxonomy, was also launched in April.

In response to the success of our standards and industry growth, in 2021 GWO boosted core competencies within the Secretariat where it made sense to build teams and replace outsourced and talent seconded from members which we have so relied on

in earlier years. Among the new hires, our first North American representative was particularly notable and all GWO Regions will certainly play an important role in positioning the community to grow with greater confidence around the world.

Also new is an online Reporting Zone which focuses on three themes underlying our strategy: Governance for Training Quality; Workforce Training Standards. and A Global Training Community. This supplements a summary Annual Report which can be downloaded as a pdf for easy sharing. The Reporting Zone offers space for more stories and different voices from among the community. We look forward to building it up into the place to know more about the community, find resources and see how we are doing. It's just first steps but we do hope you'll join us in building a community of safety and training as we move forward.

Copenhagen, March 2022

# From the Regional Committees



**Qin Haiyan**

Chair of GWO China Committee & General Secretary of the Chinese Wind Association (CWEA)

## China

GWO members in China made continuing progress towards establishing common standards for safety training in wind during 2021.

This ambition is supported by ongoing projects deployed from the GWO China Committee Secretariat in Beijing. These projects have two objectives: the growth of our membership and the expansion of our GWO certified training provider network.

I am pleased to report a further seven new training providers were certified across the year, bringing the total network to 16 at 31.12.2021 and our pipeline is strong with approximately 20 further companies at varying stages of certification.

We were also delighted to welcome China's fifth GWO member in 2021, with the accession of CRRC Zhuzhou Institute in June.

Historically, China's leading manufacturer of high-speed trains and rail infrastructure, since 2006 CRRC Windpower has built upon its ambition of becoming an important force in global clean energy with a total installed capacity of 8.2GW by the end of 2020.

The Committee is also in active discussion with several of the largest wind energy employers in China and we hope to add further new leading members in 2022.

In addition to our focus on growth, the Committee has worked hard to share knowledge with the industry. There is a genuine interest from training providers to deliver more advanced trainings from the portfolio in addition to basic safety. This work is beginning to bear fruit as several companies have become certified in Advanced Rescue Training, Blade Repair and the new Lift User standard launched in 2021.



**Kristy Abel**

Chair of the GWO North America Committee & Director of Environmental, Health & Safety for Avangrid

## North America

2021 was a year of significant growth and momentum for GWO training in North America. Since the end of 2020, we added five new training providers and had about twice as many GWO training participants.

In addition, we gained considerable traction in the US with several renewable energy companies either considering or moving ahead and implementing GWO training for their own staff; including Vestas USA meriting over 2000 technicians.

We are also strengthening our relationship with American Clean Power by collaborating with their safety and training committee; in an effort to establish synergies between ACP's training standards efforts and the GWO training framework.

With these strategic movements we are anticipating continued growth and acceptance of GWO training in the region in 2022 and beyond.

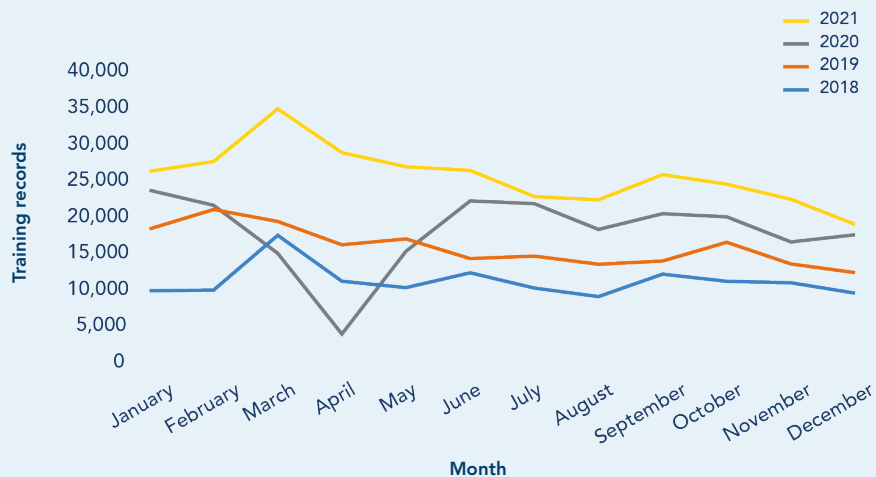
The current industry forecasts are calling for 30GW+ of new installations over the next several years creating an immense opportunity to position GWO as the industry standard for training; and helping to secure a safe and sustainable workforce that can meet the industry's growth demands well into the future.

# A Year in Numbers

## GWO Trained Workforce



## GWO Training Records Completed



The publication of this 2021 Annual Report marks the end of year two of GWO’s three-year “Safety Without Borders” strategy. At the time of its launch, two years of pandemic seemed inconceivable, but today individuals and states are still struggling. However closer to home within the wind sector a new (nearly) normal has prevailed ensuring not only that the lights never went out, they now burn even brighter.

The 2020 strategy included the deliberately stretching strategic goal of building a GWO trained workforce to more than 200,000 people. The interim goal for 2021 was set to reach a GWO Trained Workforce of 150,000 people by 31st December 2021. During 2021 the pattern of the 21% growth in trained workforce over 2020 was impressive, and increasing at a high rate with a new total of over 122,500 individuals.

The GWO Trained Workforce is a number representing course participants holding at least one valid training record in GWO’s WINDA database. At the end of 2021, the GWO Trained Workforce was 122,573, who hold between them a total of 557,462 valid

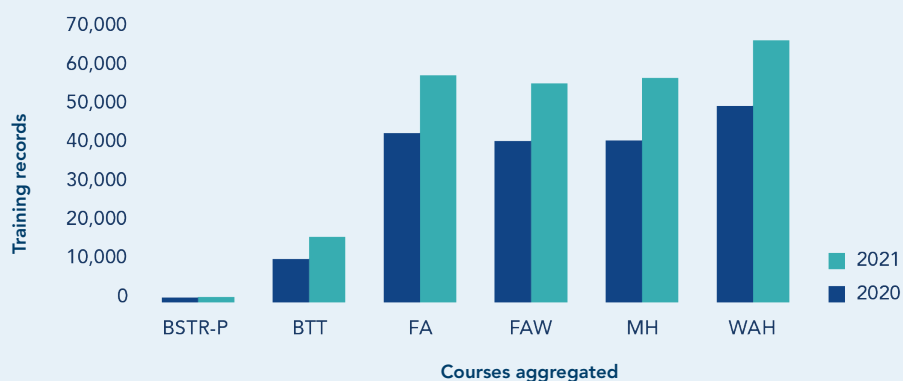
GWO training records. Among those valid records, 85% have an expiration date (usually 2 years) and will need to be refreshed within the next 24 months.

GWO also tracks the increase in the number of participants trained over time. Between 2020 and 2021 this rose from 61,318 to 80,489 in 2021 an increase of 31%. During the same years these participants completed 225,347 training records rising to 316,833, an increase of 41% year on year.

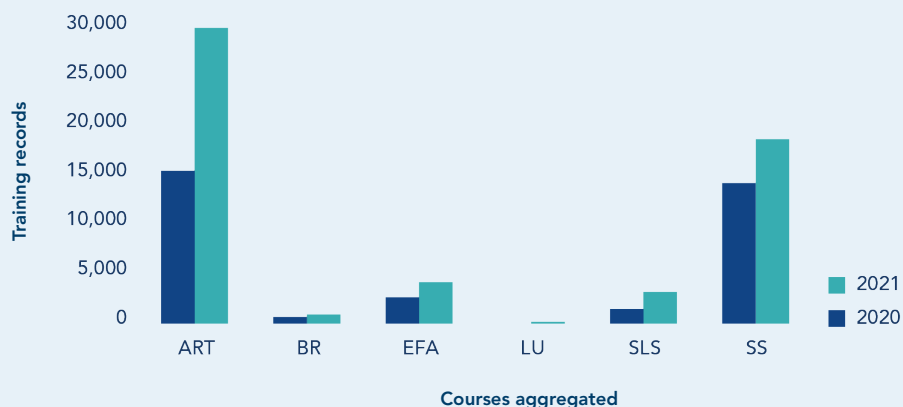
The countries with the largest proportions of total GWO Trained Workforce are: United Kingdom (17,016 participants with at least one valid record), Spain (13,188), Germany (12,193), Denmark (11,424), United States of America (8,134), and Brazil (7,139).

In 2021, GWO saw a return to the seasonal profile of safety training seen in 2019 and earlier with a pronounced peak in March related to the milder weather prevalent in the northern hemisphere and the burst of on-site construction activity during the following six months.

### Basic Safety & Technical Training



### Task Specific Training



Similar to previous years, the training records most commonly issued were: Working At Heights (41,554 training records in 2021), Manual Handling (39,316), Fire Awareness (38,335), First Aid (37,716). Each of those training records saw an average increase of +40% compared to 2020.

The training records that grew the most in 2021 were: ART-NR (1,115 records issued, +271% versus 2020), ART-HR (1,270, +173%), SART-N (5,544, +114%), SLS (3,241, +114%), SART-H (6,540, +105%). The growth of these training records shows how the GWO community is expanding the availability of more GWO courses across the world. In particular, the courses on Advanced Rescue and the Slinger Signaller/ Rigger Signal Person training standards.

#### Training Provider Trends

With 82 newly GWO certified training providers joining the GWO community, 2021

was the most successful year for the growth since the start of WINDA (+23% over 2020).

At the end of 2021, 444 GWO training providers from 48 countries were certified to deliver GWO courses, with five countries newly represented in the network: Columbia, Croatia, Egypt, Russia and Ukraine.

Several markets saw a higher number of new certifications including Brazil (+10 new training providers), Spain (+9), India (+8), France (+8), China (+7), Poland (+6) and United States of America (+5).

Further breakdowns and details of GWO's trained workforce and other data is given online in GWO's reporting zone.

# Governance for Training Quality



**Jesper Bagge Hansen**, Chair of GWO Audit & Compliance Committee, Head of Safety Assurance and Improvement at Ørsted

“ *It's been the GWO's Audit and Compliance Committee's continuing priority to maintain and further the governance aspects behind the delivery of high-quality safety training. Delivering important changes in relationships within our training community via the two Requirement documents, their related auditor qualification standards and training and were priorities in 2021.* ”

## **Changes to Audits and Auditor Training**

April 2021 marked a turning point in the management and expectations of GWO certified auditors with the objective of securing a more consistent quality of audits across the community. Auditors must now successfully complete GWO's Auditor Qualification Training (AQT) programme, acquiring detailed understanding of what a GWO audit should focus on, and especially on how to verify good training. These changes are in line with the launch of versions ten and eight of the GWO's Requirements for Training Providers and Requirements for

Certification Bodies (respectively) and version two of the GWO Auditor Qualification Standard.

GWO held 11 online AQT courses in 2021, spread across different time zones to welcome as many auditors as possible from different countries. More than 50 auditors have passed the course and were able to continue auditing training providers. By year end the first cycle of training of auditors was nearing completion, those auditors who maintain their AQT status will be enrolled in an ongoing programme to keep their knowledge up to date.

As well as AQT, GWO recently introduced the requirement for auditors to send full audit reports to GWO using a standard template. This allows easier verification that all steps of certification and recertification audits have been completed and provides insight into the quality of individual audits. Once enough reports have been submitted it is intended to establish benchmarks and feed back to the community regarding typical non-conformities in a continuous improvement process.





#### **Growth in Certification Body Numbers**

A total of 11 new certification bodies joined the GWO community in 2021. With the greater availability of remote auditing provided by recent versions of the Requirements for Certification Bodies the physical presence of a certification body in all markets, while a benefit, is no longer a core driver for GWO due to the globalisation of the market. The change of focus also reflects the market for GWO auditor services.



#### **Digitalising Training Documents**

On September 6th 2021, GWO made a step change in how its training records database, WINDA is used by the community when it launched WINDA version 3.2. The most significant changes to the platform were the introduction of two new user profiles for certification bodies (CB), and auditors. The new CB and auditor profiles enable CBs and auditors to self-service their clients' training provider certifications, re-certifications, surveillance audits and other crucial governance requirements. At the same time WINDA freed CBs and auditors from hard copy processing and emailing of GWO documentation such as audit reports and certificates.

# Workforce Training Standards



**John Barrie**, Chair of GWO Training Committee, Global Head of Training, Vestas Service

*The real stand out in 2021 for me was the visible progress made in the COHE and Lift Standards which will really take us to the next level. Building the common ground between multiple stakeholders, national regulations and the variety of (especially lift manufacturers') technical requirements was never going to be easy but the pragmatic approach taken has paid dividends. These standards will be absolute game changing at the operational level.*

## **Training Providers expand their portfolio and reach**

The GWO portfolio is composed of 11 training standards. Most consist of different modules which correspond to the 30 courses provided by the GWO training providers around the world. In 2021, several training standards were reviewed to align to updated risk assessments: Basic Safety Training, Basic Technical Training, Slinger Signaller/Rigger Signal Person, Blade Repair, and Advanced Rescue. Finally, in April, the Lift User Training Standard was published for the first time.

## **Basic Safety Training (BST) Standard and its refreshers**

In 2021, a total of 261,083 BST training records (including refresher and partial refresher) were

completed corresponding to 82% of the total GWO records for the year. This is +35% compared to 2020. In detail: FFA+FAR grew 34%, FAW+FAWR 36%, MH+MHR 39%, SS+SSR 31%, WAH+Wahr 33%.

## **Advanced Rescue Training (ART) Standard and its refresher**

2021 was a very successful year for ART related records with +93% growth over 2020 and over 30,000 training records completed (15,591 in 2020). Compared against all training records issued in 2021, ART represented almost 10%, an increase of 2.5% from 2020. It is notable that ART-NR, and ART-HR achieved the greatest growth, compared to 2020 (+217% and +173% respectively).

## **Enhanced First Aid (EFA) Training Standard and its refresher**

In 2021, EFA and EFAR combined represented 1.3% of the total GWO records and they grew +58% compared to the previous year (4,232 training records completed). Taken individually, EFA grew +49% and EFAR +68% compared to 2020.

## **Blade Repair (BR) Training Standard**

BR grew 36% in 2021 compared to 2020, reaching almost one thousand records completed.



**Basic Technical Training (BTT) Standard**  
 During 2021 BTT's four training records grew +51% over 2020 and represented

over 5% of the total annual GWO records. Of the four training records BTTE, (+57%) grew the most while BTTM (5,668 records) was issued most.

**Slinger Signaller/Rigger Signal Person (SLS) Training Standard**

Compared to the previous year, 2021 saw the numbers of SLS records more than double (+114%) with a total of 3,241 records issued in 15 countries.

**Lift User (LU) Training Standard**

The Lift User Training Standard was introduced to the GWO portfolio in April 2021. In the first nine months since the release of the LU standard, 210 training records

were issued by seven training providers in South Africa, Portugal, Spain, and Egypt.

**GWO Taxonomy: Understanding different kinds of learning**

The GWO Taxonomy is a tool kit that helps instructors plan the right kinds of activities in their classes. The approach takes learning objectives for a training and defines the "domain" or type of learning a participant needs to master the learning objective. These domains are; knowledge, skills and ability. Each of these three domains, is again defined at three levels of complexity: basic, intermediate and advanced. Once the domain and complexity level are determined for a learning objective GWO Taxonomy provides specified guidance to help training providers and instructors plan lessons and be sure that desired effect (the learning objective) is being achieved.

# A Global Training Community



Jacob Fredriksen, SGRE  
Head of Global Training

For GWO members it's still worth remembering how different the world would be if we didn't have the mobility of workforce GWO standards facilitate. As a forum where members, training providers and training participants can build consensus and seek compromise, GWO has an important role in removing global barriers. But national requirements do still exist and where learning outcomes are the same bridging these recognitions remains key for GWO.

## Trends in Europe Middle East & Africa

Europe remains the largest market for GWO training. By the end of 2021 there were 297 GWO certified training providers (+46 in 2021) and 217,611 training records were completed by 54,749 participants.

Training provider certifications increased in Spain (+9) France (+8) and Poland (+6). As in previous years, UK based training providers lead the way in Europe with 11,095 participants and 50,075 training records completed. This was followed closely by Spain (8,799 participants and 35,173 training records) and Germany (8,027 participants and 29,035 training records).

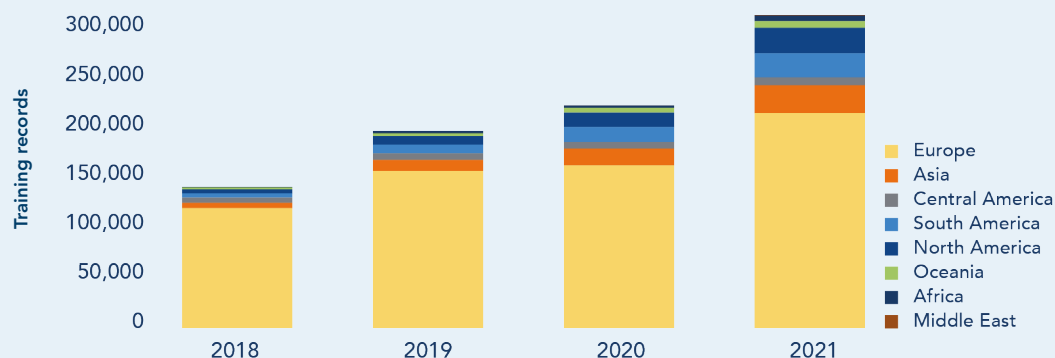
GWO growth in Africa has begun to gain pace. In 2021, one more training provider joined the GWO community and overall, training more than doubled (134%) from 2,363 training records completed in 2020 to 5,535 in 2021. South Africa's six GWO certified training providers trained 1,358 participants suggesting strong local demand.

The first GWO training provider of the Middle East was certified in Egypt this year. Just months later, over 500 training records have been issued to 125 course participants.



Check out the training provider data near you online in GWO's Reporting Zone.

## GWO Market Distribution



The recent trend to a higher proportion of training occurring outside Europe continued in 2021 demonstrating how the GWO community is becoming more global. In 2021, only 69% of GWO training records were issued by training providers in Europe, a decrease of 4% from the previous year. GWO training, particularly in Asia, North America and South America has been growing faster in the last few years relative to the rest of the world. The countries that have grown the most in the last four years are Taiwan - Province of China, Pakistan, Argentina, Japan, Brazil, South Africa, Chile, United States of America, Greece, Canada.

### Trends in Asia Pacific

The Asia Pacific region represents 11% of the total GWO training (+1% over 2020). Most GWO training in the region is conducted in

Asia. In 2021, 9,153 participants completed 28,186 training records (+67% compared to the records completed in 2020). 17 new GWO training providers were certified during 2021, reaching a total of 58 certified GWO training providers in Asia

The largest Asian markets were India (3,739 participants with 9,829 training records issued), Taiwan – Province of China (1,277 participants with 5,726 training records), and China (1,943 participants with 4,969 training records).

In Oceania, GWO training is present in Australia and New Zealand. Australia welcomed one new training centre in 2021, bring the total to nine GWO certified training providers while New Zealand, maintains one GWO training provider. In 2021, the GWO

training in both countries involved 1,716 participants and a total of 6,829 training records completed (+ 39% over 2020).

### Trends in the Americas

The Americas contributed to 18% of all GWO training records issued globally in 2021 (+3% over 2020). North America surpassed South America in the number of training records issued during 2021, completing 25,874 certificates versus 24,219. Central America (including Mexico) also saw an increase of 19% in the training records issued in 2021 versus 2020 (8,067 in 2021 and 6,801 in 2020). The exponential training growth in North America (+78% compared to 2020) is mainly located in the United States where 5,161 participants completed 23,940 GWO training records, on average 4.6 training records per person. In Canada, 567 participants completed 1,934

training records, with an average of 3.4 records per person.

The GWO community in the Americas not only expanded in the number of participants, but also in the number of GWO certified training providers. In the USA, five more training providers were certified to deliver GWO courses last year, reaching a total of 28 GWO training providers in the region, corresponding to 6% of the global community. In South America, Brazil welcomed 10 new GWO certified training providers and Colombia one, for a total of 31 GWO training providers (7% of the global community). Central America maintained its 13 GWO certified training providers, representing 3% of the global community.

# Round Up 2021

## First Module of Lift Standard

In April 2021, GWO launched its Lift User module the first of three modules in this standard which together support greater standardisation of training in the areas of lift user safety, installation and operation. Thomas Grønlund, Senior Training Project Manager at Global Wind Organisation led a working group of member companies and GWO training providers, developing the module.

“The Wind Turbine Lift Basic/User course module comprises 92 learning objectives in a structure that can be delivered over an expected duration of 240 minutes instruction time. Participants will learn about their responsibility in the safe use of lifts, including inspection prior to use, practical operation and evacuation of lifts and how to shut down lifts safely and responsibly after use.



## Digital Tools

Following the successful introduction of blended learning to GWO portfolio as a contingent solution to the COVID-19 pandemic, GWO decided to promote the Basic Safety Training Standard (partial) BSTR-P to the permanent portfolio of training standards at the close of 2020.

In a similar way, during 2021 it also became clear that Training Provider auditing was being impacted by the inability of auditor to travel to providers and so renew GWO certification. In response, remote auditing of training providers was also introduced in April 2021 as permanent part of the GWO processes in the Requirements for Certification Bodies, version 8.

## Merit Assessment

In June 2021, GWO member Vestas' North American division completed the GWO merit assessment process where the company's existing training programs were evaluated against the GWO standards. This meant more than 8,000 GWO training records GWO for nearly 2,000 technicians across the U.S. and Canada could be added to GWO's WINDA database.

“As the pace of growth in the wind industry accelerates, safety remains the top priority for Vestas, and the standardization of training delivers a range of benefits. GWO-trained technicians can be easily verified and onboarded more quickly through the WINDA database, eliminating redundant training. Standardization also expands our network of training providers, allowing refresher training to be conducted at or near our 240-plus service sites,” said Shaun Melander, Vice President of Service, Vestas North America.

***“The merit process was created for employers in the wind industry who want to migrate their employees' existing training to GWO standards.”***

Jakob Lau Holst, CEO GWO

### More Training Providers

in North America. GWO training is expanding rapidly in North America. Colorado and Texas are ahead in this race with 11 training centres delivering increased training capacity to meet the growing demand for trained wind technicians in the 'American Wind Corridor'. Safety One Training in Littleton, Colorado was founded in 1988, but only recently certified as a GWO training provider. Safety One Training currently offers manual handling, fire awareness and working at heights from the GWO portfolio and is continuously evaluating other modules based on needs of clients especially where it's indoor nacelle can facilitate year-round training. "We've been providing wind training for some time. With GWO becoming more popular and the growth of the overall wind industry, we obtained training provider certification," said Tamara Hebbert, Client Advisor for Safety One Training.



### Inaugural GWO Safety and Training Awards, 2021

One of the highlights of 2021 was the inaugural GWO Safety Training Awards held in Copenhagen in November. The awards offered a vital moment to recognise the skills and highlight the outstanding work and best practices of GWO certified training providers and instructors whose diligent work keeps the wind workforce safe every day.

In a competitive market with over 440 training providers in more than 45 countries, employers have a lot of choice in who to use for training. GWO's ambition for the Safety & Training Awards was to create a training quality mark that generates long-term value for training providers. With an impressive number of highly qualified entries, finalists came from GWO certified safety training providers on every continent and, despite the pandemic, many were able to join the celebration in person and so simultaneously strengthening the GWO training provider community.

The awards were divided into two categories that championed; first, training teams and secondly, individual trainers. In turn, the Training Team of the Year category was divided into seven sub-categories which allowed training providers to be judged against their peers. Judging for the awards was by a panel of 11 industry experts. So impressed were the judges by the standard of the entries they created two additional 'highly commended' distinctions for each finalist category: a total of 24 awards in all.

About GWO

Global Wind Organisation is a non-profit body founded by leading wind turbine manufacturers and operators, to create a safer and more productive workforce. GWO members strive for an injury free work environment in the wind turbine industry, setting common international standards for safety training and emergency procedures.



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