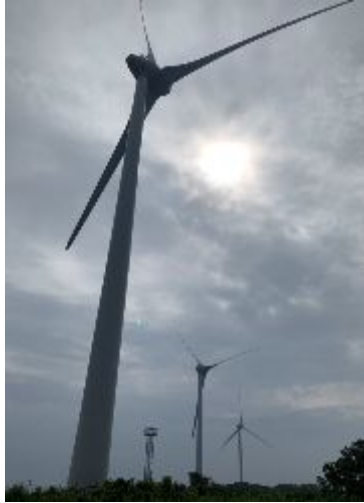


# Hokutaku Bases & Wind Power Stations

- Office
- Wind power stations owned by Hokutaku



Enercon 2,300kW x 3 turbines



Vestas 1,990kW x 1 turbine



Head office (Asahikawa City, Hokkaido)



Fukushima Branch

Kitakyushu Branch



Micon 400kW x 2 turbines



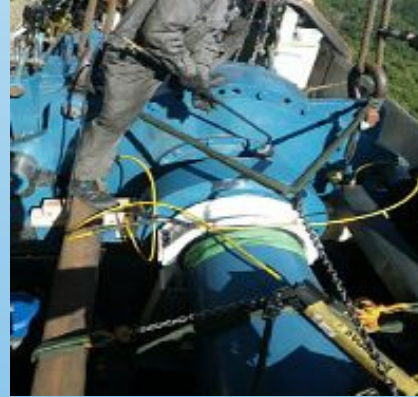
Vestas 1,750kW x 10 turbines



Vestas 3,300kW x 2 turbines



Remove coupling break mechanism



Disconnect main shaft and gear box



Lower old gear box



Hoist new gear box



Installation complete



Adjust alignment

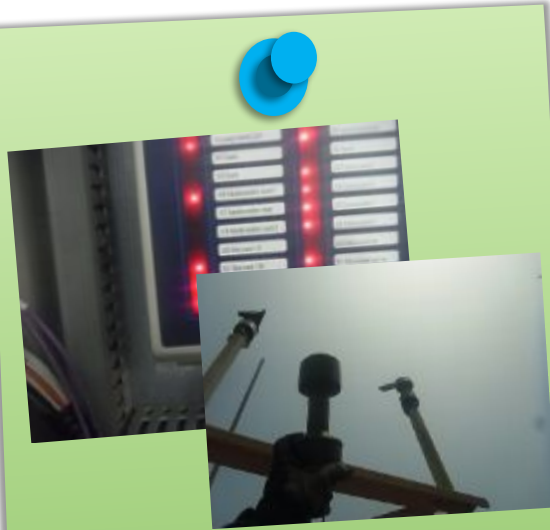




# Handling Wind Turbine Problems

## Rope access





Errors with anemoscopes



Errors with pressure sensors



Errors with connectors



Errors with gear boxes



Errors with yaw systems



Errors from lightning strikes



# Hokutaku's Initiatives

- Development of human resources through the use of training centers

## Hokutaku-owned wind power stations (training sites)



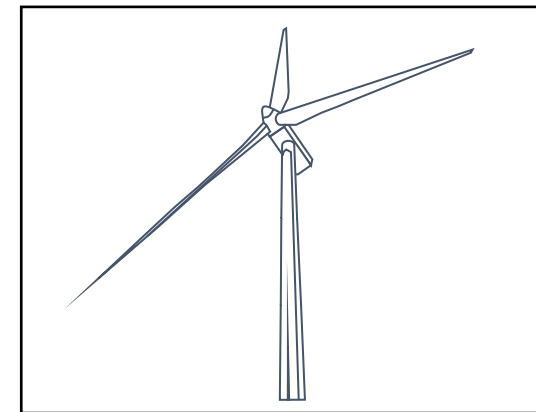
**Minami Izu Wind Power Station**  
Micon/400kW/2 turbines



**Banya Wind Power Station**  
Vestas V66/1750kW/10 turbines



**Kitakyushu Hibiki Wind Power Station**  
Vestas V80/2000kW/1 turbine



**Fukushima Wind Power Station**  
1 turbine

## Training facilities (Asahikawa HQ, Kitakyushu Branch)



Rope access



Rope rescue



Blade polishing  
research lab



Wind turbine simulator  
(Vestas V52)



Actual 900-kW  
wind turbine




Controllers and brakes  
Training kit



# Hokutaku's Initiatives

- Certified by the Global Wind Organisation (GWO)**, which requires wind power facilities around the world, and particularly in Europe, to attend training courses, Hokutaku is developing practical training with its own engineers who have extensive knowledge on maintenance serving as instructors, in collaboration with The University of Tokyo's Research Center for Advanced Science and Technology, which has concluded an agreement to collaborate with Iwaki City.



**Global Wind Organisation**  
WINDA Delegate Training Certificate

WINDA ID  
TH598269JP

Delegate Name  
TAIGA HIGUCHI


Training certificate generated on 2019-03-25 21:10 UTC +0900

Course Title	Course Code	Training Provider	Country	Completion Date	Valid From	Valid Until	Status
First Aid	FA	K2 Specialist Services Pte Ltd	Korea (Republic of)	2019-03-12	2019-03-12	2021-03-12	Current
Working at Heights	WAH	K2 Specialist Services Pte Ltd	Korea (Republic of)	2019-03-14	2019-03-14	2021-03-14	Current
Fire Awareness	FAW	K2 Specialist Services Pte Ltd	Korea (Republic of)	2019-03-15	2019-03-15	2021-03-15	Current
Manual Handling	MH	K2 Specialist Services Pte Ltd	Korea (Republic of)	2019-03-15	2019-03-15	2021-03-15	Current

Training Provider: K2 Specialist Services Pte Ltd  
Country: Korea (Republic of)  
Address: 54-28, Donsan1ju-ro, Dosan-myeon, Tongyeong-si, Gyeongangnam-do 53003

Certificate Code: 36b77fb1-e114-4dfc-ad0a-b204f6c20281  
Certificate URL: <https://winda.globalwindafsfu.org/certificate/36b77fb1-e114-4dfc-ad0a-b204f6c20281>

This certificate is a representation of training records in WINDA. We strongly encourage training records directly in WINDA. Verify the current training status of delegates by [winda.globalwindafsfu.org/](https://winda.globalwindafsfu.org/)



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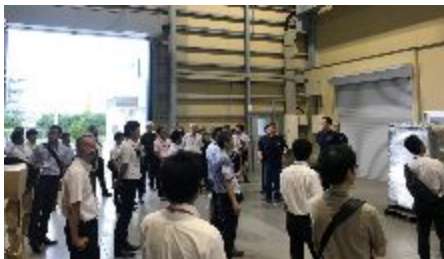
## GWO Certificate Global Wind Organisation WINDA Delegate Training Certificate

# Human Resources Development Activities for Wind Power

## Example from Hokutaku's Kitakyushu Branch: Use of actual Vestas V80 wind turbine



- About 400 people visit the Kitakyushu Branch each year
- About 200 to 300 people ascend wind turbines to inspect the nacelle each year





# Human Resources Development Activities for Wind Power

- Hokutaku is **engaged in raising awareness and promoting understanding of wind power** with the organization of energy classes for children and students and inspection tours for residents and businesses using its own bases and actual wind turbines.

## Example from Hokutaku's Kitakyushu Branch: Global Wind Day activities

