

Vryhof leader in mooring of renewable energy devices



Khalid Errabih 01-03-2017

Introduction:

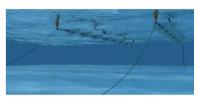


- Vryhof Anchors is a mooring and anchoring company founded in 1972, headquartered near Rotterdam, The Netherlands. www.vryhof.com
- Since then invented designs like; Stevin®, Stevpris®, Stevshark®, Stevmanta®, Stevtensioner®, Stevtrack®, etc.
- Vryhof has supplied more than 10500 anchors to the offshore industry....
- Vryhof has also supplied full mooring system and installation services to many projects worldwide
- A selection of floating renewable energy projects and activity areas in other sectors are presented next

Vryhof is heavily involved in Floating Renewable Energy Systems (FRES)









We have supplied to the following projects in the world

Hywind - Statoil - Norway Windfloat - Principal Power - Portugal University of Maine - VolturnUS - USA Fukushima Kizuna - IHI/JMU - Japan Fukushima Mirai – Mitsui - Japan Fukushima Shimpuu – Mitsubishi - Japan SKWID - Modec - Japan Wave and current devices - World









And many other projects to be deployed in near future !!

Vryhof is heavily involved in Japan Floating Renewable Energy Systems (FRES)



Fukushima Forward – JMU (former IHI) Fukushima Kizuna



Substation

WD: 120 m

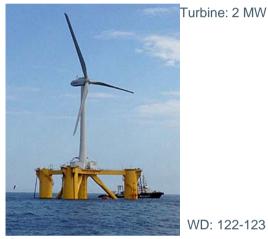
Soil:

- Soft rock, mudstone/siltstone
- · Catenary all chain
- 4 x 22.5mT Vryhof St0evshark® with 8.8 mT ballast with special cutter points

Installation:

- AHV and construction barge with chain tensioner
- Installed in: July 2013

Fukushima Forward - MITSUI **Fukushima Mirai**



WD: 122-123 m

Soil:

- Soft rock, mudstone/siltstone
- Catenary all chain
- 6 x 25mT Vryhof Stevshark Mk5® with 9.8 mT ballast with special cutter points

Installation:

- AHV and construction barge with chain tensioner
- Installed in: November 2013

Fukushima Forward - Mitsubishi **Fukushima Shimpuu**

Turbine: 7 MW



WD: 125 m

Soil:

- Soft rock, mudstone/siltstone
- Catenary all chain
- 8 x 29.5mT Vryhof Stevshark Mk5® with 11.5 mT ballast with special cutter points

Installation:

- AHV and construction barge with chain tensioner
- Anchors installed in: July 2014
- Hook-up in July 2015

Vryhof Technology and Engineering Services



- Supply of complete mooring systems and installation support
 - Drag Embedment Anchors
 - Anchor analysis
 - Requirements analysis and site investigation specifications for offshore moorings
 - · Geotechnical design, Technical evaluations and feasibility studies
 - Soil analysis and anchor advice
 - Analyses and selection of components
 - Design, engineering and fabrication of custom tools e.g. chain adjusters, stevlink, etc.
 - Anchor handling and installation procedures offshore supervision
 - Installation tools; Stevtensioner rental and supervision





