

**FIBRE**Max  
World's strongest cable...



STEEL  
BELONGS  
TO THE PAST.



***FIBRE* Max**  
World's *strongest* cable...

**Welkom**

## **IRO ledenbijeenkomst 2022**

Duco Handgraaf

- *CEO*

Sander van Helvoort

- *Business Development Manager*



# FibreMax

## Who we are

- Based in Joure, The Netherlands
- 2004 SmartRigging, high-end yacht rigging
- 2009 FibreMax, industrial applications
  
- 20.000+ cables made
- 35+ employees
- Cables up to 225 meters
- Maximum MBL 50.000kN
  
- 100% solar power driven
- 95% recyclable cables
- Zero LTI's since 2009

**SMARTRIGGING**  
THE INTELLIGENT CHOICE



# The challenge

How to solve...

- Metal fatigue
- Fibre to fibre abrasion
- Man-made end terminations
- Corrosion
- Sudden failure
- Maintenance



OUR  
FIGHT  
AGAINST  
METAL  
FATIGUE.

# Endless wound parallel fibres

Unique with 16 world patents

- Incorporated end terminations
- Parallel fibres
- Exact lengths
- Extremely high repeatability
- Custom robots for complete production process
  
- With any fibre...
  - Aramid
  - Dyneema
  - Carbon
  - PBO
  - Polyester



OUR  
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# Fibre vs Steel

Lighter, stronger and more durable

- Comparison of 60m cable, with a MBL of 16.200kN
- End terminations
  - Steel 1.050 kg
  - FibreMax 40 kg
- Total weight
  - Steel 8.100 kg
  - FibreMax 1.300 kg
- Weight saving 6.800 kg = 84% !!

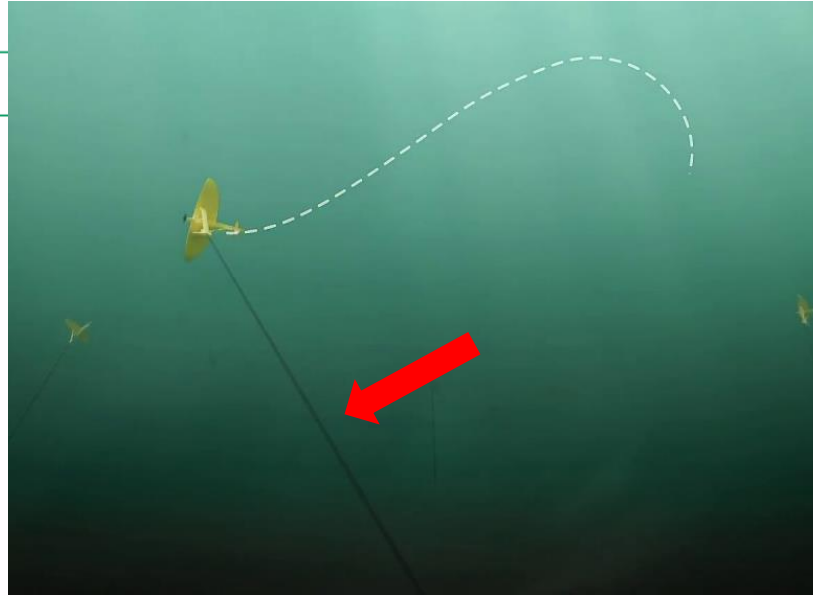
*Left picture: 16.000kN steel end termination*

*Right picture: Our world record – 17.020kN !*

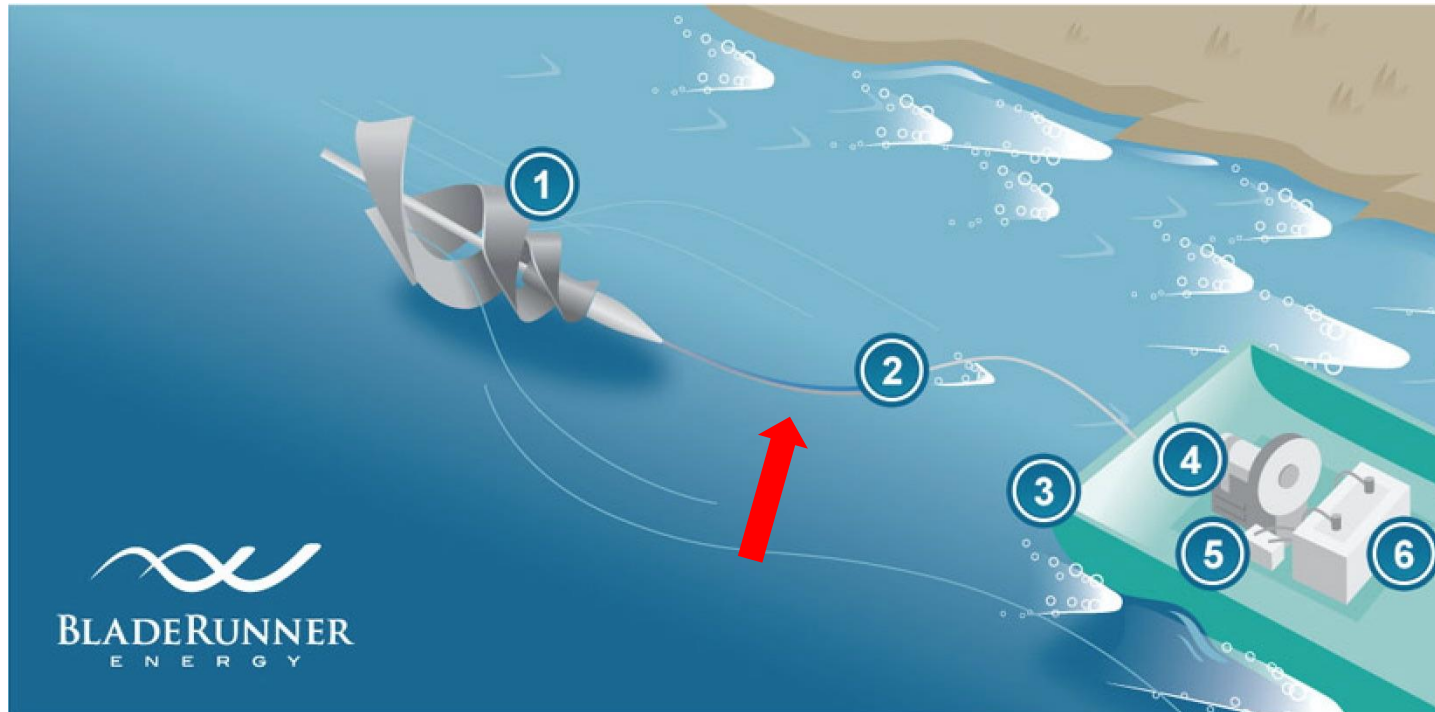


OUR  
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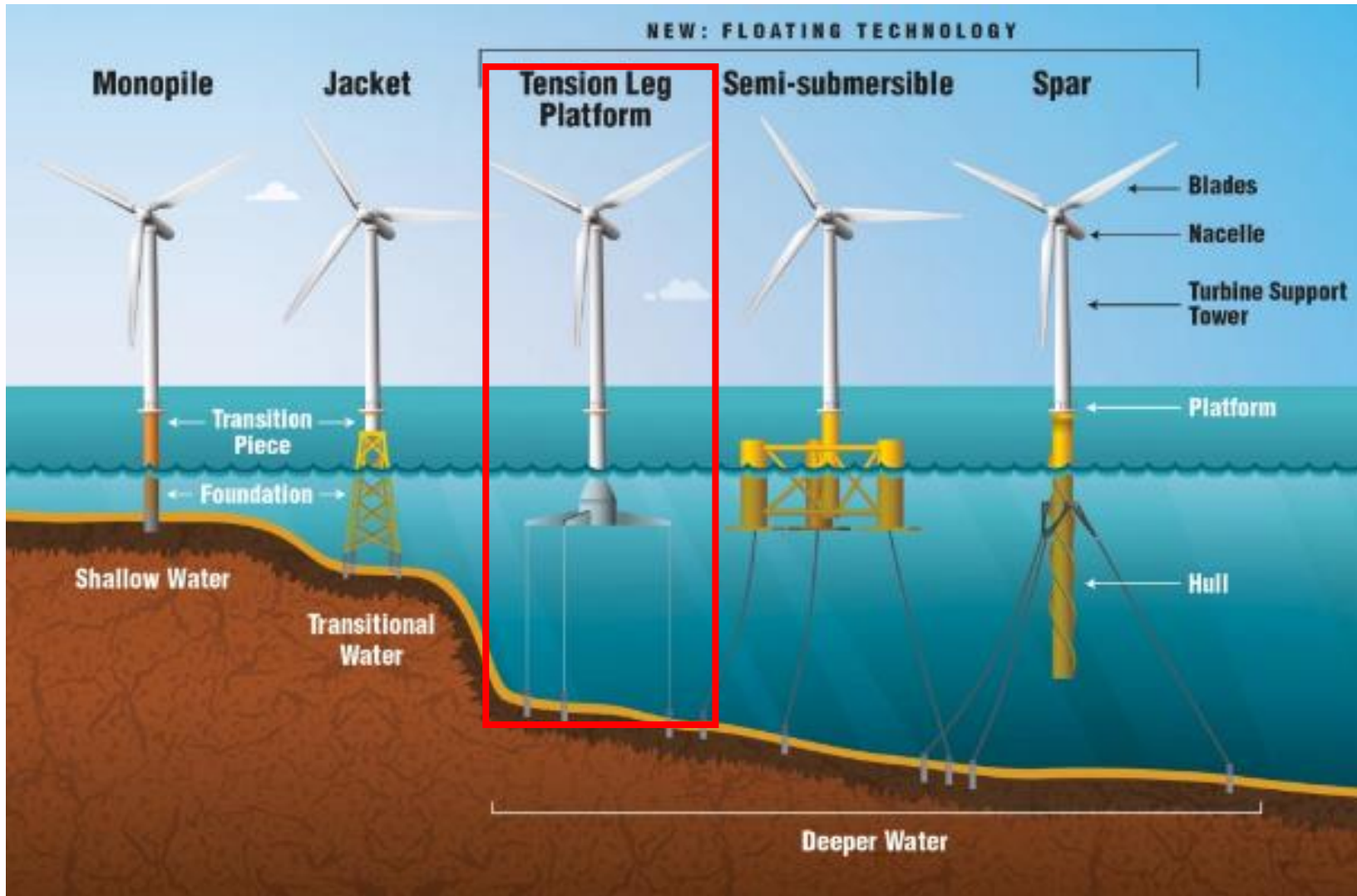




Renewable energy



# Types of floaters





# Offshore Renewable Energy

## Build to last a lifetime

- Endless wound tendons with Dyneema DM20
- Certified production process by DNV (AOM)
- 7,5 million ULS load cycles proven
  - Tested by IFT Stuttgart
- Unique load sharing capabilities
- Lowest weight to stiffness ratio
- No pre-stretching required
- No bedding in effect



THE  
MOST  
DURABLE  
TENDON.

# Onshore cranes



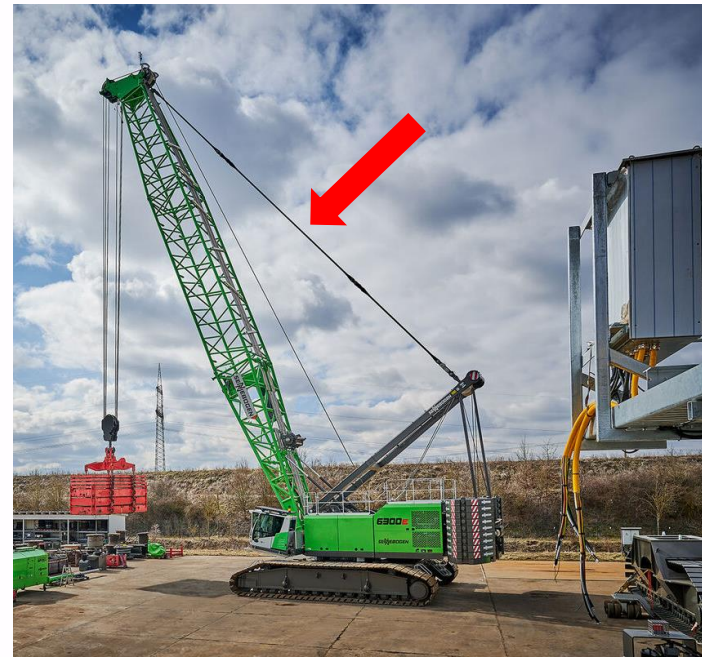
**LIEBHERR**



 **KRØLL CRANES**

**Twaron®**

The power of Aramid



**SENNEBOGEN®**

**FAVELLE  
FAVCO**





# Offshore cranes





# Expansion Joure to 12.000m2





# Second facility - Drachten



30.000m<sup>2</sup>

 sipmaarchitecten

# FibreMax

## More information

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- [www.Fibremax.nl](http://www.Fibremax.nl)

- *Movie about our world record, the strongest cable: [Link](#)*

- *Movie about our collaboration with Huisman and BigLift:*

[Link](#)

# **FIBRE** Max

**World's *strongest* cable...**

