

Innovation and scaling of European high-temperature superconductors

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Interim Chair, European Fusion Association

Ziehl X Conference, Berlin, iv Supra – 16th April 2026

We are now one company

 Subra & **THEVA**

Agenda

- 01 The vision for a European Champion in High Temperature Superconductors
- 02 New innovations in HTS
- 03 Building a European large-scale supplier of HTS
- 04 Uniting the European Fusion Industry across technologies

Electrifying and decarbonising the European energy system and establishing regional energy supply security require long-distance high-power transmission and compact distribution

However, based on current copper technology, this transition would:

Require 37 M tons of copper for transmission

(Double of the global yearly production)

Waste 50 GW electricity equal to the electricity production of 50 nuclear power plants due to electrical resistance in copper wires

Require huge amounts of AC/DC converters and extensive transmission corridors across Europe

Mean that **cost of transmission of renewable energy** between regions **will overcome cost of energy production by 2030**



There is no green transition - without transforming the way we transport electricity

A Grid Bottleneck to the Green Transition

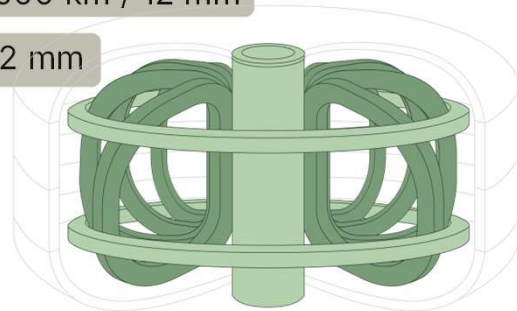
The global shift to electrification is accelerating, but two critical bottlenecks are slowing it down:

Fusion power

Baseload electricity generation remains inadequate, especially with renewables' capacity limitations and intermittency issues

1 ARC fusion plant = 6,000 km / 12 mm

1 GIGA = 33,000 km / 12 mm



Power transmission

Grid capacity for energy transport is lagging due to limitations in current materials and infrastructure

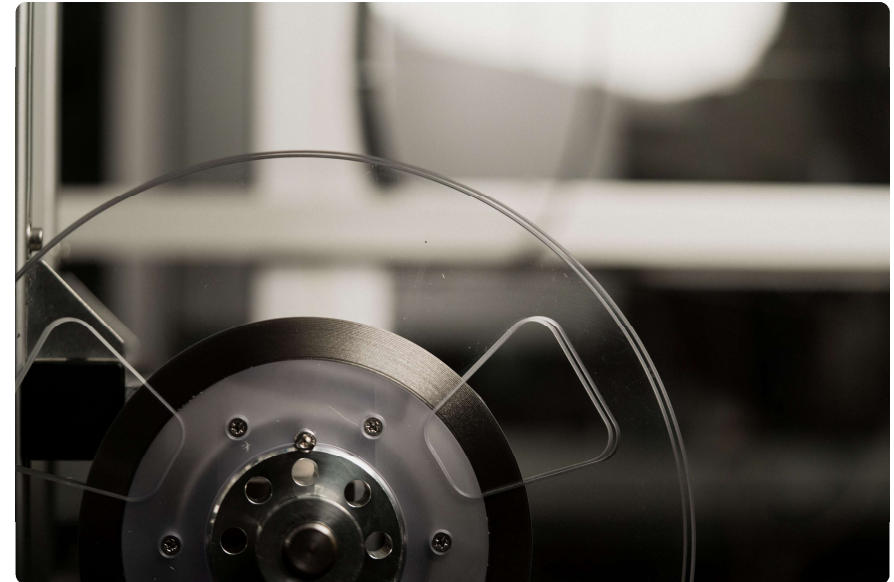
1,000 km / 12 mm = 15 km SuperLink



A future where energy flows without limits
– clean, connected, and carbon-free



“We are an impact company, that believes in the power of science to shape a future where energy flows without limits - clean, connected, and carbon-free”



Mission

We reshape energy landscapes through scalable superconductor solutions for sustainable impact on society and our planet.



Deep expertise in superconductivity and production technology and scaling revolutionary superconductor solutions.



Growing team of 100 scientists, engineers, analysts, technicians, operators, and support functions.

Our REBCO HTS tape – a scaling platform

REBCO HTS tapes

High performance high-temperature superconductors for power cables and magnets

I_c (77 K, s.f.) 600 – 700 A

Tape lengths (typical) 400 - 500 m

Copper, silver, lamination...



Bringing Innovation to market

Filamentised HTS tapes

Filamentised high-temperature superconductors for magnets in fusion power production

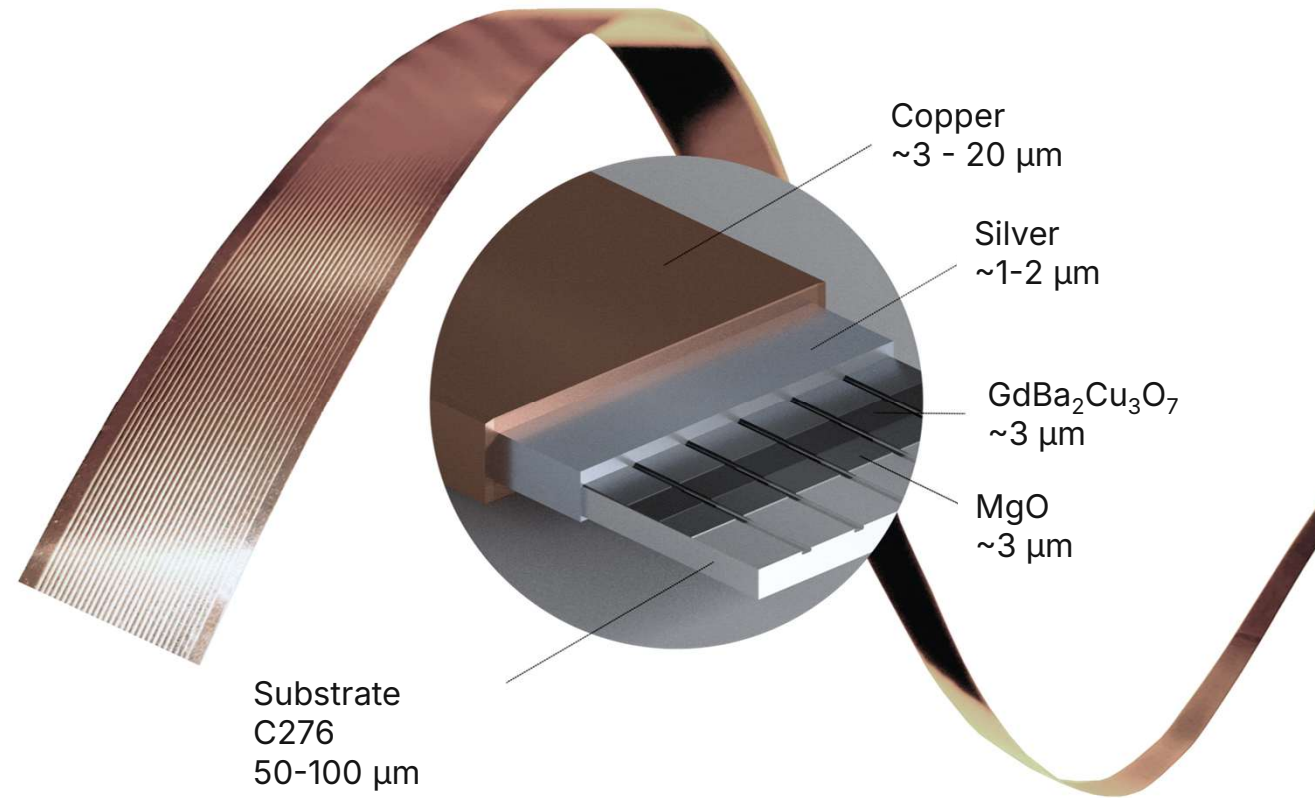
Reducing energy losses by HTS filamentisation and wrapping around a former

Preventing mechanical strain concentrations from forming

Allowing for **higher operational temperature and fast field ramping**

Enabling **scalable, low-cost production** of superconductor magnets

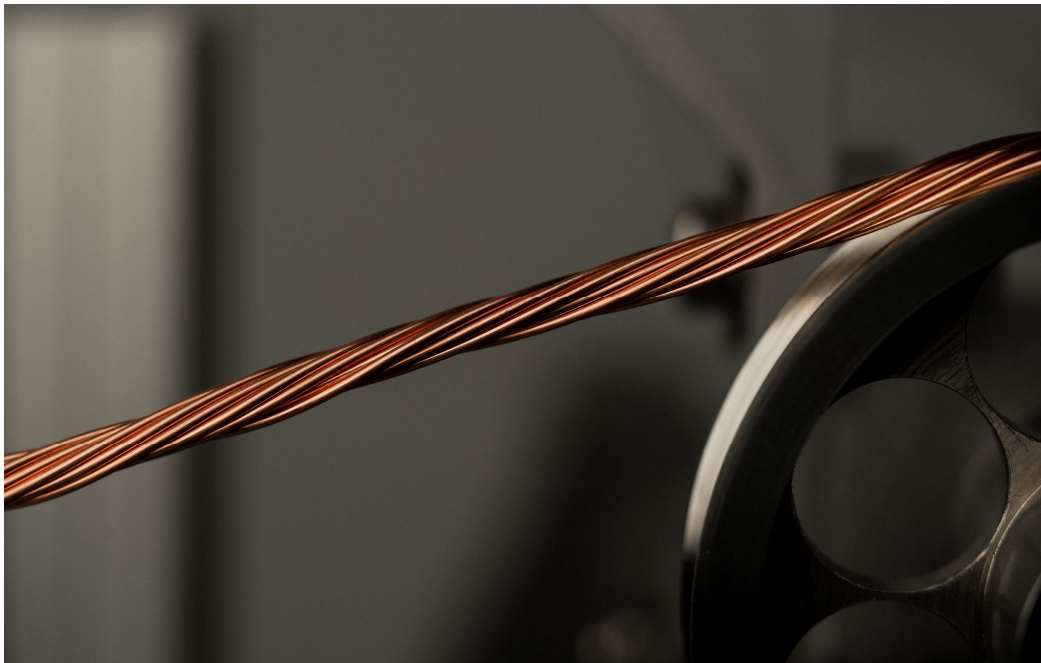
Lengths of up to 500 m



Wiring our world for infinite energy

Bringing Innovation to Scale – Subracable wires

The world's first scalable and cost-effective high-temperature superconductor - transitioning from flat tapes to bundled wires with enabling properties




Product differentiation vs. HTS tapes

Isotropic Ic & mechanical flexibility

A modular product

Quench safe and low AC losses



We reshape energy landscapes through scalable superconductor solutions for sustainable impact on society and our planet

We are now increasing our capacities towards large-scale manufacturing of our technologies



**European
Fusion Association**

Introduction

Run by industry, for industry

April 2026

About EFA

- **Industry-run voice of Europe's fusion ecosystem**, representing companies across the full fusion technology and value chain.
- **Shaping policies, regulatory frameworks and industrial capabilities** needed to make European fusion a reality – from funding and governance, to supply-chain readiness and technology development.
- **Bringing together 60+ members** from nine countries, including technology developers, manufacturers, research partners and major industrial players.
- **Providing members with influence, insight and visibility** through EU and European government advocacy, structured Working Groups, access to policy processes and industry-led platforms that showcase Europe's growing fusion ecosystem.



Current members



Policy and advocacy

European Fusion Association
2.174 følgere
1u

EFA presents its vision for #FusionEnergy in Brussels eu

Yesterday, **Milena Roveda**, Chair of the European Fusion Association (EFA), and **Anders C. Wulff**, Vice-Chair, visited Brussels for important discussions on the future of fusion energy in #Europe.

They had the opportunity to present the European Fusion Association to **Dan Jørgensen**, Commissioner for Energy and Housing.

Born during the first ITER Private Sector Workshop in Cadarache, EFA has quickly grown into an international association based in Brussels, representing over 50 member companies from 12 countries across the fusion value chain.

Our mission:

- To accelerate the transition of fusion energy from the lab to the grid
- To foster industry-wide collaboration across science and policymakers
- To put fusion at the heart of Europe's next industrial renaissance

One industry, one voice - now is the time for Europe to enter the fusion race!

#EnergyInnovation #SustainableFuture #EU #GreenEnergy

Vis oversættelse



med Anders C. Wulff og 1 mere


Du og 99 til 6 kommentarer · 8 genopslag

European Fusion Association
2.183 følgere
6d

From talk to action: Fusion momentum builds after Fusion Fest in London gb

On 8 April, Fusion Fest brought together global thought leaders to explore ... mere

Vis oversættelse



med Milena Roveda

Du og 48 til 2 kommentarer · 7 genopslag

European Fusion Association
2.183 følgere
5md


Yesterday, we were delighted to have three members of EFA (**Pierpaolo Bianchino**, **Bernard BLANC**, and **Milena Roveda**) in Vienna meeting with **Rafael Mariano Grossi**, Director General of the **International Atomic Energy Agency (IAEA)** to discuss European collaboration on fusion energy.

Europe has an opportunity to harness fusion as an engine for growth and innovation.

EFA is proud to be representing the voices of our members and meeting with world leaders on fusion to discuss Europe's central role in a global fusion future.

#fusionenergy #EU #Europe #netzero #energysecurity

Vis oversættelse



271 16 kommentarer · 19 genopslag

Member engagement, working groups and outreach

First EFA Member Spotlight Webinar
Friday, 17 April | 12 PM (CET) | Microsoft Teams

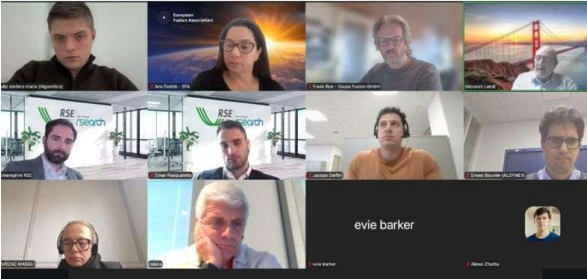


w/ Bernard Blanc, Director of Nuclear Development at Assystem



European Fusion Association

AI Working Group - Kick-off meeting
Chair: Giovanni Landi Vice-Chair: Evie Barker
April 1st, 2026



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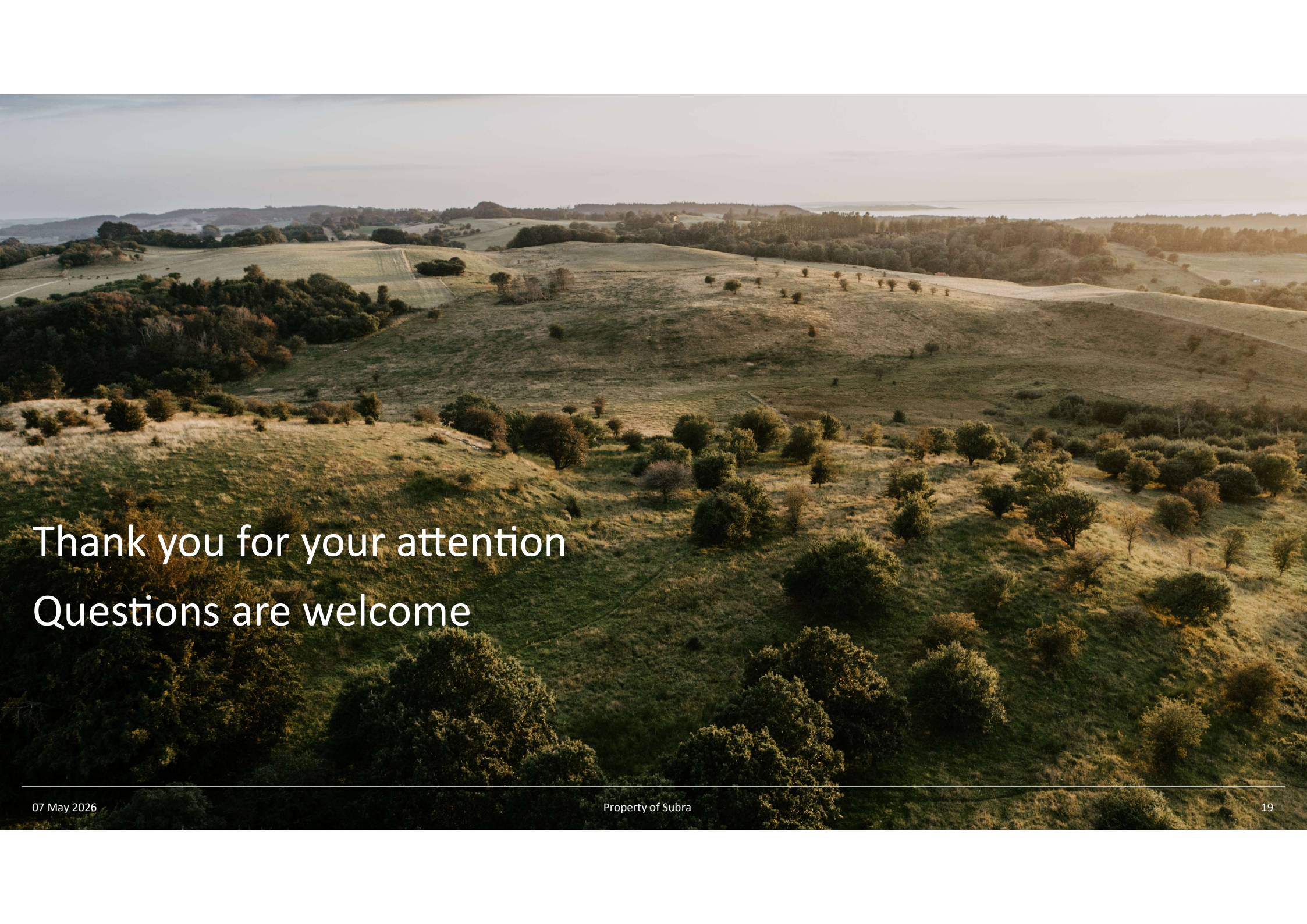


Anders Wulff

Interim Chair, European Fusion Association



**European
Fusion Association**



Thank you for your attention
Questions are welcome



Wiring our world for infinite energy

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