



UKAEA and Eni launch RH3OVA to expedite fusion energy industrialisation

RH3OVA to deliver services addressing key fuel cycle challenges facing the development of commercial fusion energy

Oxford, United Kingdom, and San Donato Milanese (Milan) – July 2, 2026 - The United Kingdom Atomic Energy Authority (UKAEA) and, Eni, have formed a joint venture to offer capabilities to the fusion energy sector.

Named [RH3OVA](#) [pronounced: Reeova] and incorporated in the UK the joint venture combines the technical and industrial expertise of both partners to deliver specialist consultancy and operational services to the growing global fusion industry.

Fuel cycle technologies represent one of the critical challenges in the pursuit of commercial fusion energy. RH3OVA offers end-to-end services across the fuel lifecycle, from early-stage feasibility studies to deployment and operational support.

Deuterium and tritium are fuels commonly used in fusion energy. Deuterium is abundant in nature and extractable from seawater. In contrast, tritium is extremely rare. It is therefore essential to ensure careful and efficient management throughout the entire fuel cycle, from tritium's production and use in energy generation to its recovery from exhaust gases and refinement for re-use.

Stephen Wheeler, Executive Director, Tritium Fuel Cycle, UKAEA, said: *"Having operated the Joint European Torus, which was the world's most powerful deuterium-tritium fusion machine for more than 40 years, and with 30 years' experience of tritium operations, the UK is a leader in tritium fuel cycle technology. For fusion to be realised as a commercially viable source of energy, however, this expertise must be scaled beyond the lab. RH3OVA offers best in class digital process models validated with real world, fusion relevant data sets. RH3OVA will combine UKAEA's scientific and operational know-how, with Eni's large-scale industrial capability, and leverage this joint expertise to increase knowledge and understanding across the fusion sector."*

Lorenzo Fiorillo, Director Technology, R&D & Digital of Eni, said: *"Fusion energy has the potential to redefine the global energy landscape, and at Eni we are committed on multiple fronts to turning this potential into tangible industrial progress. Our partnership with UKAEA is of great strategic value to us and represents a further step in scaling up innovation and translating scientific excellence into real-world solutions. Today, with UKAEA, we are continuing our joint commitment for further progress in the fusion energy field, with a particular focus on the fuel cycle for fusion. This builds on our collaboration developing the UKAEA-Eni H3AT Tritium Loop Facility started last year which will be a world-class facility of its kind. At the same time, RH3OVA will respond to the growing demand for specialized technical expertise and integrated engineering services dedicated to the fuel cycle, which will be*

essential enabling factors for the operation of fusion power plants using deuterium and tritium as fuels.”

RH3OVA's launch delivers a strategic goal within both the [UK's Fusion Strategy](#) and [UKAEA's organisational strategy](#). RH3OVA also strengthens the strategic collaboration between Eni and UKAEA and their joint effort to commercialise fusion energy.

Current projects with UKAEA for the commercial development of fusion energy, together with other ongoing initiatives, confirm an increasingly strategic positioning of Eni in this field.

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Interested parties are invited to register for RH3OVA's launch webinar, which will be held on July 14, 2026. visit [this registration link](#).

Notes to editors:

About the United Kingdom Atomic Energy Authority

Who we are

The United Kingdom Atomic Energy Authority (UKAEA) is the UK's national fusion energy research organisation. It is an executive non-departmental public body of the Department for Energy Security and Net Zero (DESNZ).

The work we do

UKAEA's mission is to lead the delivery of sustainable fusion energy to maximise scientific and UK economic benefit. It does this by being technical experts, partnering with companies and the international research community.

At the core of UKAEA's efforts is the operation of world-leading facilities that build a comprehensive knowledge base for fusion energy. By addressing and solving the challenges across the full lifecycle of fusion, and integrating solutions from various disciplines, UKAEA establishes technical centres of excellence that serve as the foundation for future fusion power plant programmes.

UKAEA collaborates with its partners to develop fusion power plants by providing access to our skills, facilities and expertise. UKAEA owns UKFE Ltd on behalf of the UK government. Through UKFE Ltd, UKAEA is spearheading the STEP Fusion programme to design and build the UK's first prototype fusion energy power plant in Nottinghamshire.

To grow the fusion ecosystem, UKAEA focuses on cultivating skilled talent, growing the fusion industry and creating 'innovation clusters'. UKAEA actively seeks opportunities to advance fusion technologies and communicate its vast potential to stakeholders and the public alike to accelerate fusion energy's future – the energy of tomorrow we need today.

More information: <https://www.gov.uk/ukaea>. Social Media: @UKAEAofficial

About Eni

Eni supports a socially fair energy transition with the aim of promoting efficient and sustainable access to energy resources. Eni places innovation at the centre of its strategic vision and it has transformed the businesses by investing significantly in research, development, and the implementation of technologies with the goal of progressively decarbonising its energy mix and achieving carbon neutrality by 2050.

About fusion energy

When a mix of two forms of hydrogen (deuterium and tritium) is heated at extreme temperatures – 10 times hotter than the core of the Sun – they fuse together to create helium and release energy which can be harnessed to produce electricity.

Magnetic Confinement Fusion: This method uses strong magnetic fields to contain high-energy fusion fuel in a plasma state. Machine designs include the tokamak (similar to JET) and the stellarator.

Inertial Confinement Fusion: This process initiates reactions by rapidly compressing and heating a tiny pellet of fusion fuel using high-powered lasers, ion beams, or x-rays.

Rh3ova will be providing services to companies and organisations working across both fusion technologies.

2026 Fusion Industry Supply Chain Report

The Fusion Industry Association's [2026 Fusion Industry Supply Chain report](#) highlights fuel infrastructure among the most pressing future concerns among its members, while also identifying fuel cycle technologies as an emerging supply chain requirement.