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EERA BIOENERGY NEWSLETTER

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Coordinator's corner. Winter 2025.

Myrsini Christou
EERA Bioenergy Coordinator

As we approach the end of the year, I would like to take a moment to reflect on a piece of work that I am particularly proud of: the EERA Bioenergy Position Paper 2025, "Unlocking the Full Potential of Bioenergy and Biobased Technologies in FP10." This paper is the result of a truly collective effort by our members and brings together their expertise, hands-on experience, and long-standing knowledge of the bioenergy and bio-based sectors. It captures not only where we stand today, but also where we believe Europe needs to go.

We strongly believe that if Europe is to secure its competitiveness, energy security, and climate neutrality, the next Framework Programme must better reflect the specific needs of bioenergy and biobased technologies. These technologies are inherently more complex than many other renewables. Current R&I project durations of 3–5 years are simply not sufficient for biorefineries, advanced biofuels, biogenic gases, or biobased chemicals. Such systems require long development cycles, extensive upscaling, feedstock maturation, regulatory alignment, and deep industrial integration. For this reason, we call on FP10 to introduce longer-term or multi-phase funding schemes—up to 6 or even 12 years—with milestone-based continuation, allowing continuous progress from low to high TRLs.

From our perspective, the current separation of bioenergy (Cluster 5) and biobased products (Cluster 6) also creates artificial barriers. Biomass is a renewable carbon resource that naturally lends itself to integrated biorefineries producing both energy and high-value materials. FP10 should therefore move towards genuine cross-cluster approaches, including joint calls between relevant Directorates-General, to support systemic, circular, and multiproduct value chains.

We are equally convinced that biomass supply chains and innovation must be addressed at a European scale. Treating Europe as a single market for biomass, technologies, and data would unlock cross-border supply chains, economies of scale, and greater resilience. This will require harmonised sustainability criteria, robust digital traceability systems, improved biomass data, and the development of digital tools and digital twins to optimise both existing and emerging bioenergy technologies.

In addition, FP10 should place stronger emphasis on biomass supply, logistics, standardisation, and commoditisation. Without reliable, standardised, and tradable biomass and biobased products, these technologies will struggle to compete globally. We see a clear need for dedicated topics on biomass sustainable production schemes, quality standards, certification aligned with RED III, and AI-based optimisation of markets and material flows.

We also see significant untapped potential in the valorisation of biogenic by-products such as waste heat, CO_2, digestate, chars, and ashes. By supporting cascading use concepts and regional biohubs, FP10 can help unlock circular economy benefits, improve overall resource efficiency, and strengthen regional industrial ecosystems.

Finally, we believe that biobased technologies must be assessed based on their system-wide contributions—not only their end uses. Their value lies in climate mitigation, energy resilience, circularity, and flexibility taken together. FP10 should therefore integrate system-level KPIs, reward multifunctional solutions, and explicitly embed climate and resilience co-benefits into evaluation criteria.

On a more operational note, we encourage FP10 to adopt faster and more agile project launch mechanisms, such as rolling calls or idea hackathons, and to institutionalise cross-DG collaboration. This would ensure that bioeconomy innovation is addressed in a truly integrated and coherent way.

We therefore encourage all our members to actively disseminate this position paper among their contacts and policy-level liaisons, to help ensure its messages are widely shared, understood, and taken up in the ongoing discussions on FP10. By speaking with a common voice, we can strengthen the impact of our collective expertise and contribute meaningfully to shaping a more sustainable, resilient, and competitive European bioeconomy.

With this in mind, I would like to close by wishing you all a lovely Christmas holiday and a happy, creative New Year—one that is greener, more sustainable, and driven by innovation, collaboration, and shared ambition.

"We strongly believe that if Europe is to secure its competitiveness, energy security, and climate neutrality, the next Framework Programme must better reflect the specific needs of bioenergy and biobased technologies."

EERA Bioenergy news in brief

SHAPING FP10: EERA BIOENERGY CALLS FOR STRONGER SUPPORT FOR BIOENERGY AND BIOBASED TECHNOLOGIES

Although the next **Framework Programme for Research and Innovation (FP10)** is not due to start until January 2028, discussions have already begun on how it should shape European funding for research, technology, and innovation. EERA Bioenergy joined the debate with the release in July 2025 of the Position Paper "Unlocking the Full Potential of Bioenergy and Biobased Technologies in FP10: A strategic path to resource-efficient and sustainable climate neutrality, resilience, and industrial sovereignty" aimed at establishing sustainable bioenergy and biobased systems as key pillars of Europe's energy transition, strategic autonomy, and circular economy.

In this document, EERA Bioenergy defends that if Europe wants to achieve climate neutrality while strengthening industrial sovereignty, FP10 must place a bold focus on bioenergy and biobased technologies. The message is clear: biomass should no longer be artificially split between energy and non-energy uses. It is a renewable carbon resource capable of feeding multiple value chains — energy, fuels, chemicals, and materials — in an integrated and circular way. This means supporting projects that connect sectors, make full use of all by-products, and link the bioeconomy with the energy transition.

A significant point highlighted is the need for longer and more flexible project timeframes. While fast-moving technologies such as solar and wind can progress within 3–5-year cycles, bioenergy technologies — involving crops, biorefineries, pilot-scale validation, and complex supply chains — require longer horizons and phased funding. Only then can Europe compete with countries such as the United States, China, or Brazil, which are already backing long-term industrial strategies for their biobased sectors.

EERA Bioenergy also calls for removing barriers between clusters and Member States. Europe, it argues, should operate as a single market for biomass, with shared standards, certification schemes, logistics, and data systems. This includes developing quality standards for agricultural residues or digestate, and deploying digital tools that support traceability, optimisation, and system integration. At the same time, the paper highlights the often-overlooked value of biogenic outputs — CO_2, heat, ashes, aqueous streams — to supply regional biohubs and create new industrial synergies.

Finally, the document encourages a more agile approach to EU funding and stronger cooperation between Commission departments to design coherent calls. FP10 is portrayed as a unique opportunity to place bioenergy and biobased solutions at the heart of Europe's green and digital transitions, driving not only innovation and decarbonisation but also high-quality, long-term employment across the Union. In EERA Bioenergy's view, the bioeconomy can become a key engine of resilience — industrial, territorial, and climate-related — if supported with the ambition and structure it deserves.

EERA BIOENERGY EXPERTS STEP INTO NEW EERA aisbl STRATEGIC WORKING GROUPS

Following the announcement made in June at the 2025 Annual Strategy Meeting, EERA aisbl decided to launch three temporary **Working Groups (WGs)** in July 2025 to analyse and advise EERA on how to address and incorporate new research areas, within and across its JPs.

The three Working Groups (WGs) are:

1. Innovation Hubs (formerly EUCoEs)
2. The disruptive nature of AI
3. Resilience and Preparedness

Each WG is coordinated by a leader of the Secretariat, who will chair the WG together with 1 leader from ExCo and 1 leader from JPCs. This new tool, expected to become a primary driver of the Clean Energy Transition, was finally joined by 12 representatives from EERA Bioenergy.

EERA BIOENERGY COORDINATOR WELCOMES THE PARTICIPANTS OF THE EIGHTH EDITION OF THE DOCTORAL COLLOQUIUM ON BIOENERGY AND BIO-BASED PRODUCTS (DOC 2025)

The 8th Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS (DOC2025) took place from 10–12 September 2025 in Stuttgart, Germany. The event was organised by the University of Stuttgart in collaboration with the **DBFZ – Deutsches Biomasseforschungszentrum**, a member of the EERA Joint Programme Bioenergy.

Launched in 2018 as a meeting primarily focused on bioenergy, the colloquium has since grown into an international platform for early-career researchers working on bioenergy and biobased products. Over the years, its scope has broadened to reflect shifting scientific priorities and societal needs. This edition expanded further to include emerging research in biotechnology and the bioeconomy, mirroring current political and economic developments across Europe and beyond.

The studies presented—ranging from bioenergy and biobased products to system integration—highlighted how biomass and biobased resources can drive the sustainable transformation of key sectors, including chemicals, pharmaceuticals, and construction, supporting higher-quality processes and greener products.

Since its inception, the Doctoral Colloquium has become far more than an academic gathering: it is a hub for advanced training, networking, and interdisciplinary scientific exchange. Doctoral researchers from universities and research institutes share their latest findings, engage in discussion, and forge new collaborations.

As has now become tradition, Myrsini Christou, Coordinator of the EERA Joint Programme Bioenergy, welcomed participants and presented the programme's strategic priorities, emphasising the ongoing efforts to advance bioenergy within the European Union and to position it at the heart of the transition towards a climate-neutral economy.

Figure 1. Attendees to the 8th Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS (DOC2025), listening to Myrsini Christou's welcome.

EERA BIOENERGY'S SUBPROGRAMMES MEETING HELD IN OCTOBER DURING THE 5TH ICARUS PROJECT GENERAL ASSEMBLY

The latest meeting of the **EERA Bioenergy Subprogrammes** took place on October 10, both in person (in Lisbon, Portugal) and online; coinciding with the ICARUS project 5th General Assembly.

Myrsini Christou, JP Coordinator, set the tone with a concise overview of the key messages from EERA's recent Position Paper, "Unlocking the Full Potential of Bioenergy and Biobased Technologies in FP10". Her summary highlighted bioenergy's pivotal role in Europe's journey towards climate neutrality, resilience, and industrial sovereignty, offering a roadmap for how the next Framework Programme could harness this potential more effectively.

From there, participants plunged into an open, collaborative discussion on what FP10—and future programmes—should prioritise. Ideas flowed freely: from strengthening research on advanced biomass uses to improving cross-sector integration and ensuring sustainable resource mobilisation. It was a constructive exchange that reflected both the ambition and the practical expertise within the JP Bioenergy community.

Finally, the meeting explored collaboration opportunities, particularly with countries newly associated with Horizon Europe. The inclusion of partners from the Republic of Korea, the UK, Canada, New Zealand, and nations in the Global South sparked conversations about widening research networks and co-developing innovation pathways with a truly global outlook.

The meeting wrapped up with closing reflections led by EERA Bioenergy's Secretariat, Margarita de Gregorio (Bioplat), who distilled the main takeaways and outlined the next steps.

EERA BIOENERGY CLOSES 2025 WITH STRATEGIC STEERING COMMITTEE MEETING

EERA Bioenergy held its final Steering Committee meeting of the year online via Zoom on Wednesday, 17 December, bringing members together for a focused and engaging session. The meeting was particularly enriching thanks to the participation of Maria Georgiadou, Senior Expert at the European Commission's DG RTD, and Biljana Kulisic, Policy Officer at the Commission's DG for Energy.

Both guests provided valuable insights into the upcoming Framework Programme, the latest developments within the SET Plan, and other relevant updates related to future calls and EU energy policy. Their contributions also enabled a constructive exchange on the committee's Position Paper responding to the European Commission's Public Consultation on the future EU Bioeconomy Strategy, offering thoughtful feedback and guidance.

As part of EERA Bioenergy's activity plan, the coordinators of the different sub-programmes (SPs) presented the 2026 perspectives for each SP, while the EERA Bioenergy Secretariat outlined the activities and services delivered in 2025, along with the related financial matters.

The meeting helped set the stage for continued collaboration and informed action within the EERA Bioenergy community.

Bioenergy highlights

BIOTHEROS PROJECT KNOWLEDGE HUB: ADVANCING SUSTAINABLE BIOFUELS THROUGH GLOBAL COLLABORATION AND INNOVATION

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The **BioTheRoS Knowledge Hub** is a comprehensive platform established as part of the BioTheRoS project to support international collaboration and knowledge exchange in the field of sustainable biofuels. Addressing the global challenge of scaling up biofuels requires not only technological innovation but also consideration of environmental, social, and economic sustainability. The Knowledge Hub contributes to this effort by providing a space for sharing research, publications, and expertise, ultimately fostering global knowledge building for advanced biofuels value chains.

The **Publication Database** offers a list of technical reports, scientific publications, and presentations relevant to biofuel research. Users can explore content across various topics, including biobased value chains, biofuels, gasification, pyrolysis, and other related areas. This resource enables researchers, industry professionals, and policymakers to access up-to-date information, facilitating informed decision-making and collaborative research efforts.

Complementing the Publication Database is the **Research Network**, a directory of research groups and organisations actively working on biofuels derived from gasification and pyrolysis processes. By mapping these groups and their areas of expertise, the Research Network encourages partnerships, knowledge sharing, and joint projects, which are essential for overcoming the complex challenges associated with sustainable biofuel production.

The Tech State Navigator provides a structured overview of the Technology Readiness Levels (TRLs) for processes within the BioTheRoS value chains. The Navigator allows users to explore technology-feedstock combinations, understand current TRLs, and identify existing demonstration facilities, offering a clear picture of the maturity and applicability of different biofuel technologies.

The **Pyrolysis & Gasification Pathway Selector** is an interactive tool for exploring specific feedstock-technology combinations. Users can view the TRL of the corresponding value chain, examine detailed explanations of each stage, and locate operational demonstration sites. This tool bridges the gap between research and practical implementation, helping stakeholders identify viable pathways for sustainable biofuel deployment.

Overall, the BioTheRoS Knowledge Hub serves as a central resource for the biofuel community, promoting information exchange, collaboration, and innovation. By integrating publications, research networks, and technology readiness insights, it supports the global effort to develop advanced biofuels in a sustainable and scalable manner, contributing to a greener energy future.

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Visit project website

Visit Knowledge Hub

UNLOCKING EUROPE'S BIOMETHANE POTENTIAL: LESSONS LEARNED FROM GREENMEUP STRATEGIC ANALYSIS

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The **GreenMeUp project** (Horizon Europe, 2022–2025) aimed to accelerate the **uptake of biomethane across Europe** as a key lever for the EU's energy transition and circular economy. Biomethane plays a central role in meeting the EU's REPowerEU objectives. It can reduce reliance on imported natural gas while helping to cut emissions in sectors such as transport, heating, and industry, where defossilisation is particularly challenging.

While biomethane production has reached around **3 billion cubic meters (bcm)** annually in Europe, the EU's 2030 target is **35 bcm**. Meeting this tenfold increase requires supportive national frameworks, new investment models, and cross-sectoral collaboration. During its three-year duration, GreenMeUp focused on seven target countries: the **Czech Republic, the Danube region (Hungary, Romania, Serbia), Estonia, Greece, Latvia, Poland, and Spain,** to better understand the opportunities and challenges for biomethane´s market uptake, and to work with stakeholders on practical strategies for action.

SWOT–TOWS ANALYSIS OF TARGET COUNTRIES' BIOMETHANE MARKETS

As part of the project, the GreenMeUp consortium conducted a **comprehensive SWOT (Strengths, Weaknesses, Opportunities, Threats) and TOWS analysis** in each target country.

Goals:

- Identify the technical, economic, policy, and social conditions shaping biomethane market development.
- Develop actionable strategies that leverage national strengths and opportunities while addressing weaknesses and threats.
- Provide policymakers and market actors with an actionable strategy for scaling biomethane deployment by 2030.

Methods:

- Analysed previously collected information on existing production routes, feedstock potential, policy frameworks, and infrastructure
- Integrated earlier project work, such as **policy gap analyses** and **PESTEL assessments.**
- **Stakeholder engagement** via Policy–Market–Society Hubs in each country: interactive workshops, expert interviews, and validation meetings.
- Application of a structured **TOWS matrix** to cross-analyse SWOT factors and co-create strategies with national actors.

TOWS Matrix		External factors	
		Opportunities	**Threats**
Internal factors	**Strengths**	**SO** How to exploit strengths to respond to the opportunities?	**ST** How to use strengths to mitigate threats?
	Weaknesses	**WO** How to prevent weaknesses to risk opportunities? How identified opportunities can remove weaknesses?	**WT** How to avoid weaknesses from enhancing the threats? How to minimize both weaknesses and threats?

Figure 1. TOWS Matrix and supportive questions for the development of strategies.

This participatory approach ensured that results reflect not only analytical insights but also the **practical perspectives of stakeholders** who will drive implementation.

KEY RESULTS AND STRATEGIC PRIORITIES

While each country faces its own unique challenges, several **common priorities** emerged across Europe's biomethane markets.

1. Establishing binding national targets

- Many countries still lack **clear and enforceable biomethane production targets** in their national energy and climate plans (NECPs).
- Stakeholders consistently highlighted that **binding targets** are essential to give certainty to investors and signal long-term policy commitment.

2. Financial support and de-risking investment

- High **CAPEX and OPEX costs** remain critical barriers.
- Recommended instruments include **contracts for difference (CfDs)**, subsidies for grid connection, and **cost-sharing mechanisms** between network operators and producers.
- Financial stability is necessary to unlock private investment and accelerate upgrading of biogas plants.

3. Upgrading existing biogas infrastructure

- Hundreds of agricultural biogas plants across Europe provide a strong basis for conversion to biomethane.
- Strategies focus on **modernising existing facilities** and shifting from energy crops to **residues and waste-based feedstocks** such as manure, sewage sludge, and municipal biowaste.

4. Linking biomethane to the Circular Economy

- Many countries identified large volumes of **unused waste resources** Ne (municipal organics, agro-industrial residues).
- Integrating biomethane production into **waste management and circular economy policies** provides dual benefits: renewable gas production and improved environmental outcomes.

5. Cross-sectoral policy coordination

- A recurring issue is **fragmented governance:** different ministries and agencies working in silos.
- Effective biomethane strategies require **cooperation between energy, agriculture, waste, transport, and environmental ministries.**
- Stakeholders underlined the importance of **policy roadmaps** that connect biomethane to broader decarbonisation and resource-efficiency objectives.

6. Strengthening Market Frameworks

- Countries need consistent systems for **Guarantees of Origin (GoOs)** and simplified permitting for new plants.
- Demand-side measures (e.g. **green procurement for transport fleets,** incentives for CNG/LNG use) can stimulate consumption and market creation.

The GreenMeUp SWOT–TOWS analysis[1] reveals that **biomethane can scale rapidly if the right enabling conditions are created.** These results have provided a solid based for further policy design and definition of specific policy measures[2] developed in the framework of the project.

For more information on GreenMeUp results, please visit this website.

This work has been funded under the recently finished Horizon Europe project GreenMeUp (Green Biomethane Market Uptake), with grant agreement no. 101075676. We would like to thank the whole project consortium for their continuous engagement in the application of this approach and co-creation of strategies with their national biomethane stakeholders.

[1] https://www.greenmeup-project.eu/wp-content/uploads/2025/09/D2.2.pdf
[2] https://www.greenmeup-project.eu/wp-content/uploads/2025/09/D4.5.pdf

BIORECAST - BIOBASED RESIDUES CONVERSION TO ADVANCED FUELS FOR SUSTAINABLE STEEL PRODUCTION

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The EU-funded BioRECAST project aims to address the key challenge of decarbonising the European steel sector by proposing a "new and improved steelmaking technique", reusing waste heat of electric arc furnaces (EAF) from steel companies for the on-site conversion of residual biomass into biocoal and sustainable bioenergy. These alternative sustainable fuels will be used within the steelmaking process to improve its sustainability. Dedicated research activities within BioRECAST include biocoal production tests in a 100 kg/h pilot plant, biocoal tests in industrial EAFs, pyrogas combustion trials and design of new pyrogas burners to be used in EAFs, and the executive design of a new integrated pyro-EAF steelmaking plant based on two industrial case studies.

The following innovative solutions will be developed within BioRECAST:

- Production of biocoal from residual biomass streams of suitable quality to be used as a coal substitute in EAF steelmaking processes
- Valorisation of EAF hot flue gases to supply the thermal energy required for the pyrolysis process, enabling the use of the pyrolysis gases (pyrogases) as a renewable energy source in the steel sector
- Assessment of the best available solution for pyrogas valorisation in steelmaking companies

On 18 June 2025, the joint online webinar "Defossilizing the Steel Sector" successfully brought together over 50 stakeholders from across Europe. The event was jointly organised by the EU-funded projects BioRECAST (BIObased REsidues Conversion to Advanced fuels for sustainable STeel production) and H2Steel (Green H_2 and circular bio-coal from biowaste for cost-competitive sustainable steel), in close collaboration with IEA Bioenergy Task 33: **Gasification of Biogenic and Waste Feedstocks for a Sustainable Future.** Presentation slides and a recording of the webinar are available for download at the project website. Further BioRECAST webinars are planned for 2026, and a project workshop will be organised on the occasion of the European Biomass Conference and Exhibition (EUBCE 2026) in The Hague in May 2026.

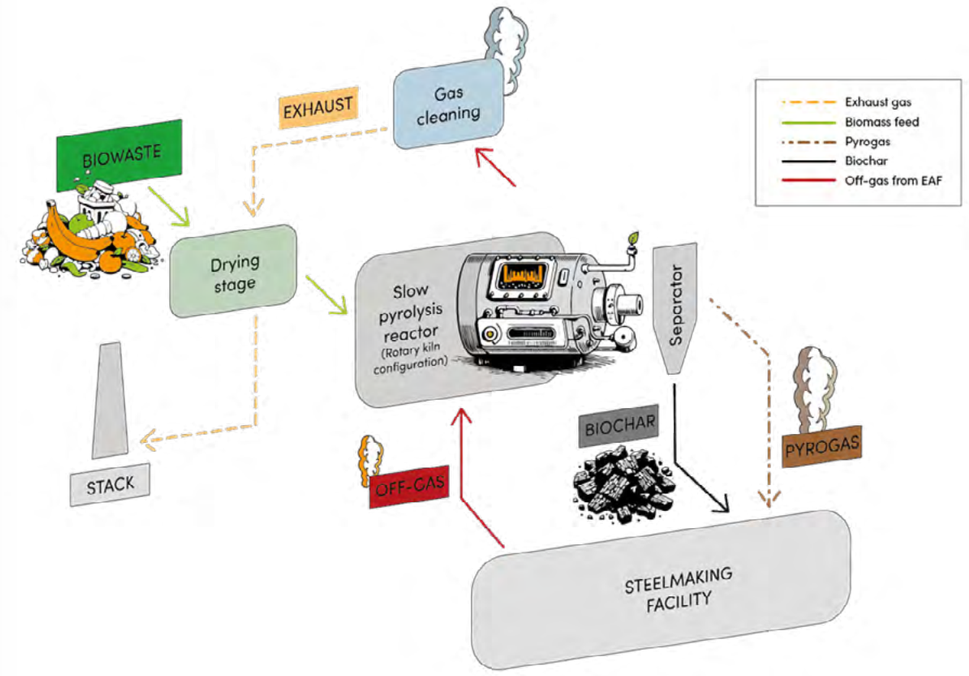

Figure 1. Schematic overview of BioRECAST innovation objectives.

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WORKING GROUP BIOGENIC CHAR APPLICATIONS

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A new team at the Deutsches Biomasseforschungszentrum gGmbH (DBFZ) has started working on transforming carbon-rich residues into smart, sustainable solutions. The **Working Group of Biogenic Char Applications**, launched in May 2024 in the Thermochemical Conversion department, focuses on one of the most promising tools for climate protection and mitigation in the bioeconomy: biochar. The group is led by Dr. Özge Mutlu, who has worked at DBFZ since 2018 and holds a PhD on the topic of slow and fast pyrolysis of biomass. The team is as international as it is interdisciplinary—with eight members from seven different countries and a wide range of technical backgrounds, combining creative approaches with a shared motivation to develop sustainable solutions.

Figure 1. Working Group of Biogenic Char Applications – from left to right Rafiandy Dwi Putra, Dr. Betelhem Mekonnen Muluneh, Dr. Andreas Schedl, Dr. Dennis Krüger, Dr. Özge Mutlu, Carsten Tilch, Anjitha Kuriakose, Kassé Jean Hugues Angbé (@Paul Trainer/DBFZ)

OUR RESEARCH: UNDERSTANDING, IMPROVING, APPLYING

The group explores the full value chain of biochar—from feedstock selection and processing to end-use performance and system integration. The goal is to understand how different biochars behave under various conditions, identify which properties are key for specific applications, and explore how biochar can support the shift to more sustainable material and energy systems.

Our main research areas include:

- **Comprehensive characterisation** of biochars to determine further application areas (e.g. soil improvement, alloying, construction materials, fuels, etc.)
- **Development of new fields of application** for biochar for further defossilization of the material and energy systems, including development and testing at the technical centre
- **Investigations into carbon capture possibilities** through biochar, e.g. as a technical carbon sink
- **Production of tailor-made biochar** from various feedstocks using pyrolysis, torrefaction and pyrolytic combustion, depending on the application in adapted plants on a pilot scale and in larger quantities in cooperation with industrial partners
- **Techno-economic evaluation and simulation** of the production processes and the products examined

The working group works particularly closely with colleagues at the DBFZ on gasification, hydrothermal carbonisation, biochar uses in the biogas context, resource availability and LCA accounting.

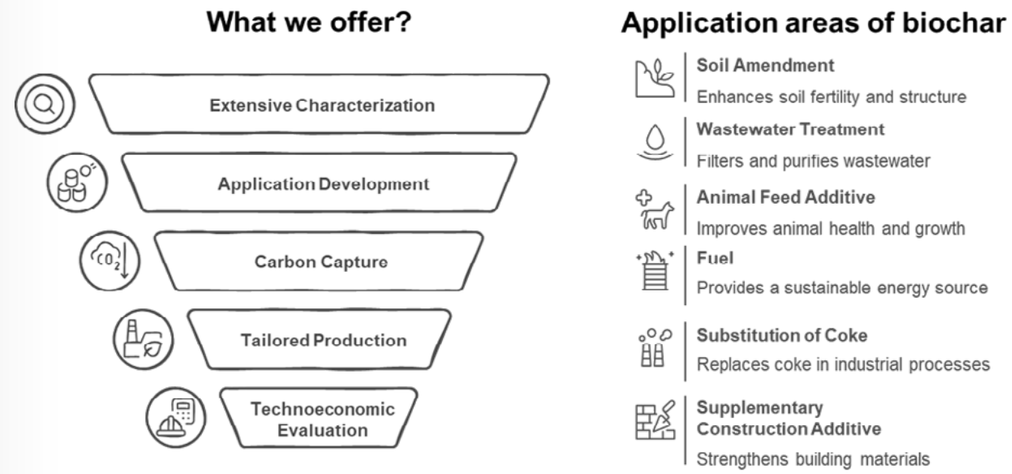

Figure 2. Main research focus of the Working Group of Biogenic Char Applications and further application areas of biochar (created by @Napkin AI).

OUR INFRASTRUCTURE: TURNING IDEAS INTO IMPACT

The group has a strong technical infrastructure for both production and analysis of biochar. This includes several pyrolysis systems such as a lab-scale retort muffle oven, two reactors working based on the Top-Lit Updraft (TLUD) principle (~3 and 20 kW), and a Kon-Tiki flame curtain kiln. For biomass and biochar characterisation, the working group is well connected to the analytical lab of DBFZ. Moreover, the team is responsible for analytical measuring devices such as simultaneous thermogravimetric analysis (NETZSCH STA 449 F3 Jupiter) coupled with gas phase Fourier transform infrared spectroscopy (FTIR) and mass spectrometry (MS) (STA-FTIR-MS), an Attenuated total reflection (ATR-FTIR) spectrometer (Perkin Elmer) and two types of handheld Near-infrared spectroscopy devices for rapid characterisation.

Figure 3. Some examples of the group's research infrastructure – from left to right: Lab-scale TLUD reactor, thermogravimetric analysis coupled with FTIR and MS (STA-FTIR-MS) (@Andreas Schedl), APELI cookstove (@Dennis Krüger).

BEYOND THE LAB: REAL-WORLD APPLICATIONS

For industrial applications, especially in the steel sector, biochar can be used as a partial replacement for fossil fuels such as coke, thereby reducing CO_2 emissions and lowering production costs in the long term. The technology enables the utilisation of biomass residues and creates a circular economy value chain. Furthermore, biochar shows considerable potential as a soil additive in agriculture. It improves soil structure, increases nutrient storage capacity, and contributes to long-term carbon sequestration. In the water balance, biochar acts as a natural filter and water reservoir, thereby improving both water quality and increasing the water-holding capacity of soils. Successful implementation requires a holistic approach to the value chain, from sustainable biomass procurement and optimised pyrolysis processes to market-oriented application in various sectors.

Last but not least, the Working Group is deeply engaged in clean cooking solutions, recognising the critical need to improve health and sustainability for billions worldwide. Around 2.3 billion people still depend on open fires and inefficient stoves, causing serious health and environmental issues. To address this, the team develops biomass cookstoves tailored to local needs—offering solutions at both the household and communal levels. These range from small, efficient stoves for individual families to larger systems designed to serve schools, canteens, and entire communities. One of the key developments is the APELI cookstove—a forced-draft, continuously fed biomass stove designed for locally-available fuels with high efficiency and low emissions. It is already in operation within a field test village in Togo, where it's providing a cleaner alternative to traditional cooking methods and demonstrating the impact that applied research can have on daily life.

At its core, The Working Group of Biogenic Char Applications combines scientific depth with practical relevance. Whether through advanced material development or hands-on solutions in the field, we're working to make biochar part of a more sustainable future. The working group is well connected through a broad international network—with strong collaborations across Europe and particularly in Africa—enabling partnerships with academic institutions, industry, and community initiatives around the world.

Learn more

ICARUS - INTERNATIONAL COOPERATION FOR SUSTAINABLE AVIATION BIOFUELS

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The ICARUS project is dedicated to advancing Sustainable Aviation Fuel (SAF) production by addressing critical technology limitations in three key routes: **(i) Biocrude from hydrothermal liquefaction, (ii) Isobutanol from lignocellulosic biomass, and (iii) Synthetic Fischer-Tropsch from biomass gasification.** These value chains have been strategically chosen due to their proximity to market deployment and their pivotal role in meeting European and international SAF deployment targets. ICARUS builds on a strong international consortium of 20 reputed partners, including 5 partners from three Mission Innovation Countries (MIC), Canada, India and Brazil, and two partners from the USA joining R&I activities as members of the External Executive Advisory Board (EEAB).

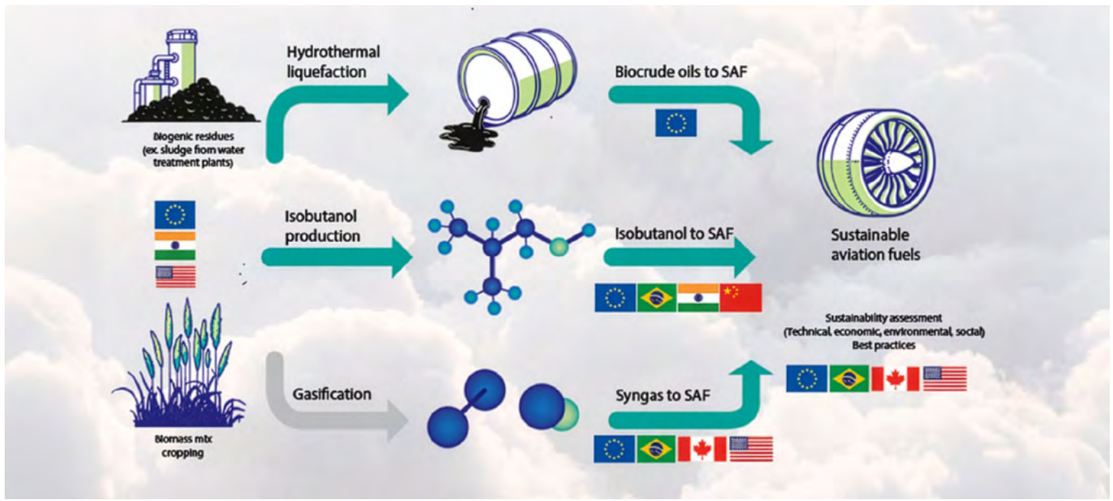

Figure 1: ICARUS value chains for SAF production.

Among the main objectives of the ICARUS project, future best practices and concepts along the entire value chain will be developed for the three technological pathways selected in the project.

Such best practices and concepts rely on results, know-how, experiences and lessons learned from two types of sources. On the one hand, this work builds on in-house intelligence developed within the project and on the other hand, on external knowledge sharing from European and internationally renowned key industrial stakeholders and R&I experts. Ultimately, a set of guidelines will be proposed to accelerate the scaling up of the three value chains, hence contributing to cost-effective and more sustainable large-scale production of SAF. Dedicated co-creation webinars with selected international experts have been organised on Biocrude oils to SAF (3 June 2025), Syngas to SAF (24 June 2025), and Alcohols to SAF (27 October 2025). The next upcoming ICARUS initiative on the development of best practices and concepts will be the organisation of a co-creation workshop on the occasion of the European Biomass Conference and Exhibition (EUBCE 2026) in The Hague in May 2026.

Figure 2: ICARUS co-creation webinar on Alcohols to SAF in October 2025.

Finally, ICARUS also creates strong synergies between the private industry and the scientific community by providing further guidance for SAF certification and coordinating the engagement with oil industries, airports and end-users, and by fostering international knowledge transfer to establish long-lasting interactions on the upscaling of SAF. Specific focus is placed on the development of SAF in Africa, as a strategic energy partner for the EU. The recording and presentations of dedicated webinars on Sustainability Certification of Novel SAF Pathways and SAF Development in Africa: Exploring the Role of Novel Pathways are available on the project website.

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DOC2026 | 9th DOCTORAL COLLOQUIUM BIOENERGY AND BIOBASED PRODUCTS (23/24 SEPTEMBER 2026, LEIPZIG, GERMANY)

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DOC2026
9TH DOCTORAL COLLOQUIUM
BIOENERGY & BIOBASED PRODUCTS

Dear EERA Bioenergy Newsletter readers,

I am delighted to invite you, particularly young researchers in the field of bioenergy and bio-based products, to participate in the forthcoming **Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS (DOC2026).** As the Scientific Leader and Patron of this event, I am excited to share with you the opportunities and advancements that this colloquium has to offer.

The **EERA Bioenergy** - European Alliance for excellent research in sustainable bioenergy, proudly supports this event, recognising its value in fostering early-career development, collaboration, and knowledge exchange within the European bioenergy research community. We, the organisers, scientific committee, and participants, are grateful for this support, which underscores the importance of nurturing the next generation of bioenergy researchers.

BACKGROUND

Biomass is the sole renewable carbon source available to us, offering a unique opportunity for sustainable development. The biosphere is a complex and fascinating system of interdependencies and solutions, providing a wealth of possibilities for innovation. However, as a limited resource, its utilisation requires novel and innovative approaches, such as cascading uses and co-production, to ensure sustainability and efficiency.

Research into bioenergy and bio-based products, as well as system integration, holds considerable promise for the development of groundbreaking solutions and has demonstrated significant potential for transforming various sectors, including chemicals, pharmaceuticals, and construction. This research is characterised by its diversity and high quality; however, numerous questions remain unanswered. Furthermore, there is a pressing need to strengthen networking within the research community to facilitate more efficient knowledge exchange and exploit synergies more innovatively.

The Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS provides comprehensive coverage of all components of the biomass conversion chain, from feedstocks to conversion technologies and resulting products and services. Additionally, it encompasses overarching aspects, including economic, environmental, and social considerations, as well as system analysis and integration. The colloquium also explores work on biological principles and knowledge, thereby providing a thorough examination of the topic.

The recent history of the Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS

1st Doctoral Colloquium BIOENERGY	2nd Doctoral Colloquium BIOENERGY	3rd Doctoral Colloquium BIOENERGY	4th Doctoral Colloquium BIOENERGY	5st Doctoral Colloquium BIOENERGY	6nd Doctoral Colloquium BIOENERGY	7nd Doctoral Colloquium BIOENERGY	8nd Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS
2018	2019	2020	2021	2022	2023	2024	2025
Initiator and host: DBFZ, Leipzig	Host: FAU, Nuremberg	Host: DBFZ, Leipzig	Host: KIT, Karlsruhe	Host: DBFZ, Leipzig	Host: HAWK, Goettingen	Host: DBFZ, Leipzig	Host: University of Stuttgart
71 Participants	51 Participants	185 Participants	70 Participants	75 Participants	42 Participants	85 Participants	74 Participants
Participants from Germany	Participants from Germany and Norway	Participants from Algeria, Austria, Brazil, France, Germany, India, Indonesia, Ireland, Mexico, Netherlands, Nigeria, Norway, Poland, Sweden, Switzerland, Turkey and USA	Participants from Austria, Brazil, Canada, China, Germany, Ghana, Greece, Iran, Nigeria, Poland, Russia, Syria, Thailand and Zambia	Participants from Austria, Belgium, China, Columbia, Denmark, France, Germany, Ghana, Greece, India, Indonesia, Iran, Iraq, Italy, Norway, Pakistan, Phillipines, Republic of Cameroon, South Africa, Spain, Sweden and Switzerland	Participants from Austria, China, Columbia, Germany, Great Britain, India, Iran, Italy, Norway and Pakistan	Participants from Austria, China, Colombia, Denmark, Germany, Iran, Italy, Mali, Sweden and Switzerland	Participants from Germany, Australia, Denmark, France, Greece, India, Ireland, Italy, Portugal and South Africa
Scientific Advisory Board	Scientific Advisory Board	Scientific Advisory Board	Scientific Advisory Board	Scientific Advisory Board	Scientific Advisory Board	Scientific Advisory Board	Scientific Advisory Board
9 Members representing	34 Members representing	46 Members representing	46 Members representing	46 Members representing	46 Members representing	46 Members representing	50 Members representing
11 Institutions	27 Institutions	37 Institutions	37 Institutions	37 Institutions	37 Institutions	37 Institutions	39 Institutions

Figure 1: The recent history of the Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS.

RECENT HISTORY OF THE DOCTORAL COLLOQUIUM

Established in 2018 with a primary focus on bioenergy, the Doctoral Colloquium has evolved over the years into an international platform, extending its thematic reach to include research on biotechnology and bioeconomy. In 2025, a new session focusing on 'Circular Bioeconomy in Industry' was introduced, featuring presentations and discussions by doctoral students on topics such as expanding industrial capacities to close a non-fossil carbon cycle and decarbonising the steel industry. The event has grown in participant numbers, with 74 attendees at our last event, DOC2025, which included six sessions, 24 presentations, and 31 scientific posters. For more information, please visit our website.

The Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS serves as a platform for young researchers to develop their skills and engage in scientific exchange and networking. The event brings together doctoral researchers from universities and research institutions, providing a forum for them to present and discuss their latest findings and progress.

A Scientific Advisory Board, established in 2018 with an initial membership of 9 scientists from 11 institutions, has since grown to comprise 50 esteemed bioenergy and bioeconomy experts from Germany, Austria, Switzerland, Italy, and Norway, representing a total of 39 research and higher education institutions. This board plays a crucial role in ensuring the scientific quality and magnitude of the event.

Figure 2: Group picture of Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS (DOC2025).

SAVE THE DATE

This year, the **9th Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS (DOC2026)** will be organised by DBFZ under the scientific coordination and direction of Professor Dr Michael Nelles and his team. The event will take place at the conference venue of DBFZ Deutsches Biomasseforschungszentrum gemeinnützige GmbH in Leipzig, Germany.

We warmly welcome your participation and valuable contributions to help shape and advance the scientific community. The Call for Abstracts and Posters will be announced in early March 2026. For more information, please visit our website.

I would like to extend my sincere gratitude to the organisers of last year's event (DOC2025) at the University of Stuttgart, especially Professor Dr Ralf Takors and Dr Ludger Eltrop, as well as the numerous helpers who contributed to the outstanding success of this event. The enthusiasm of the participants, the stimulating scientific presentations, and the inspiring atmosphere all combined to facilitate a more intense exchange and transfer of knowledge, making DOC2025 a truly exceptional experience.

University of Stuttgart
Germany

ValBio

CONTACT

If you have any questions or would like further information about the Doctoral Colloquium, please do not hesitate to contact our Research Coordinator or Event Manager. They will be delighted to assist you and provide any necessary details to ensure your participation in this exciting event.

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Useful information

NEW BIOECONOMY STRATEGY TO DRIVE GREEN GROWTH, COMPETITIVENESS AND RESILIENCE ACROSS EUROPE

The **European Commission** unveiled its Strategic Framework for a Competitive and Sustainable EU Bioeconomy in November 2025—an ambitious roadmap designed to propel the continent towards a cleaner, more resilient, and more competitive economic model. By turning to renewable biological resources and by developing alternatives to critical raw materials, the EU aims to accelerate its shift towards a circular, low-carbon economy while reducing reliance on fossil imports.

At its core, the bioeconomy offers Europe a chance to bolster resilience, replace fossil-based products, foster job creation and position itself at the forefront of the global transition to sustainable industry. The new strategy promises support for practical, sustainable solutions across a wide range of sectors, including agriculture, forestry, fisheries, aquaculture, biomass processing, biomanufacturing and biotechnology. By tapping into Europe's vast natural resources, scientific expertise and industrial strength, the Commission hopes to spark innovations that benefit the climate, nature and society alike.

In 2023, the EU bioeconomy was valued at up to €2.7 trillion and employed 17.1 million people—around 8 % of all EU jobs. Each bioeconomy job is estimated to create three more indirectly. From algae-based chemicals used in pharmaceuticals and personal care to bio-based plastics in packaging and car components, demand for bio-derived materials is rising sharply. Construction materials, textile fibres and fertilisers made from biological resources are also gaining ground. Yet, the Commission insists, much potential remains untapped.

Figure 2: Group picture of Doctoral Colloquium BIOENERGY AND BIOBASED PRODUCTS (DOC2025).a Figure 1. Jessika Roswall, Commissioner for Environment, Water Resilience and a Competitive Circular Economy, during the presentation of the new EU Bioeconomy strategy. (© European Union, 2025, licensed under CC BY 4.0)

A key challenge is ensuring that cutting-edge research does not stay confined to the lab. Scaling up bio-based innovations, the Commission argues, requires coordinated public and private investment along with a regulatory framework that encourages circular, sustainable business models without compromising EU safety standards. Faster, simpler approval procedures for new technologies should make it easier for companies—especially SMEs—to thrive within Europe.

To keep the momentum going, the Commission plans to channel EU funding more systematically towards bio-based technologies. It also proposes creating a Bioeconomy Investment Deployment Group to develop a pipeline of viable projects, spread risk more effectively and attract private capital.

On the market side, Brussels has identified a set of high-potential sectors—from bio-based plastics and textiles to advanced fermentation, construction materials, biorefineries and biogenic carbon storage—where innovation could deliver both economic and environmental benefits. Plans include setting product-content targets in legislation and establishing a new Bio-based Europe Alliance, through which European companies would collectively commit to purchasing €10 billion worth of bio-based solutions by 2030.

SUSTAINABLE BIOMASS AND GLOBAL OPPORTUNITIES

Maintaining Europe's resilience also means ensuring a sustainable supply of biomass. Although the EU is largely self-sufficient, the Strategy underscores the need to respect ecological limits by managing forests, soils, water and ecosystems responsibly. Enhancing circularity—particularly by better using agricultural residues, byproducts, and organic waste—will be essential. The Commission also aims to reward farmers and foresters who protect soils, boost carbon sinks and support sustainable biomass use.

Internationally, Europe's strong innovation landscape provides a solid foundation for global leadership in bio-based materials and technologies. The Strategy pledges to help European industry access global markets, build diverse partnerships and avoid over-dependence on any single region or resource—an increasingly critical concern in today's uncertain geopolitical climate.

Rooted in the 2012 Bioeconomy Strategy and subsequent reviews, the new framework marks a shift towards industrial deployment, market expansion, competitiveness and long-term resilience. Above all, it signals a clear commitment: Europe intends not only to embrace the bioeconomy but to lead it.

Source: European Commission

EUROPEAN UNION'S BUDGET: A €2 TRILLION VISION FOR 2028–2034

In July 2025, the **European Commission** (EC) unveiled its ambitious plan for its **long-term budget**: nearly €2 trillion for 2028–2034, equivalent to 1.26 per cent of the Union's average gross national income. Besides the numbers, it is a statement of Europe's intent to invest in resilience, innovation, and global influence.

President von der Leyen stated: *"Our new long-term budget will help protect European citizens, strengthen Europe's social model and make our European industry thrive. In a time of geopolitical instability, the budget will allow Europe to shape its own destiny, in line with its vision and ideals. A budget that supports peace and prosperity and promotes our values is the best tool we can have during these uncertain times."*

The new budget is designed to be flexible and fast, allowing funds to be redirected in times of crisis or when priorities shift. It aims to simplify overlapping programmes, making EU funding easier for citizens, regions, and businesses to access. At the heart of the plan are national and regional partnership plans, blueprints that tailor investment to local needs — from rural development to cutting-edge technologies.

The budget places people and cohesion at the centre. Less developed regions are guaranteed minimum allocations, farmers benefit from simplified rules, and young entrants are supported. The European Social Fund Plus will continue funding employment, skills, and anti-poverty initiatives, while justice programmes ensure access to courts and respect for the rule of law.

Innovation and competitiveness are major priorities. The European Competitiveness Fund will pour money into clean energy, digital transformation, health, bioeconomy, defence, and space. Horizon Europe will continue supporting research from ideas to scale-up, while cross-border barriers are tackled through the Single Market and Customs Programme. By combining public investment with private incentives, the EU aims to make every euro count.

Resilience, defence, and global reach also take centre stage. A crisis mechanism worth up to €400 billion can be triggered during emergencies, alongside reserves to protect farmers from market shocks. Defence and security are strengthened with €131 billion in strategic investments, while migration management and border security get a major lift. The Global Europe Instrument, set at €200 billion, will fund diplomacy, partnerships, enlargement, and crisis response, including support for Ukraine.

To fund this ambitious agenda, the Commission proposes five new EU revenue streams, including emissions trading, a carbon border levy, a tax on non-collected electronic waste, tobacco duties, and contributions from large companies. These resources aim to reduce the reliance on national budgets while financing innovation, green transition, defence, and pandemic recovery.

The 2028–2034 budget aims to be a roadmap for Europe's future: strategic, resilient, and ambitious, focused on localised investment, new revenue sources, and key sectors like innovation, defence, and global partnerships.

Source: European Commission

Figure 2. Ursula von der Leyen, President of the European Commission. (© European Union, 2025, licensed under CC BY 4.0)

EUROPE AIMS HIGH WITH HORIZON EUROPE EXPANSION, BUT TENSIONS LOOM OVER RESEARCH FUNDING

The **European Commission** is aiming to enhance Europe's research and innovation landscape with its proposal for the next long-term EU budget (2028–2034), suggesting a doubling of the **Horizon Europe** programme to €175 billion. Designed to propel Europe to the forefront of technological innovation, the revamped programme promises to tackle real-world challenges—from AI supporting medical professionals, to satellites safeguarding agriculture, and to cleaner, smarter ways of moving, living, and working.

Ekaterina Zaharieva, Commissioner for Startups, Research and Innovation, highlighted the programme's ambition: *"Horizon Europe will place research and innovation at the heart of the EU economy and investment strategy. We will attract and retain talent, de-risk private investment, and empower startups, while working with Member States to meet the 3 % investment target."*

The new Horizon Europe builds on the achievements of its 2021–2027 predecessor and is structured around four pillars. 'Excellent Science' seeks to strengthen Europe's scientific base, attract top researchers, and expand the European Research Council. 'Competitiveness and Society' focuses on collaborative research in high-impact areas such as the clean transition, digital leadership, and industry. The 'Innovation' pillar supports the development of groundbreaking products and services, while the 'European Research Area' aims to unify Europe's research landscape and enhance infrastructure.

Ambitious 'moonshot projects' are also on the horizon, backed by pooled funding from EU, national, public, and private sources. These projects target frontier fields, from quantum computing and fusion energy to clean aviation, regenerative therapies, and space economy innovations.

Yet not everything is straightforward. Recent updates by the Council of the EU have cast uncertainty over two pivotal components: the Widening programme, which supports regions with weaker research performance; and Article 25, which enshrines scientific excellence as the primary evaluation criterion for grants. Both have been bracketed for review by an *ad hoc* working party, composed mainly of diplomats from finance and foreign affairs ministries rather than research specialists.

The move has sparked alarm among research lobbies and science diplomats.

As interinstitutional negotiations unfold between the European Parliament, Council, and Commission, observers caution that finance priorities may outweigh research imperatives, potentially affecting the programme's capacity to deliver on Europe's innovation ambitions. Despite these uncertainties, Horizon Europe's vision remains bold: positioning Europe as a global leader in science, innovation, and sustainable growth.

Source: European Commission / Science Business

COP30: GLOBAL CLIMATE TALKS FALL SHORT ON FOSSIL FUEL PLEDGES

The United Nations (UN) climate summit **COP30** in Belém, Brazil, concluded in November 2025 with a deal that **makes no direct mention of the fossil fuels** driving global warming, frustrating more than 80 countries, including the European Union (EU), which had pushed for faster cuts to oil, coal, and gas.

Oil-producing nations, however, insisted on the right to continue exploiting their fossil fuel resources to grow their economies. The summit comes as the UN warns that global efforts to limit warming to 1.5°C above pre-industrial levels are falling short.

Colombia's climate delegate, Daniela Durán González, criticised the COP presidency for not allowing countries to object to the deal during Saturday's plenary formally. *"Colombia believes we have sufficient scientific evidence showing that more than 75% of global greenhouse gas emissions come from fossil fuels," she said. "It's time that the Convention on Climate Change starts talking about that reality."*

The final agreement, known as the Mutirão, instead encourages countries to accelerate reductions in fossil fuel use voluntarily.

Figure 3. Opening of the 30th Conference of the Parties to the United Nations Convention on Climate Change (COP30). (© Ricardo Stuckert / PR, 2025, licensed under CC BY-ND 4.0)

For the first time, the US did not send a delegation after President Donald Trump announced the country would withdraw from the 2015 Paris Agreement, which committed nations to tackle climate change. Veteran negotiator Jennifer Morgan, former German climate envoy, explained that Trump's absence left a *"hole"* in negotiations. *"In a 12-hour overnight negotiation, when oil-producing countries push back hard, not having someone counteracting that made it very difficult,"* she said.

Despite the setbacks, many countries welcomed that the talks did not collapse or undermine existing climate commitments. Saudi Arabia, echoing other major oil producers, stressed that each state must pursue its own path based on its circumstances and economy.

The outcome leaves the global climate effort intact but under pressure, with voluntary pledges on fossil fuels likely insufficient to meet urgent temperature goals.

ANAEROBIC DIGESTION, AT THE HEART OF CLIMATE POLICY

Global data unveiled at COP30 in Brazil has delivered a sobering update: CO_2 emissions from fossil fuels are rising yet again, with levels projected to reach 38.1 billion tonnes in 2025. Despite years of climate pledges, the world is still struggling to cut emissions quickly enough. Yet the picture isn't entirely bleak. Renewables have now overtaken fossil fuels in global electricity generation, and when land-use changes are included, overall greenhouse gas emissions are expected to dip slightly next year.

This mix of progress and setbacks is drawing fresh attention to anaerobic digestion (AD) and the biogas it creates. As highlighted at COP30 by Charlotte Morton OBE of the World Biogas Association, AD stands out because it turns organic waste into heat, electricity, biomethane and even transport fuels—while also supplying biogenic CO_2 for industry and horticulture. Crucially, it prevents methane from escaping from food waste, farms and landfills, a vital step given methane's far greater short-term warming impact.

However, Morton warned that outdated guidance in the Greenhouse Gas Protocol is holding the sector back by failing to fully recognise biomethane in market-based systems—a core issue behind the Let Green Gas Count campaign. This, she argued, is slowing investment in projects that could be cutting methane today. Companies like HRS Heat Exchangers support calls for AD to play a far bigger role, emphasising that plants must also operate with high energy efficiency to strengthen environmental benefits and attract investors.

As COP30 made clear, tackling methane swiftly is essential to meeting global climate goals. With its ability to cut emissions, generate clean energy and recycle valuable nutrients back into soils, anaerobic digestion is fast-moving from niche technology to a cornerstone of effective climate strategy.

Source: BBC / Industria Química

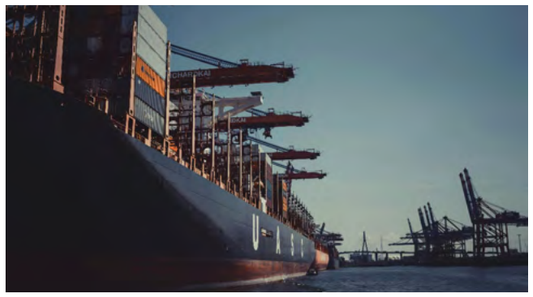
SHIPPING ENTERS DECISIVE PHASE AS NEW DNV FORECAST CHARTS THE PATH TO 2050

Shipping's energy transition is gathering pace, with strategic investment, growing fleet readiness and fresh regulatory developments marking a new chapter for the industry. That is the message from the ninth edition of DNV's Maritime Forecast to 2050, published after the formal adoption of the International Maritime Organisation's Net-Zero Framework (NZF), and when the number of vessels capable of running on alternative fuels is set to almost double by 2028. For shipowners, the moment for preparation appears to be giving way to one of practical action.

The new forecast offers an in-depth analysis of the fuels, technologies and regulations shaping the next decades of global shipping, aiming to help decision-makers navigate an increasingly complex transition. Crucially, it highlights several pathways that could close the gap between a fleet rapidly gearing up for low-emission operations and an energy market struggling to supply the necessary fuels. Among them is the pragmatic use of existing infrastructure to roll out lower-GHG options such as biodiesel and bio-LNG, supported by more flexible models for chains of custody — an approach that could ease access while encouraging both production and uptake.

Energy-efficiency measures on newbuilds are also becoming widespread, cutting emissions immediately without relying on new infrastructure or supply-chain overhauls. At the same time, onboard carbon capture appears to be gaining momentum, particularly on large vessels with the space to accommodate the equipment. DNV's modelling suggests that installing CO_2 offloading facilities at just 20 major ports could enable the removal of up to 75 million tonnes of captured CO_2 each year — potentially offsetting the need for around 25 Mtoe of low-GHG fuels, roughly the volume required to meet the IMO's 2030 baseline target.

Wind power may also be poised for a resurgence. DNV points to 2025 as a potential breakthrough year for maritime wind energy, with wind-assisted propulsion systems seeing broader commercial uptake.



According to shipowners, operators and technology developers, these systems can reduce fuel consumption by between 5 % and 20 % on certain vessel types.

By 2030, the alternative-fuel-ready fleet could be capable of consuming up to 50 million tonnes of oil equivalent in low-GHG fuels annually — twice the amount needed to hit the IMO's 2030 emissions target, DNV notes. Yet current consumption stands at just 1 Mtoe. The widening gulf between capability and actual use underscores not only the scale of industry commitment but also the urgent need for fuel producers and infrastructure developers to accelerate supply. Without matching progress on the energy side, the sector's growing readiness risks outpacing the availability of the very fuels needed to power its transition.

Source: DNV

FOLLOWING ITS RE-ASSOCIATION PROCESS, SWITZERLAND BECOMES THE 22ND NON-EU COUNTRY TO BECOME A FULL MEMBER OF HORIZON EUROPE

Switzerland has officially signed the EU Programmes Agreement (EUPA), securing full association with Horizon Europe, Euratom, and Digital Europe, with retroactive effect from 1 January 2025. The agreement was signed in Bern on 10 November 2025 by Federal Councillor Guy Parmelin and EU Commissioner Ekaterina Zaharieva.

The accord takes provisional effect immediately, restoring Switzerland's right to apply for, receive, and coordinate EU-funded projects under these flagship research and innovation programmes.

Since 2021, Swiss organisations have taken part in most Horizon Europe calls as "associated partners," with their costs covered directly by the State Secretariat for Education, Research and Innovation (SERI) and supplemented by transitional support from the Swiss National Science Foundation (SNSF) and Innosuisse. With the EUPA now in place, these temporary arrangements are replaced by standard EU funding and governance, simplifying administration and restoring full parity with participants from EU and associated countries.

With Switzerland joining, there are now 22 non-EU countries formally associated with Horizon Europe, including Albania, Armenia, Bosnia and Herzegovina, Canada, the Faroe Islands, Georgia, Iceland, Israel, Kosovo, Moldova, Montenegro, North Macedonia, Norway, Serbia, Tunisia, Türkiye, Ukraine, the United Kingdom, New Zealand, Egypt, and the Republic of Korea.

Country	Estatus	Date of Association / Agreement	Scope of Participation	Notes
Albania	Associated	Nov 2021	Full programme	Western Balkans group
Armenia	Associated	Nov 2021	Full programme	Eastern Partnership
Bosnia and Herzegovina	Associated	Dec 2021	Full programme	—
Canada	Associated	Jul 2024 (retroactive to Jan 2024)	Pillar II only	First North American country to join
Faroe Islands	Associated	2021	Full programme	Linked via Denmark
Georgia	Associated	Nov 2021	Full programme	Eastern Partnership
Iceland	Associated	2021	Full programme	EEA member
Israel	Associated	Dec 2021	Full programme	Long-standing cooperation with EU
Kosovo	Associated	2021	Full programme	Western Balkans group
Moldova	Associated	Nov 2021	Full programme	Eastern Partnership
Montenegro	Associated	2021	Full programme	Western Balkans group
North Macedonia	Associated	2021	Full programme	Western Balkans group
Norway	Associated	2021	Full programme	EEA member
Serbia	Associated	2021	Full programme	Western Balkans group
Tunisia	Associated	2021	Full programme	First African country to join
Türkiye	Associated	Oct 2021	Full programme	Successor to Horizon 2020 participation
Ukraine	Associated	Jun 2022	Full programme	Participation maintained during wartime
United Kingdom	Associated	Dec 2023 (effective Jan 2024)	Full programme (except Innovation Fund)	Post-Brexit re-association
New Zealand	Associated	2023 (retroactive Jan 2023)	Pillar II only	First Pacific partner
Egypt	Associated	Oct 2025	Full programme	Second African country to join
Republic of Korea (South Korea)	Associated	Jul 2025	Full programme	First Asian country to join
Switzerland	Associated	November 2025	Full programme	From 2021 until this re-association, Swiss entities participated as "associated partners" with their costs covered by SERI

Table 1: Horizon Europe Association Status in December 2025. (Source: In-house production)

Several other countries are also in negotiations or discussions regarding their status:

Country	Stage	Launched / Updated	Expected Outcome	Remarks
Australia	Exploratory talks	Sep 2025	Pending negotiation mandate	Full association under discussion
Singapore	Expression of interest	Apr 2024	TBD	Early exploratory phase
Morocco	Negotiations stalled	—	Uncertain	Talks currently suspended

Table 2: Ongoing negotiations on Horizon Europe Association in December 2025. (Source: In-house production)

The growing involvement of non-EU countries in Horizon Europe offers significant benefits. By expanding this network, the programme enhances the exchange of knowledge, expertise, and resources, leading to more impactful and inclusive scientific outcomes. Strengthening these international partnerships not only bolsters Europe's role as a global research and innovation leader but also promotes shared growth and understanding beyond the continent.

Source: In-house production

EERA URGES EU TO UNLOCK LOW-CARBON POTENTIAL THROUGH NEW INNOVATION ACT

The **European Energy Research Alliance (EERA)**, Europe's largest low-carbon energy research network, has voiced strong support for the European Union's upcoming **Innovation Act**, which it sees as a crucial step toward turning scientific breakthroughs into practical solutions for a climate-neutral society by 2050. With over 250 leading organisations from more than 30 countries, EERA champions the role of research and innovation (R&I) in boosting both European competitiveness and societal well-being.

In a feedback text submitted to the European Commission, EERA welcomes the Act's ambition to tackle the persistent barriers that slow the journey from laboratory to market. Among the most pressing challenges identified are insufficient strategic investment, the need to de-risk industrial technologies, regulatory and market obstacles, skills mismatches, limited access to research infrastructures, and the fragmented governance of Europe's R&I ecosystem.

To overcome these hurdles, EERA urges the Innovation Act to place low-carbon energy research at the heart of its agenda, explicitly recognising its pivotal role in enhancing EU competitiveness, strategic autonomy, and resilience. The Alliance also advocates for the creation of integrated innovation ecosystems that bring together research institutions, industry, governments, and societal stakeholders. These ecosystems, EERA argues, could coordinate joint R&I and industrial roadmaps, support industrial-scale pilots, and host living labs for higher-risk innovations—essentially providing the scaffolding for faster commercialisation and deployment of new technologies.

On financing, EERA broadly supports the European Commission's push to mobilise private capital and leverage public procurement to accelerate the uptake of near-market solutions. Yet, the Alliance cautions against concentrating funding solely on the final stages of technology readiness. Sustained investment across all stages is critical to keeping the innovation pipeline flowing and ensuring new ideas continue to emerge.

EERA also highlights the need for improved access to research infrastructures, particularly for SMEs, where administrative burdens and high costs remain significant barriers. It calls for pan-European "one-stop shops" to streamline access, targeted funding to ensure fairness, and clear, user-friendly guidance to help innovators navigate these facilities.

Finally, EERA stresses the importance of aligning the Innovation Act with other major EU initiatives, including the **European Strategic Energy Technology Plan (SET Plan)** and the forthcoming **European Research Area (ERA)** Act. Clear links to the ERA Pillar IV under Horizon Europe's Framework Programme 10, EERA suggests, will be vital for better coordination, cross-sector collaboration, and overall policy coherence.

In EERA's view, the Innovation Act represents a unique opportunity for Europe to strengthen its innovation landscape, ensuring that low-carbon technologies not only survive in the lab but thrive in the market—and ultimately, in society at large.

Source: European Commission

THE EU'S INNOVATION CHALLENGE: A YEAR AFTER DRAGHI'S REPORT

It's been almost a year since former Italian Prime Minister **Mario Draghi** shook the European Union with his 401-page economic report, laying bare the bloc's lag behind the US and China, particularly in digital technologies. Back then, few doubted Europe's relative weakness, but Draghi's meticulous chronicle of decline made the urgency impossible to ignore—and set the European Commission's competitiveness agenda for the year.

Today, the gaps Draghi highlighted seem even wider. Recent deals, such as Brussels' agreement to buy hundreds of billions of euros of US fossil fuels and $40 billion of AI chips, underscore the EU's technological and strategic dependence on Washington. Draghi himself says the lessons from his report are *"even more urgent"* now. Yet he still sees a glimmer of hope: with the US less attractive for start-ups under Trump's administration, Europe might finally retain some of its brightest minds.

FRAMEWORKS, FUNDS, AND THE QUEST FOR DISRUPTION

Draghi's report called for a bold reshaping of Europe's research and innovation Framework Programmes. The proposed FP10, due in 2028, responds to some recommendations but falls short in key areas. While the Commission pledges to cut bureaucracy and offer more flexibility for applicants, waiting times for grants remain painfully long. FP10's budget is projected at €175 billion—well below Draghi's suggested €200 billion, and likely to shrink further once member states negotiate.

One of Draghi's most pointed critiques concerned Europe's fragmented research landscape. He urged the creation of world-leading centres of excellence and the establishment of a regime to attract top researchers. So far, progress is uneven. Schemes like the €500 million Choose Europe initiative aim to lure talent from the US, but funding is short-term and dependent on universities picking up the slack. Coordinating national research spending remains a political challenge, meaning Europe still risks spreading resources too thinly to produce truly disruptive innovation.

Figure 4. Mario Draghi, former European Central Bank President © European Union 2011 PE-EP/Pietro Naj-Oleari, licensed under CC BY-NC-ND 2.0)

The European Innovation Council (EIC), Draghi's preferred instrument for change, is set for a budget boost of nearly 140 % under FP10. Planned initiatives like Advanced Innovation Challenges echo his recommendations, giving teams up to €2.5 million to prototype cutting-edge technologies. Yet questions remain about the council's capacity: with only ten programme managers, can it make strategic decisions across the EU's diverse fields of innovation? Early signs suggest FP10 may grant the EIC more autonomy and independence, but concrete details are scarce.

A year after Draghi's wake-up call, Europe is moving—but cautiously. The bloc is taking steps to back early-stage, high-risk technologies, and to simplify frameworks. Yet on funding, institutional concentration, and coordination, much of the heavy lifting remains ahead. As Draghi warned, a continent aiming for geopolitical and economic clout cannot afford to miss the technological wave—and Europe is still learning to surf.

Source: Science Business

VON DER LEYEN EMPHASISES THAT EUROPE'S INDEPENDENCE DEPENDS ON INNOVATION DURING HER SPEECH ON THE STATE OF THE EUROPEAN UNION

"Europe's ability to stand on its own feet will depend on how fast it can innovate", European Commission President Ursula von der Leyen declared in her annual State of the European Union address—an hour-and-a-half speech that placed research, technology and competitiveness firmly centre stage.

Speaking to MEPs in Strasbourg, von der Leyen warned that Europe is entering *"turbulent times,"* in which geopolitical tensions and technological rivalries are reshaping the global landscape. *"We have seen how dependencies can be used against us,"* she said. *"This is why we will massively invest in digital and clean tech."*

At the heart of the Commission's plans is a new Competitiveness Fund and a proposal to double the budget of Horizon Europe, the EU's flagship research and innovation programme. The goal, she stressed, is nothing short of an *"independence moment"* for Europe—one in which the continent can safeguard its own defence, secure the technologies that power its industries and chart a sustainable economic future.

Von der Leyen also revisited the findings of the Draghi report, which highlighted chronic barriers holding Europe back in areas such as energy, investment and capital flows. She pointed to a forthcoming initiative to cut red tape—potentially saving companies €8 billion a year—as part of a broader effort to make Europe a more competitive, business-friendly environment. Minutes after her speech, MEPs approved a resolution urging even stronger action, warning that without sweeping reforms, the EU risks sliding behind global rivals.

A fully functioning Single Market remains central to Brussels' agenda. Von der Leyen announced that the Commission will present a *"Single Market roadmap to 2028,"* aimed at dismantling long-standing barriers in finance, energy and telecommunications. She also confirmed plans for a *"28th regime"*—a unified rulebook designed to help companies scale across borders without navigating 27 different national legal systems.

In a significant move, she called for a new *"fifth freedom"* for Europe: the free circulation of knowledge and innovation, placing researchers, data and ideas on equal footing with goods, services, capital and people.

To stop Europe's most promising start-ups from looking overseas for capital, the Commission will launch a multi-billion euro Scaleup Europe Fund alongside private investors. Too often, von der Leyen argued, European innovators in quantum, artificial intelligence and biotechnology seek funding elsewhere—taking jobs, ideas and strategic technologies with them.

Europe's research organisations were quick to welcome the renewed focus on innovation. The Guild of European Research-Intensive Universities and the League of European Research Universities (LERU)—two of the most influential academic alliances in Brussels—both praised von der Leyen's remarks.

With another political cycle on the horizon, von der Leyen's message was unmistakable: Europe's future security, prosperity and sovereignty will depend on the choices it makes now—and on its willingness to invest boldly in the knowledge and technologies that will define the decades ahead.

COMMISSIONER JØRGENSEN BACKS BIOGASES AS EUROPE'S HOMEGROWN ENERGY SOLUTION

European Biomethane Week 2025 opened in Brussels with a clear message from EU Energy and Housing **Commissioner Dan Jørgensen:** Biogases are no longer a niche technology but a strategic pillar for Europe's future. Speaking to more than a thousand participants, he described the gathering as an opportunity to discuss *"a very important subject at a very important time"*, stressing that biomethane delivers clean energy while boosting industrial competitiveness and reinforcing Europe's security and independence. *"Biomethane provides clean energy to support the competitiveness of European industries and can strengthen our security and independence by enabling us to diversify our gas supplies with a homegrown alternative,"* he said, setting the tone for the rest of the week.

Jørgensen's intervention reflected a growing recognition that biogases offer tangible, near-term benefits at a moment when Europe's energy system is under pressure. The significance of homegrown energy was echoed by NATO's Climate and Energy Security Officer, Julijus Grubliauskas, who warned that in today's geopolitical landscape *"energy is both a target and a key enabler of defence and security"*. Ensuring strong local supply and reducing dependence on Russian gas, he argued, are essential steps for long-term stability—further reinforcing the Commissioner's call for strengthened domestic production of renewable gases.

The case for biogases extends well beyond security. Industry experts and policymakers highlighted their unique role in decarbonising sectors that are difficult to electrify, while making use of existing infrastructure and offering the most affordable renewable gas option currently available.

The Commissioner's confidence in the sector is supported by global trends. The International Energy Agency pointed to strong worldwide growth in biogas production, with Europe leading thanks to supportive policies and a mature ecosystem of companies capable of scaling up technology and investment. Denmark, represented by Minister Lars Aagaard, offered a concrete example of what long-term political commitment can achieve. With biogas accounting for around 40 % of the Danish gas system in 2024—the highest share in Europe—the country is steadily progressing towards a fully decarbonised gas network.

Yet despite the Commissioner's strong backing, industry leaders cautioned that momentum could falter without urgent action. EBA CEO Harmen Dekker warned that growth is slowing due to persistent barriers such as complex permitting, grid injection challenges, limited cross-border trade and low public awareness. Unlocking biomethane's full potential, he argued, will require *"long-term certainty, streamlined permits, broader public support, better network integration and full valorisation of digestate and bio-CO_2"*. The sector, he insisted, stands ready to work with policymakers, communities and industry partners to deliver the resilient growth and sustainability envisioned by Commissioner Jørgensen.

Source: European Biogas Association (EBA)

EU UNVEILS €2.9BN PUSH TO SCALE UP GREEN FUELS AS HEAVY TRANSPORT LAGS ON CLIMATE GOALS

The European Commission has unveiled a €2.9 billion plan to accelerate the roll-out of sustainable fuels for shipping and aviation by 2027, amid growing concern that the bloc is not on track to decarbonise heavy transport by mid-century. Aviation and maritime transport together make up more than a quarter of EU transport-sector emissions, and both remain deeply reliant on fossil fuels despite legislation intended to steer them towards climate neutrality.

Announcing the package, Commissioner for Sustainable Transport and Tourism Apostolos Tzitzikostas said the initiative aimed to shore up Europe's competitiveness while pushing forward on its net-zero commitments. *"By investing in scaling up renewable and low-carbon fuels, we are making Europe's transport system cleaner, more resilient and more affordable for citizens,"* he said.

Brussels estimates that around 20 million tonnes of sustainable fuels will be needed by 2035 to meet aviation and maritime targets — a shift that would require roughly €100 billion in overall investment. The newly announced funding, taken from the EU's multiannual budget up to 2027, will go towards technologies for renewable and low-carbon fuels, from advanced biofuels to synthetic e-fuels.

The scale of the task is stark. Under existing rules, shipping must cut its greenhouse gas emissions by 2% from 2025 compared with 2020 levels, rising to an 80 % reduction in GHG intensity by 2050. Aviation faces similarly steep requirements: from 2035, one-fifth of aviation fuel supplied at EU airports must be sustainable, with 5 % of that being e-SAF — synthetic jet fuel produced using carbon dioxide, water and renewable electricity. By 2050, 70 % of aviation fuel must be green, half of it, e-SAF. Yet available volumes of both bio-based and synthetic fuels fall far short of what will be needed after 2030, the Commission warns.

Industry groups broadly welcomed the funding but underscored the urgency of reducing costs. Airlines for Europe (A4E) stressed that mandates alone cannot create a viable market for sustainable aviation fuels. *"It is high time we collectively admit that and take action to accelerate affordable SAF,"* said managing director Ourania Georgoutsakou, arguing that cost reductions are vital if air travel is to remain accessible while keeping European carriers competitive.

The picture is mixed for producers. More than 40 e-fuel projects are currently at the planning stage within the EU, but none have yet secured a final investment decision. High costs, the need for abundant renewable electricity and the complexity of carbon-capture technologies continue to hinder progress.

For maritime operators, the funding marks a positive but preliminary step. The World Shipping Council said bridging the cost gap between renewable marine fuels and conventional bunkers will be essential to prevent production and uptake from stalling, despite significant fleet investments already undertaken.

As the EU races to meet its legally binding 2050 climate-neutrality target, the coming years will reveal whether this injection of funding is enough to spark a genuine market for the cleaner fuels needed to transform Europe's hardest-to-abate transport sectors.

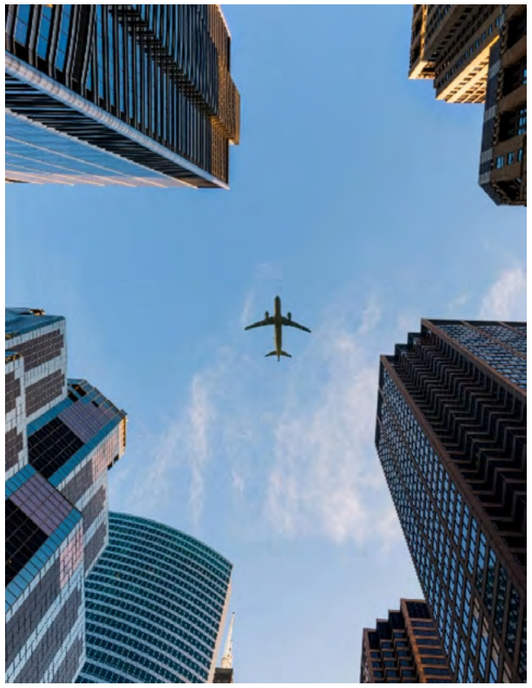
Source: EuroNews

SUSTAINABLE AVIATION FUEL FACES AN UNEXPECTED HURDLE WITH TECHNOLOGY

While the aviation industry looks towards a greener future, a new report from the International Air Transport Association (IATA) reveals that the main barrier to scaling up sustainable aviation fuel (SAF) isn't a shortage of feedstock, but the slow rollout of the necessary technology.

The study, produced in collaboration with Worley Consulting and titled Global Feedstock Assessment for SAF Production – Outlook to 2050, confirms that there is enough feedstock to achieve net zero emissions by 2050 without changing land use. The challenge lies in the lack of large-scale facilities to convert this feedstock into SAF.

Currently, HEFA technology, which transforms used cooking oil into SAF, is the only production method in operation. While it will continue to play a role, other technologies are expected to accelerate the aviation sector's journey to carbon neutrality. Biomass, for instance, could produce over 300 million tonnes of bio-SAF annually by 2050. The report notes that this potential could grow further through unlocking additional feedstocks or improving efficiency and technology over the coming decades.



In addition, power-to-liquid (PtL) fuels, which rely on large-scale access to renewable energy, hydrogen, and carbon capture infrastructure, will be essential to reach 500 million tonnes of SAF production annually by 2050.

The IATA calls for action on multiple fronts: strengthening feedstock supply chains, enhancing conversion efficiencies, scaling up new production methods, and aligning investment between governments and the private sector. Regions such as North America, Brazil, Europe, India, China, and the ASEAN countries have been identified as "key drivers" of global SAF output.

In short, the ingredients for cleaner skies are already there – it's the technology that needs to catch up, according to the report.

Source: International Air Transport Association (IATA)

EUROPEAN PARLIAMENT SUPPORTS SIMPLIFICATION MEASURES ON THE DEFORESTATION LAW

The Members of the European Parliament (MEPs) voted to streamline the **European Union's landmark deforestation law**, originally adopted in 2023 to ensure that products sold within the bloc are not tied to forest destruction. The European Parliament endorsed a package of targeted adjustments designed to simplify the implementation of the EU Deforestation Regulation for companies, international partners, and authorities both within and outside the EU. The decision follows the move to fast-track the Commission's latest proposal.

Under Parliament's position, all companies would be granted an additional year to comply with the new rules designed to curb deforestation. Large operators and traders would need to meet the requirements from 30 December 2026, while micro- and small enterprises would follow from 30 June 2027. Lawmakers say the extra time is necessary to ensure a smooth transition and to allow for improvements to the IT system used for electronic due diligence submissions.

MEPs also discuss that the responsibility for submitting a due diligence statement should rest with the businesses that first place a product on the EU market, rather than with operators and traders further down the supply chain. For micro and small primary operators, the burden would be reduced even further, limiting their obligation to a one-off simplified declaration. Parliament has also called for a review by April 2026 to assess the regulation's administrative impact and identify opportunities for further simplification.

The updated text was approved with 402 votes in favour, 250 against and eight abstentions. Parliament is now preparing to open negotiations with EU member states to determine the final shape of the law. For the one-year delay to take effect, the regulation must be endorsed by both Parliament and the Council and published in the EU's Official Journal before the end of 2025.

The law at the centre of these changes was adopted in April 2023 to reduce the EU's role in global deforestation, a major driver of climate change and biodiversity loss. It covers products such as cocoa, coffee, palm oil, soya, timber, rubber, charcoal, printed paper and cattle-related goods. The UN Food and Agriculture Organisation estimates that 420 million hectares of forest — an area larger than the entire EU — were lost between 1990 and 2020. Approximately 10 % of global deforestation is attributed to EU consumption, with palm oil and soy accounting for more than two-thirds of this impact.

Source: European Parliament

Publications

Opportunities for innovation in the bioeconomy

PDF

European Environment Agency (EEA)

This briefing by the European Environment Agency (EEA) presents high-potential bio-based innovations to support the forthcoming update of the EU bioeconomy strategy, while also informing wider EU climate and biodiversity goals and related national and regional strategies. Drawing on data from European and international institutions, it highlights that Europe's resource use exceeds its domestic biocapacity, identifies key sectors—such as construction, food and transport—that generate significant environmental pressures yet offer sustainable bio-based opportunities, and showcases 23 promising innovations that could reduce fossil dependence and other impacts.

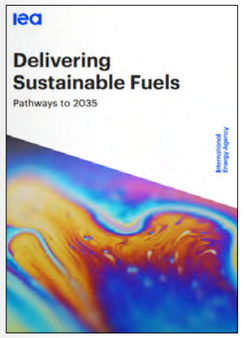
Can Horizon Europe help to close the competitiveness gap?

PDF

Joint Research Centre (JRC) Publications Repository

The report by the European Commission's Joint Research Centre (JRC) analyses the reasons why the European Union's Horizon Europe programme and its predecessors have failed to reduce the competitiveness and productivity gap between the United States and the European Union. In the case of collaborative projects, which receive most of Horizon's funding, only a temporary impact on beneficiary companies has been observed. According to the report, this is likely due to the excessive size of the consortia (often more than twenty entities). Only the relatively small portion of funding allocated to single beneficiaries, such as the Horizon 2020 SME programme and the European Innovation Council, shows a positive long-term impact on beneficiary companies.

Delivering Sustainable Fuels



PDF

International Energy Agency (IEA)

The International Energy Agency (IEA) report, prepared in support of Brazil's COP30 Presidency and its Climate Action Agenda, analyses sectoral pathways to accelerate the deployment of sustainable liquid and gaseous fuels by 2035. It summarises accumulated policy experiences, identifies technological and infrastructural requirements, and highlights benefits beyond emissions reductions.

According to the report, if current and proposed national and international policies are fully implemented, the use of these fuels could nearly double by 2030 and quadruple by 2035 compared to 2024 levels.

Achieving this progress requires a shared global approach, policies that reduce the cost gap with conventional fuels, innovation to expand production, robust carbon accounting methodologies, long-term investment in infrastructure, and more accessible financing, especially in emerging and developing economies.

10 citizens' visions on socially inclusive bioenergy actions for the implementation of the integrated European Strategic Energy Technology plan (SET Plan)

PDF

ETIP Bioenergy

This report by ETIP Bioenergy presents ten citizen-generated visions for a socially inclusive bioenergy future within the framework of the Integrated European Strategic Energy Technology Plan, drawing on workshops held in Austria, Italy, Bulgaria and Sweden, where 87 participants explored how bioenergy might shape life in 2055. Across countries, citizens imagined community-centred, regulation-supported and biodiversity-friendly energy systems; expanded use of agricultural, forestry and urban residues; stronger cooperation between institutions and citizens; and innovations such as automated biomass collection, advanced bio-crops, AI-based sustainability guidance, and diversified land use.

Sustainable Transport Investment Plan

PDF

European Commission

The European Commission adopted its communication on the Sustainable Transport Investment Plan (STIP), setting out a pivotal roadmap to rapidly accelerate the energy transition in aviation and waterborne transport sectors. A key component of the EU Competitiveness Compass and the Clean Industrial Deal, this initiative provides for the first time a common approach to boost investments in renewable and low-carbon fuels for these sectors.

The Investment Plan responds to the urgent need to unlock investments and scale up production of renewable and low-carbon fuels. To meet the fuel targets set out in the ReFuelEU Aviation and FuelEU Maritime Regulations, a significant volume of around 20 million tonnes of sustainable alternative fuels (13.2 Mt of biofuels and 6.8 Mt of e-fuels) will be needed by 2035. This calls for substantial investments from the market, with an estimated €100 billion required by 2035 to drive production.

By accelerating the production of EU-made sustainable fuels, Europe can significantly boost its competitiveness, reduce its energy dependency on fossil fuels and lead this industrial transition on the way to reaching climate neutrality by 2050. Europe is already a global leader and holds most of the know-how and industrial leadership in this sector.

Bioeconomy Strategy Development in Horizon Europe Associated Countries

PDF

Joint Research Centre (JRC) Publications Repository

This report describes the bioeconomy policy developments in Albania, Armenia, Bosnia and Herzegovina, Georgia, Kosovo, Montenegro, North Macedonia, Moldova, Serbia, Türkiye and Ukraine, associated with the Horizon Europe Framework Programme. The work extends the geographic coverage of the existing Bioeconomy Country dashboard developed by the European Commission Knowledge Centre for Bioeconomy at the Joint Research Centre. The dashboard provides comprehensive data and knowledge on the presence of national strategies, national institutions and initiatives related to bioeconomy.

The study shows growing interest and potential for national bioeconomy strategies in these countries. Six out of eleven countries already have policies in place related to the circular economy, while all eleven countries have other policy documents addressing various aspects of the bioeconomy. All countries engage in macro-regional initiatives, and businesses and non-governmental organisations actively contribute to advancing bioeconomy projects. Key recommendations include expanding macro-regional initiatives to support the development of bioeconomy strategies and increasing awareness of the bioeconomy concept to foster stakeholder engagement.

World Energy Outlook 2025

PDF

International Energy Agency (IEA)

The International Energy Agency (IEA)'s flagship report is the most authoritative source of global energy analysis and projections. Updated annually to reflect the latest energy data, technology and market trends, and government policies, it explores a range of possible energy futures and their implications for energy security, access and emissions.

The World Energy Outlook (WEO) 2025 covers the whole energy system, using a scenario-based approach to highlight the central choices, consequences and contingencies that lie ahead. It includes exploratory scenarios that flow from different assumptions about existing policies, as well as normative pathways that achieve energy and emissions goals in full. The multi-scenario approach illustrates how the course of the energy system might be affected by changing key variables, including energy policies adopted by governments worldwide.

This year's edition comes amid major shifts in global energy policies and markets, and acute geopolitical strains. Governments are reaching different conclusions about the best ways to tackle concerns about energy security, affordability and sustainability. As always, the World Energy Outlook provides unrivalled insights into the consequences of different energy policies and investment choices. An important theme in this year's WEO is the security of supply of critical minerals.

Beyond the plant: Aligning biogas projects with community needs

PDF

European Biogas Association

The European Biogas Association (EBA) report explains how Europe is advancing towards a more sustainable, competitive, and resilient economy, highlighting the growing importance of biogases—biogas and biomethane—and the need for strong local support to ensure successful projects. Drawing on expertise from stakeholders across the biogas value chain, it provides practical guidance for project developers and residents on building trust, addressing concerns, and integrating biogas and biomethane plants into their communities, demonstrating how effective engagement can create long-lasting partnerships and shared benefits. Developed by the EBA's national associations with support from BiogasWorld, the report is underpinned by technical data from the EBA Statistical Report 2024.

ReFuelEU Aviation Annual Technical Report

PDF

European Union Aviation Safety Agency (EASA)

The European Aviation Safety Agency (EASA) published the first ReFuelEU Aviation Annual Technical Report, which presents an initial overview of the supply, purchase and use of Sustainable Aviation Fuels (SAF) in the EU. In 2024, SAF accounted for only 0.6 % of the fuel supplied at airports in the Union (193 kilotonnes), avoiding 714 kilotonnes of CO☐, and a mandatory target of 2 % is set for 2025.

The report shows that 25 suppliers supplied SAF to 33 airports in 12 Member States, although five countries accounted for 99 % of the supply, almost all of which was biofuel from used oil and animal fats, with 69 % of the material coming from outside the EU. It is noted that synthetic fuels are not yet in use, and the average price of SAF was €2,085/tonne compared to €734/tonne for conventional fuel. The ReFuelEU regulation establishes the obligation to publish these reports and to comply with SAF targets, with the expectation that the EU will achieve a 6 % mandatory blend by 2030, thereby improving traceability and compliance by suppliers and air operators.

Biomethane across borders

PDF

Biomethane Industrial Partnership (BIP)

The Biomethane Industrial Partnership (BIP) commissioned Common Futures to conduct a study analysing how EU Member States compile their greenhouse gas emissions inventories for submission to the United Nations Framework Convention on Climate Change (UNFCCC). The study was prompted by concerns that cross-border trade in biomethane within the EU internal market could be hampered if the emission savings associated with imported or exported biomethane flows are not correctly reflected in the inventories used to monitor the Paris Agreement climate targets. The research examines current practices in Member States for including imports and exports of biomethane by pipeline in emissions inventories, comparing the UNFCCC approach, based on energy balances that do not account for cross-border trade, with that of the Renewable Energy Directive and the EU-ETS, which requires reporting of emission savings in the consuming country using mass balance. To this end, the Union Database will be used to track and allocate biomethane shipments to economic operators across the EU.

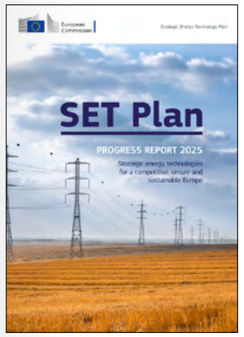
Renewable Energy Statistics 2025

PDF

International Renewable Energy Agency (IRENA)

The International Renewable Energy Agency (IRENA) provides authoritative global datasets on renewable energy through its Renewable Energy Statistics 2025, detailing power-generation capacity from 2015–2024, actual generation from 2015–2023, and renewable energy balances for over 150 countries in 2022–2023. Compiled from national statistics, IRENA questionnaires, industry and consultant reports, and news sources, the report highlights major global trends in the sector in its accompanying brief, Renewable Energy Highlights. It also includes investment data in renewables from 2014–2023, sourced from the OECD-DAC database and 16 key development financial institutions, expressed in 2022 USD million. The datasets cover the maximum net generating capacity of renewable installations (in MW) and electricity generation (in GWh), excluding pumped storage from the total renewables figures, and include historical data from 2000 onwards available for download.

SET Plan. Progress Report 2025



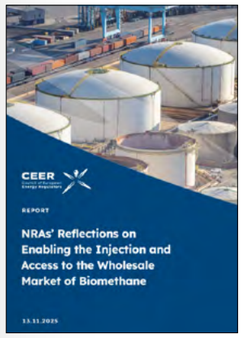
PDF

Joint Research Centre (JRC) Publications Repository

Published coinciding with the 19th Strategic Energy Technology Plan (SET Plan) conference in Odense, Denmark, this report highlights the SET Plan's role in coordinating EU and national research and innovation (R&I) agendas for a more competitive, secure and sustainable Europe, and its achievements during the last 12 months.

The 2025 SET Plan report draws extensively on input from SET Plan stakeholders, offering an opportunity to showcase their recent work, challenges, investment needs, expectations, and growth opportunities. Of the nearly 200 SET Plan activities this year, approximately a quarter have already achieved significant success and produced tangible results.

NRAs' Reflections on Enabling the Injection and Access to the Wholesale Market of Biomethane



PDF

Joint Research Centre (JRC) Publications Repository

The CEER's "Regulators' Reflections on Enabling the Injection and Access to the Wholesale Market of Biomethane" report offers a smart take on how nine EU countries are tackling the regulatory challenges of injecting biomethane into gas grids and allowing it to trade on wholesale markets. It digs into how different nations handle network access, connection fees, cost-sharing, tariff discounts, and trading rules (especially Guarantees of Origin), highlighting both common hurdles and promising practices. Some countries use "virtual" trading points so biomethane injected at lower-pressure distribution networks can still reach big wholesale markets; cost-sharing is often used to split upfront infrastructure costs; and while many places offer full tariff discounts for biomethane's entry, there's variation when support schemes already exist. The report also flags the need for better cross-border trading via linked Guarantees of Origin systems and sustainability proofing, urging more harmonised, transparent regulations and close cooperation between regulators, operators and policymakers to scale up biomethane in a consistent, efficient way.

Save the date! International bioenergy events

JANUARY 2026

19-20 January 2026
International Conference on Renewable Mobility
Berlin, Germany

21-23 January 2026
Central European Biomass Conference (CEBC 2026)
Graz, Austria

28 January 2026
II BioCircular Summit
Madrid, Spain

28-29 January 2026
Berlin Conference on Waste Management and Energy (BKAWE)
Berlin, Germany

FEBRUARY 2026

11-12 February 2026
Bio360 Expo
Nantes, France

24-26 February 2026
DeCarbon Copenhagen 2026
Copenhagen, Denmark

25-26 February 2026
Lignofuels 2026
Helsinki, Finland

MARCH 2026

11-12 March 2026
Sustainable Fuels Global Summit (SFGS)
Rotterdam, The Netherlands

17-19 March 2026
BIOeconomy Key Enabling Technologies (BIOKET26)
Fribourg, Switzerland

18-19 March 2026
European Conference Green Marine Transport 2026
Amsterdam, The Netherlands

23-5 March 2026
International Conference on Bioenergy and Biofuels 2026
Boston, USA

25-26 March 2026
The Future of BioLNG: Europe 2026
Turin, Italy

30-31 March 2026
International Conference on Industrial Biotechnology and Bioenergy (ICIBB)
Madrid, Spain

APRIL 2026

14-15 April 2026
International Biogas Congress & Expo
Brussels, Belgium

21 April 2026
European Biomethane Trading Conference
Amsterdam, The Netherlands

21-23 April 2026
Argus Biomass Conference
London, United Kingdom

MAY 2026

18-20 May 2026
Green & Sustainable Chemistry Conference
Dresden, Germany

19-20 May 2026
International Conference on Renewable Energy Gas Technology (REGATEC 2026)
Lund, Sweden

19-22 May 2026
European Biomass Conference and Exhibition (EUBCE 2026)
The Hague, The Netherlands

27-28 May 2026
Annual Biogas & Biomethane World Summit
Amsterdam, The Netherlands

JUNE 2026

1-3 June 2026
International Conference on Renewable Resources & Biorefineries
Leuven, Belgium

2-4 June 2026
International Fuel Ethanol Workshop & Expo (FEW 2026)
St Louis, USA

15-17 June 2026
Sustainable Aviation Futures
Amsterdam, The Netherlands

25-26 June 2026
International Conference on Biofuels and Bioenergy
Edinburgh, United Kingdom

EERA Bioenergy in Europe

Table 1. Full members of the EERA Bioenergy Joint Programme.

Aalborg University Department of Energy Technology (Denmark)	**BERA** Belgian Energy Research Aliance (Belgium)	**CEA** French Alternative Energies and Atomic Energy Commission (France)
CIEMAT Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (Spain)	**CNR** Istituto Motori del Consiglio Nazionale delle Ricerche (Italy)	**CRES** Center for Renewable Energy Sources and Saving (Greece)
CSIC Agencia Estatal Consejo Superior de Investigaciones Científicas (Spain)	**DBFZ** Deutsches Biomasseforschungszentrum gemeinnützige GmbH (German Biomass Research Center gGmbH)	**ENEA** Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Italy)
I2E3-UQTR Institute of Innovations on Eco-materials, Eco-products and Eco-Energy, University of Quebec at Trois-Rivières (Canada)	**IEN** The Institute of Power Engineering (Poland)	**KIT** The Research University in the Helmholtz Association (Germany) **KIT / BIOLIQ**
LNEG Laboratório Nacional de Energia e Geologia (Portugal)	**NTNU** Norwegian University of Science and Technology (Norway)	**PSI** Paul Scherrer Institut (Switzerland)
SINTEF (Norway)	**TNO** (Netherlands)	**TÜBITAK** Scientific and Technological Research Council of Turkey (Turkey)
TU/e Eindhoven University of Technology (Netherlands)	**UKERC** UK Energy Research Centre **ASTON UNIVERSITY** **SUPERGEN Bioenergy Hub** (United Kingdom)	**UNIBO** Universitá di Bologna (Italy)
UPV/EHU University of Basque Country (Euskal Herriko Unibertsitatea) (Spain)	**VTT** Technical Research Centre of Finland Ltd (Finland)	**WUR** Wageningen University & Research (The Netherlands)

Table 2. Associate members of the EERA Bioenergy Joint Programme.

Agricultural University of Plovdiv (Bulgary)	**CNRS** Centre National de la Recherche Scientifique (France)	**CoLAB BIOREF** Collaborative Laboratory for the Biorefineries (Portugal)
Energy Agency of Plovdiv (Bulgaria)	**ETA-Florence Renewable Energies** (Italy)	**FCiências.ID** Associação para a Investigação Desenvolvimento de Ciências (Portugal)
IFK Stuttgart Institute of Combustion and Power Plant Technology (Germany)	**NIC** National Institute of Chemistry (Slovenia)	**RE-CORD** Renewable Energy Consortium for Research and Demonstration (Italy)
UNICT Università degli studi di Catania (Italy)	**UNIMORE** University of Modena and Reggio Emilia (Italy)	**UNIPD** Università degli Studi di Padova (Italy)

UNITO Università di Torino (Italy)	**UNL** Universidade NOVA de Lisboa, Faculdade de Ciências e Tecnologia (Portugal)	**WIP** WIP Renewable Energies (Germany)
VŠB Technical University of Ostrava (Czech Republic)		

EERA Bioenergy in Europe

EERA Bioenergy is open to new complementary RTD organisations.
Please contact the Joint Programme Secretariat for further details at secretaria@bioplat.org

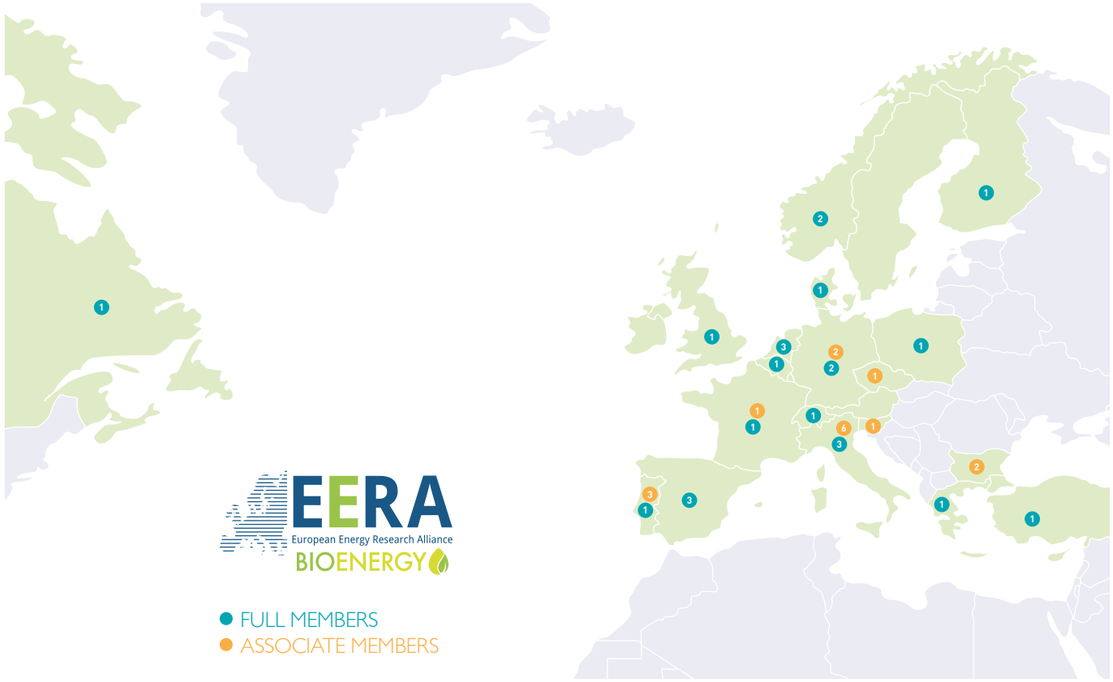


Figure 1: The EERA Bioenergy Joint Programme consists of 40 members (24 Full members and 16 Associate members) from a total of 19 countries. Link

www.eera-bioenergy.eu

Contacts

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