Bioenergy as a function of the Bioeconomy: Challenges, Potentials, Perspectives in the Danube Region
The Central European Initiative (CEI) was established in 1989 as the first intergovernmental forum promoting regional cooperation in Central, East and South-East Europe.

The CEI has now 18 Members, spreading from the Adriatic to the Black Sea and the Baltic, with a population of more than 240 million

✓ 10 are EU Member States
✓ 8 are at different levels of relationship with the EU
✓ CEI Members might be very different, but consolidated a shared vision and a common mission

✓ Since 1996, CEI has its operational arm in the Executive Secretariat established in Trieste with the status of an International Organisation

The CEI operates flexibly to promote intergovernmental, inter-parliamentary and business cooperation, and is committed to supporting EU integration through collaboration among its Member Countries and with the EU, international and regional organisations.
Regional Cooperation for European Integration

while providing

A Bridge between Macroregions

Overlapping membership

1 within the EUSBREUSDR
13 out of 14 Countries encompassed by the EUSDR
7 countries in common with the EUSAIR

CEI approach to regional cooperation pivots of four objectives

✓ Support EU integration of CEI Member Countries
✓ Promote the alignment to EU standards and the Acquis
✓ Translate constructive ideas into innovative results
✓ Implement small and medium-sized projects
The CEI is committed to supporting the implementation of macro-regional strategies as well as in the neighbourhood dialogue and enlargement.

**Coinciding themes and goals:**

10 areas of cooperation, grouped in 3 thematic pillars:

- **Towards a Knowledge-based Society;**
- **Towards a Sustainable Economy and Development;**
- **Towards an Inclusive Society**

The CEI Plan of Action 2014-2016 prioritizes **Energy Efficiency and Renewable Energy**, with a focus on **Advanced Biofuels** and the **Bioeconomy**.
The CEI is not only a platform for political dialogue: we developed a specific methodology, combining *multilateral diplomacy and project management*.

Noticably, we are engaged in projects both as *BENEFIARIES*, when participating to EU projects, and as *DONORS*, through our dedicated instruments:

- **the Know-How Exchange Programmes**
- **the CEI Cooperation Fund**
- **the CEI Trust Fund at the EBRD**

The CEI is a proxy to involve a growing number of partners from the region in EU-funded projects:

*also in the field of R&I and with a more recent focus on bioenergy and the bioeconomy*.

For more information about CEI funding opportunities, please visit our website: [www.cei.int](http://www.cei.int)
Challenges
The Bioeconomy encompasses those parts of the economy that use renewable biological resources from land and sea to produce food, bio-materials, bio-energy and bio-products (EU Bioeconomy Strategy, 2012)

Bioenergy used to be much emphasized, yet the new circular economy approach is moving biofuels more to the background.
Replacing fossil raw materials with biological resources is an indispensable component of a forward-looking climate change policy ("Agenda for Jobs, Growth, Fairness and Democratic Change")

However, bioenergy is still a fundamental contributor to energy security, economic growth and job-creation, being at the intersection of several EU policies, strategies and programmes.

So, not necessarily bad news!

Re-prioritization does not imply that the bioenergy sector cannot grow into a key economic driver, yet it requires appreciating the opportunities in a broader context. An integrated approach that encompassed a variety of socio-economic and environmental considerations would multiply benefits. Keeping in mind that priority shall be given to most advanced sustainable solutions!
In the circular perspective, only the residues that cannot be further reused of recycled shall be used for energy purposes.

How does this apply to the specific context of the Danube Region?
Potentials
S2BIOM
Sustainable supply of non-food biomass to support a “resource-efficient” Bioeconomy in Europe

Funding programme: FP7
Funding volume: > 5 Mio
Duration: 40 Months (09/2013 – 11/2016)
Participation: 31 Partners from 16 countries

www.s2biom.eu

This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 608622.

Within this theme, the following activities are planned:

- Provide clarity - for industry, investors and other stakeholders - on sustainability requirements for the different value chains addressed in the project and to support the future development of an agreed methodology for the calculation of environmental footprints, e.g. using life cycle assessments.

- Provide a structured overview of all elements of economic and regulatory frameworks that relate to the sustainable delivery of non-food biomass at different levels of governance across Europe (i.e. local, regional and pan-European), and to develop coherent policy guidelines (with a set of indicators) that will allow policy makers from the respective levels of policy determination to quickly appreciate the support frameworks that exist and the most efficient ways to apply them for the future use of biomass in a sustainable manner.

- Define the optimal pathways (by employing the RESOLVE model) towards a low-carbon bio-based economy that focuses on stimulating the prioritised biomass applications from 2020 up to 2030.

- Develop a vision, strategies, implementation plans and an R&D roadmap for the sustainable delivery of non-food biomass feedstocks at pan-European level.

Please contact the Project Partners or the Helpdesk for further information.
Overview of S2BIOM

**OBJECTIVES**

- Secure indigenous and sustainable biomass supply to meet targets for 2020 and beyond (2030)
- Policy and implementation of sustainability criteria
- Support and financing (public and private investment) for biomass deployment
- Access to consistent information on sustainable biomass supply

**KEY OUTPUTS**

- **COHERENT DATASETS FOR NATIONAL STATISTICS AND REPORTING OBLIGATIONS**
- **Benchmarking, capacity building, transfer of knowledge and engagement of stakeholders**
- **Strategies, Action Plans and implementation case studies in collaboration with industry**
- **User friendly web based toolbox with open access to public**

The CEI is engaged in designing and implementing a set of case studies to validate data on biomass availability, and assess the applicability of measures proposed beyond EU28.
The Tool will be S2BIOM heritage, the deliverable that stakeholders could access and use over time. This is a working version, not yet accessible; but the beta version is coming soon...
Serbia committed to a 27% RES target in gross final energy consumption in 2020, with a 10% share in RES-T (≈245 ktoe).

The economy of Vojvodina is largely based on agriculture and food industry (84% agricultural land). The region is well connected with neighbouring countries and benefits from Danube logistics; it also has a strong industrial background, also in the conventional fuels sector. Regional authorities are committed to sustain the development of RES, including the valorization of agricultural residues.

However, investments in this sector are lagging behind due to market and regulatory uncertainties. Installed biodiesel capacities are currently not exploited, while relying on imports. Unfavourable climate is determined, among other factors, by uncompetitive taxation and lack of incentives.

The relevant sustainable biomass potential therefore still remains largely unutilized, is used as solid fuel for renewable heating or exported. The conjuncture seems to favour conversion of district heating installations as well as production of biogas.

Residues of corn cultivation are among most promising sources of sustainable biomass in the region, with approx. 450,000 t/y of dry matter. Cereal straw and other residues add 150,000 t/y.
Ukraine is the second largest country in Europe (>600,000 km² of which ≈70% agricultural land) with a population of 45.5 million. Owing to high energy intensity, it is one of the largest energy markets.

Ukraine is a net energy importer (>30% of TPES), therefore RES have been prioritized as a key energy security strategy, with particular regards to natural gas substitution. According to the NREAP, in 2020 RES shall represent 11% of the gross final energy consumption, with a mandatory 10% target in RES-T.

Ukraine – one of the largest cereals exporters globally – has extensive fertile farmlands and well developed agro-food industry. Apparently, this abundance in sustainable lignocellulosic feedstocks fosters the ambition to meet the 10% RES-T target mainly relying on domestic production of biofuels (77% of total RES-T = , approx. 320Mtoe bioethanol and 70Mtoe biodiesel).

The share of biofuels in transport is currently very low, notwithstanding the 7% mandatory blending. Despite the relevant capacities of the Ukrainian alcohol industry, production of bioethanol is limited (60-90 Ml), with ephemeral use in transport. Presently, there is no commercial biodiesel production.

The deployment of domestic capacities lagging behind, Ukraine is a major supplier of lignocellulosic feedstock to the EU, with 17 companies that implement voluntary certification schemes.
Romania is the largest energy market in SEE, with final energy consumption of approx. 22 Mtoe in 2013. The current trend is below the 2020 targets that set final energy consumption at approx. 30.3 Mtoe. Owing to domestic coal and oil industry, the energy sector plays an important role in the country's economy. Direct and indirect employment in RE is ≈ 0.22% (<EU average).

In 2013, the overall RES share was 23.9%, close to the 24% national target for 2020, owing to the combination of reduced consumption, declining energy intensity and relevant capacities in hydro. Furthermore, the country has extremely promising, yet only partially utilized, biomass potentials.

According to recent estimations (Scarlat et al. 2011), Romanian agricultural and forestry sector could make available up to 5.4 Mtoe (228PJ), yet with very relevant spatial and seasonal variability which might entail temporary shortages. Almost 2/3 of this potential comes from agricultural residues, which are currently mostly unutilized.

Western Romania encompasses the counties Arad, Timis, Caras-Severin and Hunedoara, at the border with Hungary and Serbia. It occupies an area of 32,034 km², about 13% of the total area of Romania. 34.3% of the total area of the Region is forested; in Hunedoara and Caras-Severin counties the share of forests rise to 50%. Sustainable biomass potential in the region is 11TWh/y.
TESTING THE TOOL:
S2BIOM.ALTERRA.WUR.NL
USER: DEMO
PW: HELSINKI
The European Biofuels Technology Platform and the new European Technology and Innovation Platform on Bioenergy
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 609607.
The mission of EBTP

The European Biofuels Technology Platform aims at:

- Contributing to the development and strengthening of cost-competitive advanced biofuels value chains
- Supporting the development of a healthy and resilient biofuels industry in the context of bioeconomy
- Accelerating the deployment of sustainable biofuels in Europe through guidance, prioritization and promotion of research, development & demonstration

Networking in EBTP-SABS aim at:

- Improving availability of sustainable feedstocks by addressing supply, logistics and markets
- Fostering innovative conversion pathways for the production of advanced biofuels at industrial scale
- Contributing to value chain optimization and reduction of bottlenecks
- Promoting the uptake of advanced biofuels in transport & other sectors

The EBTP is on the lookout for stakeholders in our region to foster the deployment of advanced biofuels value chains!

The EBTP evolved in ETIP BIOENERGY and a follow-up project started September 2016
Perspectives
BIOMASS

BIOGAS

BIOFUELS
KNOWLEDGE
RULES
OPPORTUNITIES

A NEW PARADIGM
THANK YOU FOR YOUR ATTENTION!

www.cei.int