The promotion of Advanced Biofuels in the context of a Biobased Economy:
A priority of the Central European Initiative for its Member States.

Biofuels for an eco-friendly energy strategy

Energy is top priority for CEI, and Advanced Biofuels are the most attractive option for any eco-friendly energy strategy: they also address priorities in Science, Innovation, Environment, Agriculture. In fact, Advanced Biofuels are the best equation combining:

- energy requirements (reducing dependence on fossil fuel imports),
- environmental protection (reducing CO2 emissions),
- rural development and food security,
- far-reaching global market opportunities (to sell new technologies and final products).

Advanced Biofuels are now efficiently produced from different feedstock, without competing with food or cash crops for fertile land and water, and reducing global greenhouse gas emission in the process: technology for remunerative production is already there but more R&D is needed. Furthermore, the development of Advanced Biofuels is complemented by that of bio-refinery, which means the production of added value biochemical materials: these will be the basis for a new chemical industry.

CEI Member Countries have large agriculture and forestry sectors: promoting advanced biofuels is therefore a natural priority for CEI, which commissioned to Bloomberg a Report on Advanced Biofuels as a most relevant aspect for a Bio-based Economy in today reality. The Report is based on a very conservative approach, considering a long-term projection (until 2030):

- only agricultural waste as feedstock (no forestry residues, no algae, no urban waste)
- only existing technology (vs. breakthroughs expected soon) related to different feedstock
- no change in current land-use patterns

The residue potential scenario as highlighted in the Bloomberg Report (only what today farmers consider “waste”, i.e. not used for soil improvement and animal breeding) is already striking … What would be the outcome if, on the contrary, we decide to exploit the full potential of a Bio-based Economy? Benefits of Advanced Biofuels in the CEI region according to the residue potential scenario (only agricultural waste as feedstock, for which cost-efficient technology is already available), converting 17% agricultural residue:

- job creation, 580.000 man-years of employment in the years 2012-2030 and up to 36.000 permanent jobs predominantly in rural areas (collecting and transporting residue and operating bio-refineries), contributing to rural development and thus contrasting rural flight and ‘’land grabbing’’ trends;
- innovation and economic growth, with an ethanol potential in 2030 of 30 billion litres per year, requiring a total investment of €40 billion in 2012-2030 for a total revenue of +/- €260 billion in 2012- 2050;
- energy security, moving from dependence on foreign oil towards fuel self-sufficiency for transport;
- environment protection through a reduction of CO2 emissions (around 40%) by replacing 61% of fossil gasoline in 2030 with next generation ethanol converted from agriculture residue.

CEI activities in the field of advanced biofuels include the following:

- Promoting R&D and pilot industrial projects through regional cooperation;
- enhancing political and public awareness through direct contacts with governments, public institutions, scientific and business communities at all levels, and participation in specific seminars, conferences;
- establishing CEI Secretariat as the focal point for Member Countries vs. European Commission, Pan-European sectorial Organisations and major industrial players of the relevant public-private-partnership (PPP) being established with the EC;
- participating with a prominent role in **three dedicated 7th FP projects** with prime European partnerships in high level consortia, as announced last year:

Project S2BIOM (sustainable and cost efficient supply chain of non-food biomass for its optimized use) was launched in September 2013: it will develop strategies, roadmaps and a computerized and easy-to-use tool to support decision-makers in promoting sustainable non-food biomass value-chains at local, regional and pan-European level. CEI will mobilize its networks to investigate, through dedicated case studies, areas with lower or technologically less advanced biomass utilization, weaker supply chains, inadequate infrastructures, and poor availability of data. Furthermore, CEI will interact with its stakeholders in order to complement datasets, highlight bottlenecks and jointly address strategic aspects, to support a "resource-efficient" Bioeconomy in Europe through an alignment with international development policies.

Project EBTP-SABS (support for biofuels stakeholders through the European Biofuels Technology Platform) started in September 2013 with multifaced activities that are of interest to the biofuels community as a whole, and the general public. CEI will contribute to strengthening the information base on Central, East and South-East Europe, providing unbiased, scientifically sound, up-to-date information on development and deployment of advanced biofuels, thus facilitating informed discussions and fact based decision-making processes. CEI will act as a focal point to convey quality and information to its Members. CEI will also contribute to the updating of the Strategic Research Agenda and the Strategic Deployment Document (SDD) of the platform, through targeted consultations at ministerial level and with major stakeholders.

Project Danube-INCO.NET (meeting energy challenges in a bio-based economy in the Danube region) is a strategic high-level coordination and support action focusing on the EU Strategy for the Danube Region (EUSDR) and its Priority Areas for Knowledge Society and for Competitiveness. The project has been launched in January 2014 with the aim to support a policy dialogue within the EUSDR and to tackle societal challenges of energy efficiency and renewable energy in a bio-based economy. Danube-INCO.NET is also committed towards the development of joint funding mechanisms contributing directly to one of the most important milestones of the EUSDR for this priority area: namely the establishment of the Danube Region Research and Innovation Fund. In this context the experience and the role of CEI as the Regional Focal Point for the PPP recalled above could be strategic.

A strong **cooperation in CEI Countries is needed** to promote Advanced Biofuels i.e. working on comparative efficiency and cost effectiveness vs. other renewable sources, regulatory framework, taxation, incentives, etc. The global European dimension provides the natural context and cooperation among International Organizations focused on the CEI region will contribute to the development of a broad and consolidated market for Advanced Biofuels. An **informal inter-agency group** has been promoted by CEI. In this context CEI has … an informal interagency consultative group among International Organizations dealing with renewable energy and focused on Eastern Europe and the Western Balkans. Energy Community, European Commission- Joint Research Center, Novozymes, OSCE and UNECE have adhered to this initiative; other institutions have indicated a specific interest in it.

In this context, the Central European Initiative is currently engaged in the definition of the pilot activities already envisaged for **CEI-PRAISE, a Framework Programme** aimed at the promotion of Research, Technology Transfer and Innovation in all CEI Member Countries. Besides these activities, CEI is also promoting the establishment of **EULAB32** a consortium based virtual laboratory among institutions and research groups already active in, or with specific competences for the development of advanced biofuels and added value byproducts from biorafinery, which are currently operating ± 200 km around Trieste: in Italy, Austria, Slovenia and Croatia. It is expected that this initiative, open to contributions and direct involvement from other neighboring Countries, will develop from the initial stage of a virtual lab into a **full fledged laboratory** within two/three years.