



**The Prospects for Next Generation Biofuels
in the Countries of Central European Initiative**

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- **Next Generation Biofuels** are the most attractive option for any eco-friendly energy strategy: they also address **CEI priorities** in Energy, Science, Innovation, Environment, Agriculture
- In fact Next Generation Biofuels are the best equation **combining**
 - Energy requirements (reducing dependence on fossil fuel imports)
 - Environment protection (reducing CO2 emissions)
 - Rural development and food security
 - Far-reaching global market opportunities (to sell technology)
- CEI Member Countries have large agriculture and forestry sectors
- Our strategic challenge for Next Generation Biofuels: **from waste to energy!**

WHAT IS MEANT BY NEXT GENERATION BIOFUELS?

- Next Generation Biofuels are 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. Examples of such residues:
 - Crop residue, plentiful where there is an agricultural production
 - Residue from sustainably harvested forests and undergrowth
 - Algae or other spontaneous vegetation
 - Municipal solid waste
- By definition Next Generation Biofuels leave behind the controversies related to the First Generation
- **World players** are turning to Next Generation Biofuels: oil majors, top research centres, chemical industries, even Petrobras in Brazil
- Why not a priority project in the framework of **CEI**?

- **Technologies** for Next Generation Biofuels are around the corner, five/ten years is a very short time in view of a long-term sustainable strategy. But several pilot plants / bio-refineries are already being built worldwide, and second generation plants are ready for production.
- **Mission:** dissemination of interdisciplinary scientific knowledge (Biology, Chemistry, Physics) and upgrading technology know-how
- **Needed through CEI:** further increasing **process efficiency**
 - Organising existing human resources through in-house applied research
 - Supporting capacity building (advanced training, workshops, seminars, networking, public and political awareness)
 - Catalysing financial instruments available (FP7, Horizon 2020, Structural Funds, IPA, etc.) for an **integrated CEI regional project** to provide support to centres/groups of excellence/agencies according to the status of their respective countries vs. the EU, with greater efficiency than that of aggregate efforts of individual applicants according to standard rules

- CEI Countries cannot wait years to buy new/future technologies, unless they accept an external impact on their national priorities
- These countries must **invest now** adequate resources in **applied research** and development for Next Generation Biofuels: **human resources** are ready **available**, but must get organised !!
- We should promote a **network of centres / research groups / agencies** with appropriate competence involving all CEI countries in a major joint R&D project: a **virtual critical mass of over one thousand scientists and technologists** could easily be mobilized in a short time, as CEI has made an **inventory** of almost ± 100 such groups/centres/agencies
- Concrete objective: to improve process efficiency and public awareness so that relevant investment becomes more attractive and remunerative

- The development of Next Generation Biofuels is complemented by that of biorefinery, i.e. production of added value biochemical materials, which will be the basis for a **new chemical industry**
- Chemical industry heavily depends on by-products of oil refinery: by-products of Next Generation Biofuels will bring a **revolution** which also will require more R&D efforts and imply new opportunities
- The prospects of **additional income for farmers** – therefore a consistent rural development and a consequent environment protection - must also be a crucial element in the evaluation for a strategic choice in favour of Next Generation Biofuels

CEI commissioned a comprehensive **report** on opportunities for its Member Countries from Next Generation Biofuels and other Bioproducts to **Bloomberg**/New Energy Finance, an authoritative source for studies and information in this field. It elaborates:

- **a fuel demand scenario**, projecting what it will take to replace 10% of forecast gasoline demand by 2020 with next generation ethanol supply: reasonable but achievable penetration that also does not rely on significant changes to the existing vehicle fleet;
- **residue potential scenario**, projecting how much gasoline could be replaced with next generation ethanol if only 17,5% of the available agriculture residues were used, i.e. without changing land use pattern (crop distribution) and current use of residues (also for soil protection and animal husbandry).

According to the residue potential scenario of the **Bloomberg Report** (assuming no change in today's land use patterns and converting to bioenergy all agricultural residue already available, i.e. 17,5% equal to 75 million dry tonnes by 2030) **potential benefits** of Next Generation Biofuels in CEI Region would be:

- **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 biorefineries)
- **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 high dependence on foreign oil towards greater 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.

- In order to achieve all the possible outcomes we must overcome the main **barrier** to the development of Europe's bio-products potential: perceived investment risk without incentive policies
- All alternative / renewable / eco-friendly energy options need a **substantive incentive policy**: that for Next Generation Biofuels may be the **cheapest** and no longer necessary in the future!
- It is necessary to secure, as a priority for CEI and EU **policy makers**, the introduction of a **wide mandate** for Next Generation Biofuels along the lines of US policy covering 2009-2022
- Policy makers should introduce **incentives for the collection of biomass** through adequate assistance programmes and/or through the EU Common Agricultural Policy:
- A stronger rural development would be a relevant side result!

- Final objective of CEI project on Next Generation Biofuels: a portfolio of bankable projects for more efficient biorefineries using different feedstock, with indication of incentives and/or grant component necessary to ensure sustainability at the given level of technology. For instance, the **Western Balkans Investment Framework** or **Western Balkans Sustainable Energy Direct Financing Facility** could provide very useful instruments in this context.
- Do not forget: according to EU legislation, by 2020 Next Generation Biofuels must reach 10% of the total fuel consumption for transport. Are we **willing to abandon this strategic market** to global players?
- Our countries have plenty of the **necessary raw material** (feedstock), but who will produce this quantity of Next Generation Biofuels? Where? How? Is CEI region to import biofuels and/or the technology to produce them? Industry can easily acquire the necessary know-how.
- Are we willing and ready to **mobilise the necessary resources now**? **Waste to Energy**: the challenge and an extraordinary potential of Next Generation Biofuels. More facts in the Bloomberg report on CEI region.

The Trieste Declaration (19 October 2011) adopted unanimously by the CEI Ministerial Meeting on Science and Technology endorsed the proposal of a multidisciplinary integrated regional project: we need the full and convinced support by all of you to implement it.

THANK YOU FOR YOUR KIND ATTENTION

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