

The Global Bioenergy Partnership

*A global initiative to support next
generation biofuels*

Setting the Course for the Next Wave of Biofuels
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Outline

- **Transportation fuels**
 - The past playground
 - The future playground
- **First generation biofuels**
- **Next generation biofuels**
- **Biofuels: towards a sustainable option**
- **Transportation fuels**
 - The challenge
- **The Global Bioenergy Partnership**

TRANSPORTATION FUELS: THE PAST PLAYGROUND 1/3

Standard fuels from refinery

- Gasoline for LDV +++++
- Diesel for both LDV and HDV ++++
- MTBE-ETBE as octane boosters ++

Market drivers

- Engine performance - cooperation with car makers
- Market competition – quality of the product
- Exhaust emissions – cooperation with car makers and institutions

TRANSPORTATION FUELS: THE PAST PLAYGROUND 2/3

Alternative fossil fuels

- LPG +
- CH₄ ++
- FT gasoline from coal +
- FT diesel from NG +++
- Methanol fuel - -

Market drivers

- Refinery by product, air pollution in cities, apartheid economy, stranded natural gas, zero emission vehicle

TRANSPORTATION FUELS: THE PAST PLAYGROUND 3/3

Alternative biofuels

- Bioethanol ++
- Biodiesel +
- Bio n-butanol -

Market drivers

- Oil alternative (energy security – Brazil)
- Regional and local help to agriculture and industry (US)
- Niche markets (heavily subsidized)

TRANSPORTATION FUELS: THE FUTURE PLAYGROUND 1/2

Since the Kyoto protocol signature, the market driver priority has become a tremendously conflicting challenge

- Supply the market with all energy required for the world development
- Keep the CO₂ level below the threshold value almost unanimously established by the world's climate scientists
- According to the latest position of G8, EU, and many other environmental organizations, the target for the CO₂ reduction at planet level for 2050, is in the order of billions of tons per year

TRANSPORTATION FUELS: THE FUTURE PLAYGROUND 2/2

Transportation fuels will be required to give their contribution to this challenge

- De-carbonized fuels appear to be the best available option for the transportation sector
- Biofuels are surely the nearest option available in the market
- First generation biofuels production should grow up significantly and rapidly in specific regions
- Next generation biofuels could de-bottle the production worldwide in next decades

FIRST GENERATION BIOFUELS

- Bioethanol from crops as an alternative to food market (sugar cane, corn)
- Biodiesel from seeds (soybean, rapeseed, palm, sunflower) with trans-esterification with methanol (ethanol eventually) as an alternative to food market

NEXT GENERATIONS BIOFUELS

‘Second generation’

- Bioethanol from optimized sugar crops (Sorghum) in set aside area, in arid area or in poor soil
- Bioethanol from agriculture cellulose waste (corn stalks, straw) – Integrated agriculture-energy
- Biodiesel from optimized crops (Jatropha, Honge) - no food competition
- Bio-oil for adapted diesel engines for generators and tractors (when alcohol is not available or infrastructures inexistent)
- Biodiesel from hydro-refining of raw bio-oil (no more glycerin by-product)

NEXT GENERATIONS BIOFUELS

‘Third generation’

- Bioethanol from rotating wood plantations through cellulose hydrolysis
- Bio-oil or biodiesel from algae cultivation with CO₂ from power gen
- Bio FT diesel from waste bio-mass gasification
- Bio n-butanol from biomass fermentation (as co-solvent for ethanol/methanol-gasoline blends, or as chemicals)

NEXT GENERATIONS BIOFUELS

'Fourth generation'

- Bio-H₂ from water photolysis through micro-organisms as catalyst
- New frontiers?

BIOFUELS : TOWARDS A SUSTAINABLE OPTION

- 1) Life cycle analysis, labelling and “certification of origin” of biofuels should be applied in the global energy market, to ensure that “sustainable bioenergy” production is not affecting biodiversity and food security.
- 2) Classification of “sustainable bioenergy” should be introduced in the WTO rules in order to reduce or, as appropriate, eliminate tariff and non tariff barriers according to the Doha Development Agenda, paragraph 31 (iii)
- 3) Research and development of innovative technologies to produce biofuels from cellulose should be supported by the International Financial Institutions in the developing world.

TRANSPORTATION FUELS: THE CHALLENGE

- First generation biofuels to be increased significantly, rapidly, according to new sustainability criteria in terms of CO₂ saving, environmental impact, biodiversity, social effects
- Increase the role of trading - Global production for a global market
- Develop the second generation bio-fuels through a global effort of development and demonstration projects primarily in the tropical countries for domestic use and for export
- Research activity and pilot units for the development of third generation biofuels
- Basic research for the long term biofuels production

THIS CHALLENGE NEEDS A GLOBAL EFFORT 1/2

1. Scaling-up of first generation biofuels and the development and implementation of next generations biofuels demands revised regulation.
2. The domestic market requires more than the support of single organizations and EU and local directives in view of large-scale trading to make biofuels a commodity, as are fossil fuels.
3. Existing international regulations should be reviewed, new regulation should be shared in order to create a new market CO2 free in competition with the existing fossil fuel market associated with CO2 emissions.

THIS CHALLENGE NEEDS A GLOBAL EFFORT 2/2

4. Developing countries, especially those with favourable soil, climate and social conditions for the large scale biofuels development, should be involved in this process from the beginning.



The role of the Global Bioenergy Partnership (GBEP)

GBEP is a partnership recently set up to create a forum to facilitate the development of a sustainable, affordable and effective international market of biofuels.



G8 MANDATES

G8 +5 Gleneagles Plan of Action

*“We will promote the continued development and commercialisation of renewable energy by: [...] d) **launching a Global Bioenergy Partnership** to support wider, cost effective, biomass and biofuels deployment, particularly in developing countries where biomass use is prevalent.”*

2007 Heiligendamm Summit Declaration

*“We invite the **Global Bioenergy Partnership (GBEP)** to continue its work on biofuel best practices and **take forward the successful and sustainable development of bioenergy.**”*

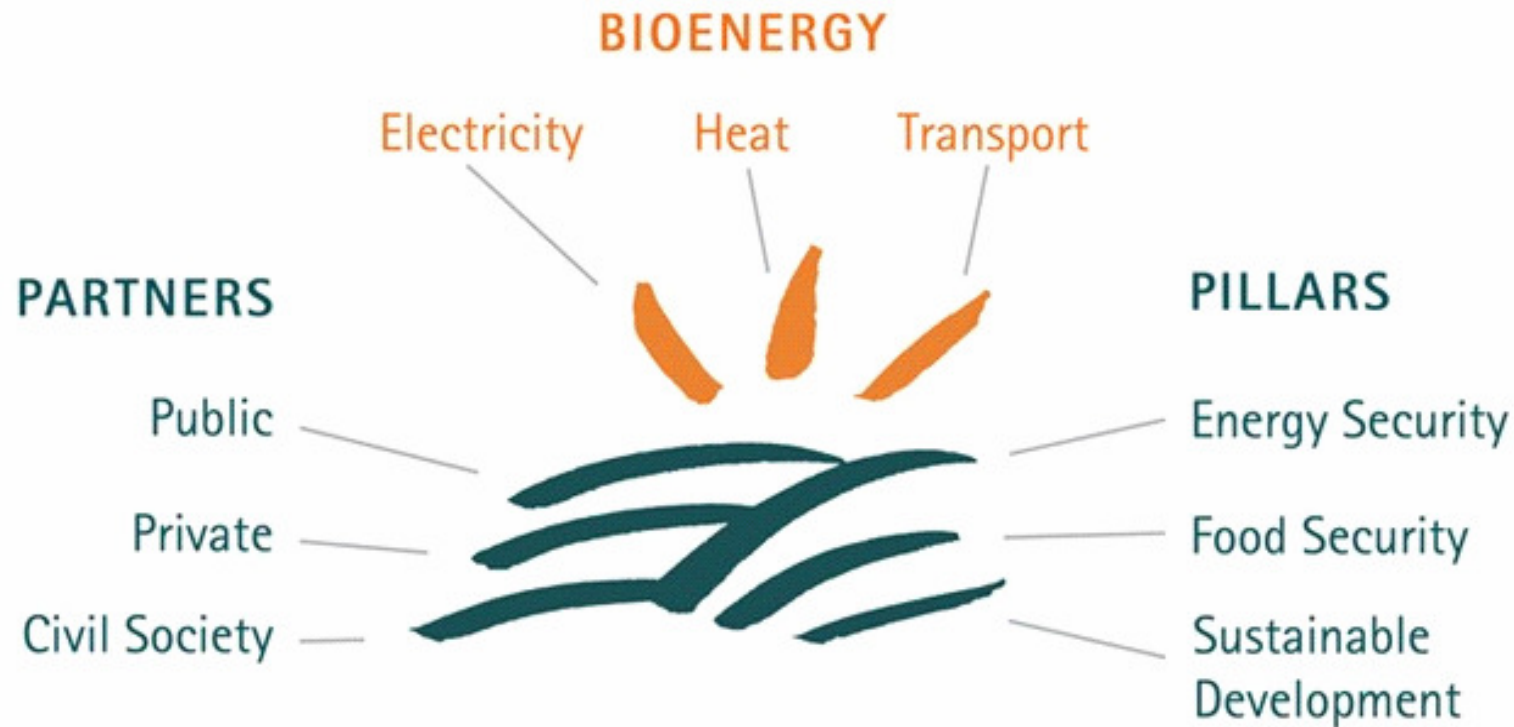


GBEP in brief

- **Launched in New York, 11 May 2006**, during the Ministerial Segment of the Commission on Sustainable Development (CSD)
- **Current Partners are:** Canada, China, France, Germany, Italy, Japan, Mexico, Russian Federation, United Kingdom, United States, FAO, IEA, UNCTAD, UN/DESA, UNDP, UNEP, UNIDO, UN Foundation, World Council for Renewable Energy, EUBIA. Tanzania and Brazil are observers
- For the first biennium: **Chair Italy, Co-Chair Mexico**
- **Secretariat hosted at FAO** in Rome with the support of the Italian Government.



GBEP – Scope, Partners, Pillars



GBEP Objectives

- Favour **efficient and sustainable** uses of biomass
- Facilitate bioenergy **integration into energy markets**
- Create a **global high-level policy dialogue** and **facilitate international collaboration**
- Foster the **exchange of information**
- Act as a **cross-cutting initiative**, working in synergy with other relevant activities and avoiding duplications

GBEP Added Value

- Focus on **bioenergy** as a key renewable energy source
- Strong **political commitment** - promote bioenergy in line with climate change, energy security & food security considerations
- A **voluntary forum** to facilitate international dialogue
- Priority given to **developing countries**
- **Exchange of experience and technologies** – North-South, South-South, South-North
- Engagement of the **private sector**
- **Visibility** of bioenergy opportunities and challenges at international level & **Integration** into development initiatives.
- Improved **coordination** across sectors and stakeholders

KEY PRIORITIES IN THE GBEP PROGRAMME OF WORK

- **Report on Bioenergy Development in G8 +5 Countries** (The First GBEP Report!)
- Methodologies for measuring **GHG emission reductions** from the use of bioenergy
- **Raising awareness** and facilitating information exchange on bioenergy

For further info

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