Enhancing International Cooperation on Biomass

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Biofuels- issues, challenges and options

J. Gururaja
Energy and Dransport Branch
Department of Economic and Social Affairs
United Nations
New York
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Key drivers for biofuel development

- **Principal focus is on liquid biofuels-ethanol and biodiesel, as part of bioenergy basket**
  - Worldwide interest reflect convergence of developed and developing country perspectives on the role biofuels can play in energy for sustainable development
  - Developed country initiatives are largely driven by **energy security and GHG reduction potential**
  - Developing countires view biofuels in terms of potential to improve **access to energy, enhance rural incomes and empolyment opportunities, spur rural development and reduce import burden of petroleum fuels**
  - **Both interests are convergent** and together constitue **key drivers.**

Issues

- **Five sets of issues:**
  - **Resources issues : Can biofuel (ethanol and biodiesel) become a significant player in the future energy mix? Is sufficient land available for fuel and food production?**
  - **Technology issues: Existing Vs New technologies requiring further developments?**
  - **Costs and benefits issues: How to assess a) real costs taking into account subsidies and b) the value of benefits in terms of energy security, GHG reduction potential, employment generation, rural development**
  - **Policy-related issues: What policy options can be considered to promote biofuels in different country contexts?**
  - **Biofuel Trade issues: barriers to trade**

Emerging trends

- Current ethanol production of about 30 billion litres mostly from sugar cane in Brazil and corn in the north America and Biodiesel production of 1.7 billion litres mostly from rapeseed and soybean witnessing increasing demand with increasing production worldwide
- Blending strategy catching up and expanding
- Non edible oil route to biodiesel production- a viable option
- New ethanol production technologies and feedstock options: cellulose and gasification routes? Biorefineries?
- Mandatory and incentive driven policies driving demand

Challenges

- "Scale-up" challenge- investment, technology, markets
- Integrated approach to energy, environmental, agricultural and trade policies
- specific policy measures reflecting costs and benefits
- internalizing external costs to level the playing field for biofuels vis a vis petroleum fuels
- Phasing out subsidies in favor of market mechanisms or modifying subsidy regimes
- Investment mobilization and Financing
- Capacity building and Technology transfer
- GHG reduction challenge for biofuel option
- trade and tariff barriers challenge

Expected role of biofuels

- Developed on a large scale thro policy and practical measures, biofuels can contribute to meeting 20-25 percent of Transport energy needs in the time frame 2050-2100
- To realize GHG reduction potential, corn ethanol has limitations; cellulose conversion, gasification routes- better alternatives
- large scale foray into biofuels in developing countries can bring potential benefits from less dependence on fossil fuel imports, employment generation, rural development, rural income and export
- Energy security, GHG reduction are the main drivers
- international trade in biofuels and markets at local levels

Policy options

- **National Policies including incentives will set the course for Biofuel development. Choices based on national circumstances and preferences**
- **Application incentives**
  - Market mandates
  - Grants, soft loans, rebates and tax credits
  - Legislative and administrative directives
- **Production incentives**
  - Direct producer payments
  - Tax incentives and Tax exemptions
  - Grants and loan programs

Policy options (continued)

- Other Tax Concessions
  - Carbon-based fuel taxes
  - Tax concessions and subsidies for vehicle purchase
  - Carbon dioxide trading
  - Clean development mechanism (CDM) and joint implementation
  - Incentives for investment
  - Policies to eliminate trade barriers
  - Support for R&D

Concluding remarks

- Biofuels developed on a large scale can produce multiple benefits at national and global levels
- Current costs are 2-3 time higher except in Brazil where costs are on par with petroleum fuels
- National policies for promoting biofuels can stimulate investments
- International cooperation is needed to foster capacity building, R&D collaboration, joint ventures and biofuel trade.

J. Gururaja
Room 2034
2 UN Plaza
New York
Tel: 212-963-8785
Fax:212-963-9883
Gururaja@un.org