



Ministry of New & Renewable Energy  
Government of India



Confederation of Indian Industry



Department of Industrial Policy & Promotion  
Ministry of Commerce & Industry  
Government of India

# Biofuels

India 2008  
22-23 August 2008, Gurgaon, India

www.biofuelsindia.org

The Confederation of Indian Industry and the Ministry of New and Renewable Energy jointly organized the first "Biofuels India 2008" supported by DIPP on 22- 23 August 2008 in Gurgaon. The two-day summit was inaugurated by Shri Sharad Pawar, *Chairman, Group of Minister National Biofuels Policy & Hon'ble Union Minister of Agriculture and Consumer Affairs Food and Public Distribution and Shri Vilas Baburao Muttemwar, Hon'ble Minister of State (IC) for New & Renewable Energy Government of India.*

- Developing strategic inputs for the policy-making process in India in creating the required enabling environment for bringing about a rapid growth in the sector.
- A sharing of global perspective on Technology, Investment and Marketing parameters as they are emerging, with special reference to global drivers for the biofuels sectors and the critical success factors with special reference to both first and second generation Biofuels.

## EXCERPTS



"India is an integral part of the Global Biofuel Industry"

Mr. Philip G New  
President, Global Biofuels  
British Petroleum, UK



"A great platform on Biofuel opportunities in India"

Dr. Samai Jai-In  
Advisor, Renewable Energy Institute Foundation  
Government of Thailand, Thailand  
National Metal and Material Technology



Mr. Rajesh Srivastava, CMD, Rabo Equity Advisors. Mr. Philip G New, President, Global Biofuels, British Petroleum, UK. Shri. Vilas Baburao Muttemwar, Hon'ble Minister of State (IC) for New & Renewable Energy, Government of India. Shri. Sharad Pawar, Chairman, Group of Minister National Biofuels Policy & Hon'ble Union Minister of Agriculture and Consumer Affairs, Food and Public Distribution, Government of India. Mr. Pramod Chaudhari, Chairman, CII-National Committee on Biofuels & Chairman - Praj Industries Ltd. Mr. C Banerjee, Director General, CII

## Key Discussions

- Emerging trends in biodiesel and bioethanol technologies.
- Global lessons in building a Biofuels industry and moving towards Renewable Fuel Standards.
- Biofuels projects development and financing.
- Integrating Biofuels with the energy infrastructure: application challenges and opportunities.

## Key Takeways

- A 'Biofuels Vision' for the nation is absolutely necessary.
- The nascent Biofuels industry promoted through a judicious balance of mandates, incentives and penalties.
- Flexibility in the Biofuel blending mandate based on area/State wise availability.
- Bring Biodiesel and Bioethanol under the ambit of 'Declared Goods' to help in the unrestricted movement within and outside the states.
- Favourable policy to promote the Second Generation Biofuels technology R&D activities through PPP mode.

## STRATEGY PAPER

"Sustainable Biofuel Policy for India"  
Focusing on...

"Building a National Sustainable Biofuels Vision analyzing the critical value chain elements"



"National Biofuel vision will help in strategize the roadmap"

Mr. Robert Vierhout  
Secretary - General  
European Bioethanol Fuel Association, Belgium



"Governmental support is absolutely necessary to sustain the implementation of any Biofuel policy"

Mr. Thomas Cauchois  
Chairman  
Comanche Clean Energy, Brazil

## Emerging Trends in Bio Diesel Technologies: Issues & Takeaways



Mr. Atul Saxena, Founder & CEO, Growdiesel Consortium, India. Mr. Nitin Shete, VP – Technical Praj Industries Ltd. Dr. G Arumugam, Managing Director, CEO & Group Science Director, Enhanced Biofuels & Technologies India Pvt. Ltd. Dr. John R. Benemann, Chairman Institute for Environmental Management, Inc. USA. Mr. Shashank Inamdar, CEO & MD, Praj Industries Ltd. Mr. Suprotim Ganguly, Deputy Director, CII. Dr. Vibha Malhotra Sawhney, Senior Scientist, TNBD, (CSIR). Dr. Anjan Ray, Director, Business Development, Honeywell International(I) Pvt Ltd.

- Algae Biodiesel and Synthetic Diesel from Biomass through via thermo conversion route are the two niche technologies in 2nd generation Biodiesel production.
- Algae would be a great sink for CO<sub>2</sub> and Biodiesel would be the by-products. Indian environment is very much suitable for algae but need focussed approach.
- Synthetic Diesel conforming to EN 591, is regular Diesel which is beyond any acceptability debate.

### EXCERPTS



"The whole summit was brilliantly conceived and executed. The focus was on real issues"

Dr. Anjan Ray  
Director, Business  
Development  
Honeywell  
International(I) Pvt Ltd, India



"Increasing demand of Biodiesel globally will prioritize the research work on Algae and Synthetic Diesel".

Mr. Nitin Shete  
Vice President Technical  
Praj Industries Ltd, India



"A very good experience. The summit was indeed a highlight in terms of development of biofuels technologies"

Dr. John R. Benemann  
Chairman  
Institute for Environmental  
Management, Inc. USA

## Emerging Trends in Bio Ethanol Technologies: Issues & Takeaways



Dr. Larry Peckous, Principal Scientist, Novozymes North America, Denmark. Mr. G B Deshpande, Executive VP (Technical Excellence), Praj Industries Ltd. Dr. Shiva Subramaniam, VP- Engineering, Mascoma Corporation, USA. Dr. D. Yogeswara Rao, Head, TNBD Division, CSIR. Dr. Dilip Kumar Adhikari, Scientist F& Head Biotechnology, Indian Institute of Petroleum, Dehradun.

- Extensive use of "Food Grains" as feedstock for Ethanol internationally has really pushed up the food prices, unlike Indian scenario where we are considering Molasses as feedstock which is not eatable grade.
- 2nd Generation Technologies like cellulosic Ethanol has higher versatility in terms of feedstock acceptance but very capital intensive activity needs govt. support likewise happening in US, EU etc.
- High productive feedstock with higher percentage of Cellulose contain and lesser Lignin to be developed and practiced. Energy and Enzymes are the other two major components contributing to the higher cost of the Ethanol.
- In Indian more than 105 MMT of Agri-waste may be available for Cellulosic Ethanol production. R&D initiative for this category of Ethanol be piloted with above objective in PPP mode.

### EXCERPTS



"Indian Agri waste is a potential feed for Cellulosic Ethanol but needs a lot of focus on process optimization"

Dr. D. Yogeswara Rao  
Head, TNBD Division  
Council of Scientific and  
Industrial Research (CSIR), India



"Right on time, will definitely help India on arresting her environmental issues"

Dr. Larry Peckous  
Principal Scientist  
Novozymes North America  
Denmark

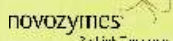


"India needs to strongly focus on R&D activities for Cellulosic Ethanol"

Dr. Siva Subramaniam  
Vice President, - Engineering  
Mascoma Corporation, USA



Knowledge Partner



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## Biofuels project Development & Financing: Issues & Takeaway



Mr Jotdeep Singh, Director, Renewable and Carbon Credit Business, Rabo Financial Services. Mr. Arvind Bansal, Executive Director, Mission Biofuels India Ltd. Mr. S K Shukla, Executive Director, Biofuel Development Board, Government of India. Mr. S Sriram, Head-Biofuels, Tata Chemicals, India Ltd. Mr. Rajesh Srivastava, Chairman & Managing Director, Rabo Equity Advisors. Mr. Suprotim Ganguly, Deputy Director, CII. Mr. Rajeev Mantri, Executive Director, Navam Capital. Mr. Indra Guha, Senior Manager, Climate Change & Sustainability Services- Risk Advisory Services, Ernst and Young Pvt Ltd.

- ♦ National vision and Road map with give a long-term sustainable growth of Biofuels sector in India.
- ♦ Political will and facilitation in terms of making the necessary resources available like Land, Water etc are the most important factor that each State Govt. should consider.
- ♦ Indicative market (in terms of % blending and sustainable price are the most enticing factor for the manufacturers and other stakeholder like financial instituting to get on this business).

### EXCERPTS



"A stronger political will is required besides the resources"

Mr. S K Shukla  
Executive Director  
Biofuel Development Board, India



"Economic access to the suitable feedstock is the first step for a successful biofuel"

Mr. Arvind Bansal  
Executive Director  
Mission Biofuels India Ltd



"By products of the Biofuels need significant attention as it determines the overall cost economics"

Mr S Sriram  
Head- Biofuel  
Tata Chemicals, India

## Integrating Biofuels with the Energy infrastructure: Application Challenges & Opportunities



Mr. Nakul Gupta, Head - Strategy & Business Development, Boeing India. Dr. Nitant Mate, Head Biofuels, Kirloskar Engines Oil Ltd., India. Dr. Leena Srivastava, Executive Director, The Energy and Resources Institute (TERI). Dr. Abraham Mathew, General Manager, Alternate Fuel Technologies, Mahindra & Mahindra Ltd, India. Mr. Ravi Damodaran, Head- Technology, DELPHI Automotive Systems Pvt Ltd.

- ♦ Potential application of Biofuels are in three area: Automotive, Aviation, Stationery Power generation through last two areas are almost unexplored.
- ♦ All stakeholders to be educated and brought to the same elevated platform to reach the mass acceptance of "Blending Programme".
- ♦ Biodiesel program in village level through 'Discrete Distributed Power Generation' may come up as a successful model to enhance the rural economy and supplement the electricity crisis at village level.

### EXCERPTS



"Design and improvement of individual components should get more R&D focus, in automotive sector"

Ravi Damodaran  
Head - Technology  
DELPHI Automotive  
Systems Pvt. Ltd.



"Stationary Power generation can really bring a revolution in indian rural economy"

Dr. Nitant Mate  
Head Biofuels, Kirloskar  
Engines Oil Ltd., India



"Aviation sector is becoming a potential user of Biofuels and positioning itself strategically"

Mr. Nakul Gupta  
Head - Startegy & Business  
Development, Boeing India

## Global Lessons in Building a Biofuels Industry - Countries Perspective



Mr. Thomas Cauchois, Chairman, Comanche Clean Energy, Brazil. Mr. Robert Vierhout, Secretary - General, European Bioethanol Fuel Association, Belgium. Dr. Samai Jain, Advisor, Renewable Energy Institute Foundation, Government of Thailand, Thailand, National Metal and Material Technology. Mr. Ajit K Gupta, Adviser, Ministry of New and Renewable Energy, GOI. Mr. Deepak Gupta, Secretary, Ministry of New and Renewable Energy, GOI. Mr. Pramod Chaudhari, Chairman, CII-National Committee on Biofuels & Chairman - Praj Industries Ltd. Ms. Indrani Kar, Senior Director & Head, Agriculture & Food Processing, CII. Dr. Gautam Bhandari, Executive Director, Morgan Stanley Bank, USA. Mr. Shashank Inamdar, CEO & Managing Director, Praj Industries Ltd.

### EXCERPTS



"International experiences of setting up Vision Biofuels is extremely relevant in Indian context"

Mr. Deepak Gupta  
Secretary, Ministry of New & Renewable Energy, Government of India



"A marvelous synergy of International policy experiences world wide in Biofuels arena".

Mr. Ajit K Gupta  
Adviser  
Ministry of New and Renewable Energy  
Government of India



"An excellent initiative of CII on 2<sup>nd</sup> generation Biofuels technologies & investments".

Dr. Renu Swarup  
Adviser, Department of Biotechnology  
Ministry of Science & Technology  
Government of India

### Learning's from International Arena: Success Factors

- ♦ National Vision & Political will.
- ♦ Mandate with transparent financial benefits and pricing policy.
- ♦ Diversification of Energy Crops (Alternate feedstock development).
- ♦ Developing an efficient Biofuels distribution network.
- ♦ Renewable Energy Fund to support Technology & R&D effort.

### Visitor Bytes



Mr. P. Subbarathinam  
Deputy Director of Agriculture  
Govt. of Tamil Nadu

"The summit was so useful and thought provoking for the participants to have national and international scenario in the biofuels"

Veena Sekhri, IFS  
APCEF (Projects)  
Govt. of Uttarakhand

"This Biofuel Summit is very informative as far as government sector is concerned and will definitely help in formulating biofuels policies for the future"

Jack Huttner  
Vice President-Biorefinery Business Development  
GENENCOR, USA

"An excellent opportunity to get a good idea of what is happening in India in biofuels segment"

Linda K M Lau  
Shell

"I am happy to come to this Biofuels conference in India. I believe the topics and presentations are very relevant"

### Contact:

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