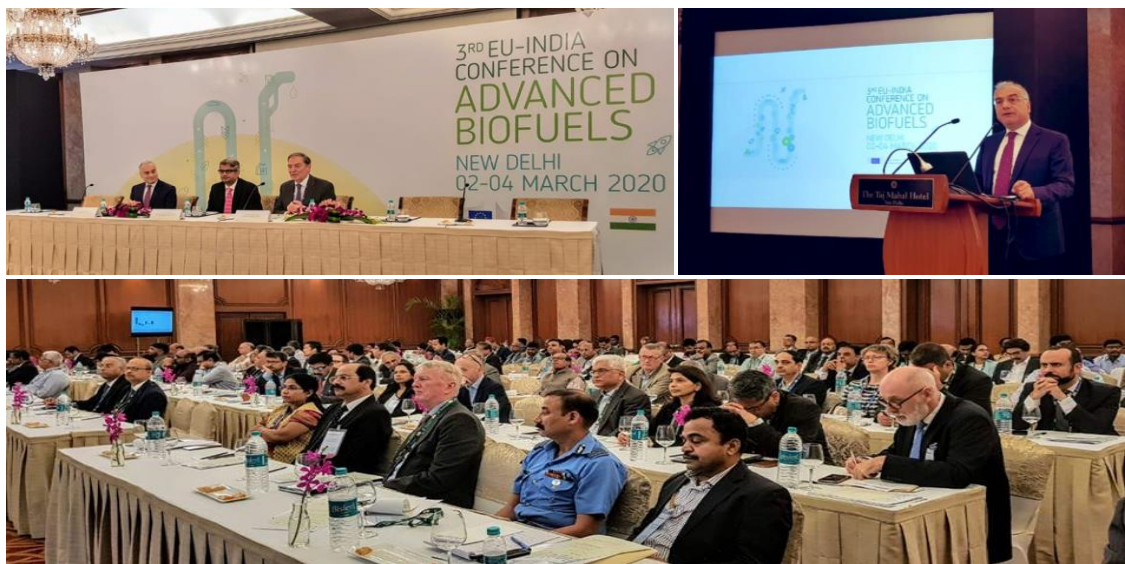


## 3<sup>RD</sup> EU-INDIA conference on advanced biofuels

The Advanced Biofuels conference, jointly hosted by Directorate-General for Energy and India's Ministry of Petroleum and Natural Gas, aimed to facilitate the development of advanced renewable fuels in the EU and India. The conference was centered around technology developers, industrial players and investors contributing to low carbon growth through sustainable fuels. On 2<sup>nd</sup> March 2019 a by-invitation only Business to Business meeting took place with the objective to enable effective cooperation between industry representatives from both sides. India has an ambitious plan to install several advanced biofuels plants in immediate future and this offers significant opportunities for EU



companies to participate in the endeavor.

**Dias: HE. Mr. Ugo Astuto, EU Ambassador; Mr. Sunil Kumar, Joint Secretary MoPNG; and Mr. Kyriakos Maniatis, Principal administrator, European Commission**

### **Business to Business meeting - 2 March 2020**

The day commenced with a welcome lunch followed by a welcome address from Mr. Sunil Kumar, Joint Secretary, Ministry of Petroleum and Natural Gas (MoPNG), and Mr. Kyriakos Maniatis, Principal Administrator, Directorate General for Energy, European Commission, who highlighted the importance of biofuel for India and the expectations from the conference. Mr. Paul Jensen, EBTC, highlighted the support extended by EBTC for development of the biofuel sector in India. Mr. Raman Jee Jha from PwC presented a brief on the biofuel outlook in India, availability of raw materials for production of biofuel and policy support from the government. Ms. Tania Friederichs, made a presentation on the cooperation opportunities between the EU and India. She mentioned the role EURAXESS India is playing and also the programs the EU has with the Department of Science and Technology (DST) and the Department of Biotechnology (DBT). Subsequently, representatives from European companies made a brief presentation on the technology solutions their companies offer in the area of biofuel (presentations were made by inter alia Novozymes, Leaf, Clariant, Versalis, Fortum, Lanzatech, SINTE) and from Indian companies (inter alia IndianOil, BPCL, HPCL, MRPL, Biodiesel Association of India, EIL).

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### **The conference - 3 and 4 March 2020**

The conference started with a welcome by Mr. Sunil Kumar and Mr. Kyriakos Maniatis. Mr. Ugo Astuto, Ambassador of EU to India made the opening speech, inter alia highlighting the European Green Deal and the objective for Europe to become a climate neutral continent by 2050. In the second session, chaired by Mr. Sunil Kumar, the speakers highlighted the developments in the biofuels sector in India, the challenges and possible solutions. The third session focused on the availability of bioresources in India. Ms. Nirmala Kaushik presented an online heatmap to understand the availability of bioresources. It was highlighted that the database is based on satellite imaging and needs yearly updation. Mr. Dinesh Dayanand, Joint Secretary, Ministry of New and Renewable Energy, set out the policy supports available for biofuel projects. Developments in the area of Compressed biogas, used cooking gas based biodiesel and co-processing were discussed in session four. Presentations were made on the Sustainable Alternative Towards Alternative Transport (SATAT) initiative, technology to produce biogas, bio-methanation and promoting startups in this biofuel segment.

A presentation was made by the representative of the Confederation of Indian Industry detailing the bio-fuel value chain, opportunity and challenges at each stage of transforming the bioresource to transport fuel. Session five, chaired by Dr. SSV Ramakumar, Director (R&D), Indian oil corporation, entailed a discussion on novel concepts of biorefineries, biochemicals and carbon capture units. A representative of Indian Air Force presented the performance and challenges of using synthetic jetfuel in aircrafts. A representative from SENASA and LyondellBasell made a presentation on the difference of scale in biofuel production in India and Europe. The role of sustainable fuel as a high-octane petrol and its role in reducing the emission was highlighted.

On 4 March the conference continued with session six on the progress in lignocellulosic ethanol chaired by Mr. Subodh Kumar (IOCL). The presentations were made by different companies on their technology solutions. Mr. M S Patke (BPCL) presented an overview of 2G bio-ethanol technology. Representations were made from Clariant Produkte and Versalis/ENI discussing their Sunliquid technology and Proesa technology respectively for cellulosic ethanol production. Praj Industries made a presentation on their Integrated advance bio refinery solutions driving sustainability. The session concluded with Mr. B Ramachandrarao from HPCL discussing the approach for overcoming limitations towards commercialization of Biofuels. The presentations on lignocellulosic ethanol continued in session seven, chaired by Mr. Didier Masy from Lesaffre Advanced Fermentations (LEAF). Presentations were made by IOCL and MRPL presenting the overview of their 2G projects. Novozymes discussed their perspective on how the 2G Ethanol industry could be enabled globally. A presentation was made by NovelYeast on development of industrial yeast strains for economically sustainable production of advanced biofuels. This session concluded with Sainc Energy Limited discussing the first of its kind biofuel scale continuous flow reactor for biorefineries.

Session eight, chaired by Ms Sangeeta Kasture, Department of Biotechnology, Ministry of Science and Technology, GoI, discussed novel concepts of biorefineries, biochemicals and carbon capture units. She briefed the DBT initiatives and schemes rolled out to promote innovation and Research & Development in Biofuels segment. Presentations were made by Reliance Industries and Shell on their Advanced Biofuels Program. IndianOil discussed their 1st refinery off-gases to ethanol production project. The session concluded with a BPCL presentation on the Integrated approach for sustainable Bio-refineries followed by Networking Coffee.

Post the networking break, Mr. Eric van der Heuvel made a presentation on the policy approach to gradually eliminate fossil fuels by 2050 and need to direct all innovation and investment to renewables energy in transport sector. He also moderated a panel discussion on Development of necessary

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ecosystem for Advanced Biofuel Economy. The panelists included Mr. Y B Ramakrishna, Mr. Pramod Choudhary, Mr. Shishir Joshipura, Mr. Renato Domith Godinho and Mr. Ralf Hortsch. The panelists discussed the key driving factors, challenges and impediments associated with development of Advanced Biofuels Economy. The presentations made during the event are available at the link-  
[https://ec.europa.eu/energy/topics/renewable-energy/initiatives-and-events/eu-india-advanced-biofuels\\_en](https://ec.europa.eu/energy/topics/renewable-energy/initiatives-and-events/eu-india-advanced-biofuels_en)

The conference resulted in the following **key recommendations**:

- **Effectiveness of Bioenergy projects:** Identification of technology gaps and stronger support for R&D, Support in the valorisation and market creation for the by-products, strategies to lower CAPEX and OPEX and design optimisation.
- **Financing bioenergy projects:** A new enabling financing mechanism needs to be developed and the developers need to access and tap into green funds.
- **Optimising the upstream section of the value chain:** Creating supply management and pricing mechanisms for the feedstocks, biomass depots, securing the involvement of agriculture sector, upstream feedstock optimisation for lower process costs
- **Accelerating permitting and licencing approvals at the local level**
- The conference also discussed upon the **upcoming 2G feasible technologies and available feedstock in India** in line with the technology booklet launched after 2<sup>nd</sup> EU-India biofuel conference<sup>1</sup>.

The series of EU-India conferences have demonstrated the creation of an ongoing interaction and integration between EU and India parties; **Intensification and further strengthening of this process, High level of open information exchange reflects a great trust in the collaboration, EU-India joint fund to support R&D, EU-India working group to accelerate the process.**

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<sup>1</sup> <http://artfuelsforum.eu/wp-content/uploads/2019/04/Booklet-on-technologies-presented-at-the-2nd-EU-India-Conference-on-Advanced-Biofuels.pdf>