

# **National Seminar on Biomass Supply Chain Management: Challenges, Opportunities, and Developments**

**MGSIPA Complex, Chandigarh, September 5, 2024**

## **Seminar Report**

Sardar Swaran Singh National Institute of Bio-Energy Technology (SSS-NIBE), Kapurthala, organized a one-day National Seminar on “Biomass Supply Chain Management: Challenges, Opportunities, and Developments” on 5<sup>th</sup> September 2024 at MGSIPA Complex, Chandigarh. The event was inaugurated by Dr. G. Sridhar, Director-General, SSS-NIBE, Chief Guest- Shri Satish Upadhyay, Mission Director, SAMARTH, MoP, GoI; Guest-of-Honour- Er. Pritpal Singh, Executive Director, PSCST, and Shri Anirudh Tewari (IAS), Director General, MGSIPA.

During the seminar inaugural, Dr. Sridhar highlighted the importance of biomass supply chains in the country and stressed on the relevance of supply chain management for the successful implementation of bioenergy programs. He emphasized on the collaboration between industries, central, state and nodal government, farmers, and academic and scientific institutes consortia to address biomass supply chain management challenges effectively so that the stakeholders can create location-specific optimized supply chain systems with improved efficiency. He also apprised the participants about the research SSS-NIBE is doing in the field of bio-energy for advancement of the sector. Shri. Satish Upadhyay in his address highlighted the importance of boosting demand to ensure the effective utilization of biomass, especially for power generation. He also stated that creating market-driven mechanisms for biomass offtake is critical for its increased use in the power sector of India. Pointing out the fact that SAMARTH Mission is already working towards integrating biomass into thermal power plants, Mr. Upadhyay recommended that for developing an efficient supply chain, limited and smaller amount tenders should be given to multiple suppliers rather than giving a large order to just one. Mr Pritpal Singh, addressed the logistical challenges of biomass management, with special emphasis on storage of biomass, supply to industries, and management of leakage. He stressed the need for making biomass economically viable with major focus on reducing its cost and using modern bioenergy pathways to maximize biomass potential. Guest of Honour, in his talk highlighted about the use of biomass fuels as an alternative solution to traditional fuels. Speaking about Punjab, Mr. Singh informed that the state has already demonstrated

different technologies to use biomass in multiple aspects and the number of pelletizing plants and their capacities are set to increase in the near future due to government schemes at the central and state levels. Mr. Anirudh Tewari, with his extensive experience in stubble management policies and practices, shared his valuable insights with the participants. He raises concern over the farm fires and suggests there is need to focus on Ex-situ management.

The seminar brought together government officials, industry representatives, entrepreneurs, policy makers and researchers to share insights, experiences, and best practices in biomass supply chain management. During the seminar, various experts gave a talk including Mr. Maganbir Singh, PSCST; Mr. Sachin Swamy, IOCL,; Mr. Sukhwinder Grewal, PRESPL; Mr. Ashwin Save, BiofuelCircle; Dr. Pratham Arora, IIT Roorkee; Mr. Sushil Kumar, SAMARTH; Mr. Salil Gupta, Ever Enviro; Ms. Kurinji Kemanth, CEEW; Mr. Ankit Sapra, Sukhbir Agro; Mr. Kamil Bhullar, NITI Aayog; Mr. Sushil Kumar, SAMARTH; and Mr. Aman Kwatra, IFGE.

The seminar aimed to help to spread awareness among the relevant stakeholders about the different policies of the government in the bioenergy and clean environment space, as well as on new business and technological models on supply chains, and learnings from successful case studies in green and sustainable supply chains.







## Session-wise Summary

### Session I

**Mr. Maganbir Singh, Principal Scientific Officer, PSCST**

#### **Topic: Paddy challenge in the state of Punjab**

- Punjab being an agrarian state produces an annual biomass of 18-20 MMT from paddy, with a collection window of approximately 35-40 days.
- The properties of paddy biomass such as presence of high silica and alkaline earthy metals, low bulk density, and thin section renders it difficult to shred and grind, and causes high wear and tear of the machinery.
- The paddy straw based problems faced in thermal power plants include: furnace slagging, superheater tube fouling, and ash disposal; in Bio-CNG plants: economic viability and disposal of fermented organic manure (FOM), in bioethanol plants: development of the technology at the stabilization stage.
- The Gross Calorific Value of paddy biomass: 3000-3500 kcal/kg (approx.), makes it a useful alternative for fossil fuel for power generation
- The Punjab state government has formulated initiatives for ex-situ paddy straw management. It's the first state to issue notification for mandatory replacement of minimum 20% coal with paddy straw based pellets in brick kilns.

### Session II

**Dr. Banafsha Ahmed, Post-Doc Fellow, SSS-NIBE**

#### **TOPIC: Setting the context on Biomass Supply Chain & an overview of Govt. of India**

#### **Policies for the Bioenergy Sector**

- Highlighted the current energy scenario and the climate goals of the country
- Energy recovery from surplus biomass can help in effective utilization of the biomass, prevention of stubble burning, generation of local jobs and business opportunities, and reduction in energy import bills.
- Informed about the various government schemes from different ministries in the bioenergy sector
- the potential and current status of Bio-energy in the country
- Highlighted the challenges in Biomass Supply Chain including Heterogeneity of biomass-seasonal availability and variation in feedstock supply, logistics and storage issues
- Benefits of Biomass Supply Chain Management: Energy security, Enhanced utilization of biomass for the various bioenergy targets, Reduction in import dependence for biofuels, Livelihood Generation, Employment opportunity, Rural development, Climate change mitigation, Waste utilization & management, Reduction in stubble burning
- Presented the National Biomass Atlas of India and its features and also mentioned about the work being done at the district level
- Shared the joint work by PNNL and SSS-NIBE under SAGE 2.0.

- Highlighted the role of stakeholders and expectations from the workshop including identification of key strategies and best practices for improving supply chain efficiency and sustainability, Understanding the challenges and opportunities in biomass supply chain management, Awareness creation about the schemes and policies from different government organizations in the bioenergy and clean environment space and Establishment of collaborative networks and partnerships to drive innovation and sectoral growth in biomass supply chain management.

### **Session III**

**Mr. Sachin Swamy, Chief Manager and Head,**

**Alternate Energy & Sustainable Development (AE&SD),**

**IOCL.**

**Topic: BSCM: Challenges and opportunities in India**

- Major crop residues: Rice (24%) Sugarcane (23%) Wheat (14%) Cotton (17%), Surplus biomass- 17 MMT
- Biofuels Potential- Ethanol potential: 3000 Crore Litres; CBG potential: 18 MMT
- IOCL's 2G Ethanol Panipat Plant capacity: 3 Crore liters of ethanol annually (100 KL/day), Project Cost: ~Rs. 1000 Crores; Licensor: M/s Praj Industries Limited, Pune; Feed: 2.2 Lakh MMT paddy straw per annum
- This plant establishment is helping in providing direct employment to 220 & Indirect employment to 1250 people, farmers in the region are generating additional income through supply of paddy straw, reducing stubble burning & GHG emissions almost by 3 lakh tons CO<sub>2</sub>e., equivalent to replacing 62,000 cars annually from roads.
- The 2G Ethanol plant, Panipat Biomass Supply Model: The activities like Paddy straw aggregation, transportation to IOCL's depots, unloading & stacking is done by Govt of Haryana (GoH) through Farmer Producer Organizations (FPOs)/ Custom Hiring Centers (CHCs)/ Baler Farmers etc; Depot operation & onward management is done by IOCL itself; For biomass pricing a committee of GoH & IOCL is established under the Chairmanship of DC Karnal to determine paddy straw procurement price from FPOs/CHCs etc.; Arrangement of land for biomass depots is done by GoH; Biomass incentive to processor is also given at the rate of Rs 1000/ton of paddy straw basis; Biomass is collected from the clusters which are under the radius of 50 km & 100 km radius from the plant.
- Highlighted the requirements of support system from agriculture ministry and state government for running the plant at its full capacities, some of them are: Dedicated ex-situ crop management policy; Credit line support For FPOs/VLEs/CHCs/individual farmer from banks with minimum interest for purchase of biomass aggregating farm equipment & working capital; Biomass Pricing similar in lines of crop MSP; Mapping of dedicated Biomass clusters; Specific insurance products from insurance companies for biomass storage.

## Session IV

**Mr. Sukhwinder Grewal, PRESPL**

### **Topic: Key strategies and best practices for improving supply chain viability**

- Importance of efficient Biomass Supply Chain Management: Agricultural Hub and Biomass Potential; Reduction of Environmental Pollution; Economic Benefits for Farmers; Employment Generation; Energy Security; Infrastructure Development; Support for Government Initiatives; Carbon Credits and Sustainability; Improved Air Quality and Public Health; Leveraging Technological Advancements
- Challenges in BSCM: Fragmented landholding patterns make the collection of biomass difficult and expensive; Lack of organized aggregation centers leads to inefficiencies in the supply chain; High transportation costs due to the bulkiness and low energy density of biomass; Inadequate rural infrastructure further complicates logistics, especially during the monsoon season; seasonal availability and geographical spread; variability in feedstock quality; high logistics costs due to bulkiness; technological gaps in conversion processes; lack of standardization in processing methods; & complex regulations.
- Opportunities in BSCM:
  - Efficient supply chain management can integrate modern technologies like IoT, AI, and blockchain for better tracking, inventory management, and transparency
  - PRESPL innovated the trolley design for soft biomass transportation to prevent wastage and multi model aggregation systems are developed for supply chain agility & flexibility.
  - The storage location should be rain proofed, completely insured & organized stacking with built in fire lanes can be achieved.
  - Need of adopting BECCS (Bioenergy with Carbon Capture and Storage): This technology captures carbon dioxide emissions from biomass-based power plants and stores them underground, effectively reducing the carbon footprint and potentially achieving negative emissions.
  - IoT and Smart Sensors can be used for real-time monitoring of biomass quality, moisture content, and storage conditions, ensuring optimal feedstock for conversion processes.
  - Blockchain Technology can be employed for tracking biomass from its origin to the end product, ensuring transparency, traceability, and sustainability in the supply chain.
  - Silage techniques: these techniques are adapted for biomass to preserve quality during storage by controlling moisture levels and reducing microbial activity.
  - Modern Air-drying Systems for Advanced air-drying used to reduce moisture content in biomass before storage, minimizing the risk of degradation and spontaneous combustion.

## **Session V**

**Mr. Ashwin Save, Co-Founder and Chief Operating Officer, Biofuel Circle**

**Topic: Innovative digital solutions and business models for BSCM and biomass trends with time.**

- BioFuelCircle offers digital solutions for the effective biomass supply chain management which will introduce transparency in supply chain which is necessary for healthy relationship between suppliers and buyers.
- Their firm has created a WhatsApp Chatbot in 5 languages which can provide easy solutions to farmers, with an advanced target to make available this chatbot in 22 languages which are listed in eighth schedule under our constitution to deliver PAN India service.
- Technology can help in interconnecting multiple local market clusters to ensure efficient supply chain.
- They are involved in making available the graphical biomass price trend data from prior services that they have provided which would directly benefit the suppliers and buyers to know about ongoing biomass price trends.
- BioFuel Circle are launching field test kit for testing sample biomass which will remove or minimize human intervention and due to this independent sampling trust will develop between both the parties.

## **Session VI**

**Dr. Pratham Arora, Assistant Professor, HRED, IIT Roorkee,**

**Topic: Modelling of Biomass Supply Chains: A Research Perspective**

- Case study of biomass to hydrogen/ammonia production: the annual production of ammonia is 13 MMT (6th most produced chemical in the world), and 83% of out of total ammonia produced is used as fertilizer.
- Biomass with its wide availability and carbon neutrality is a strong candidate to replace fossil fuels.
- Process economics, ozone depletion potential and importance of LCA in BSCM
- Case study: Designing of biomass supply chain using AnyLogistix is shown for some of TPPs.
- Importance of using algal biofuels as: Algae require CO<sub>2</sub> for growth; therefore, fuel is potentially low in carbon; there is possibility of integration to achieve low-cost CO<sub>2</sub> sequestration and nutrient remediation; algae uses all nutrients, minimizing eutrophication; it is biodegradable, so minimal issues with accidental spills /leaks; it uses underutilized land, e.g., deserts; yields 10 times more compare to land plants, so much less land is needed; certain algal species can also grow in salty or brackish water.
- Challenges in algal biofuels production: Sustainable supply of CO<sub>2</sub>; CO<sub>2</sub> requirements are responsible for 10-30% of biorefinery raw material cost, therefore, it become very important to quantify the CO<sub>2</sub> emissions for production and transportation



- Possible solution for the CO<sub>2</sub> supply in algal biofuel refineries: Flue gas can be obtained from a legacy coal-based power plant, from a legacy natural gas-based power plant, from a purpose-built natural gas combined cycle (NGCC) plant, from purpose-built biomass combustion plant; CO<sub>2</sub> supply can also be obtained from a purpose-built direct air capture (DAC) system.
- CO<sub>2</sub> supply from the combustion of biomass has the lowest GHG footprint for the delivered CO<sub>2</sub>
- Construction of a standalone NGCC unit near the biorefinery has the highest GHG footprint. However, the GHG footprint of such a plant is very sensitive to the grid electricity carbon footprint as well as emissions from the supply chain of natural gas feedstock.
- The fossil fuel power plant CO<sub>2</sub> supply has positive emissions for supplying stack gases and is expected to become prohibitive as the distance between the power plant and biorefinery increases. The results provide a benchmark for comparison of different CO<sub>2</sub> supply options for the establishment of a sustainable algal biorefinery.

## Session VII

**Miss. Kurinji Kemanth, Council on Energy, Environment & Water (CEEW)**

**Topic: How can Punjab increase the adoption of crop residue management methods.**

- CRM management in Punjab: The procedure of robust survey that their team did in 11 districts of Punjab including 1500 farmers from 143 villages; Out of 11 districts Gurdaspur, Jalandhar, Ludhiana, Patiala, Sangrur, and SBS Nagar – collectively accounted for about 58 per cent of the Kharif farm fires reported in Punjab in 2022; Atmospheric modelling studies estimate that during the peak burning, stubble burning contributes up to 30 per cent of post-harvest PM<sub>2.5</sub> levels in the Delhi & NCR.
- Notable trends-
  - About 66% of surveyed farmers grew short duration parmal rice in which PR126 is most sought after variety growing by 57.7% but short in supply. Govt. should promote breeding of these varieties.
  - 13% farmers completely burn their residue in 2022 most from Sangrur and Ludhiana districts who were mainly medium and large farmer. Small and marginal farmers were not doing such burning due to fear of heavy penalty.
  - 33% farmers adopted ex situ methods for CRM out of which 66% were those who formally used in-situ method.
  - Out of these 33% farmers only 3% get INR1200/Acre for residue, while 69% gave stubble for free Super seeders and Rotavators are most common machine used for straw management.
  - Renting CRM machines is a big challenge, as only 13% farmers rented these machines for straw management while 75% get it from their friends and family.
- Suggestion: Farmer should get benefit either in terms of subsidies or in form of manure that too within a timeframe.

## Session VII - Case Studies- Practical Field Learnings

Mr. Sushil Kumar Arjariya, SAMARTH Mission,

**Topic: Pellets/Briquettes.**

- Cumulative Biomass usage in NCR thermal power plant is about 6.97 LMT which saves  $CO_2$  equivalent to 8.37 LMT (Lakhs Metric Tonne).
- State-wise challenges are different in usage of biomass like–

### **Punjab**

- Significant gap between supply and demand for torrefied pellets, with only one manufacturer in Punjab capable of producing 400 MT per day against a requirement of 1000 TPD.
- Significant gap between supply and demand for non-torrefied pellets, with only about 47 manufacturers in Punjab capable of producing 1766 MT per day against a requirement of about 1400 MT per day apart from other competing usages.
- Procurement restriction should be removed until competent manufacturers are available within Punjab, Biomass policy required amendments allowing sourcing of Biomass pellets by Pellet manufacturers from NCR instead of insisting on procurement from the state of Punjab only.

#### **Way forward:**

- Policy amendments to remove procurement constraints
- Establishment of new torrefied pellet manufacturing

### **Uttar Pradesh**

- The absence of a unified policy for biomass procurement and utilization in U.P. hinders coordinated efforts across the state, affecting the overall efficiency of biomass usage.
- Harduaganj Thermal Power Station faces a shortfall in pellet supply, hindering the state's efforts to meet its pellet co-firing requirements.

#### **Way forward:**

- Comprehensive biomass policy for U.P.
- Supply Chain Enhancement to meet the pellet supply needs at Harduaganj TPS

### **Haryana**

- The portal ([www.agriharyana.gov.in](http://www.agriharyana.gov.in)) for biomass procurement is currently non-operational, causing non-compliance of farmer registration and the procurement process of Biomass pellets in HPGCL.
- Restrictive policies mandate that power plants source pellets from designated service areas (up to 3-4 Districts around Thermal Power Plants), creating difficulties in certification and limiting supply from competent manufacturers in distant locations.

#### **Way forward:**

- Biomass procurement Portal Activation.

- Policy Amendments reg. mandate for removing restriction for sourcing Biomass from designated service areas.

**Mr. Salil Gupta, Ener Enviro,**

**Topic: Compressed Biogas (CBG)**

- Ever Enviro is India's leading CBG Developer and sustainable solutions company which is investing in advanced technologies for climate impact, carbon neutrality, circularity, and sustainability.
- Company almost produced more than four thousand tons of CBG since its Inauguration by Hon'ble PM of India on 19.02.2022.
- The plant is capable of using all types of feedstocks (MSW, Paddy Straw, Press Mud etc.) and provide overall solutions to various streams of Waste such as Municipal Solid Waste, Agricultural Waste, Agro Industrial Waste, Construction & Demolition.
- Key points for successful operation of plants: Right mix of feedstock; Robust supply chain Right technology selection; Regular Monitoring; Supplier Default Risk Mitigation; Inventory Planning and Management
- Ever Enviro is working on to create a circular economy for farmers through supply of fermented organic manure which can increase soil productivity and long-term sustainability and developing solutions to capture and utilize the CO<sub>2</sub> generated during CBG production for high end applications.

**Mr. Ankita Sapra, Sukhbir Agro,**

**Topic: Biomass Power.**

- Sukhbir Agro is first and only paddy base waste to energy transforming company which has used almost 10 lakh tonne of paddy biomass since the commencement of the plant.
- Company is supplying continuous power supply to states like – Punjab, Haryana, and Rajasthan.
- For successful operation of plants: Collaborative efforts can be made among the farmers to be able to supply biomass; Good policies should be there to support all, i.e., supplier and buyers; Fast track resolution is necessary for dealing with farmers problems related to subsidies; Some technological advancement from research and development organisations to manage high silica containing sludge and slag from the boilers as managing them is a great challenge for these industries.

## **Session VIII**

### **Panel Discussion**

The seminar also featured a panel discussion on 'Biomass Supply Chain Management: Challenges and the Way Ahead,' chaired and moderated by Mr. Gaurav Kedia from IBA. The discussion included participation from Mr. Kamil Bhullar, NITI Aayog, Mr. Aman Kwatra, Indian Federation of Green Energy, Mr. Aman Sapra, Sukhbir Agro, Mr. Sachin Swami, IOCL

and Mr. Ashwin Save, Biofuel Circle. Panellists focused on various aspects such as policy issues, the environmental impacts of crop residue burning, subsidies and schemes for entrepreneurs seeking business opportunities, the use of new technologies, and models for enhancing supply chain transparency. They recommended providing subsidies to farmers with timely disbursement and establishing a standardized system for biomass procurement nationwide to protect industrialists. Additionally, they highlighted the need to address transportation challenges at the ground level, proposed the implementation of new credit models, such as a carbon-capture-credit system & to focus in developing Bioenergy with Carbon Capture and Storage (BECCS) system.

## Media coverage of the seminar.

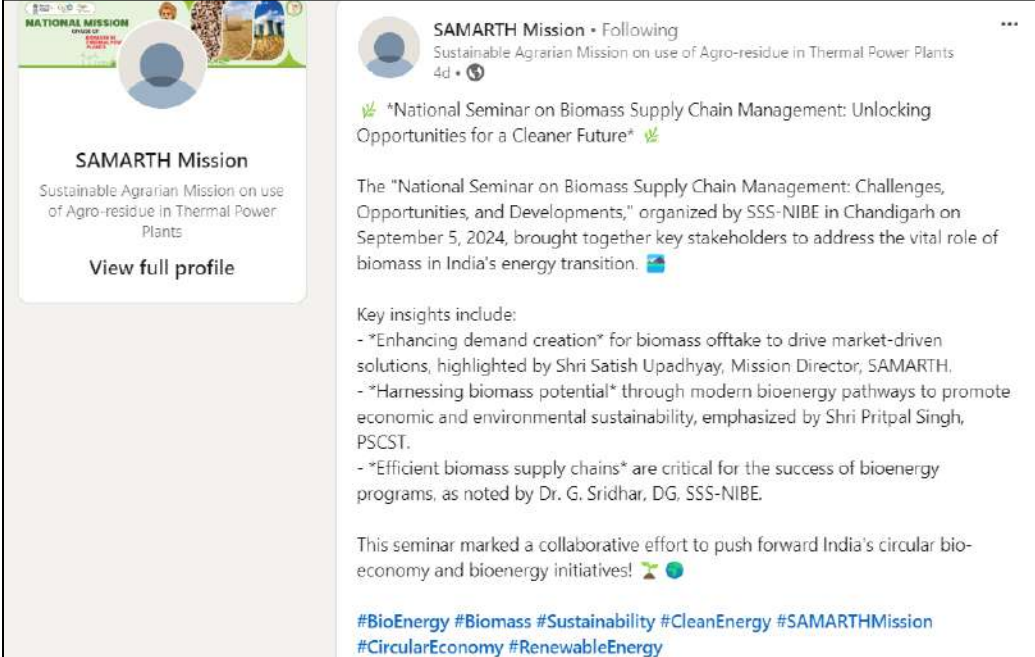
Ministry of New and Renewable Energy

### National Seminar by SSS-NIBE explores Challenges, Opportunities, and Developments in Biomass Supply Chain Management

Need to improve demand creation to facilitate development of market-driven mechanisms for biomass offtake: Mission Director, SAMARTH, Ministry of Power

Need to collectively work on harnessing biomass potential through modern bioenergy pathways: Executive Director, Punjab State Council for Science & Technology

Posted On: 05 SEP 2024 2:33PM by PIB Chandigarh



**SAMARTH Mission** • Following  
Sustainable Agrarian Mission on use of Agro-residue in Thermal Power Plants  
4d •

**\*National Seminar on Biomass Supply Chain Management: Unlocking Opportunities for a Cleaner Future\***

The "National Seminar on Biomass Supply Chain Management: Challenges, Opportunities, and Developments," organized by SSS-NIBE in Chandigarh on September 5, 2024, brought together key stakeholders to address the vital role of biomass in India's energy transition.

Key insights include:

- \*Enhancing demand creation\* for biomass offtake to drive market-driven solutions, highlighted by Shri Satish Upadhyay, Mission Director, SAMARTH.
- \*Harnessing biomass potential\* through modern bioenergy pathways to promote economic and environmental sustainability, emphasized by Shri Pritpal Singh, PSCST.
- \*Efficient biomass supply chains\* are critical for the success of bioenergy programs, as noted by Dr. G. Sridhar, DG, SSS-NIBE.

This seminar marked a collaborative effort to push forward India's circular bio-economy and bioenergy initiatives!

[#BioEnergy](#) [#Biomass](#) [#Sustainability](#) [#CleanEnergy](#) [#SAMARTHMission](#) [#CircularEconomy](#) [#RenewableEnergy](#)

# Focus on demand creation key to boost biomass offtake: SAMARTH Mission Director

Emphasizing the need to improve demand creation for biomass offtake, Shri Satish Upadhyay, Mission Director of SAMARTH (Sustainable Agrarian Mission on the use of Agri-Residue in Thermal Power Plants), called for market-driven mechanisms to facilitate biomass utilization during a national seminar held in Chandigarh on September 5.



ETEnergyWorld

Updated On Sep 6, 2024 at 07:51 AM IST

# National Seminar by SSS-NIBE explores Challenges, Opportunities, and Developments in Biomass Supply Chain Management

By **Chinmayi** | Thursday, 5 September 2024



A one-day "National Seminar on Biomass Supply Chain Management: Challenges, Opportunities, and Developments" has been organized at HISSDA Complex in Chandigarh today, September 5, 2024, to understand and address the challenges and opportunities associated with the efficient management of biomass supply chains (BSC) in the country. The seminar has been organized by Sarder Swaran Singh National Institute of Bio-Energy Technology (SSS-NIBE), Kapurthala, an autonomous institution of the Ministry of New and Renewable Energy, Government of India. The seminar seeks to

foster collaboration and knowledge exchange to facilitate the development of cost-effective and efficient biomass supply chains to support India's transition to a circular bio-economy. It brought together government officials, industry representatives, entrepreneurs, policy makers and researchers to share insights, experiences, and best practices in biomass supply chain management. The seminar aims to highlight the need and particular relevance of efficient biomass supply chains for the success of bioenergy programs in the country.

The event was inaugurated by the Chief Guest and Mission Director, SAMARTH (Sustainable Agrarian Mission on use of Agri-Residue in Thermal Power Plants), Ministry of Power, Government of India, Shri Satish Upadhyay; Guest of Honour and Executive Director, Punjab State Council for Science & Technology (PSCST), Government of Punjab, Shri Prithpal Singh; and Director General, SSS-NIBE, Dr. G. Sridhar.



Director General, MGSIFA, Shri Anirudh Tewari, with his extensive experience in stubble management policies and practices, graced the event and shared his valuable insights with the participants.

## "Need to view Biomass Supply Chain Management from Demand Side"

In his talk, the Chief Guest and Mission Director, SAMARTH, Shri Satish Upadhyay, highlighted that there is a need to view supply chain management from the demand-side and spoke on the importance of enhancing demand creation for the development of market-driven mechanisms for the offtake of biomass. He also mentioned that biomass utilization has critical environmental and social benefits for our country. He informed the participants about the successful work being done by the SAMARTH Mission for biomass co-firing and how it is increasing utilization of biomass in power generation.

## "Need to use Modern Bioenergy Pathways to harness potential of Biomass"

Guest of Honour and Executive Director, PSCST, Shri Prithpal Singh highlighted that availability of space for storage of biomass, supply to industry and management of leakage are some challenges which need to be addressed. He stressed that we should collectively work on harnessing the potential of biomass, and on utilizing it through modern bioenergy pathways, rather than wasting it. He said that there is a need to make biomass available at the minimum possible cost, so that it is economically viable for industry.

## "Supply Chain Management is Critical for Success of Bioenergy Programmes"

Director General, SSS-NIBE, Dr. G. Sridhar highlighted the relevance and importance of biomass supply chains in the country. He also apprised the participants about the research SSS-NIBE is doing in the field of bio-energy, for advancement of the sector. He stressed how supply chain management is critical for the successful implementation of bioenergy programs in the country.

Dr. Manojvir Singh from PSCST delivered a talk on paddy challenge in the state of Punjab. He highlighted the activities of PSCST, the current paddy utilization pathways in Punjab, the challenges faced in its utilization and opportunities available to use it as a resource.

The day-long seminar will have sessions exploring various facets of the challenges and opportunities associated with the efficient management of biomass supply chains in the country.

(Source PIB)

# ENVIRO ANNOTATIONS

Since 2018 Environment news, environmental news today, Current environmental issues, Current Affairs on environment, general issues on environmental ecology, biodiversity, and climate change, latest environmental news, Editorial Opinion, Analysis of general issues on environmental ecology, biodiversity, and climate change, NDT Orders, Court Orders, General Knowledge on environment are the only things here at Enviro Annotations. We are in the 6th year of publication. [Subscribe](#)

Youtube

X

LinkedIn

FB

Whatsapp

Insta



## Government, Industry Gather to Address Biomass Supply Chain Challenges

5th September 2024 [YouTube](#) [X](#) [LinkedIn](#)

A one-day National Seminar on Biomass Supply Chain Management: Challenges, Opportunities, and Developments concluded today at the MGSIPA Complex in Chandigarh. The seminar, organized by Sardar Swaran Singh National Institute of Bio-Energy Technology (SSS-NIBE), Kapurthala, aimed to address the critical issues and explore potential solutions for efficient biomass supply chain management in India.

### Key Takeaways from the Seminar:

- **Importance of Biomass Supply Chains:** The seminar highlighted the crucial role of well-managed biomass supply chains in India's transition to a "circular bio-economy". Efficient supply chains are essential for addressing issues like stubble management and preventing farm fires.
- **Need for Demand-Side Focus:** The Chief Guest, Satish Upadhyay, emphasized the importance of viewing biomass supply chain management from the demand side and creating market-driven mechanisms for offtake.
- **Harnessing the Potential of Biomass:** The Guest of Honour, Pripal Singh, stressed the need to utilize biomass through modern bioenergy pathways rather than wasting it. He also highlighted the importance of making biomass available at a minimum cost to ensure economic viability.
- **Government Policies and Initiatives:** The seminar showcased the government's efforts to promote bioenergy through various policies and initiatives, such as the "BioE3 Policy" and the "SAMARTH" Mission.
- **Challenges and Opportunities:** Participants discussed the challenges faced in biomass supply chain management, including storage, transportation, and leakage, as well as the opportunities for innovation and technological advancements.

**Expert Insights and Case Studies:** The seminar featured presentations by experts from government agencies, research institutions, and industry. Case studies on successful biomass utilization projects were shared to provide practical insights and learnings.

The National Seminar on "Biomass Supply Chain Management" concluded with a panel discussion on the challenges and the way forward. The event provided a valuable platform for stakeholders to exchange ideas, explore potential solutions, and contribute to the development of a sustainable and efficient biomass supply chain in India.