



RECOMMENDATIONS



5th INTERNATIONAL CLIMATE SUMMIT

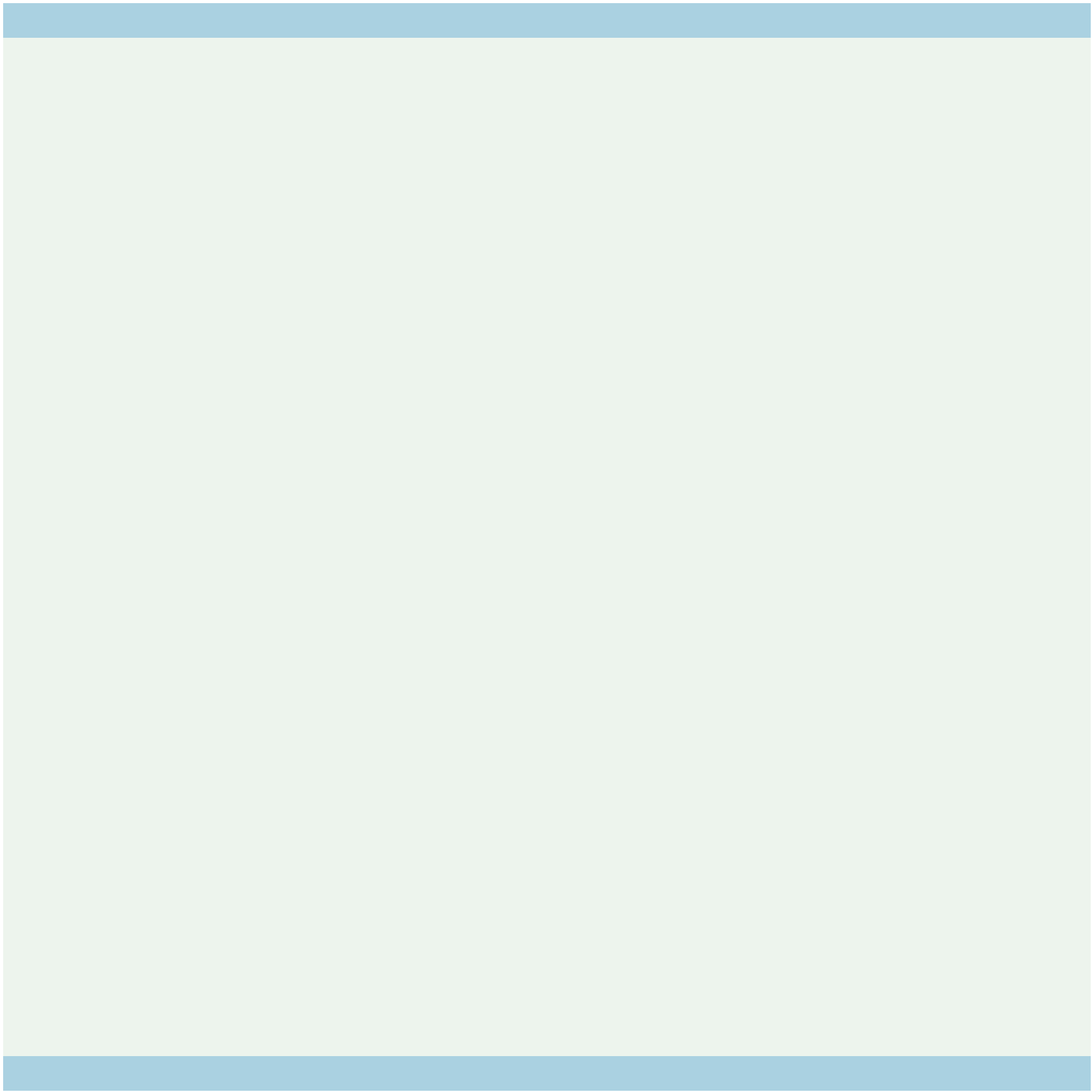
CORN REVOLUTION

LEADING TO

ETHANOL, ETHYLENE, SAF, BIO-PLASTICS, HYDROGEN & e-METHANOL

29th August 2025 | Hotel Le Méridien, New Delhi





ABOUT THE SUMMIT

5th International Climate Summit on ‘Corn Revolution leading to Ethanol, Ethylene, SAF, Bio-Plastics, Hydrogen & e-Methanol’ was held on 29th August 2025 at Le Meridien, New Delhi, marked the fifth edition of this global platform on climate, energy transition, and sustainable growth.

Since its inception each edition of ICS had carried forward a transformative agenda: from initiating India’s Green Hydrogen journey in 2021, to deepening Indo–Norwegian collaboration in 2022, championing the LiFE Mission (Lifestyle for Environment) in 2023, and catalyzing the Corn-to-Ethanol Revolution in 2024. In 2025, ICS built on that strong legacy with a comprehensive theme—“Corn Revolution: From Dent Corn to Ethanol, SAF, Bio-ethylene, Bio-based Petrochemicals, Hydrogen, Carbon Economy & Energy Storage Systems.”

This year ICS 2025 highlighted India’s ambition to reduce petroleum imports, strengthen food and energy security, and drive decarbonization through bio-based solutions. At its core, ICS 2025 was about positioning India’s farmers as equal partners in the green transition—recognizing their role not just as producers of feedstock but as contributors to carbon reduction, value addition, and national prosperity.

The 5th International Climate Summit’s primary objective was to explore alternative energy strategies that contribute to India’s decarbonization goals. The Summit focused on Dent Corn Import – Impact of Dent Corn Revolutions in India. The Corn Revolution in India has opened up new opportunities for strengthening the country’s energy security through ethanol production. Corn has become a key feedstock for ethanol-based biofuel, complementing sugarcane as a major source.

Under the Ethanol Blending Programme, India aims to achieve 20% ethanol blending with petrol by 2025, reducing dependence on imported crude oil and cutting carbon emissions. Corn-based ethanol not only diversifies the biofuel basket but also ensures a more sustainable and regionally balanced supply, since maize can be grown in both irrigated and rainfed areas.

This linkage of agriculture with clean energy creates a win-win pathway: farmers benefit from stable markets and higher incomes, industries gain reliable raw material, and the nation moves closer to its goals of energy independence, rural prosperity, and climate change mitigation.



ABOUT THE SUMMIT

The Inaugural Address was given by Shri Nitin Jairam Gadkari, Hon'ble Minister of Road Transport & Highways, Govt. of India. Deliberations brought together Global Agencies, Diplomats, Corporate Leaders, Researchers, and Innovators to address opportunities across the bioeconomy, process safety, digital platforms, and carbon credit markets. A special focus was placed on technology transfer, international collaborations, investment frameworks, and farmer-centric carbon equity, ensuring that India's bioenergy pathway aligned with both climate goals and inclusive growth.

With its multi-stakeholder engagement and future-oriented agenda, ICS 2025 proved to be a landmark convening that reinforced India's leadership in the global climate and bioeconomy movement—an essential step towards building a large bioenergy economy.



Executive Summary

India's growing dependence on petroleum, LNG, and petrochemical imports poses a significant threat to its economic stability and energy security. At the 5th International Climate Summit – 2025, stakeholders emphasized the strategic potential of corn as a sustainable, home-grown alternative to fossil fuels. Scaling up corn production and ethanol adoption can drastically reduce import dependency, strengthen food security, generate rural prosperity, and accelerate India's decarbonization efforts.

Context and Challenges

India's annual petroleum import bill stands at ₹24 lakh crore and continues to rise. Projections suggest that imports of petroleum, LNG, and petrochemical feedstocks will grow significantly by 2030, further straining the aspiration of achieving a \$5 trillion economy. Currently, 85% of petroleum demand is met through imports, creating both economic and strategic vulnerabilities.

The Brazilian model of ethanol adoption demonstrates a viable pathway. Brazil has successfully used 100% hydrous ethanol vehicles for over three decades, drastically reducing dependence on petroleum imports and improving air quality.

Strategic Potential of Corn in India – *Corn is the New Crude Oil*

Corn offers multiple value chains, including:

- Biofuels (Ethanol, Methanol, SAF, RD)
- Protein meal
- Cooking corn oil
- Beverage-grade biogenic CO₂ and dry ice
- Ethylene and downstream petrochemicals/polymers
- Green Hydrogen (with minimal power requirement)

Producing 200 million tons of corn annually can fully support India's gasoline, aviation fuel, and ethylene requirements. This would yield approximately 70 million tons of ethanol per year and 4 million tons of cooking oil, significantly reducing the import burden of petroleum and palm oil.



Key Advantages of the Corn Revolution

- Reduced dependency on petroleum and LNG imports, mitigating risks from wars, sanctions, and tariffs.
- Rural prosperity and higher income for farmers across India.
- Enormous savings for the economy, supporting GDP growth and industrial development.
- Strengthened food security through corn by-products.
- Cleaner air and reduced urban pollution, particularly in India's most polluted cities.
- Strategic independence from oil cartels and foreign pressures.

Recommended Actions

- Establish mega bio-ethanol plants (1,200–1,500 KLPD) through oil sector refineries.
- Set up 10 new corn-based green (bio) ethylene petrochemical complexes.
- Transition existing petrochemical crackers (GAIL, IOC, BPCL, RIL, Adani) to corn-based feedstock.
- Leverage India's proven expertise—India Glycols (Kashipur, UP) has produced bio-ethylene since 1990.
- Promote hybrid and GM yellow dent corn seeds to achieve 200 million tons/year production within 5 years.
- Replace LPG with ethanol, starting infrastructure development in rural India.

Budgetary Ethanol Cash Cost per MT

- Corn at \$235/MT: \$670/MT (\$0.53/L)
- Conversion costs: \$160–170/MT (\$0.13/L)
- Fixed costs: \$30–40/MT (\$0.02/L)
- DDGS, CO₂ & corn oil credits: -\$300/MT ethanol (-\$0.24/L)
- Total: \$0.44/L (₹39/L)

Learning from Global Examples

- USA: Produces 60 million tons of ethanol annually from 200 plants—nearly double India's current gasoline demand.
- Brazil: Operates vehicles on 100% hydrous ethanol or 30% ethanol blends.
- California (USA): Supports E85 vehicles (85% ethanol, 15% gasoline).
- India: With 2–3 crop cycles per year (110-day cycle), India can surpass US productivity levels.

Health and Environmental Gains

- Replacement of unhealthy palm oil imports with heart-healthy corn oil.
- Reduction in hazardous AQI (PM_{2.5}) levels caused by fossil fuel combustion.
- Cleaner air, as witnessed during COVID-19 lockdowns when fossil fuel use declined.

International Cooperation

India has initiated agreements with Burkina Faso for maize imports. To ensure supply security while scaling up domestic production, similar agreements should be expanded with Brazil, Argentina, Ukraine, and the USA.

National Mission on Corn – *Corn is the New Crude Oil*

- Corn must be treated at par with crude oil.
- Production should be targeted at a national scale comparable to cotton, milk, and wheat.
- Allow duty-free import of corn for industrial applications for five years until the Corn Revolution delivers results.
- Establish a long-term, stable policy on corn ethanol with measurable blending targets beyond 2030.
- Treat corn production as a Défense-level priority through a National Mission on Corn, comparable to the Green Hydrogen Mission, with equivalent support schemes and incentives.
- Promote high-yielding hybrid corn varieties, precision agriculture, and digital farm-to-market platforms.
- Ensure MSP assurance for all corn varieties to encourage diversification.
- Provide Viability Gap Funding (VGF) & CAPEX subsidies for ethanol biorefineries, storage, and logistics infrastructure.
- Grant priority sector lending status for ethanol and bioenergy projects.
- Offer interest subvention & soft loans through SIDBI/NABARD for farmer cooperatives and investors.
- Invest in grain storage, drying, and ethanol logistics infrastructure to reduce aflatoxin risks and ensure quality DDGS production.
- Diversify seed production hubs beyond peninsular India for timely, affordable supply.
- Involve private seed companies (sweet corn, flint corn, hybrid, dent corn) with subsidized programs to support the Corn Revolution.
- Extend high-yield hybrid corn varieties with full best-management packages to unreached areas.
- Support R&D for climate-resilient, high-starch maize hybrids with better ethanol recovery.
- Develop affordable biosensors for real-time monitoring of soil health, crop stress, and contamination.
- Create an indigenous framework for Certified Reference Materials (CRMs) for corn and derivatives to enhance global competitiveness.
- Promote efficient utilization of corn fractions (cobs, stover) for high-value co-products such as Xylooligosaccharides (XOS), which have applications in nutraceuticals and pharmaceuticals.

Conclusion

With the Corn Revolution, India can become a global export hub not only for corn but also for ethanol, ethylene derivatives, and SAF. This transformation will ensure energy security, food security, and decarbonization, enabling Viksit Bharat by 2047.



About PHDCCI

PHDCCI has been working as a catalyst for the promotion of Indian industry, trade and entrepreneurship for the past 120 years. It is a forward looking, proactive and dynamic PAN-India apex organization. As a partner in progress with industry and government, PHDCCI works at the grass roots level with strong national and international linkages for propelling progress, harmony and integrated development of the Indian economy.

PHDCCI, acting as the “Voice of Industry & Trade” reaching out to more than 1,50,000 large, medium and small industries, has forged ahead leveraging its legacy with the industry knowledge across multiple sectors to take Indian Economy to the next level.

At the global level, we have been working with the Embassies and High Commissions in India and overseas to bring in the International Best Practices and Business Opportunities.

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