

***INVESTING
IN THE FUTURE OF
SUGAR AND ETHANOL***

***M PRABHAKAR RAO
PRESIDENT***

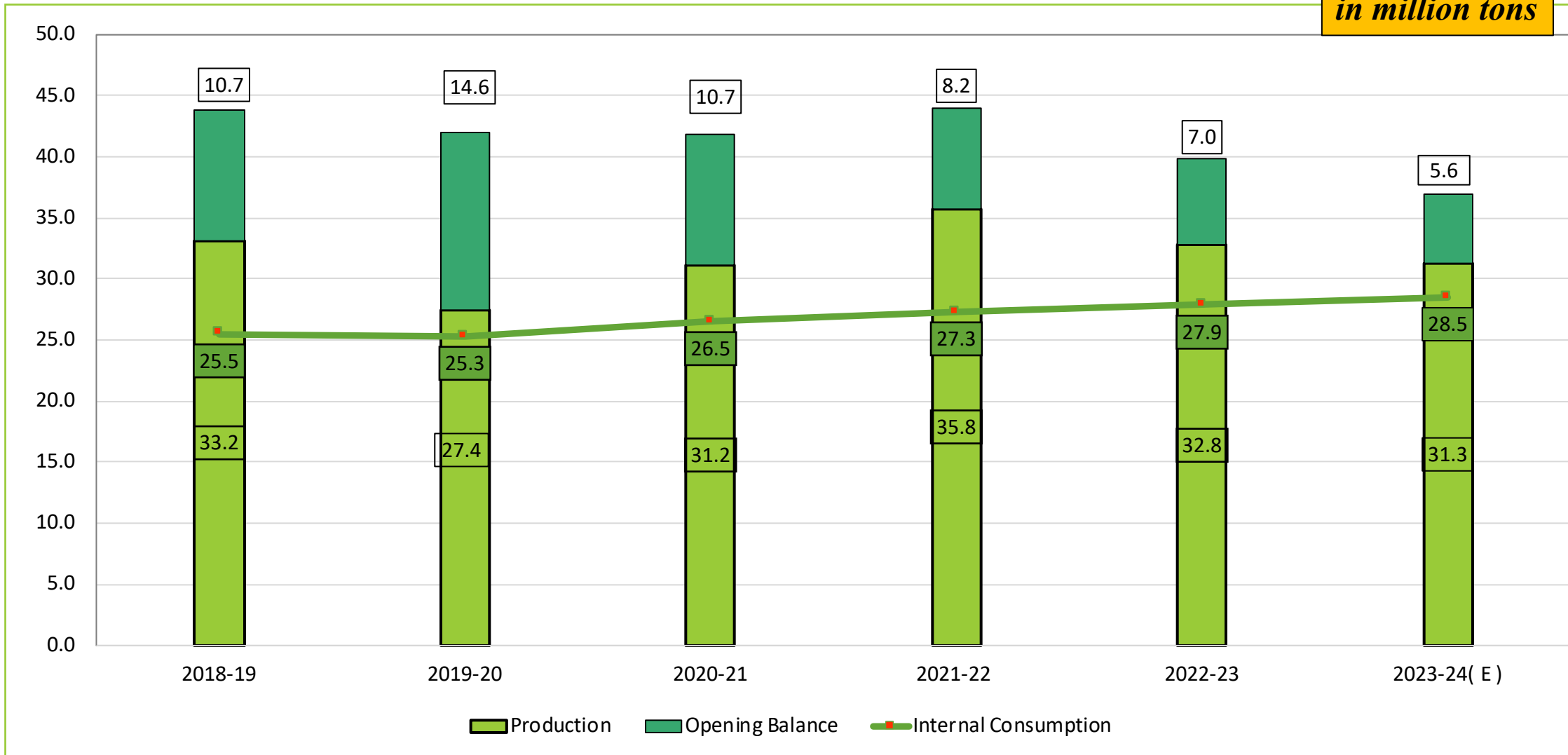
INDIAN SUGAR & BIO-ENERGY MANUFACTURERS ASSOCIATION

Facts about India

- Sugarcane planting area doubled in last 4 decades
- Sugarcane production increased 300% from around 150 mn ton in 1980s (Last 4 decades)
- Sugarcane yield increased by about 40% during this period
- India has now become surplus sugar producer over the years – 2nd highest sugar producer after Brazil
- Ethanol capacities / supplies increased multifold
- Ethanol Blending on target – achieved 12% blending in 2022-23 ESY
- **Key to success has been the growth of sugarcane and adoption of better technologies** – R & D, Investment in cane development and technology upgradation, better varieties, Good Agricultural Practices

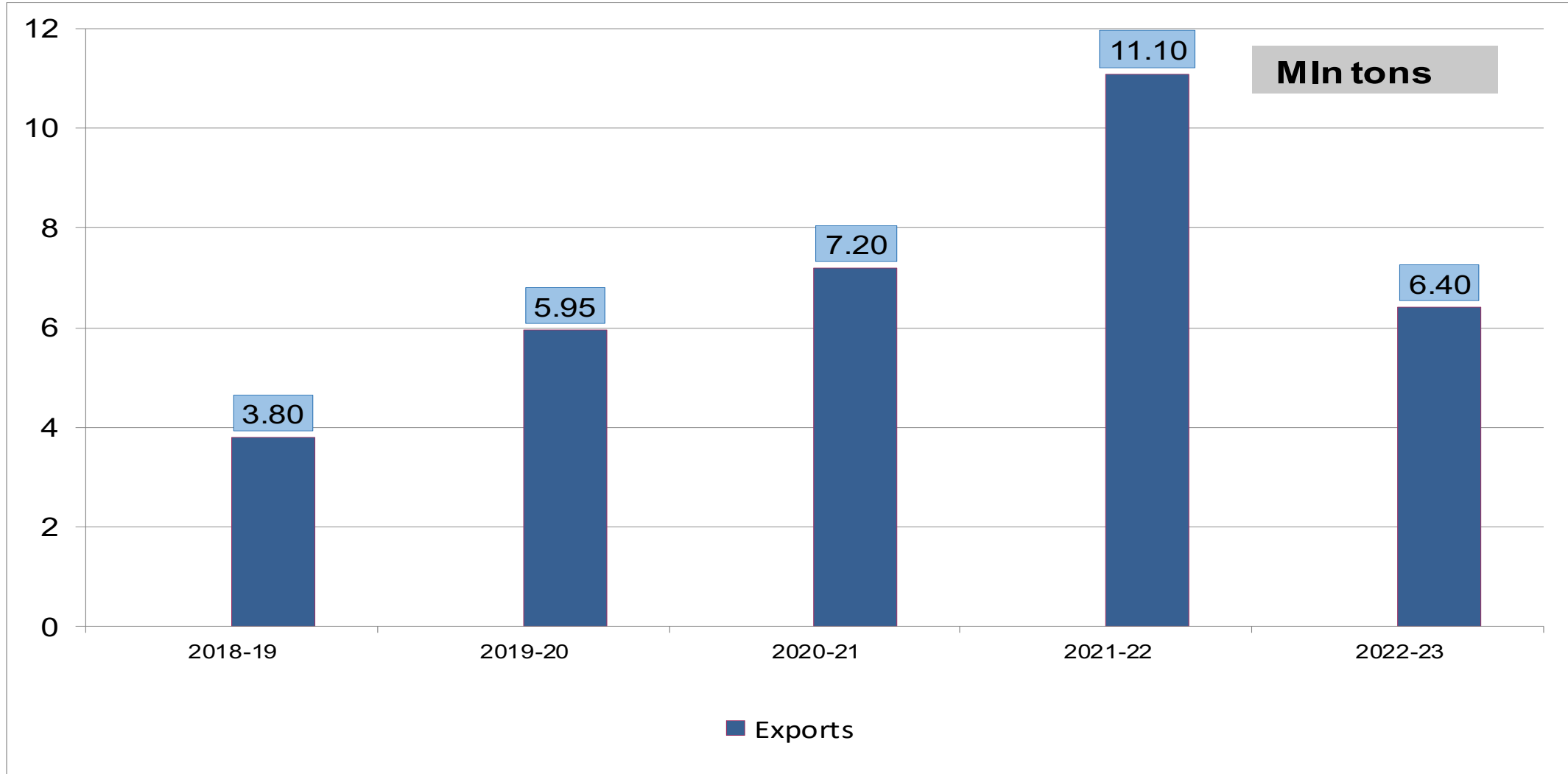
Sugar Balance

in million tons

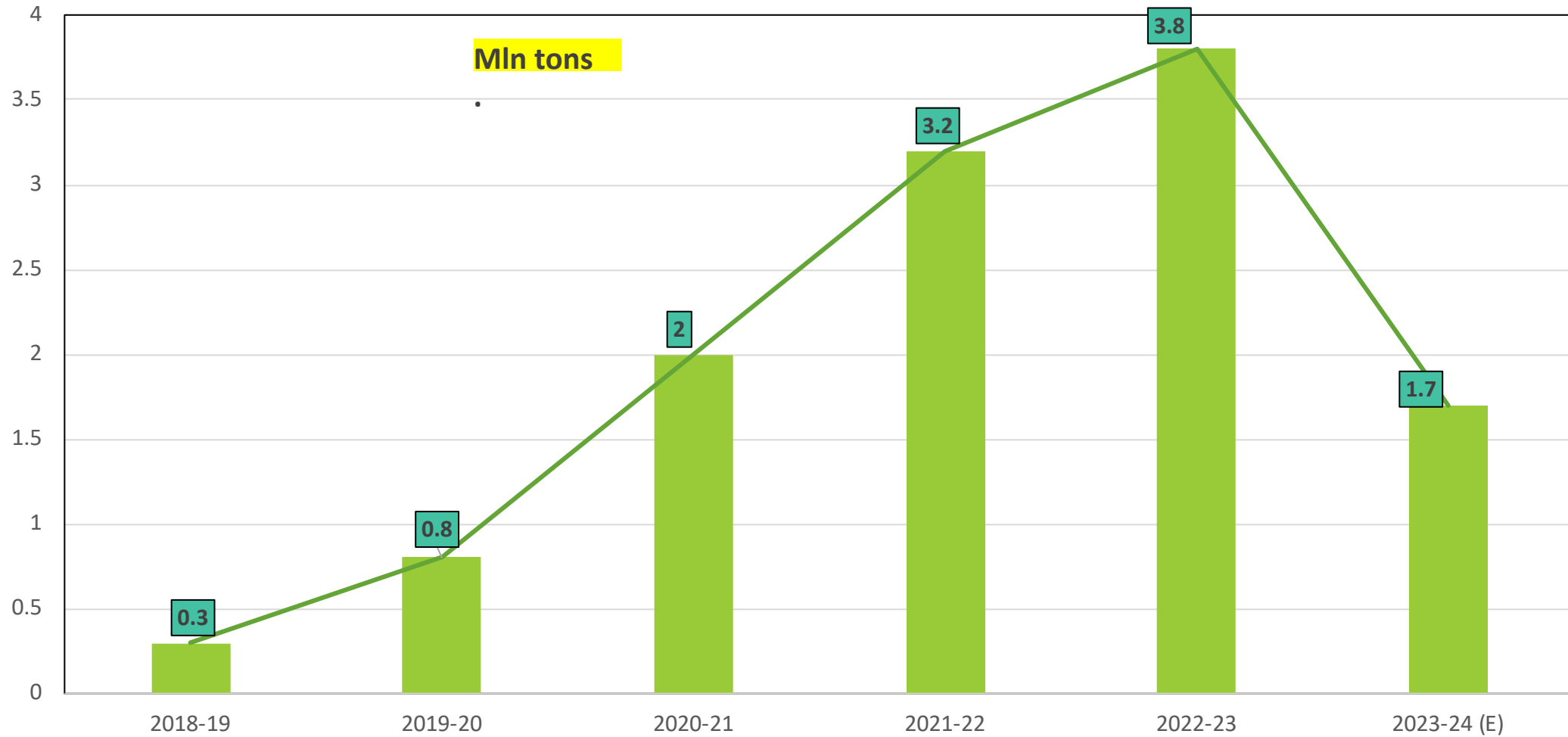


SUGAR PRODUCTION EXCEEDS DOMESTIC REQUIREMENT

Sugar exports from India

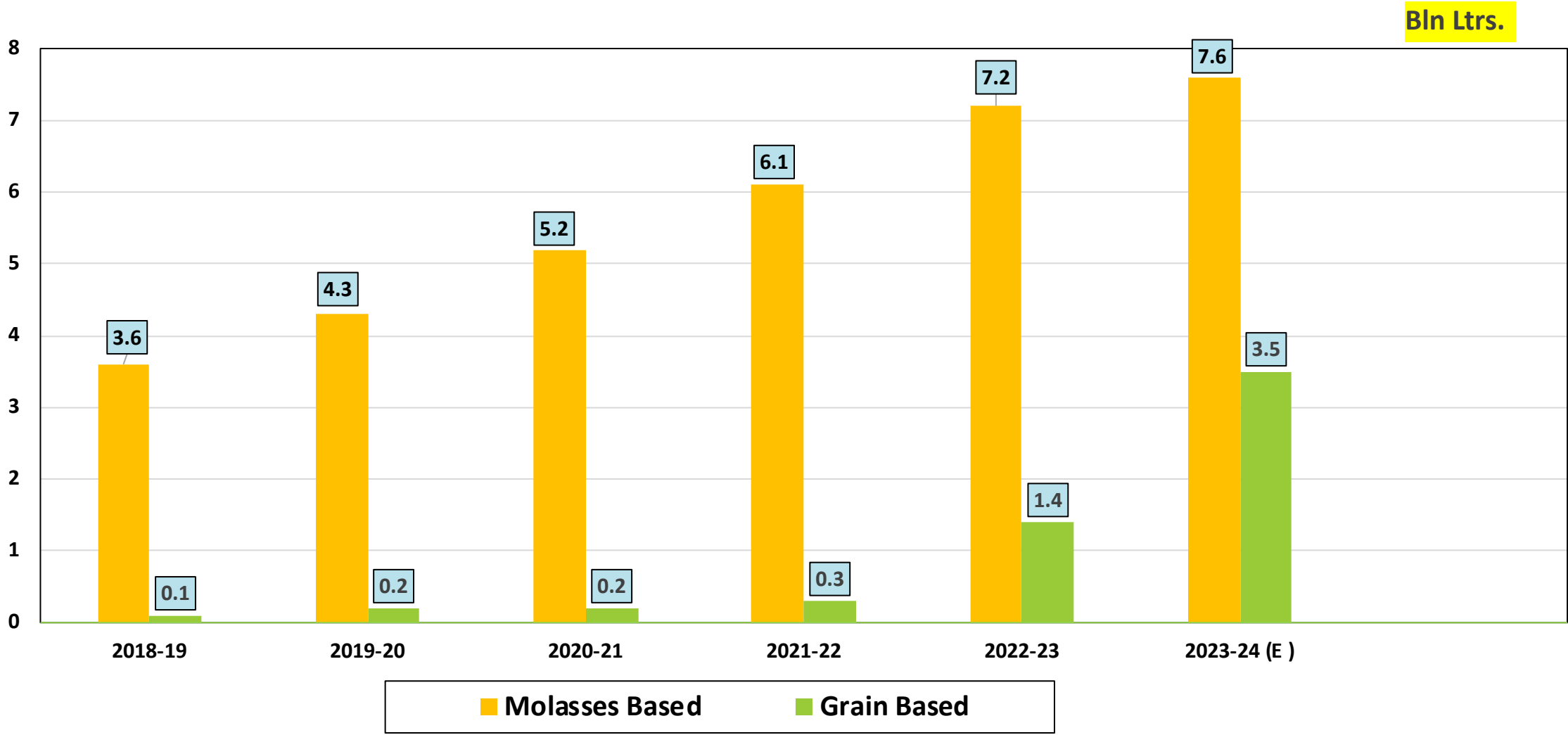


Quantity of Sugar diverted towards the production of Ethanol



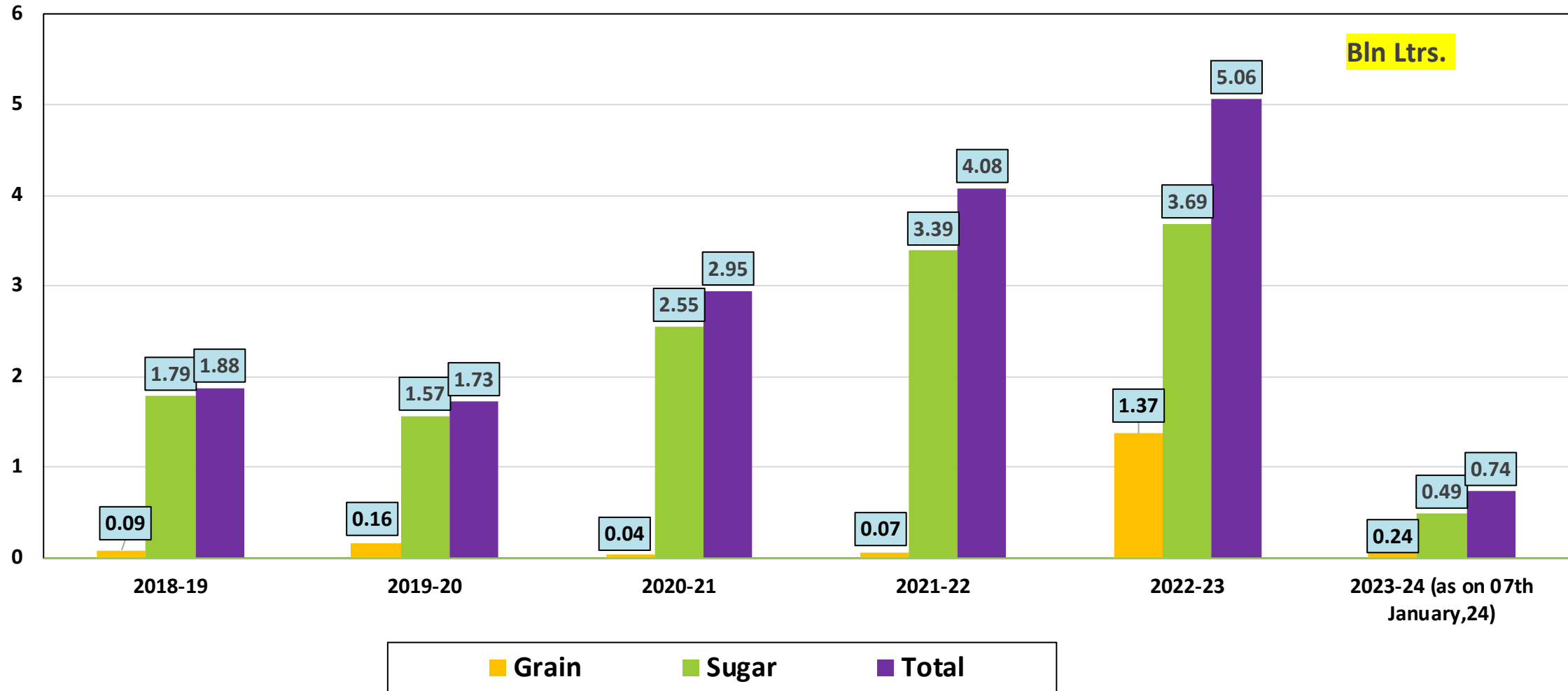
- Sugar diversion for 2023-24 ESY is as permitted by the Government so far

Manufacturing capacity of molasses / cane juice and grain based distilleries



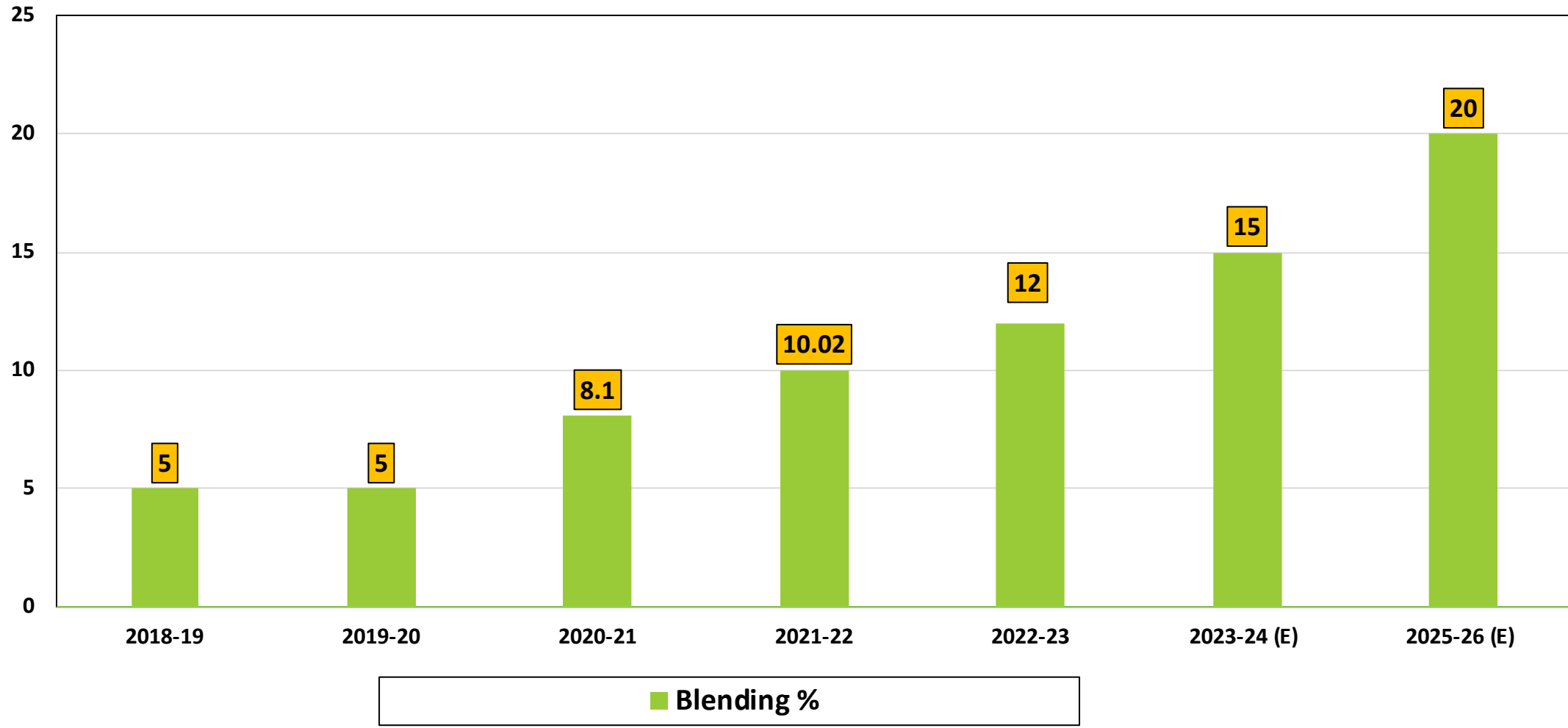
- Huge investments in Ethanol sector
- Sugar based distilleries capacity more than doubled in last 5 years

Ethanol production/supply over the years



- ❖ About 250% increase in ethanol supply over last 5 years
- ❖ Contribution of sugar based distilleries is currently around 70-80% of total supply
- ❖ 2023-24 ESY is ongoing

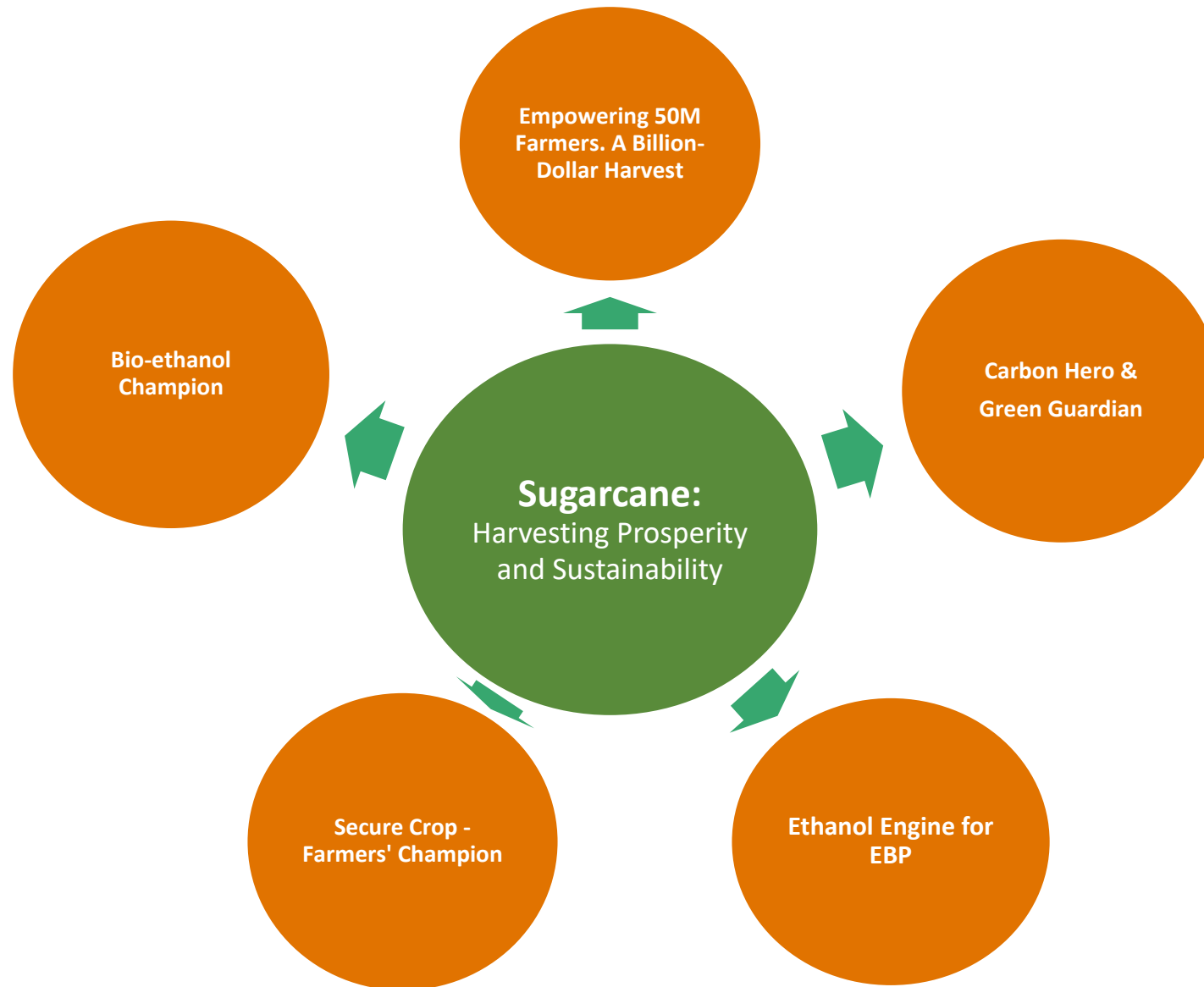
Ethanol blending journey



Future lies in sugarcane revolution

- ❖ **Sugarcane is the backbone for the development of sugar Industry**
- ❖ Currently occupies around 5.7 – 5.8 million hectares having an average yield of 73-75 T/ha
- ❖ Eyes on targeted 20% blending by 2025-26 – As per Niti Ayog, Ethanol requirement 10.2 billion ltrs, with share of sugar sector estimated as 5.5 billion ltrs
- ❖ Current average sugarcane production is around 450 million tons – Need to increase cane production to 520 – 540 million tons
- ❖ Both vertical and horizontal growth of sugarcane required – **An increase in cane area as well as cane yield by upto 8-10% from current level is needed**
- ❖ **Challenges** related to fluctuations in cane acreage / yield in Maharashtra, Karnataka & Southern states due to vagaries of weather need to be tackled
- ❖ Focus on **sustainable agricultural practices, soil and water conservation through water shed development, drip irrigation, Mechanisation**
- ❖ Leveraging different **Government schemes** for sugarcane development is must
- ❖ **Win - win situation for Government, farmers and industry.**

Sugarcane – the wonder crop



Sugarcane - Environmental ally

- ❖ **Carbon Sequestration Hero:** The CO₂ released while burning ethanol is **balanced by the CO₂ captured** during sugarcane growth, creating a closed-loop carbon cycle. This contrasts with fossil fuels, which contribute significantly to greenhouse gas emissions.
- ❖ **Sustainability :** As per recent studies on Water Footprint (WF) and Carbon Footprint (CF), Sugarcane is next only to Sugarbeet in terms of WF and CF with highest Combine Heat and Power(CHF) for generating Bioenergy with least GHG emissions.
- ❖ **Soil Guardian:** Sugarcane leaves behind **10-15% crop residue**, enriching the soil with organic matter.
- ❖ **Water Efficiency:** Advanced irrigation techniques like drip systems are readily adopted in sugarcane cultivation, This reduces irrigation-related emissions and preserves precious water resources.
- ❖ **Reduced Tillage:** Limited tillage in sugarcane minimizes soil disturbance, **preventing the release of stored carbon** from the ground. This contrasts with paddy, which often requires intensive pre-planting tilling.
- ❖ **Green By-Products:** Sugarcane manufacturing generates valuable by-products like bagasse and molasses. These are utilized to produce **green power and ethanol**, further offsetting fossil fuel use and associated emissions.

Investing for future - Initiatives by ISMA

Varietal identification Program:

- ❖ ISMA had signed an MoU with Sugarcane Breeding Institute, Coimbatore for the **'Identification of location – specific climate resilient varieties with high yield and quality potential for improving the productivity of sugarcane in the tropical and sub-tropical regions'**
- ❖ It's a 5-year duration project targeting a yield of +100 Tons/ha and a sugar recovery % of +11.5%.

Water Use Efficiency:

- ❖ 2 year duration Project on **'Improving water use efficiency and economizing water use in sugarcane cultivation in India'** ongoing at 6 premier sugarcane Research Institutes across the country

Investment Initiatives...

Mechanisation:

- ❖ ISMA conducted an all India seminar on ‘**Mechanisation in sugarcane Agriculture**’ in association with Indian Institute of Sugar Research, Lucknow in March’2023
- ❖ Stakeholders from Central and state Governments also attended the seminar, creating awareness

MoU with ‘Bonsucro’:

- ❖ ISMA had signed an MoU with Bonsucro for **sustainability in sugarcane and bioenergy production:**
 - Knowledge sharing
 - Capacity Building
 - Sustainability Assessment

Exploring...:

- ❖ Production of Compressed Bio Gas (CBG), Potash derived from Molasses (PDM)
- ❖ Genetically Modified sugarcane

Conclusion

- ❖ By addressing the challenges and implementing the proposed strategies, sugarcane can pave the way for a **sustainable, secure, and profitable future for the Indian sugar and ethanol industries, along with benefiting farmers, stakeholders, and the environment.**
- ❖ Truly fulfil its potential as the backbone of a thriving EBP
- ❖ India on road to become world leader in technological advancements evolving sugar industry as a **'Bio- Energy Hub'**

THANK YOU