



## Case study

Leading Grain-Based Distillery in South India

# Profitable & Sustainable Capacity Expansion

### Overview

A leading Grain-based Distillery in South India partnered with Praj for capacity expansion, increasing ethanol (Anhydrous Alcohol) production capacity from 400 KLPD AA to 600 KLPD AA on maize as well as broken rice as feedstock. Substantial production growth with existing co-generation facility is the theme, showcasing smart cost effective model for energy efficient scaling. The project will deliver impressive benefits like approx 40% lower steam consumption, maximum utilization of existing assets, minimum downtime ensuring uninterrupted operations & minimal revenue loss during project implementation.

### Major Highlights



**50% increase in production capacity , from 400 TO 600 KLPD AA**



**No new boiler and turbine installed , fully utilizing existing co-generation facility**



**~40% reduction in steam consumption, making plant operations more energy efficient**



**Minimal plant downtime, maintaining uninterrupted operations throughout the project execution phase**



**Maintaining lowest water footprint with proven Recycle – Treat – Reuse technology**



**Return on investment in less than 3 years, driven by strong OPEX reduction in energy & water**

# Key Interventions by Praj



## Enhanced Profitability with Minimal Capital Investment

To unlock higher profitability with minimum Capital expenditure, Praj implemented its patented EcoSmart ED® Technology – an advanced energy efficient evaporative distillation solution. With this technology 50% capacity expansion will be achieved without alteration in existing co-generation facility, giving substantial saving in CapEx.



## Major Gains in Energy and Water Efficiency

Plant energy requirement is further optimized by introducing –MVR -Mechanical Vapor Recompression for Multi Effect evaporation-MEE system. This Innovation will result in steam-less evaporation system, lowering water footprint substantially and making overall production facility more sustainable.



## Smart Execution with Minimal Downtime

Praj adopted bolt-on execution model, ensuring expansion is carried out within operational plant i.e. minimal loss of production during project execution. Combination of maximum use of existing hardware and minimum addition of new hardware, will reduce both execution time & complexity.

## Results at a Glance

Metric	Outcome
Capacity Expansion	50% increase
Steam Consumption	~40% reduction
CapEx	Lower - as no new boiler & turbine is required
Downtime	Minimal – operations continued throughout
Profitability	Return on investment - less than 3 years

## Conclusion

This capacity expansion project sets a benchmark for scalable, sustainable, and high-ROI growth in the distillery sector. By combining Praj's innovative technologies with strategic asset utilization and a disruption-free execution model, the distillery will successfully achieve:

50% higher output

Significantly lower energy and water consumption

Zero production interruption

Faster returns with minimal CapEx

**This case study reflects how technology-led execution can deliver profitability with responsibility—a hallmark of Praj's approach to driving industrial transformation.**

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