
Bioethanol Plant Economics, Feedstock Supply and Fuel Blending Training Course

10 – 14 October 2027
Kuala Lumpur





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Programme Summary

Bioethanol plant economics, feedstock supply and fuel blending form the subject of this one-week training course for energy company directors, biofuel project leaders and fuel supply and policy managers at a managerial level, ending in a bioethanol margin and supply plan for one plant. Plant returns depend on feedstock cost, conversion yield and co-product value, while demand depends on blending decisions made outside the plant. The programme moves from principles, through diagnosis of margin and supply risk, to design of feedstock and blending strategy, then to one plant. Mars Training Centre UK delivers this programme in bioethanol plant economics.

The Business Case

When plants are judged by capacity alone, feedstock is bought at the wrong time, co-product income is ignored and blending demand is assumed rather than tested. Leaders who trace each unit of cost from field to fuel, price co-products and test blending scenarios can show why a plant is worth building, expanding or supplying and where its margin is exposed.

- Plant Margin: Improves as feedstock contracts, yield and co-product credit are managed together.
- Supply Continuity: Strengthens as sources, storage and transport are planned against harvest and price swings.
- Investment Quality: Rises as project cases are tested against feedstock and blending scenarios.

Principles and Evidence Base

- Feedstock-to-fuel yield and mass balance: They frame the cost per litre calculation built in Sessions 1 and 2.
- Co-product credit: It shapes the way animal feed and other by-product income reduces net production cost in Session 2.
- Time value of money: It guides the project appraisal and sensitivity tests designed in Session 3.
- Food-versus-fuel trade-off: It informs the sustainability and supply security review completed in Session 4.

Intended Participants

- Energy company directors who decide whether to invest in or expand biofuel capacity.
- Biofuel project leaders who prepare plant cases and supply plans.
- Fuel supply managers who plan blending, storage and delivery to fuel markets.
- Policy managers who assess how blending rules affect plant demand.

The programme serves oil and gas companies, fuel distributors, agribusiness groups and energy investors.



Learning Outcomes

1. Participants will be able to evaluate the cost structure of a bioethanol plant per unit of fuel.
2. Participants will be able to diagnose margin pressure from feedstock price, yield loss and weak co-product income.
3. Participants will be able to construct a feedstock supply plan with sources, contracts and storage.
4. Participants will be able to compare blending scenarios by demand and logistics.
5. Participants will be able to prioritise investment options against feedstock and price sensitivities.
6. Participants will be able to justify a margin and supply plan to an investment committee.

Programme Structure

Day 1: Bioethanol Plant Economics Principles

What does it cost to turn feedstock into fuel, and where does the cost arise?

- Feedstock Route Comparison Table
- Mass Balance and Yield Sheet
- Cost per Litre Build-Up
- Co-Product Credit Calculation
- Plant Scale and Capital Cost Review

Day 2: Diagnosing Margin, Yield and Supply Risk

Where is the margin lost, and how exposed is supply?

- Margin Bridge Analysis
- Yield Loss Audit
- Feedstock Price Sensitivity Test
- Harvest Season Supply Gap Review
- Energy Use and Utilities Cost Check

Day 3: Designing Feedstock Strategy and Investment Cases

Which feedstock, contract and project choices protect the return?

- Feedstock Sourcing and Contract Plan
- Storage and Logistics Option Appraisal
- Discounted Cash Flow Case
- Scenario and Sensitivity Matrix
- Expansion Versus New Build Comparison



Day 4: Blending, Policy and Sustainability

How do blending rules and sustainability limits shape demand and supply?

- Blending Ratio Scenario Model
- Fuel Logistics and Terminal Blending Map
- Vehicle Compatibility Review
- Food Versus Fuel Trade-Off Assessment
- Policy Incentive and Mandate Comparison

Day 5: Applying Bioethanol Plant Economics to One Plant

Is the margin and supply plan ready for an investment committee to adopt?

- Applying the Session 2 Margin Bridge to the Chosen Plant
- Testing the Session 3 Cash Flow Case Under Price Scenarios
- Checking the Session 4 Blending Scenarios Against Supply Plans
- Setting Margin and Supply Indicators
- Completing the Bioethanol Margin and Supply Plan

Methodology

The programme uses a data workshop built on anonymised plant cost sheets, feedstock price series and blending data from sugar, grain and residue-based plants. Participants work in small teams as plant director, supply manager and policy adviser, and carry one plant from cost build-up through scenario testing to an investment recommendation.

- Suggested activity: Building a cost per litre sheet and identifying the three largest cost drivers.
- Suggested activity: Comparing two feedstock contracts under a price rise scenario.
- Suggested activity: Defending a blending assumption to a panel acting as an investment committee.

Capstone Output

Each participant completes a bioethanol margin and supply plan for one plant. It holds a cost per litre build-up, a margin bridge, a feedstock supply plan, blending scenarios, an investment case and indicators. The plan is used to brief an investment committee and to review feedstock and blending decisions.

Frequently Asked Questions

Is bioethanol plant economics suitable for managers without a chemical engineering background?

Yes. Bioethanol plant economics is set at managerial level and assumes you take decisions on cost, supply and investment, not that you design or run the process yourself.



Which principles does bioethanol plant economics rest on in this training?

Bioethanol plant economics rests on feedstock-to-fuel yield and mass balance, co-product credit, the time value of money and the food-versus-fuel trade-off.

How is the plan from bioethanol plant economics used at work?

You use the bioethanol margin and supply plan to brief an investment committee, set feedstock contract priorities and test blending assumptions.

How does bioethanol plant economics differ from a programme on renewable energy strategy?

Bioethanol plant economics centres on plant cost, feedstock supply and blending for one fuel, while a renewable energy strategy programme centres on choices across all technologies.