

SAVE TECH

Process Engineering and Industrial Technology Solutions

Field-focused engineering from concept to stable production

EDIBLE OILS • SPC • BIODIESEL • SAF • AUTOMATION

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We turn investment into an operating, value-generating system

Save Tech Process Consultancy provides process engineering, commissioning and operational improvement services for edible oils, oilseed processing, high-protein soy products, biodiesel and renewable-fuel feedstocks.

Scale to grow.

Field-focused

We validate engineering decisions against actual feedstock, equipment and operating conditions.

End-to-end support

From process design and installation supervision to commissioning and performance optimisation.

Value creation

We address yield, quality, energy, safety and by-product economics as one integrated system.

About Save Tech

Engineering industrial investments from concept to stable, value-generating operation

ABOUT US

Save Tech Process Consultancy provides process engineering, project development, commissioning and operational improvement services for edible oils, oilseed processing, high-protein soy products, biodiesel, renewable fuels and specialty process technologies.

- Investment feasibility, CAPEX/OPEX and risk assessment before major engineering commitments
- Process design, technology evaluation, equipment selection and EPC/EPCM coordination
- Installation supervision, commissioning, ramp-up and performance validation
- Plant optimisation focused on yield, quality, energy, safety and by-product value creation

FROM INVESTMENT TO OPERATION

01 **Investment Analysis**

02 **Process Engineering**

03 **Project Execution**

04 **Commissioning**

05 **Optimization**

Vision and Mission

Technical feasibility, economic value and investment risk considered as one system

VISION

To be a trusted international engineering partner that evaluates technical feasibility, economic value and investment risks together; uses resources efficiently; and transforms process losses, side streams and by-products into sustainable value.

MISSION

To support informed investment and production decisions through technical and economic analysis - from feasibility and risk assessment through process design, implementation, commissioning and optimisation - creating measurable and lasting value for industrial plants.

Our principle

Engineering decisions should be technically sound, operationally practical and economically justified.

Investment Feasibility and Risk Analysis

Engineering the investment before engineering the plant

INVESTMENT FEASIBILITY

- Feedstock, product, capacity and market assumptions
- CAPEX and OPEX structure, working-capital requirements and implementation costs
- ROI, payback, EBITDA and EBITDA-per-ton analysis
- Sensitivity and scenario analysis for price, capacity, yield, utilities and ramp-up
- Technology comparison and process-route evaluation

RISK ASSESSMENT

- Technical and technology-selection risks
- Feedstock availability and variability risks
- Product quality, yield and operational-performance risks
- Energy, utility, environmental and safety risks
- Project execution, schedule, commissioning and ramp-up risks
- Commercial assumptions and key investment sensitivities

Outcome

A clearer investment decision, defined acceptance criteria and a technically and economically defensible project scope.

Our industrial expertise spans complementary fields

Oilseed Processing

Preparation and extraction of soybean, sunflower, canola and other oilseeds.

Edible Oil Refining

Degumming, neutralisation, bleaching, winterisation and deodorisation.

SPC and Protein Technologies

High-protein products, solvent recovery, drying and molasses management.

Biodiesel and Renewable Fuels

FAME from waste oils; SAF/HVO feedstock pretreatment and process optimisation.

Boiler and Cogeneration Systems

Steam generation, heat recovery, power-heat integration and commissioning.

Automation and Process Control

PLC/SCADA, recipe management, interlocks, data acquisition and reporting.

Our core services cover the full investment life cycle

- Process design, mass and energy balances, and capacity analysis
- Plant layouts, PFD/P&ID development, and equipment specifications
- Process simulation, bottleneck analysis, and capacity expansion studies
- Installation, commissioning, and integration of boiler and cogeneration systems
- Automation, PLC/SCADA integration, and safety interlock design
- Installation supervision, FAT/SAT, loop checks, and mechanical completion follow-up
- Commissioning, operator training, and performance validation
- Technical management and coordination of investment-incentive processes

One objective

**A technically
functional,
safe,
measurable and
economically
sustainable
process.**

Our delivery model: define, validate, engineer, implement, improve

01

Definition

Objectives, feedstock, capacity, quality, and site constraints

02

Validation

Analysis, simulation, pilot tests, and feasibility

03

Engineering

Process, equipment, automation, and safety

04

Implementation

Installation follow-up, testing, and commissioning

05

Improvement

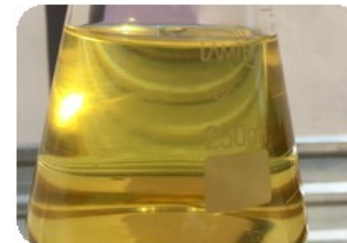
Ramp-up, performance, training, and optimisation

We eliminate gaps between technical coordination and field execution.

Each stage provides measurable data and clear acceptance criteria for the next investment decision.

An integrated approach to oilseed processing and refining

- Feedstock preparation, cracking, flaking, extraction, and desolventisation
- Crude oil refining: degumming, neutralisation, bleaching, and deodorisation
- Optimisation of product losses, chemical consumption, energy, and capacity
- Heat recovery, economiser applications, and utility integration
- Root-cause analysis for quality deviations and process-parameter development



Example solution

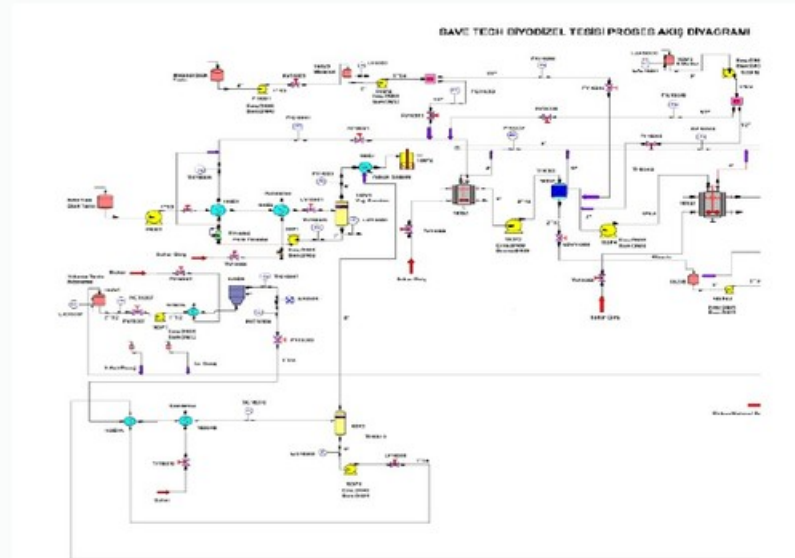
Oily perlite → oil recovery

→ remaining perlite → meal dosing

Yield improvement • waste-to-value • refinery integration

Process development for biodiesel and renewable fuels

- Biodiesel processes from waste oils, developed with local technology and engineering to meet EN 14214
- Optimisation of transesterification, esterification, washing, and product purification
- Plant improvements for Sustainable Marine Blending Component applications
- SAF/HVO feedstock preparation solutions from UCO and animal fats
- Optimisation of capacity, yield, methanol consumption, and energy use
- Automation, recipe management, and quality traceability



01
Feedstock
Pretreatment

02
Esterification /
Transesterification

03
Purification

04
EN 14214
Biodiesel

Tocopherol recovery and concentration from deodorizer distillate

Value recovery from deodorizer distillate through dedicated purification and concentration.

- Deodorizer distillate / fatty-acid distillate feed preparation and pretreatment
- Tocopherol enrichment with configurable product concentration targets: 30%, 50% and 70%
- Vacuum and molecular-distillation based separation concepts for heat-sensitive components
- Integration of feed tanks, nitrogen blanketing, vacuum, heating/cooling and product handling
- Process engineering, equipment specification, commissioning and performance validation
- Focus on product yield, thermal exposure, energy efficiency and stable continuous operation

Value proposition

Convert a low-volume refinery side stream into higher-value tocopherol concentrates while maintaining a practical, industrially scalable process configuration.



Representative skid-mounted process equipment

WBE dosing technology converts waste into value and safety

- Preparation of an oily Used Bleaching Earth suspension and stabilisation of the process stream
- Controlled and homogeneous dosing through mass-flow measurement
- DTDC/product-line integration with alarms and safety interlocks
- Elimination of uncontrolled free accumulation, reducing self-heating and spontaneous combustion risk
- Batch records, recipe tracking, and complete process traceability
- Industrial implementation experience in Türkiye and Russia



Oily perlite oil recovery and remaining perlite dosing to meal

Recover oil value first - then convert the remaining solid stream into a controlled value route

Integrated waste-to-value concept

Oily perlite generated during edible-oil winterisation/filtration can retain a significant amount of oil. Save Tech's concept combines mechanical oil recovery with controlled utilisation of the remaining perlite in the meal stream.

01

OILY PERLITE

Collection from filtration

02

MECHANICAL RECOVERY

Hydraulic pressing

03

RECOVERED OIL

Value recovery / further processing

04

REMAINING PERLITE

Controlled dosing to meal

VALUE

**Additional recovered-oil revenue • lower disposal burden
• improved resource efficiency • potential meal value from the remaining perlite**

Final use of recovered oil and remaining perlite is subject to applicable food/feed regulations, product specifications and plant-specific approval.



From oily perlite to recovered oil and controlled meal integration

Oily perlite → hydraulic pressing → recovered oil
↓
remaining perlite → meal dosing

Designed for feasibility assessment, plant integration, safe handling and measurable ROI.

PLC and SCADA make the process visible and manageable

- Process instrumentation and control philosophy
- PLC software, SCADA screens, and recipe management
- Alarm, interlock, permissive, and emergency-shutdown scenarios
- Trend monitoring, reporting, and production-data archiving
- Commissioning tests, loop checks, and field validation
- Simple, reliable, and operator-focused control interfaces



Boiler and Cogeneration Systems

Efficient, reliable and integrated utility solutions

- Steam generation for process and power requirements
- Cogeneration (power and heat) integration
- Heat recovery, economiser and energy optimisation
- Fuel flexibility and combustion optimisation
- Emissions control and regulatory compliance
- Integration with refinery, extraction and biodiesel processes
- Installation supervision, commissioning and performance validation
- Operator training and long-term operational support



High
energy efficiency



Lower
operating cost



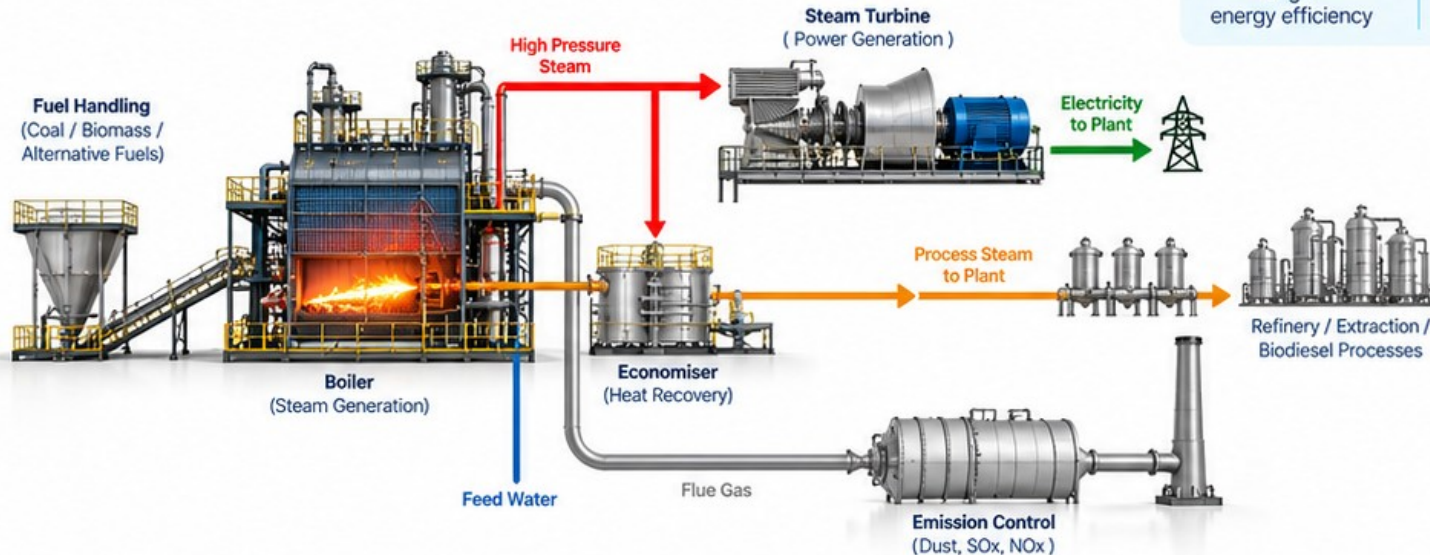
Reduced
emissions



Reliable
and continuous operation



Compliant with
international standards



Economiser & Heat Recovery

Utilisation of flue gas heat to reduce energy consumption



Steam Turbine & Power Generation

Reliable and efficient cogeneration solutions



Flue Gas Treatment

Dust, SOx, NOx control for regulatory compliance



Steam Distribution to

Stable and flexible steam s

15

Our SPC experience extends from installation to stable production

The Save Tech team has direct field experience in the installation, commissioning, and production phases of an industrial-scale Soy Protein Concentrate plant.

- Mechanical completion and process commissioning
- Water tests, solvent commissioning, and production ramp-up
- Stabilisation of protein, colour, moisture, and functionality targets
- Optimisation of solvent recovery and energy consumption
- Capacity tests, bottleneck analysis, and continuous production improvement
- Operator training and preparation of procedures and checklists



Support after SPC technology selection

Detailed Engineering

Coordination of supplier documents with site and process requirements.

Installation and Testing

Installation supervision, mechanical completion, FAT/SAT, and loop checks.

Commissioning

Water tests, solvent commissioning, safe start-up, and production ramp-up.

Performance

Capacity, product-quality, solvent, steam, energy, and water-consumption tests.

Operations

SOPs, shift checklists, and training for operators and maintenance teams.

Optimisation

Bottleneck removal, yield improvement, stable production, and loss reduction.

Coordination of investment-incentive processes

Industrial investments require not only engineering, but also a sound incentive strategy and disciplined implementation follow-up. Save Tech maintains alignment between the technical investment scope and the incentive file.

Investment Classification

Clarification of capacity, product, machinery, energy, and technology scope.

Technical File

Preparation of process descriptions, capacity reports, equipment lists, and investment rationale.

Application Coordination

Technical coordination with consultants and authorities for incentive, grant, or support applications.

Implementation Follow-up

Monitoring procurement and expenditure items against the approved investment scope.

Change Management

Correct reflection of capacity, equipment, schedule, or budget changes in the file.

Completion Process

Coordination of technical records, reports, and closing activities for the completed investment.

SPC molasses is a distinct value chain

- Monitoring dry matter, sugar profile, protein/nitrogen, ash, viscosity, and colour
- Maintaining product quality and energy balance through concentration and heat integration
- Managing crystallisation, microbial deterioration, and pumpability risks during storage
- Developing specifications for feed, fermentation, or technical applications
- Converting the by-product into a standardised, traceable, and commercially valuable product

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