

PROJECT OVERVIEW

REFINERY BY-PRODUCT RECOVERY SOLUTIONS

Controlled WBE Dosing to Meal and
Oil Recovery from Oily Perlite

PROJECT OVERVIEW FOR EUROPEAN EDIBLE-OIL PLANTS

September 2026

2

**complementary
efficiency projects**

Turning process
losses
into measurable value

Two projects, one objective: higher process yield

The first step is to quantify the technical and economic potential using verified plant data.

01

Controlled dosing of oily WBE into meal through the DTDC

- Convert a disposal stream into measurable value
- Reduce self-heating and fire risk through controlled handling

02

Recovery of retained oil from oily perlite filter cake

- Recover vegetable oil otherwise lost with perlite
- Increase overall refinery oil yield

The WBE project combines cost, value and safety improvements

CURRENT CHALLENGE

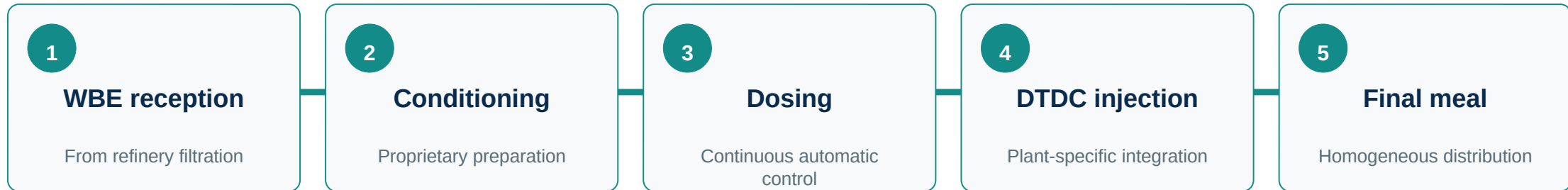
- WBE retains oil and may create disposal, transport and handling costs.
- Rapid oxidation can create self-heating and fire risk during storage.
- Uncontrolled feeding may affect final-product and DTDC stability.

ENGINEERED SOLUTION

- WBE is conditioned into a stable, manageable process stream.
- Automated dosing, PLC monitoring and safety interlocks are applied.
- Closed DTDC injection provides homogeneous, traceable distribution in meal.

Outcome: lower WBE handling cost + recovered value + safer material management

The controlled WBE process consists of five traceable stages



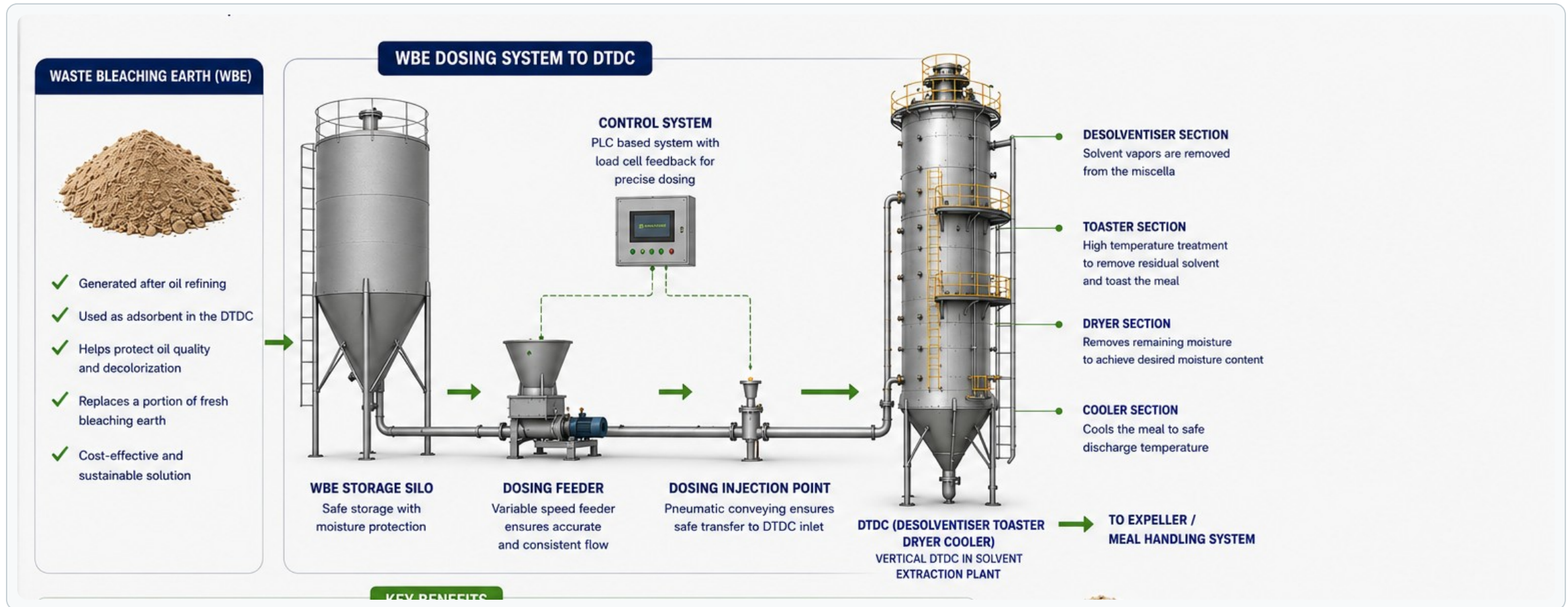
Operational control

Enclosed handling, load-cell feedback, variable-speed dosing and continuous PLC monitoring support a stable, measurable feed rate.

Safety control

Controlled inventory, enclosed transfer and defined interlocks reduce uncontrolled exposure, dust release and self-heating risk.

WBE dosing system: controlled transfer to DTDC



European references define the regulatory framework

The 1% figure is a maximum content in final meal - not a standard dosing setpoint.

EU Catalogue of Feed Materials

**Commission Regulation (EU) 2022/1104,
amending Regulation (EU) No 68/2013**

For specified meal-feed entries produced at integrated crushing and refining sites, the product may contain up to 1% of the sum of used bleaching earth and filter aid.

Relevant examples: 2.18.13/14 (soya), 2.19.6/7 (sunflower) and 2.14.6/7 (rapeseed).

FEDIOL industry declaration

**Declaration on the Safety of Used Bleaching Earth and
Used Filter Aids in Meal Feed and Expellers - Ref.
13SAF195**

The declaration describes the use of WBE and filter aids in integrated plants and identifies material restrictions that must be respected before implementation.

Final acceptance remains subject to applicable EU, national feed-safety, environmental, quality, traceability and HACCP requirements.

Plant-specific legal and quality review is required before commercial operation.

The oily perlite project recovers otherwise lost oil

No disposal-cost saving is assumed; the business case is based on recovered-oil value and refinery yield improvement.



Economic basis

Recovered oil quantity × net oil value

– energy, consumables, maintenance and operating costs

Priority outcomes

- Lower refinery product loss
- Higher overall oil yield
- Measurable recovery performance

A reliable feasibility study starts with verified plant data

WBE PROJECT

- Daily WBE quantity and residual oil analysis
- Daily meal production and DTDC capacity
- Disposal, transport and handling cost
- Annual operating days and activated-carbon use

PERLITE PROJECT

- Daily or monthly oily perlite quantity
- Perlite use, oil type and filtration process
- Oil and moisture analysis of the perlite cake
- Net recovered-oil value and annual operating days

CAPEX, annual benefit and payback will only be stated after the plant data have been assessed.

Recommended route: from plant data to investment decision



Recommended next step

Hold a technical review meeting to confirm the data list, identify suitable plant integration points and define the site-assessment plan for one or both projects.