

KEY FIGURES DSEC



350+
Employees



300 M€
Latest project value



500+
Projects completed
in 65+ countries



BIOFUELS INDUSTRIES



DE SMET
ENGINEERS & CONTRACTORS

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Serving the World Biofuels industry

Process integrator dedicated to Agro-processing industries

De Smet Engineers & Contractors (DSEC) is a private company located in Belgium, created in 1989:

- Acting as an engineering & general contractor company specializing in the agro-industrial and bio-based industry fields,
- Fully integrated world-class provider of project management, engineering, procurement and construction services.

DSEC carries out projects from their initial conceptual stage (audits and engineering studies) up to complete delivery, including commissioning and performances demonstration (turnkey management - EPCM or full turnkey construction - EPC).

Bioethanol

Bioethanol production plants solutions

DSEC has successfully built complete bioethanol production plants using cereals, sugar beet and sugar cane :

- Autonomous ethanol plants using starch-type raw materials (maize, wheat, manioc, etc.) or sugar cane with by-product recovery units.
- Extra Neutral Alcohol (ENA) production unit, as well as technical, pharmaceutical or spirits alcohol, etc.
- Optimisation of process parameters in existing plants to improve viability, yields and cogeneration efficiency

DSEC offers a global approach to Ethanol production, with the aim of improving the economic viability and environmental footprint of the entire plant:

- CO₂ scrubbing and recovery
- Vinasse concentration
- Incineration of condensed molasses solubles (CMS)
- Aerobic and anaerobic treatment of wastewater
- Biogas production (methanisation – CNG)

DSEC handles all the facilities involved in bioethanol production, depending on the type of feedstock.



Reliability through experience

Biodiesel and HVO production

DSEC extends its activities in the Edible Oils & Fats sector to **Biodiesel plants construction** as a natural complement to Oilseeds processing.

Biodiesel Production covers **Vegetable Oils** and **Used Cooking Oil (UCO)** pre-treatment and Transesterification units as well as vertically integrated facilities with oilseed extraction plant.

The pre-treatment of crude Vegetable Oils or UCO for the production of **Hydrotreated Vegetable Oil (HVO)** Biodiesel can also be contemplated.

Implementing External Technologies and beyond

- Capability to develop full projects **from feedstock handling to product conditioning**, including **offsites and construction works**
- Full **understanding of Technology Providers' downstream requirement** through DSEC's large experience in the agro industry (filtration, evaporation, separation, drying, chromatography, ion exchanges...)
- Experience in **assessing and validating all stages of process development** and products definition so as to reach a comprehensive concept before effective project start (Pilot ► Demo ► Industrial)

DSEC is your partner for...

PROJECT DEFINITION

- PDP development based on technical process description from supplier & client
- Technical & technological assessments
- Selection of appropriate technology & unitary operation
- Integration of an add-on into & existing facility
- Utilities engineering & interfaces design
- CAPEX & OPEX development

PROJECT IMPLEMENTATION

- Overall Project Management including cost control, scheduling
- Detailed Design of all activities (Civil & Structure, piping, E&I...)
- Procurement of equipment & materials
- Workshop quality control & FAT
- Expediting services
- Integration of all related project activities
- Plant automation standardization
- Site activities management including implementation of site HSSE
- Plant commissioning & start-up assistance

Reliability through experience

DSEC's Assets for the Biofuels Industry

- Efficient Integration of new developments and flexibility in dealing with changing environments
- Strong track record accumulated for more than 30 years, working in 65+ countries and completing more than 50 Large Scale Projects (which major biofuels projects referenced are listed opposite)
- Integrated, robust, validated process and final product definition, before transfer of technology
- Repeated experience with key industry players, Client IP protection
- Focus on efficiency and energy saving
- Full independence from equipment suppliers allowing optimization of projects' Global Sourcing Strategy
- Execution of all downstream process units applicable such as: filtration, evaporation, separation, drying, chromatography, ion exchange, ...
- Familiar with all types of raw material: seeds, grain, molasses, beet, bagasse, wood, ...

Industrial References in Biofuels Industries

PRODUCT	CUSTOMER	COUNTRY	CAPACITY	CONTRACT	YEAR
Conversion & capacity increase of an ETHANOL plant from molasses to corn	Alco NCP	South Africa	Undisclosed Capacity	EP+CM 50 M€	2021
Revamping of the complete BIOETHANOL production plant from corn	Acabio	Argentina	From 150,000 m ³ to 270,000 m ³	EPCM 50 M€	2020
Complete BIOETHANOL production plant with cogeneration from corn	Acabio	Argentina	150,000 m ³ /year	EPCM 140 M\$	2014
Complete BIOETHANOL production plant with cogeneration from sugar cane	Addax Bioenergy	Sierra Leone	80,000 m ³ /year + 20 Mwe	EPCM 130 M€	2014
Complete BIOETHANOL production plant with cogeneration from wheat	Biowanze	Belgium	300,000 m ³ /year	EPC 250 M€	2011
Greenfield of a BIODIESEL production plant from multi feedstock	Dutch BioDiesel	Netherlands	2 x 250,000 TPY	EPC 50 M€	2011
Greenfield of a BIODIESEL production plant from multi feedstock	Rosendaal Energy	Netherlands	250,000 TPY	EPC 28 M€	2009
Complete BIOETHANOL production plant construction from wheat	Alco Bio Fuel	Belgium	150,000 m ³ /year	EPC 80 M€	2006
Greenfield BIODIESEL production unit with crushing plant from rapeseed	Ineos Enterprises	France	2 x 100,000 TPY	EPC 100 M€	2006

MEETING OUR CUSTOMER'S NEEDS

