TOTAL IN BIOFUELS

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Christophe Hein, Biofuel Business Development manager
TOTAL
IN NUMBERS

Active in 130 countries worldwide, Total is a major energy operator, producing and marketing fuels, natural gas and low-carbon electricity. Our 100,000 employees are committed to better energy that is safer, more affordable, cleaner and accessible to as many people as possible.
TOTAL ORGANISATION

Exploration & Production
- OIL / GAS PRODUCTION
- GAS LIQUEFACTION / REGASIFICATION

Refining & Chemicals
- REFINERIES
- PETROCHEMICAL PLANTS
- SPECIALTY CHEMICALS
- BIOFUEL DIVISION

Marketing & Services
- FUEL RETAIL
- LUBRICANTS
- OIL DEPOT

Gas, Renewables & Power
- GAS / POWER DISTRIBUTION
- SOLAR PANELS
- BATTERIES
OUR CHALLENGES FOR THE NEXT 20 YEARS

Meet the energy needs of a growing global population

Protect the planet and limit global warming

Adapt to new consumer practices and changing customer expectations

Helping provide tangible solutions to these challenges means supplying affordable, reliable, clean energy.
TOTAL, ALREADY AN ACTIVE PLAYER IN BIOFUELS

1st DISTRIBUTOR OF BIOFUELS IN EUROPE

Already producing in our refineries:
1) ETBE (Ethyl Tert-Butyl Ether) from ethanol and isobutylene
2) HVO (Hydrotreated Vegetable Oil) by co-processing of vegetable oils

Industrial project at La Mède:

- 2.4 Mt biofuels incorporated in 2018:
  - 20% ethanol
  - 80% biodiesel

500 kt HVO per year

Partnerships with industrials, startups, universities & private laboratories:
Conversion of lignocellulosic biomass
Fermentation of sugars:
Ethanol based chemistry: Ethanol de-hydratation

Total’s subsidiary
LA MÈDE BIOREFINERY

LA MÈDE
FRANCE’S FIRST WORLD-CLASS BIOREFINERY, one of the biggest in Europe.

€275M INVESTMENT
Redeployment of the site to an activity that will drive growth. Bio-units will start up in 2018.

500 kt/year of HVO to meet growing demand for biodiesel.

TECHNOLOGY THAT CAN PROCESS ALL TYPES OF OIL: vegetable, used and residual.

HVO UNIT
The unit is being created by converting two existing refinery units that operated in parallel. It consists of two sections that will operate in series — the HDT and the HDI.

HDT SECTION
The oil is hydrotreated to produce motor fuel.

REFORMING UNIT
The existing unit will remain in operation to produce the hydrogen needed for HVO unit operations, and high-octane-number gasoline stock for aviation fuel in particular.

HDI SECTION
Hydroisomerization improves the fuel’s cold resistance.

PRETREATMENT
Pretreatment removes any contaminants in the oil that could damage the catalyst in the downstream HVO unit.
FEEDSTOCKS, SUSTAINABILITY AND CHALLENGES

Any lipidic raw material

Vegetable Oil
Wastes and residues
Advanced material

Sustainability
Availability
Acceptability

Tracability is the key point

TOTAL have very stringent suppliers selection criterias
TOTAL is supportive to a system that leads to more tracability and control
THANK YOU!