R&D TECHNOLOGY PLATFORMS

CIRCULAR ECONOMY

CARBON NEUTRALITY

OPERATIONAL EXCELLENCE
A SINGLE R&D TEAM FOR ALL ENI BUSINESSES
AN INDUSTRIAL R&D TO SUPPORT ENI NEEDS

1,500 PEOPLE

70 UNIVERSITIES AND RESEARCH CENTERS

7 FACILITIES

Waste to Fuel Pilot plant - Novara
A REAL EXAMPLE OF BUSINESS TRANSFORMATION
BIO-FUELS STRATEGY: ECOFINING™ TECHNOLOGY

**INPUT**

**TO DATE**
- UCO (Used Cooking Oil)
- Certified Palm Oil
- Tallow
- Waste

PALM OIL FREE TARGET @2023

**NEW ALTERNATIVE FEEDSTOCK**
- Microbial Oil
- Algal Oil
- Castor Oil

**PROCESS**

**ECOFINING™**

**OUTPUT PRODUCTS**

**TO DATE**
- BIO-DIESEL HVO (Hydrotreated Vegetable Oil)
- BIO-LPG
- BIO-NAPHTHA

**FURTHER POSSIBLE PRODUCTS**
- BIO-JET FUEL
WASTE TO FUEL

A PROPRIETARY TECHNOLOGY FOR CIRCULAR ECONOMY
# Waste to Fuel Technology

**Termoliquefaction Process of the Organic Fraction of Municipal Solid Waste**

**Input**

- **Organic Fraction of Municipal Solid Waste**

**Process**

**Output Products**

- **Bio-Oil up to 16%** as marine bunker fuel
- **Water up to 80%** for industrial and irrigation purposes

## Pilot Scale

- **250 t/y Pilot Plant**
  - Running since December 2018

## Key Figures for 1 Industrial Plant

- **150,000 t/y Plant Size**

## Feedstock

- Waste produced by
  - ~1.5 Min people

## Production

- **Bio-Oil**
  - up to 24 kton/y
- **Water**
  - up to 120 kton/y
MAGNETIC FUSION
A BREAKTHROUGH TECHNOLOGY FOR THE FUTURE
MAGNETIC FUSION – A BREAKTHROUGH TECHNOLOGY FOR CLEAN AND RELIABLE ENERGY

DEVELOPMENT OF TECHNOLOGIES LEADING TO THE CONSTRUCTION AND OPERATION OF THE FIRST INDUSTRIAL PLANT THAT CAN ENSURE A CONTINUOUS AND PROFITABLE PRODUCTION OF ENERGY FROM FUSION BY MAGNETIC CONFINEMENT

HIGHLIGHTS

- NO EMISSION OF AIR POLLUTANTS AND GREENHOUSE GASES
- ABUNDANCE OF FUEL
- OPERATIONAL SAFETY DUE TO CONTROLLABILITY OF THE REACTION

COLLABORATIONS ON A GLOBAL SCALE


CNR

ENEA

CFS & MIT

JRA for STUDIES ON PLASMA, SUPERCONDUCTORS & MATERIALS

CONSTRUCTION OF THE DIVERTOR TOKAMAK TEST

DIVERTOR TOKAMAK TEST OPERATION MANAGEMENT

ACQUISITION of a CFS SHARE & REALIZATION OF THE FIRST COIL

SPARC REALIZATION

ARC REALIZATION

* CFS = COMMONWEALTH FUSION SYSTEM | CNR = ITALIAN NATIONAL RESEARCH COUNCIL | ENEA = ITALIAN NATIONAL AGENCY