



Assistance for Action

Aviation and Climate Change Seminar

23 - 24 October 2012

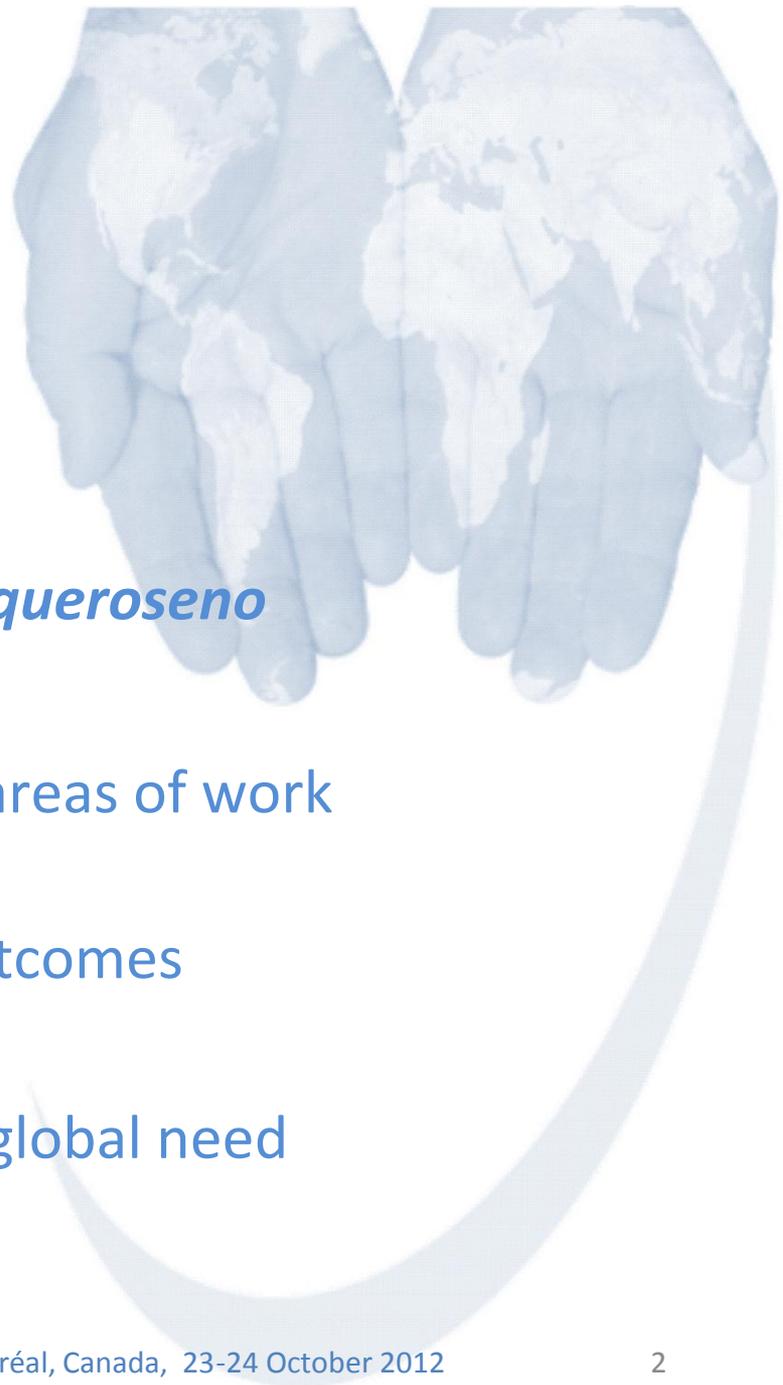
ICAO Headquarters, Montréal, Canada

The Case of Alternative Fuels: Spanish Initiative for the Production & Consumption of Bio-kerosene

César Velarde

**Observatory of Sustainability in Aviation
(SENASA) www.obsa.org**



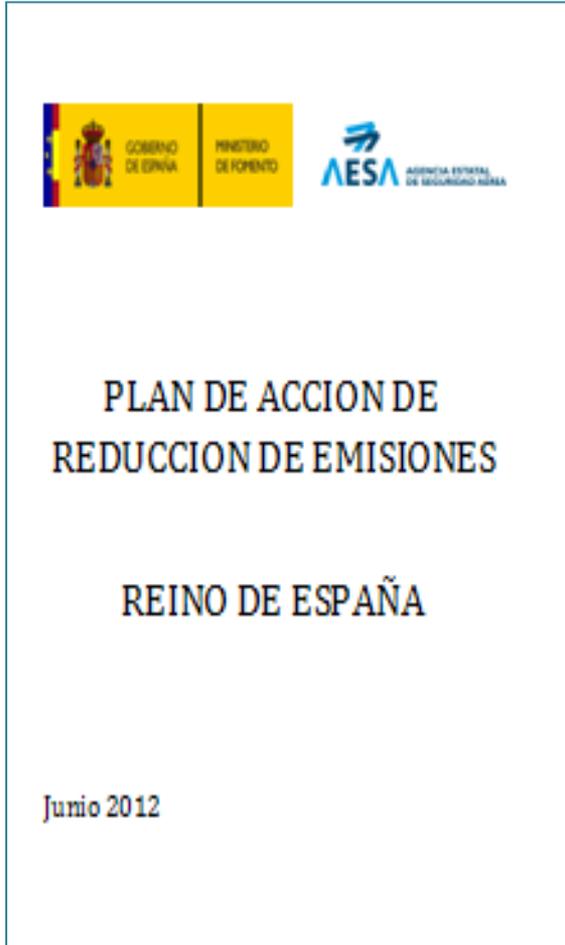


Contents

- ① The Spanish *Bioqueroseno* Initiative
- ② Objectives and areas of work
- ③ Progress and outcomes
- ④ Cooperation: A global need



1 THE SPANISH *BIOQUEROSENO* INITIATIVE



Spanish Air Safety Agency

Action Plan on International Aviation CO2 Emissions (June 2012)



Actions at National level



DEVELOPMENT AND DEPLOYMENT OF AVIATION BIOFUELS

bioqueroseno.es

Iniciativa española para la producción y consumo de bioqueroseno para la aviación





1 THE SPANISH *BIOQUEROSENO* INITIATIVE

In place since 2010, the ***Spanish Initiative for the Production and Consumption of bio-kerosene***, aims to facilitate the implementation of a **sustainable bio jet fuel full value-chain** at national level.

Is led by the **transport, industry and environment** authorities.

bioqueroseno.es

Iniciativa española para la producción y consumo de bioqueroseno para la aviación

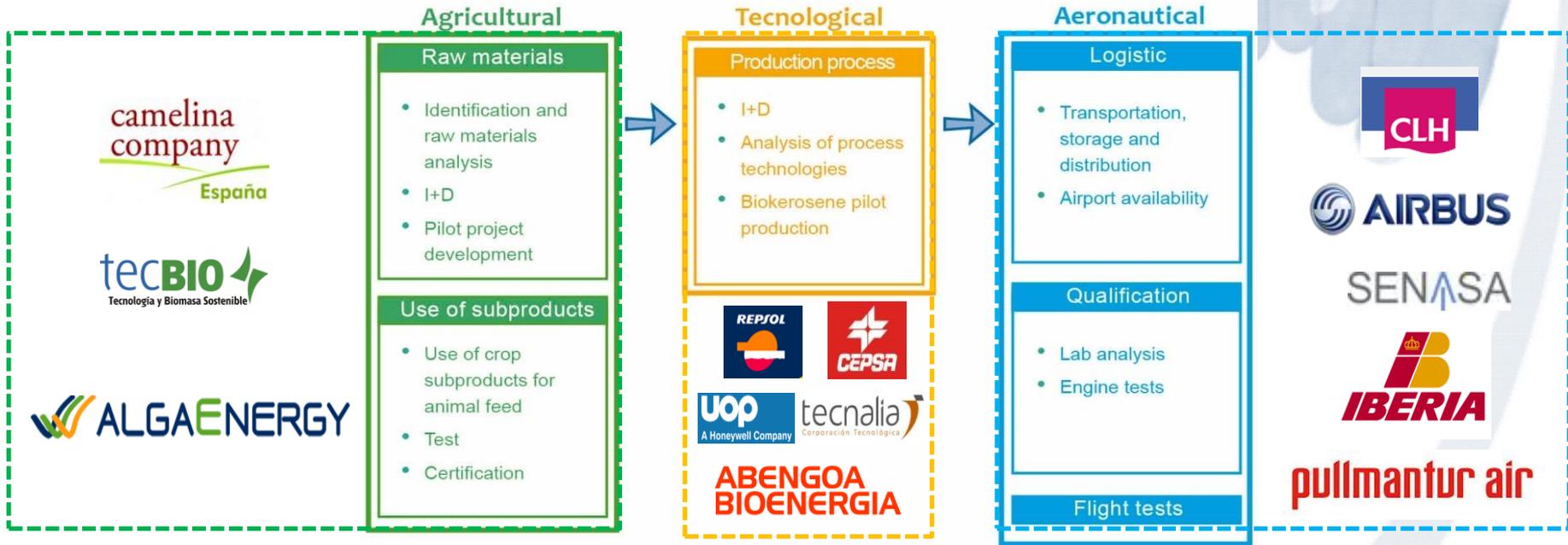


Supported through specific agreement by:





1 THE SPANISH *BIOQUEROSENO* INITIATIVE



Sustainability



1 THE SPANISH *BIOQUEROSENO* INITIATIVE

Roadmap

bioqueroseno.es

Iniciativa española para la producción y consumo de bioqueroseno para la aviación

ACHIEVED

PHASE I.a
FEASIBILITY STUDY

June 2010 – October 2011

Comprehensive feasibility analysis and selection of technological pathways adapted to national conditions.

ONGOING

PHASE I.b
DEMONSTRATION

November 2011 – 2013

Demonstration of the viability of the selected value-chain paths, through different projects/initiatives.

PHASE II
IMPLEMENTATION

2014 – onwards

Implementation and scaling of the production process based on the results of PHASE I.b.



2

OBJECTIVES AND AREAS OF WORK

PHASE I.b DEMONSTRATION

Feedstock

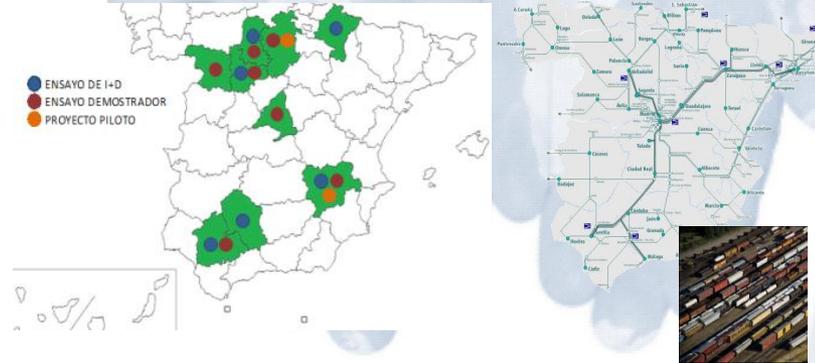
- Test plantations. Objective: **200.000 Has. of camelina**
- **Logistics and crushing** capacity study

Refining technology:

- Best options for a **flagship refinery**:
 - Objective: produce **100.000 t/year of biojet**
(2% of the Spanish consumption)

Logistics

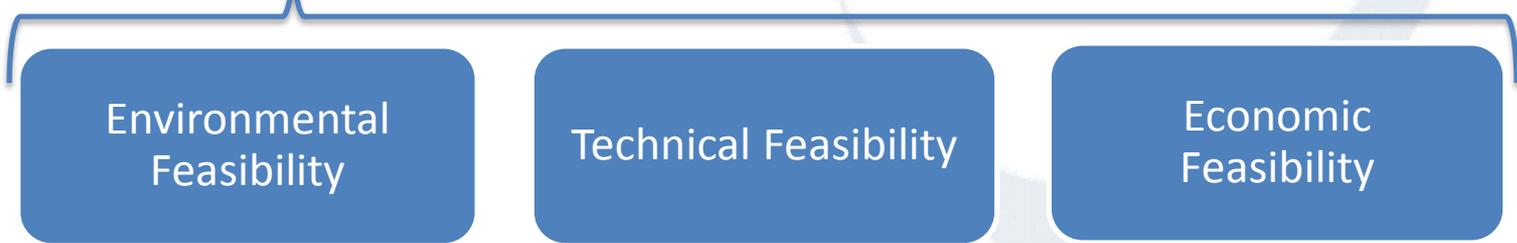
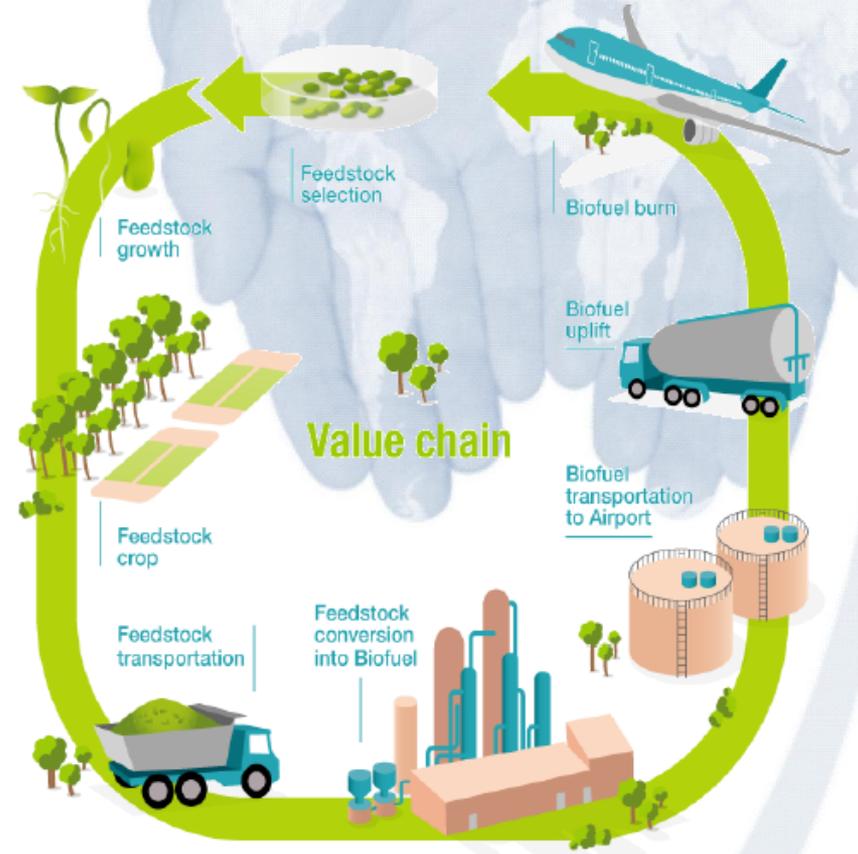
- Analysis, non segregated logistics in airports.
- **Test demonstrator** in Spanish airports.





2 OBJECTIVES AND AREAS OF WORK

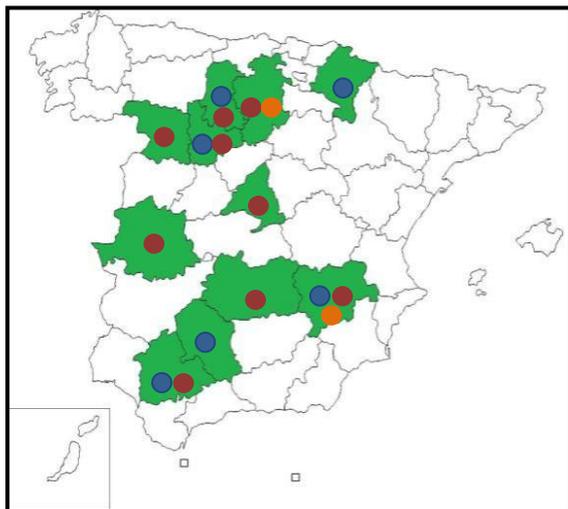
Sustainability





3 PROGRESS AND OUTCOMES

FEEDSTOCK: CAMELINA



- R&D trials
- Demo trials
- Pilot project

camelina
company

España



Large scale



Sustainable



**Short term
deployment**





3 PROGRESS AND OUTCOMES

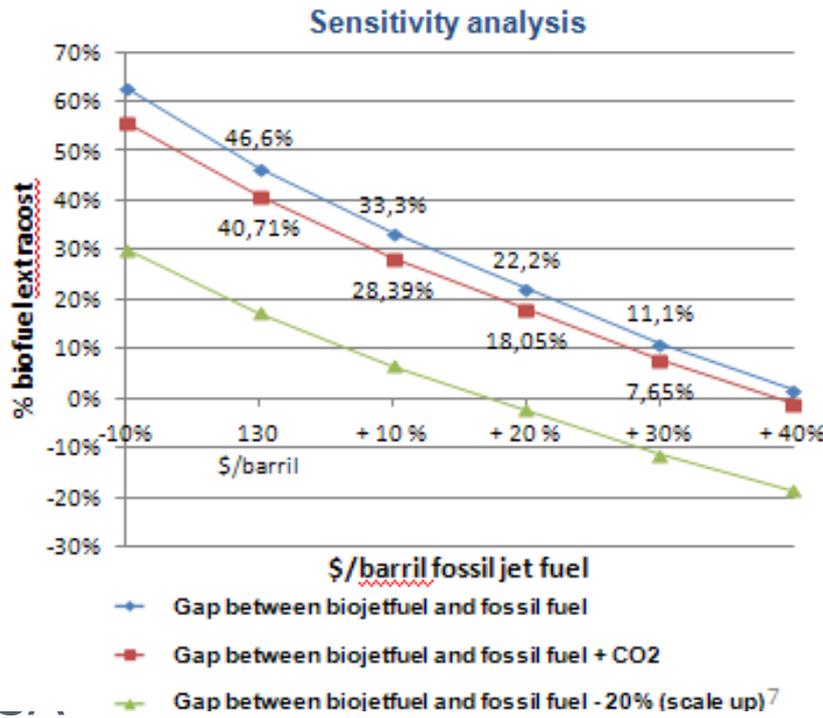
INDUSTRY BUSINESS-CASE ANALYSIS:

- Working Group for a real case study
- Medium – term analysis of **economic viability**

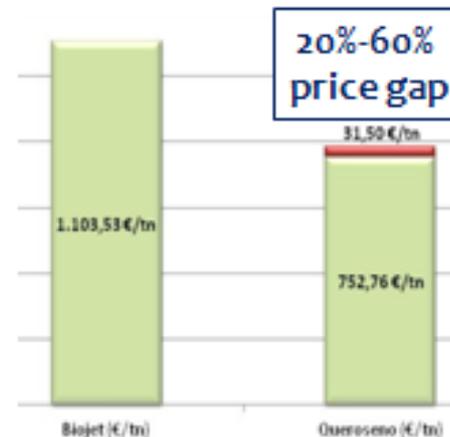


camelina
company

España



Economic viability:

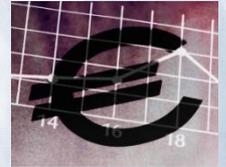




3 PROGRESS AND OUTCOMES

IDENTIFIED CHALLENGES FOR SCLAE-UP:

1. Reduce price difference of bio and fossil jet fuel



2. Manage to reach competitive feedstock prices



3. Identify and establish production poles



4. Promote the demand at early stages



5. Ensure efficiency in the value chain





4

COOPERATION: A GLOBAL NEED

A global effort must be built promoting **cooperation opportunities:**





4

COOPERATION: A GLOBAL NEED

Friday 1, April 2011

Italy, Spain join CAAFI effort on aviation biofuels

Iberia, Airbus, the Spanish government and the state company Senasa have signed an agreement to develop a complete Spanish 'value chain' for sustainable and renewable aviation bio-fuel for commercial use.

ITALIAN AND SPANISH JOIN EFFORTS ON BIOFUEL TESTING AND CERTIFICATION AT PARIS AIR SHOW

Jun 22, 2011
Aircraft, Engines & Components



FRAMEWORK AGREEMENT ON AIR TRANSPORT, SECURITY AND SUSTAINABILITY



NOVEMBER 2010



SECRETARY OF COMMUNICATIONS AND TRANSPORTS OF THE MEXICAN FEDERAL GOVERNMENT

MINISTRY OF TRANSPORT OF SPAIN

SPECIFIC COLLABORATION AGREEMENT FOR THE DEVELOPMENT OF SUSTAINABLE AVIATION BIOFUELS





THANKS!

César Velarde (SENASA)

More information in:

www.obsa.org  **OBSA**

www.bioqueroseno.es

