

COMSYN project WP7: Market assessment and business cases



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WORKSHOP ON EUROPEAN 2ND GENERATION BIOFUELS -
OPPORTUNITIES AND APPLICATIONS
APRIL 18TH, 2018 @ DLR, STUTTGART



1. ÅF
2. Objectives
3. Market assessment
4. Business concepts
5. Next steps





Facts at a glance

Founded 1895

Headquarter in Stockholm

Sales ~1,1 EUR billion

Number of employees: 10 000

Number of ÅF offices: 100

Geographical coverage: Established in around 30 countries, assignments are carried out in over 100 countries



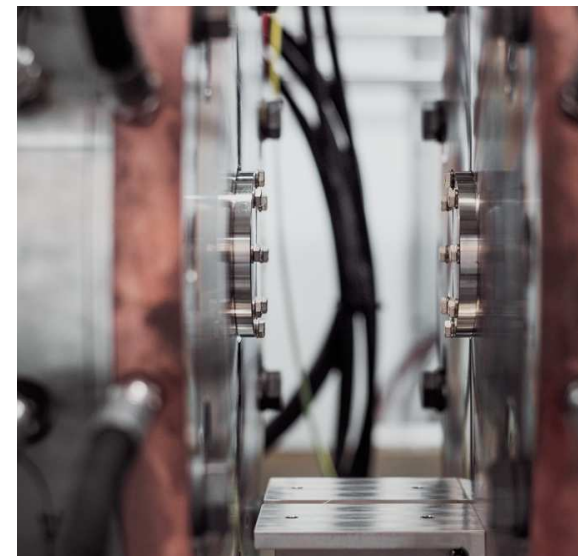
Infrastructure

Buildings
Rail & Road
Project Management
Water & Environment
Architecture & Design



Industry

Advanced Manufacturing
Automotive R&D
Food & Pharma
Process Industry
Product Development
Industrial Engineering
Specialized Technical Service



Energy

Thermal Heat & Power
Hydro Power
Renewable Energy
Nuclear Energy
Transmission & Distribution
Oil & Gas
Energy Markets

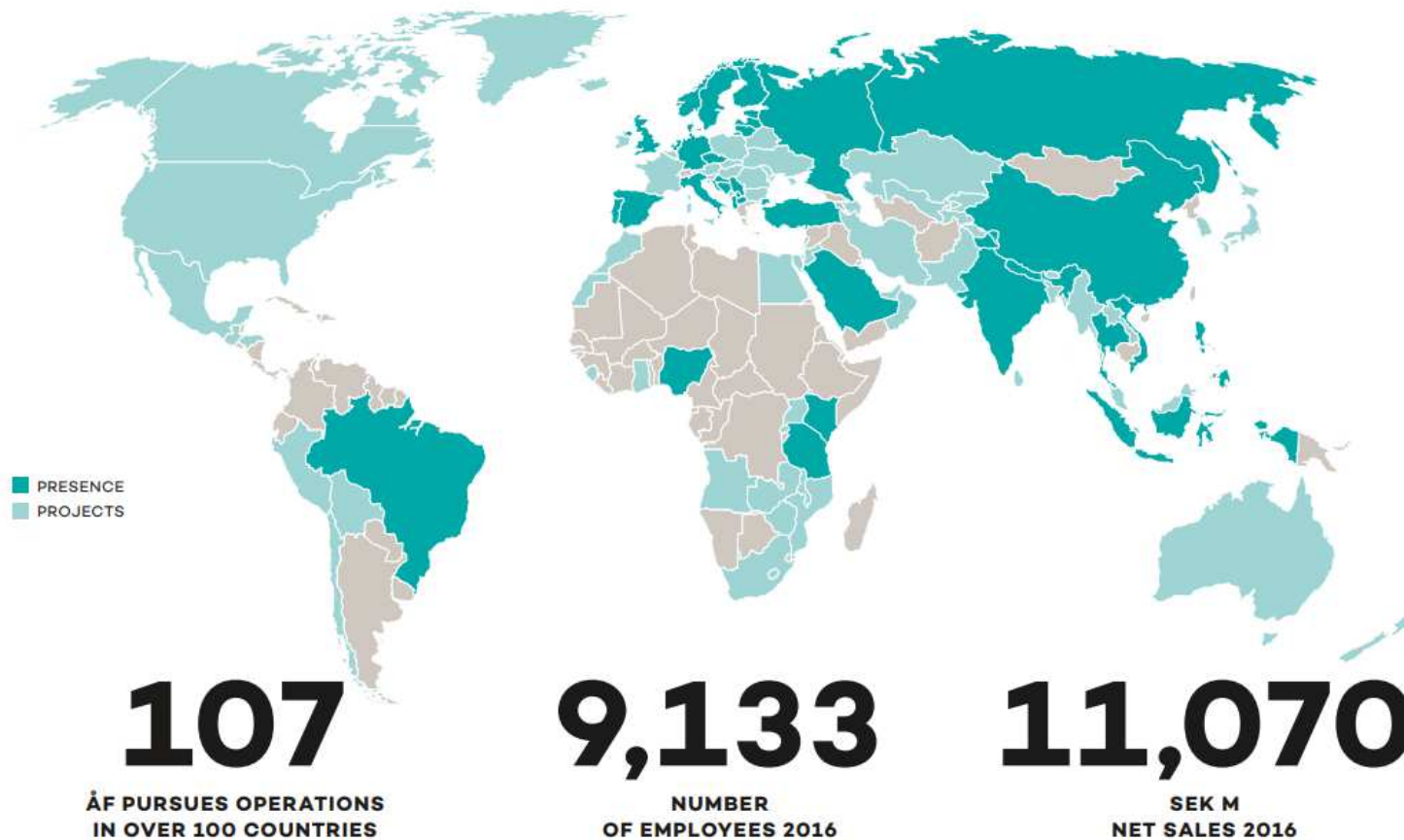


Digital Solutions

Experience Design
IT Solutions
Embedded Systems
Systems Management



Worldwide presence



Domestic

Markets:

Sweden
Norway
Denmark
Finland

Other main offices with engineering resources:

Brazil
Estonia
Germany
India
Indonesia
Iran
Italy
Kenya
Kingdom of Saudi Arabia
Lithuania



Objectives



OBJECTIVES

Comsyn and WP 7

Comsyn

Target <0.8 eur/ltr production cost for diesel

- 1) utilization of various biomass residues
- 2) new BTL distributed primary production concept (gasification + FT)
- 3) utilizing existing oil refineries to refine biocrude for end-products

Work Package 7

Task 7.1: Biocrude market potential assessment

Task 7.2: Business concepts for the case studies



Market Assessment



MARKET ASSESSMENT

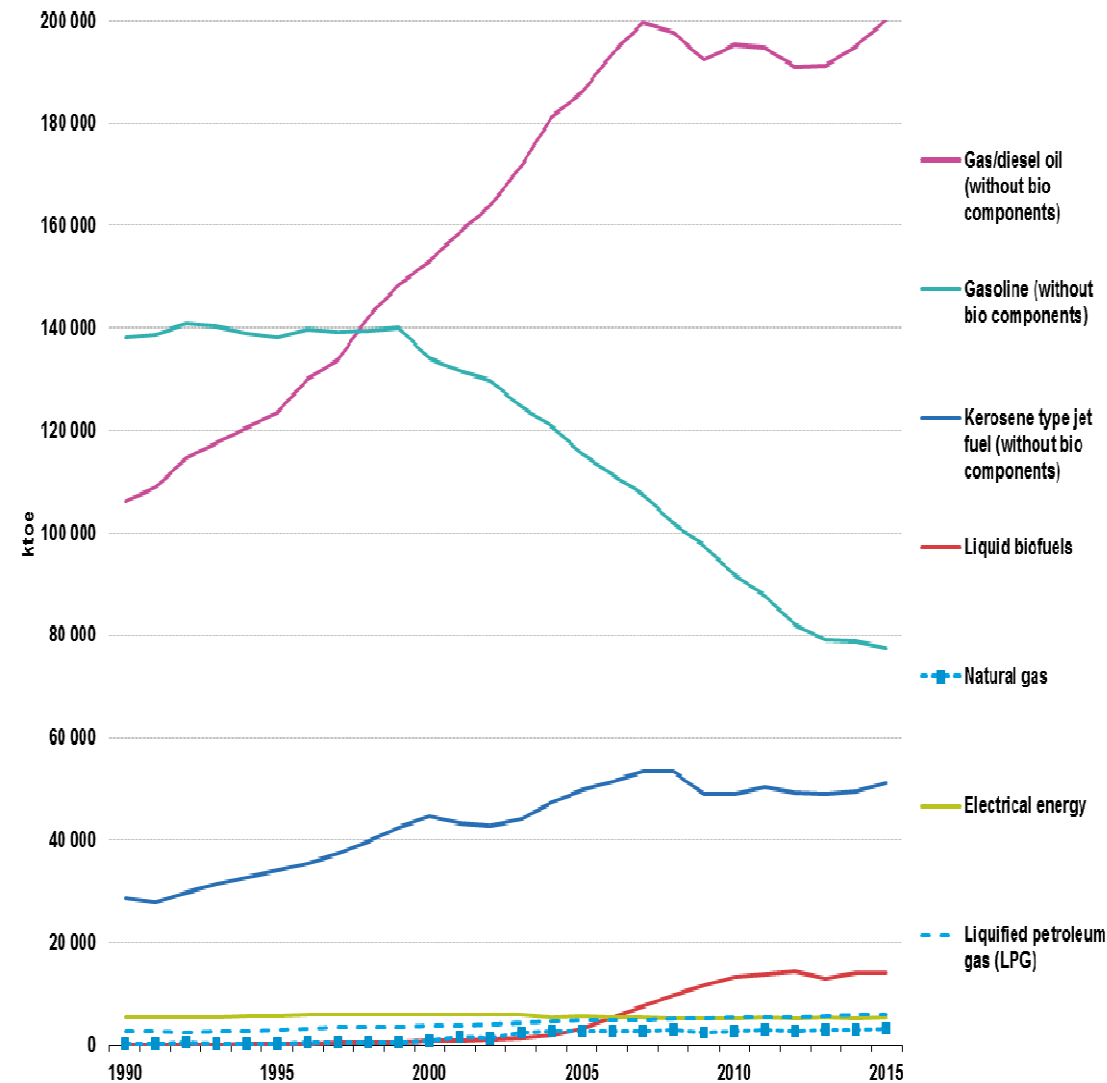
Overall status

Use of fuels in transport in EU-28

Diesel use has increased by 6700 ktoe/a from 1990 to 2005 and then levelled off

Gasoline use has decreased by 4000 ktoe/a from 2000 to 2015

Liquid biofuels ~4% of total in 2015



Source: Eurostat

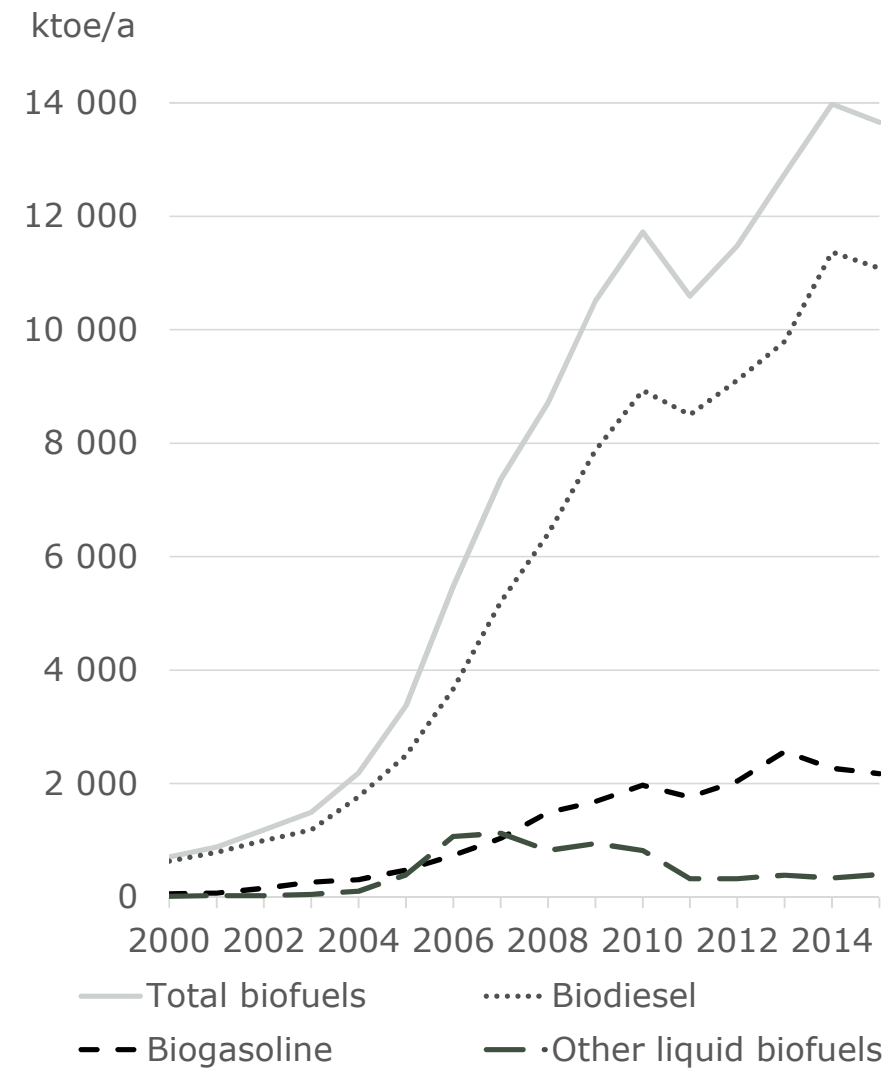


MARKET ASSESSMENT

Biofuel production in EU

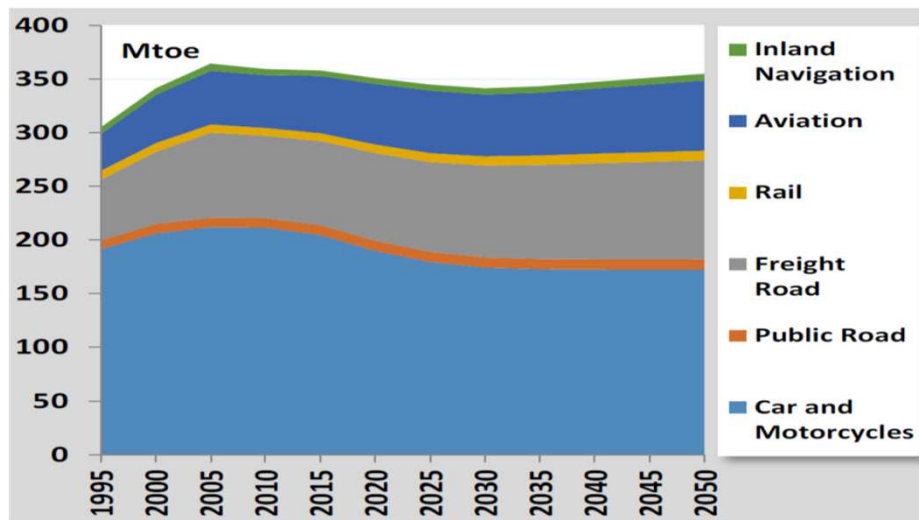
Total biofuels AAGR ~900 ktoe/a from year 2000 to 2015

On average +23% annual growth from year 2000 to 2015

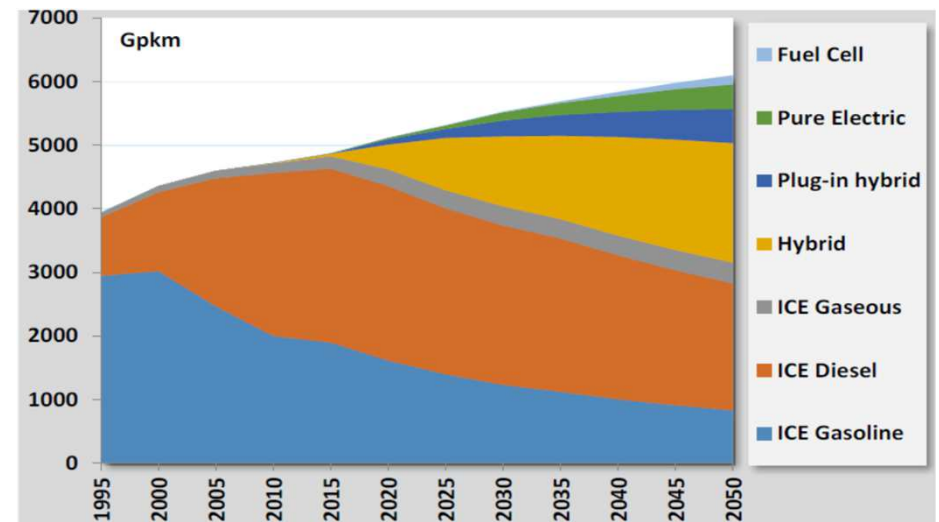


MARKET ASSESSMENT

Transport energy demand to slightly decrease by 2030



Final energy demand in transport



Activity of passenger cars and vans

Source: EU Reference Scenario 2016

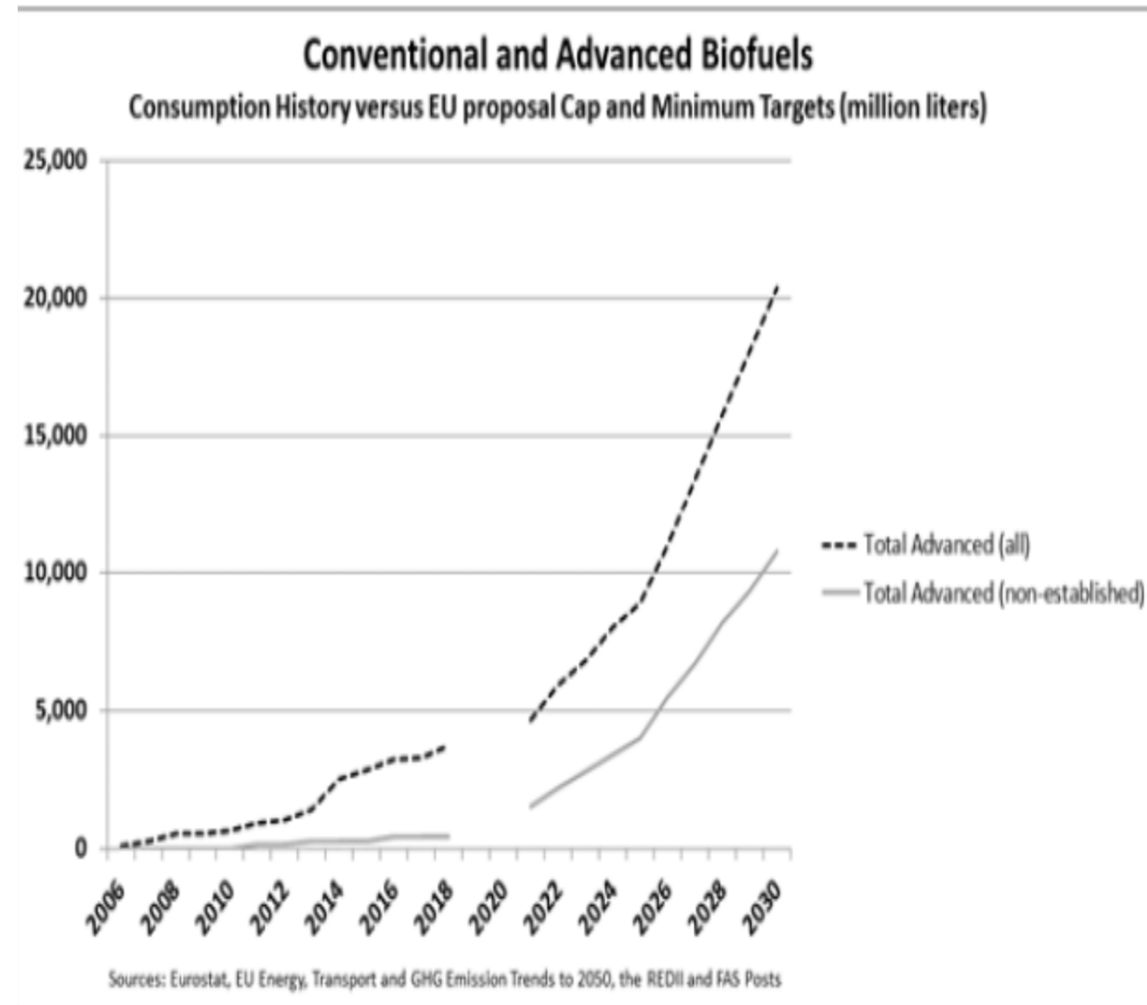


MARKET ASSESSMENT

Potential of the Comsyn concept

EC targets (transportation)

- Advanced non-established ~11 000 ktoe/a by 2030
- growth of 1000 ktoe/a (= 27% AAGR)
- Assuming á 10 000 - 50 000 toe/a
- 220 - 1100 primary conversion units by 2030



Source: USDA, 2017



MARKET ASSESSMENT

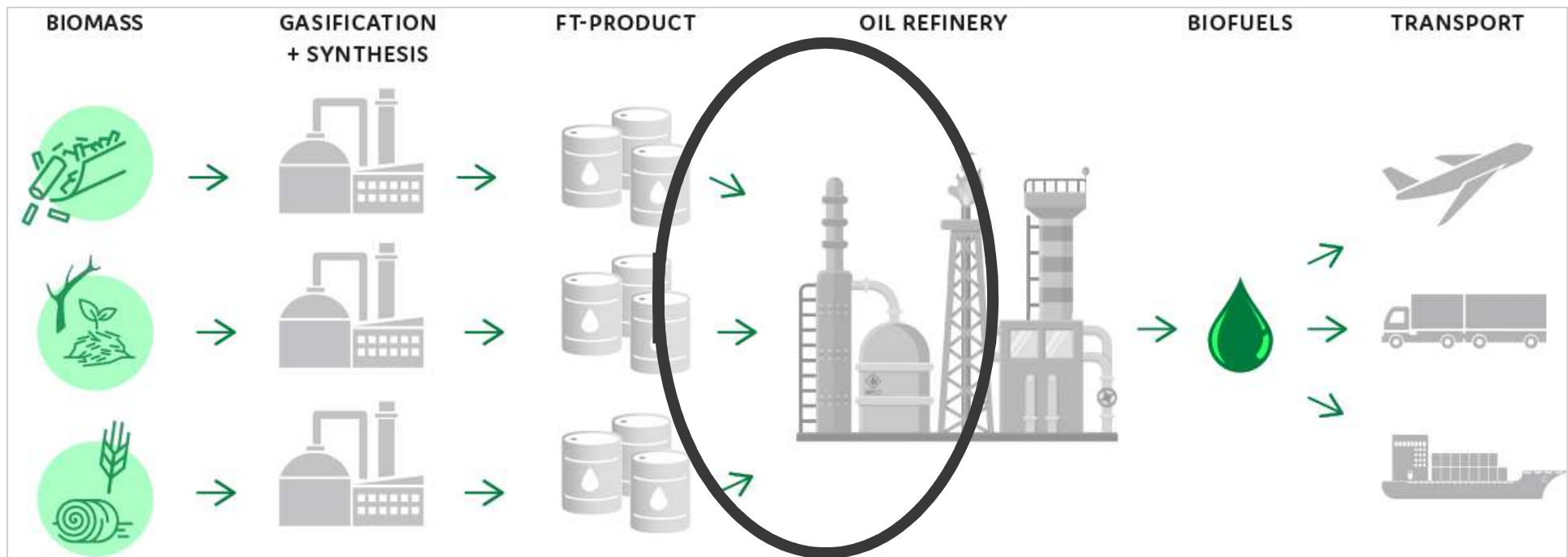
Trilogy negotiations for 2030 in 2018

- European Commission
 - Sustainable energy from 1.5 -> 6.8%
 - Advanced biofuels 0.5 -> 3.6%
 - 1st gen biofuels from 7 -> 3.8%
- EU Council
 - 14% target for biofuels by 2030
 - 3% share of advanced biofuels
 - 7% cap for 1st gen biofuels
- European Parliament
 - 12% target for biofuels by 2030
 - Palm oil to be banned after 2021
 - 7% cap for 1st gen biofuels



MARKET ASSESSMENT

Focus



MARKET ASSESSMENT

Market survey

A questionnaire by email

Complementary phone interviews

Making Future. 

Market survey for advanced biofuels

Welcome to share your thoughts about the future of biofuels!

As a part of an EU Horizon 2020 funded research project on next generation biofuels *COMSYN (Compact Gasification and Synthesis process for Transport Fuels)*, we are conducting a **market assessment** in order to fully understand the commercial potential of the concept.

In this survey, we focus on market potential of the **Fischer Tropsch (FT) biocrude**. We would like to obtain an insight into how attractive the FT-based biocrude is and what would be the most attractive products to be refined from it. The market assessment results will be published and discussed on scientific articles, seminars and at the official *COMSYN* website (see below).

Please answer the survey by xxxxxxxx.

All survey participants will receive the market survey report, so this is a unique chance to **stay up-to-date with the latest biofuel market developments**. Filling in the survey takes approximately 10 minutes. The responses will be kept **strictly confidential**. Your and your company's identity will remain confidential – only aggregated information will be reported publicly and to the *COMSYN* partners.

More information can be found here:

- Detailed information on the *COMSYN* project and project partners: www.comsynproject.eu
- More information about AF: www.afconsult.com
- Should you have questions regarding the survey, please contact Mr. Ville Hankalin (ville.hankalin@afconsult.com) or Ms. Johanna Wahlström (johanna.wahlstrom@afconsult.com).

Thank you for your time and inputs!



Business Concepts

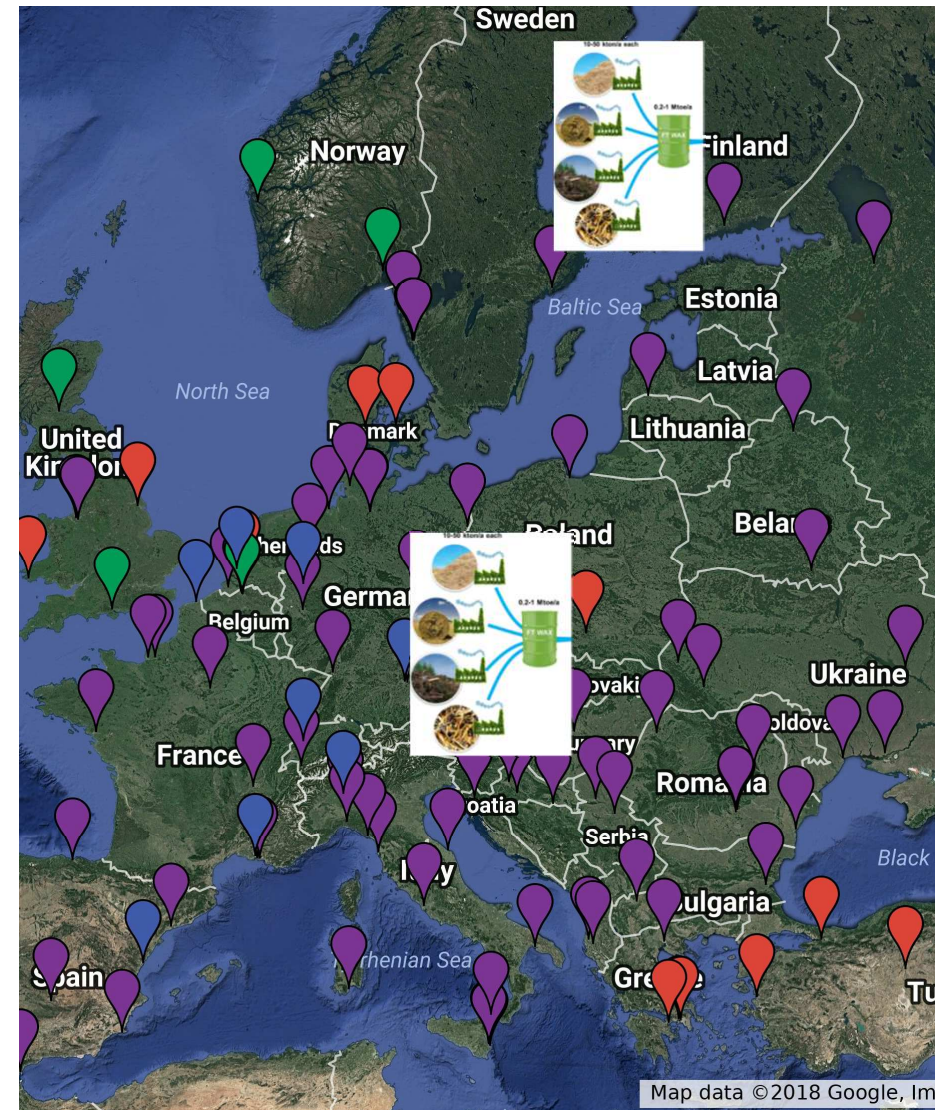


BUSINESS CONCEPTS

Case studies

Central Europe

Northern Europe



BUSINESS CONCEPTS

The whole value chain

BIOMASS

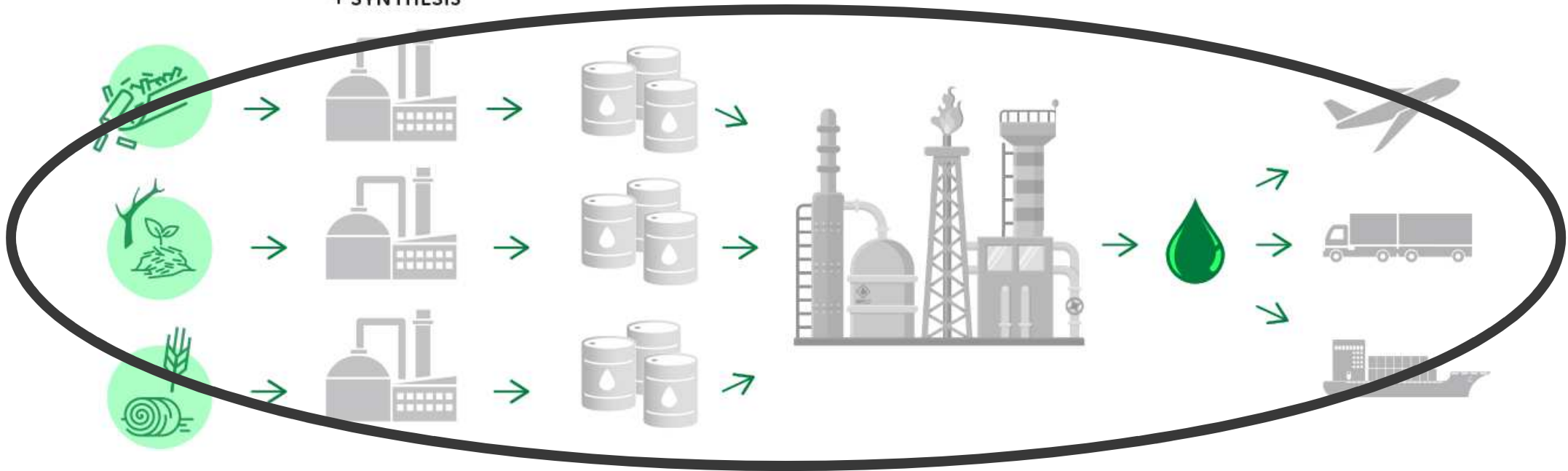
GASIFICATION
+ SYNTHESIS

FT-PRODUCT

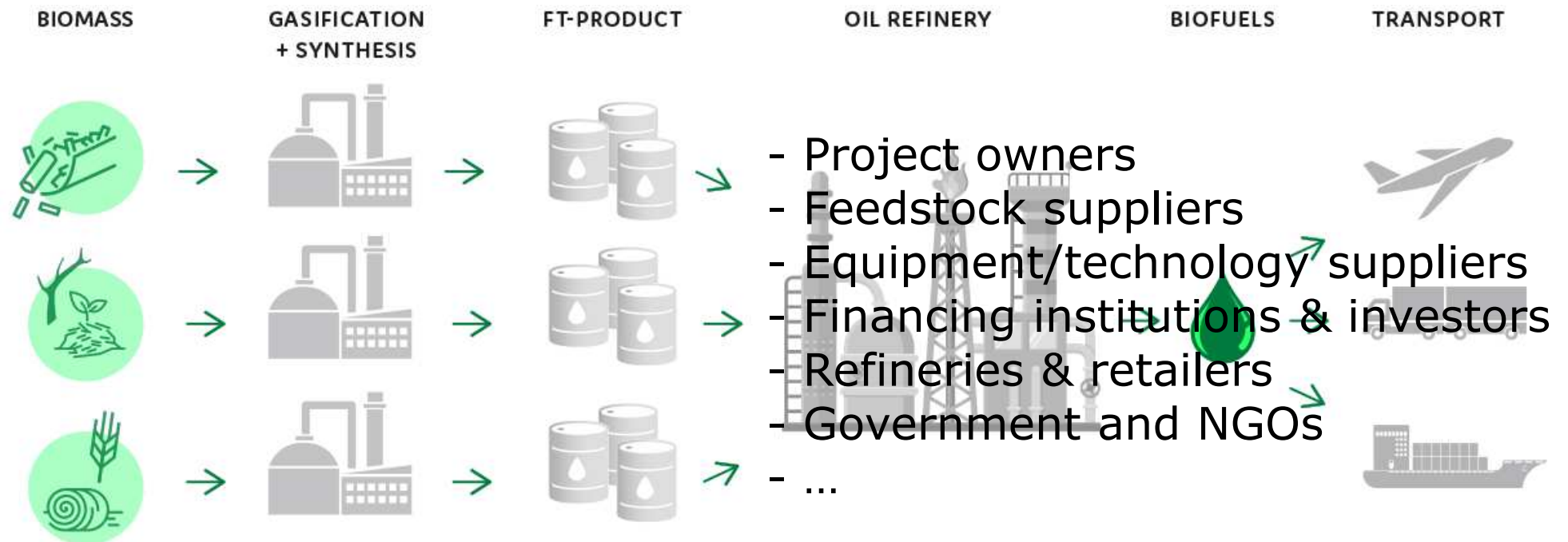
OIL REFINERY

BIOFUELS

TRANSPORT



Stakeholders



Next Steps



NEXT STEPS

Market Survey

We are sending out market surveys in April-June

YOUR CONTRIBUTION IS APPRECIATED!

Should you like to participate, please provide us your or your colleague's contact information

ville.hankalin@afconsult.com

johanna.wahlstrom@afconsult.com

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Thank you!

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Making Future 