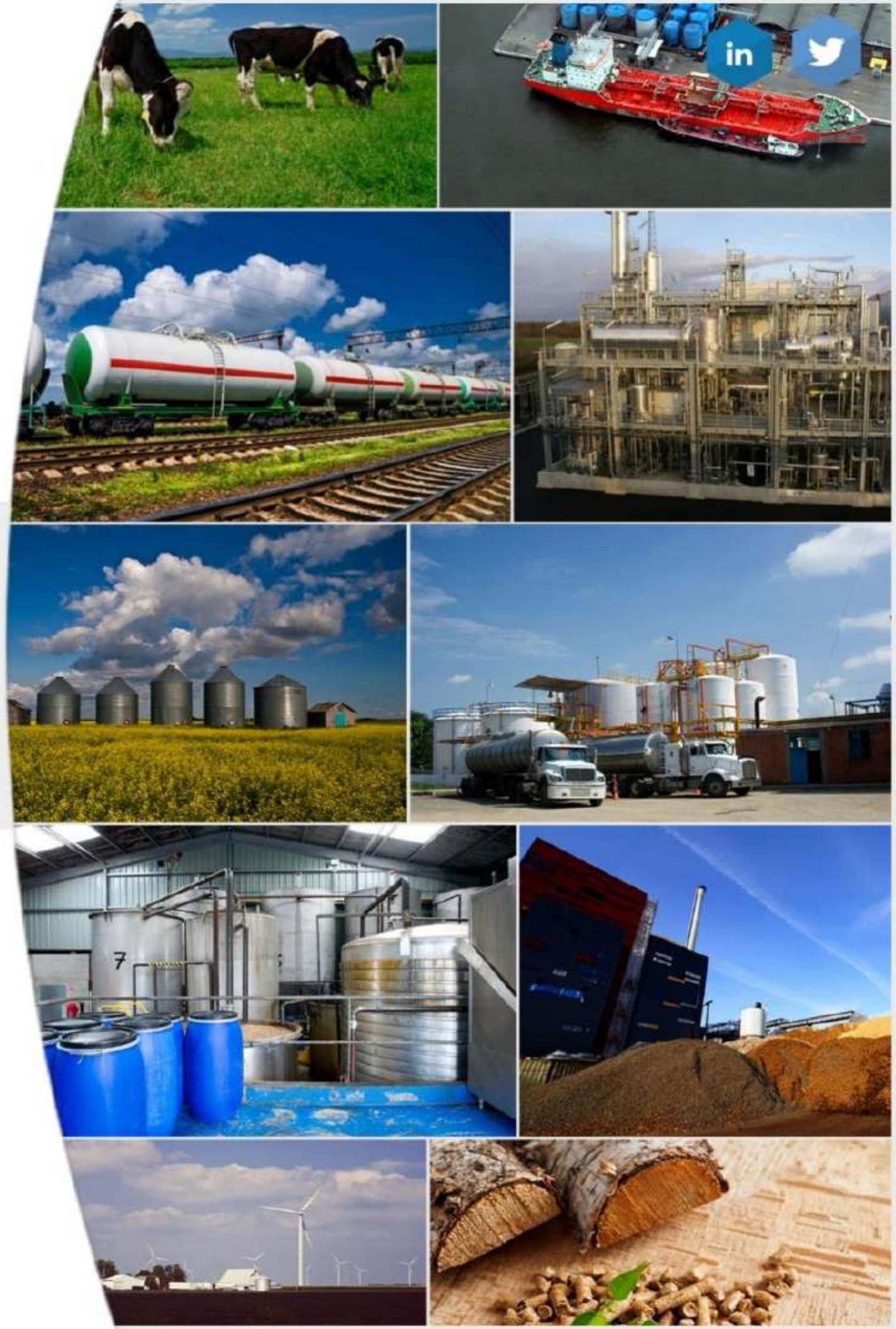
YOUR BROKER FOR WASTE-BASED
FEEDSTOCK & BIODIESEL



Waste-Based Biodiesel Market in 2016

September 2016

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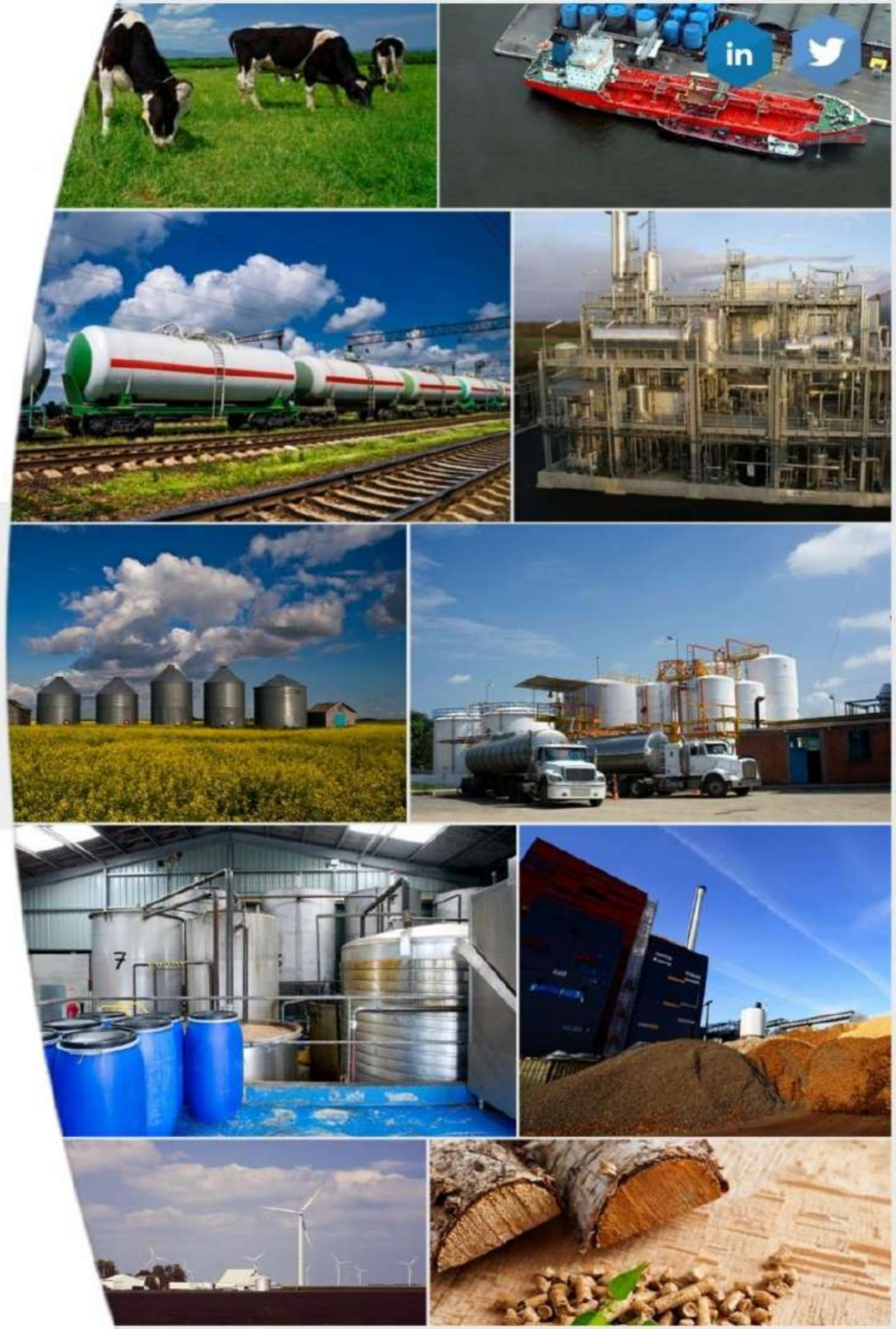
Agenda

What are the key trends shaping the market in 2016?

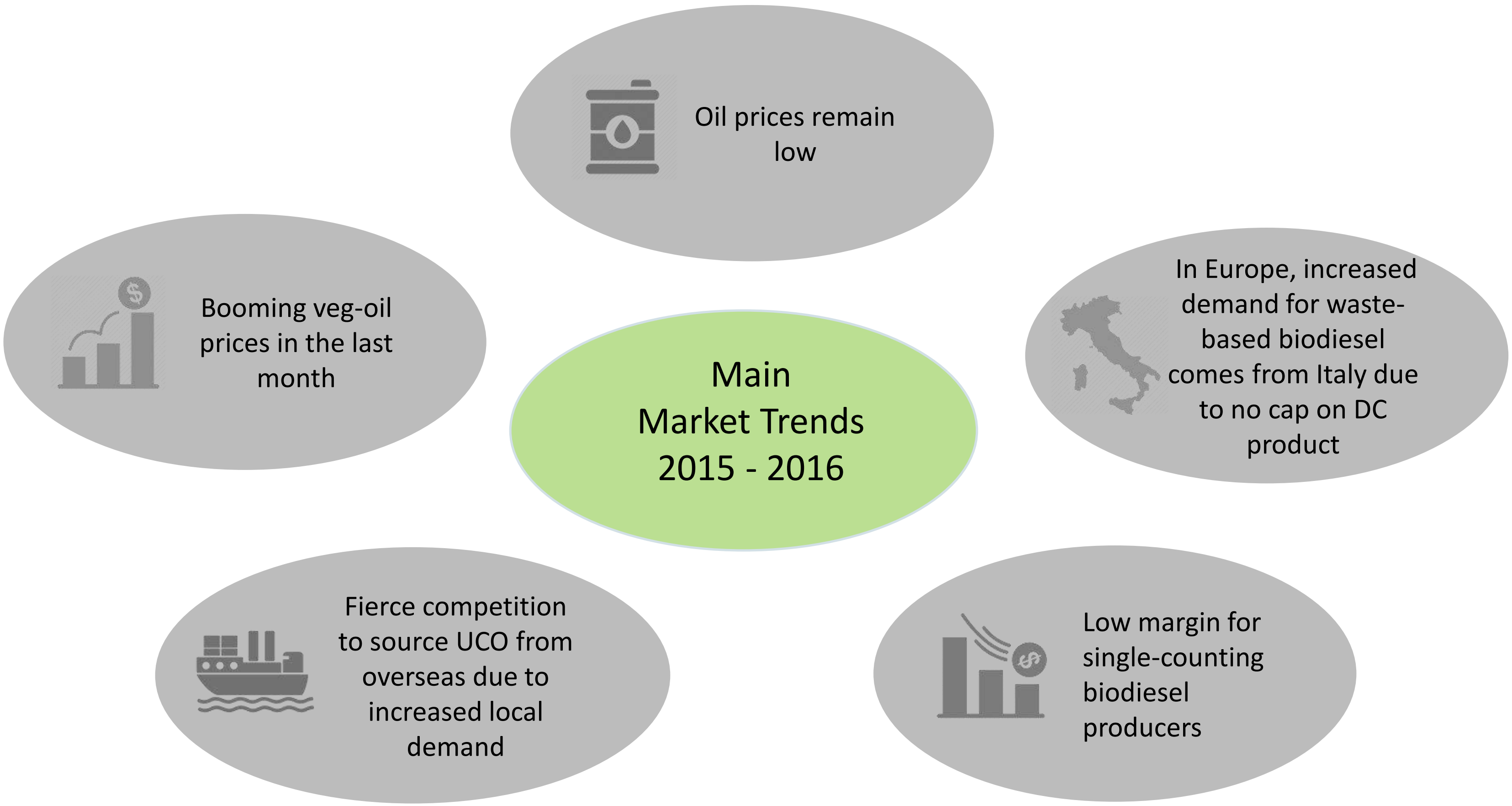
How does the waste-based feedstock and biofuel market perform?

What do we expect in the next years?

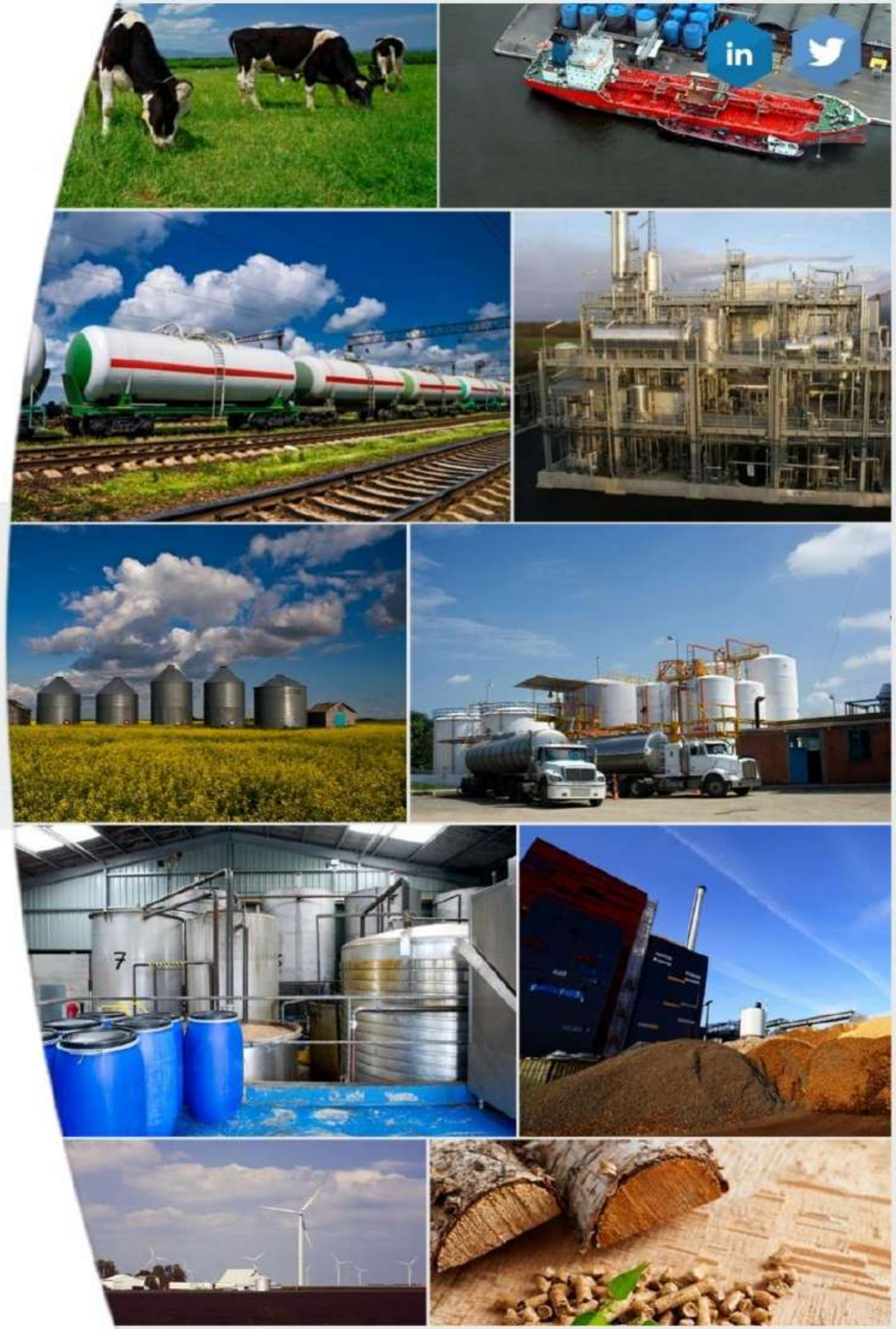
What are the key trends shaping the market in 2016?



Low crude oil and high vegetable oil prices as the main drivers of the market in the last months



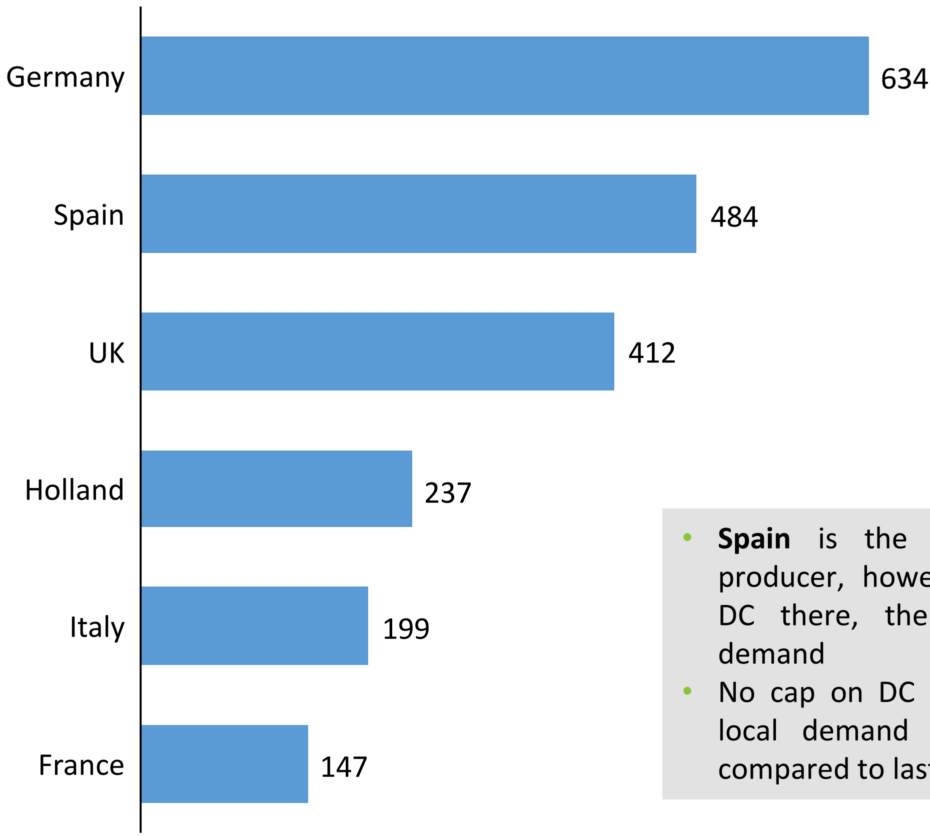
How does the waste-based feedstock and biofuel market perform?



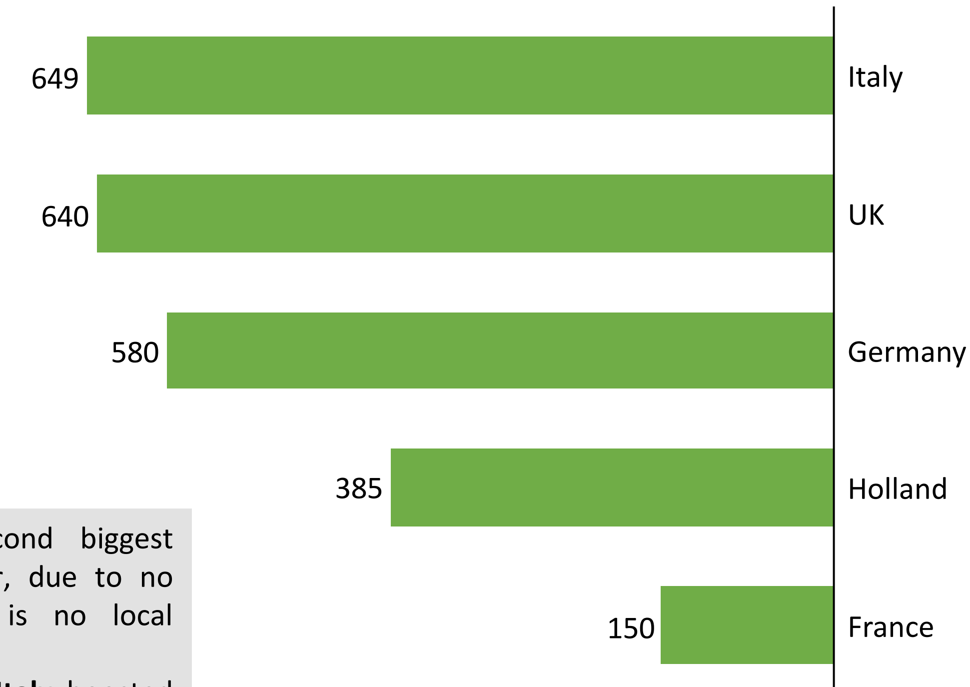

European biodiesel market is
estimated at 14 million tons

Germany, Italy and the UK are key players on the waste-based biodiesel market

WASTE-BASED BIODIESEL PRODUCTION IN 2016 (EST.)



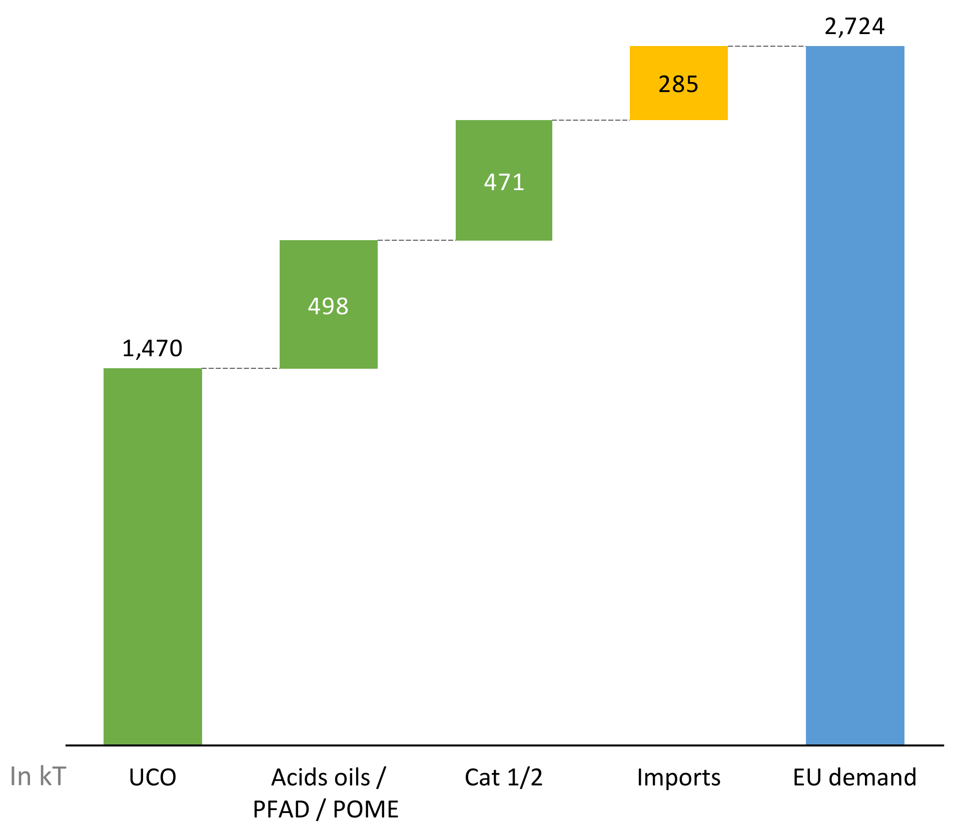
WASTE-BASED BIODIESEL CONSUMPTION IN 2016 (EST.)



- **Spain** is the second biggest producer, however, due to no DC there, there is no local demand
- No cap on DC in **Italy** boosted local demand by nearly 50% compared to last year

The supply of waste-based biodiesel in Europe does not cover the local demand

WASTE-BASED BIODIESEL CONSUMPTION IN EUROPE



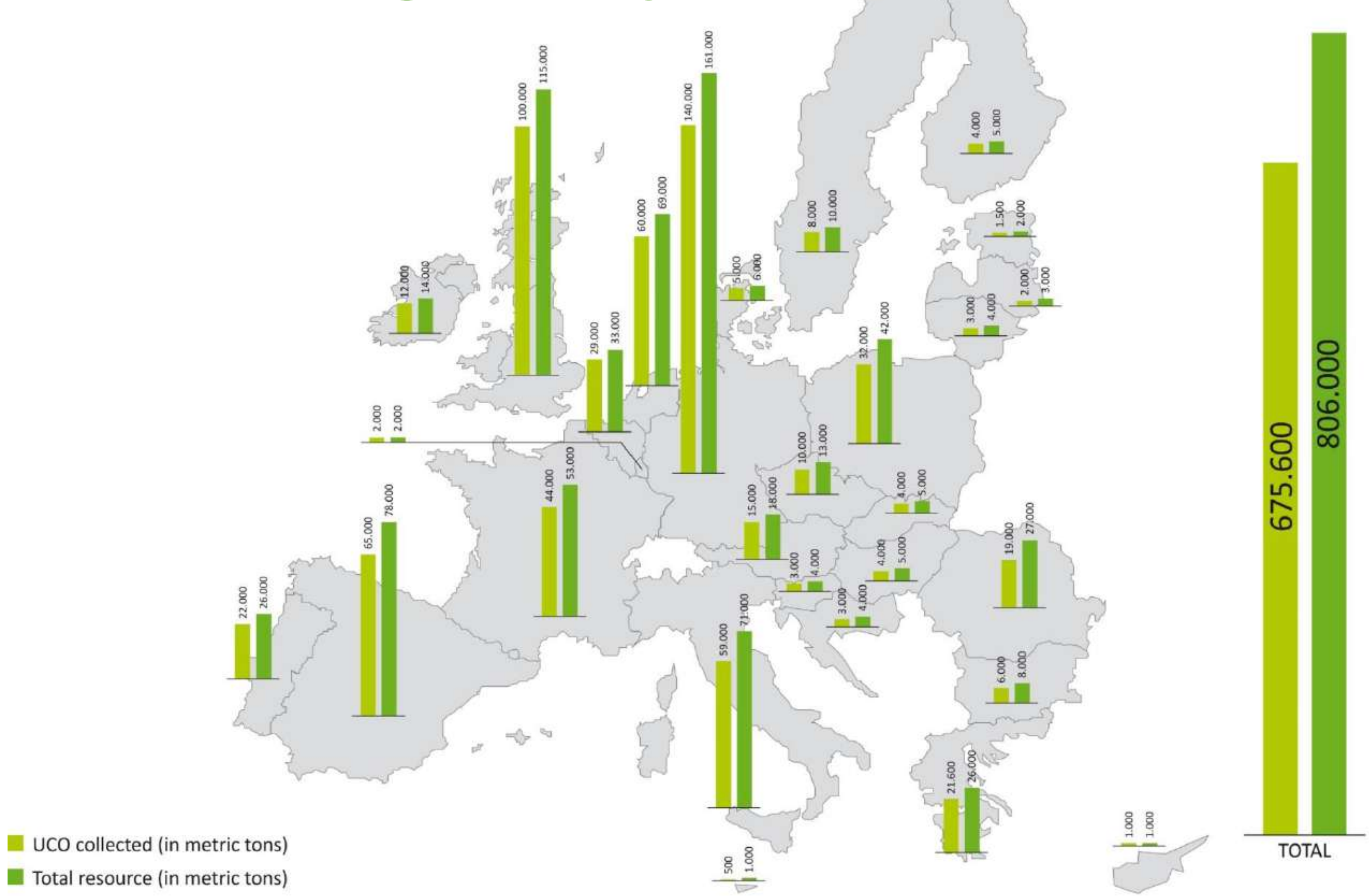
10%

Percentage of waste-based biodiesel demand in Europe that has to be covered by import

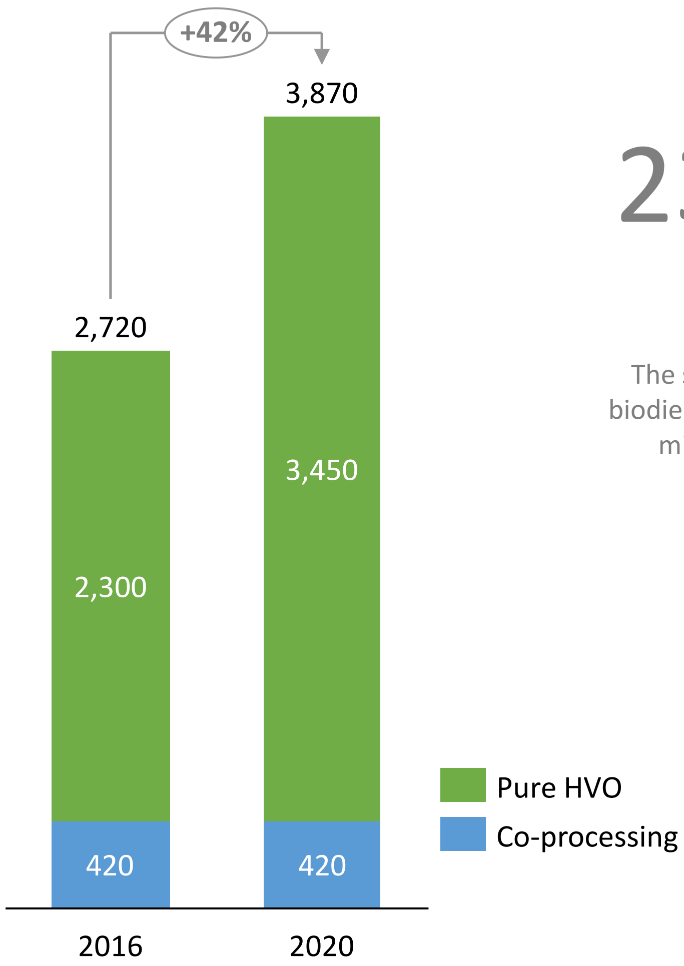
- Europe is the main export destination of Asian waste-based biodiesel producers.
- New investments aimed at supplying the EU market keep appearing in Asia.
- In Asia, there will be a shift from exporting UCO to using the oil locally for biodiesel production and exporting the ready-made UCOME to Europe.
- Nevertheless, the 6,5% import tax remains a significant barrier.

Source: GREENEA analysis

European UCO market is already mature with limited growth possibilities



TOTAL and ENI plants will significantly increase the HVO production capacity in Europe



23%

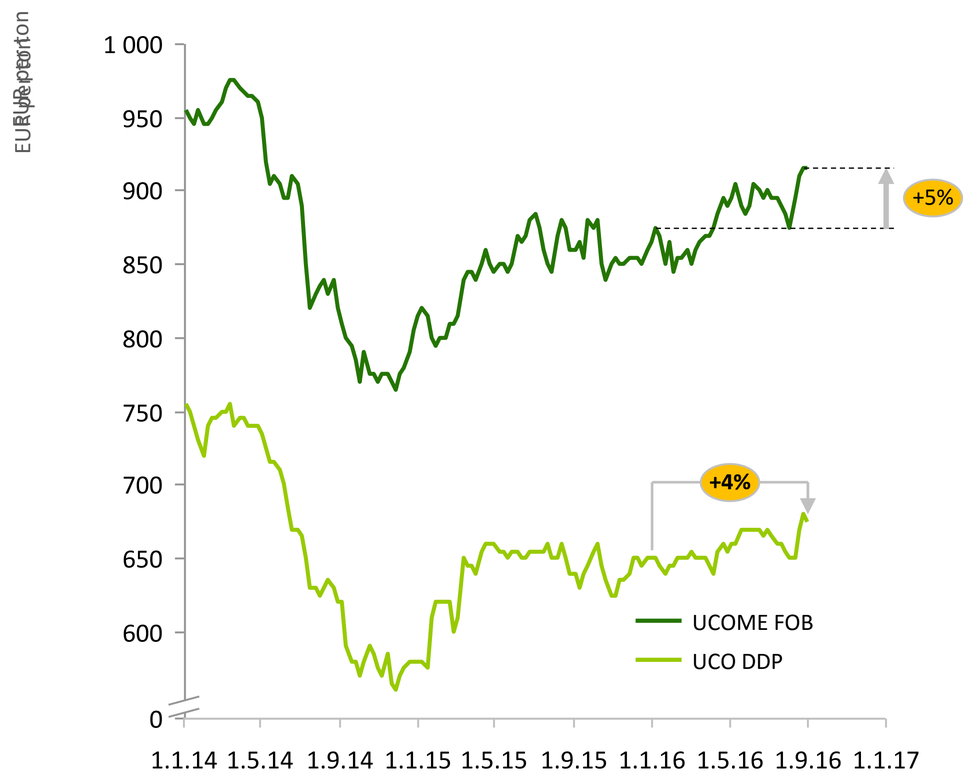
The share of European biodiesel market that HVO might get by 2020

PURE HVO AND CO-PROCESSING PLANTS IN EUROPE

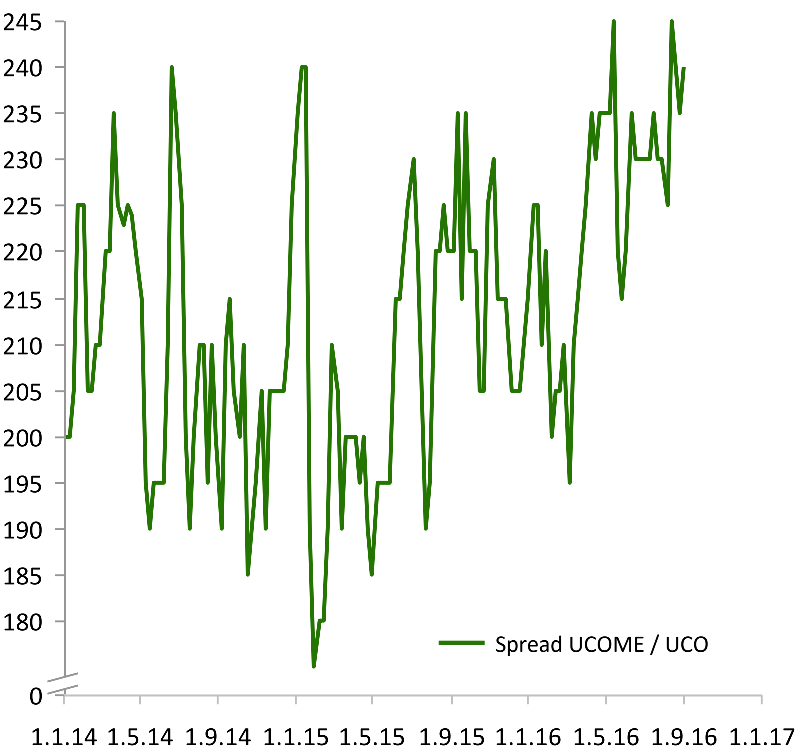
Source: GREENEA analysis

The margins for UCOME producers have been increasing since the beginning of the year

2015-2016: UCO AND UCOME PRICE DEVELOPMENT



2015-2016: SPREAD BETWEEN UCO AND UCOME

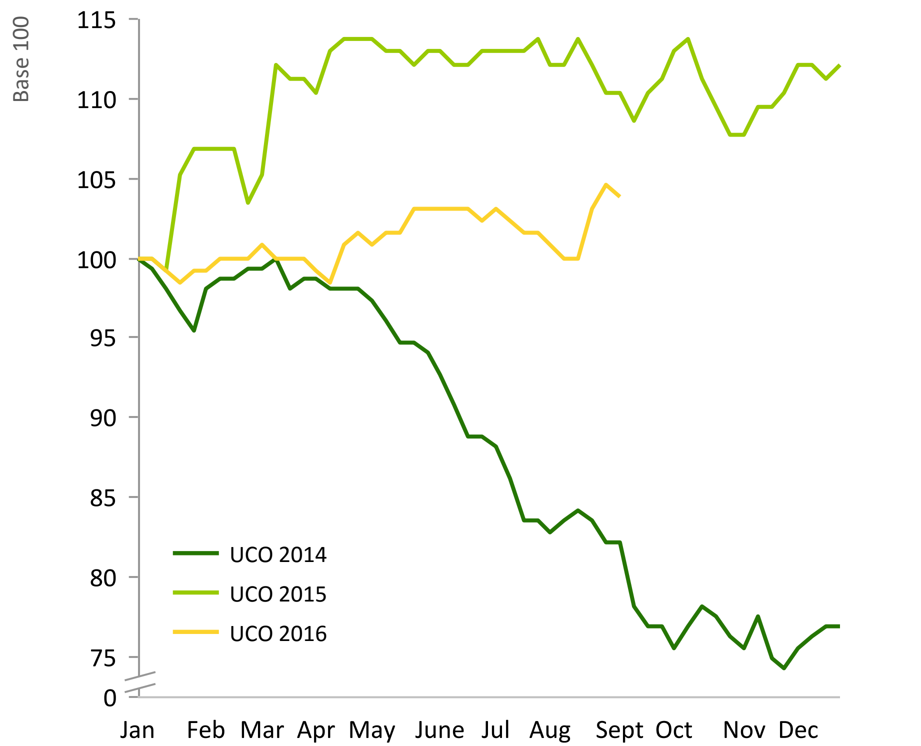


The price of UCOME grew by 5% since the beginning of the year while the price of UCO increased only by 4%. This resulted in the improvement of margins for the producers.

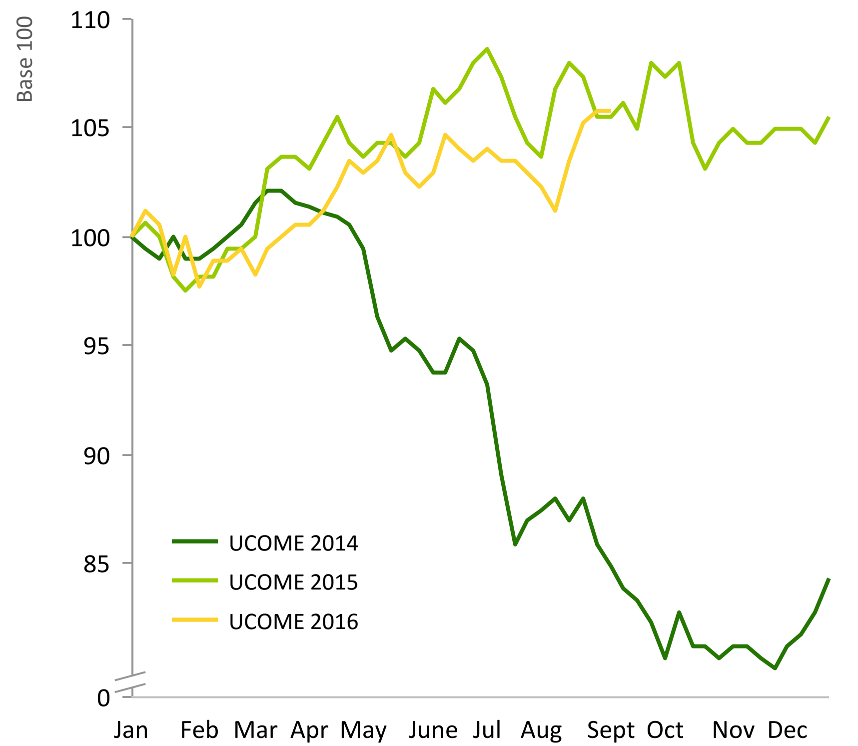
Source: GREENEA analysis

In 2016, UCO and UCOME show again an upward price trend

2014-2016: YEARLY UCO PRICE TREND



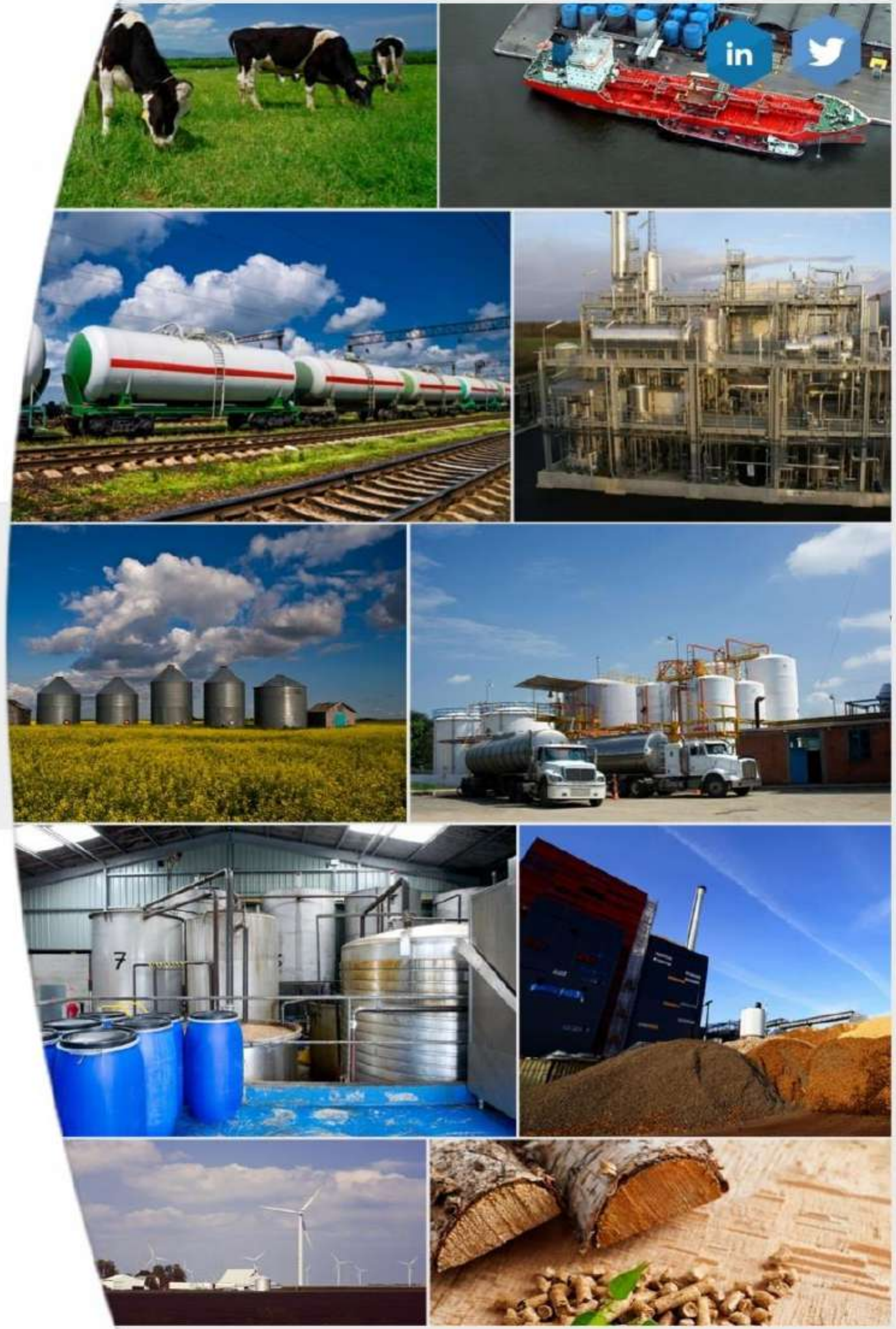
2014-2016: YEARLY UCOME PRICE TREND



2016 is the second year in a row when we see a price increase of both UCO and UCOME after a disastrous 2014. This gives some support to the European UCO collectors and helps importation.

Source: GREENEA analysis

What do we expect in the next years?



Main trends to watch in the next years

HVO

- New investments in Europe and overseas
- Conversion of non-profitable plants to HVO units (TOTAL, ENI)
- Growing demand for HVO diesel due to its superior parameters and possibility to blend with out of spec diesel to improve its quality

FEEDSTOCK

- Use of new feedstock in the biodiesel industry, e.g. crude tallow oil
- Use of acid UCO, acid oils and POME
- Opening up to lower quality high acidity feedstock

ASIA

- The demand for UCO is growing locally in Asia due to new investments in waste-based biodiesel plants there
- Instead of UCO, Asian producers start to export more UCOME to the European market

TECHNOLOGY

- Adding pre-treatment units to already existing refineries to increase feedstock flexibility
- Adding distillation columns to improve the quality of the final product

REGULATION

- Implementation of DC in new countries: Spain, Poland
- Changes in the regulation in the Netherlands
- Changes in DC feedstock rules in Italy

Opportunities to capture and challenges to face in the waste-based sector in the next years

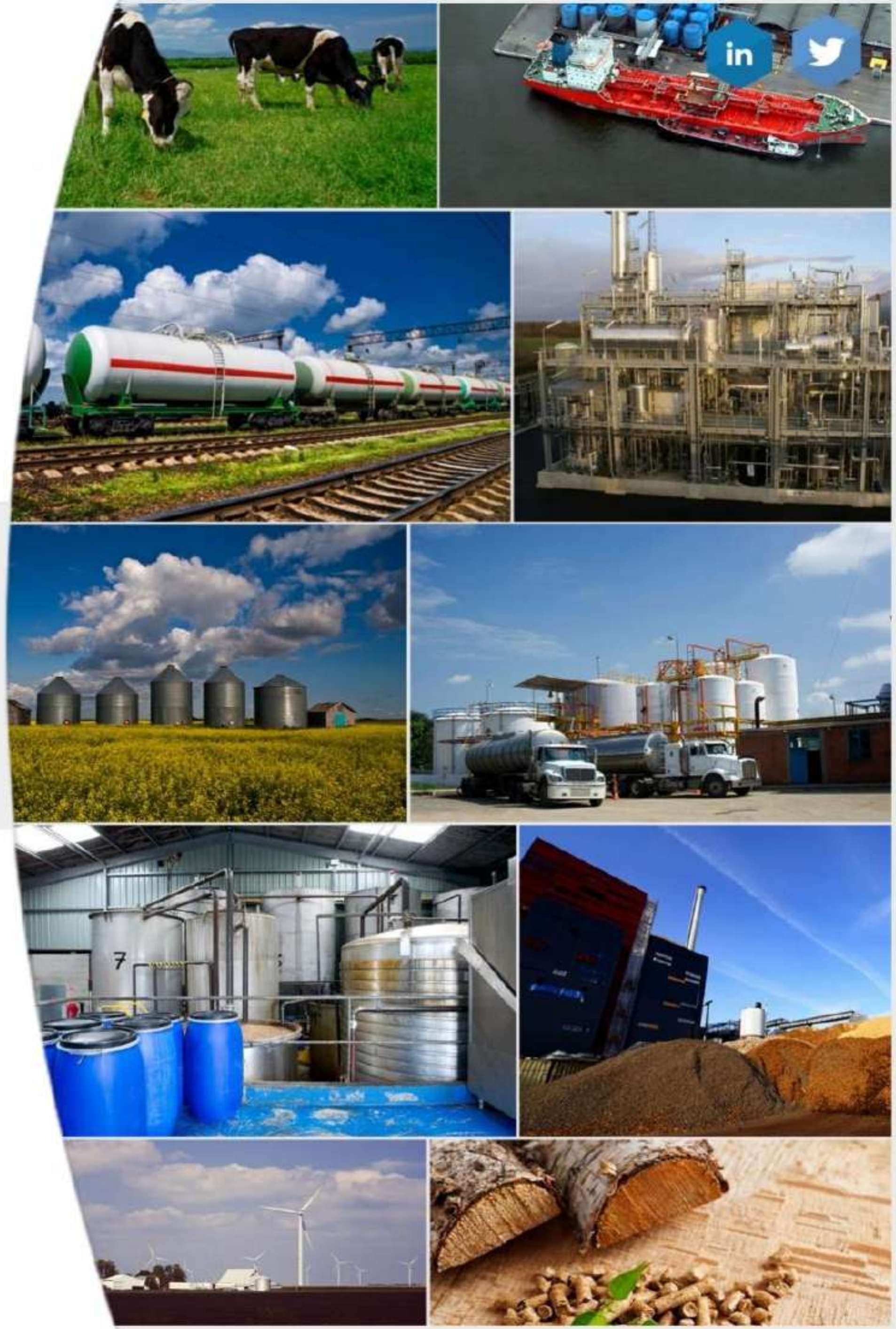
OPPORTUNITIES

- New technology investments to process high acidity feedstock and thus increase the sourcing potential and decrease the costs.
- Continuous demand for renewable fuels due to obligation from the EU.
- Increasing interest in renewable fuel mandates also overseas (e.g. Peru, Colombia, Argentina, Brazil, Indonesia, Malaysia, Philippines).

CHALLENGES

- Fierce competition to source UCO both in Europe and in Asia due to increasing local demand. This is caused by the switch to local UCOME production and export of ready-made product to Europe.
- Higher demand for feedstock coming from new HVO players.
- High volatility of veg oil prices and low crude oil prices.
- Possibility of an increase in freight rates due to bankruptcy of Hanjin Shipping, a Korean shipping line.

Why Greenea?



Why Greenea?

Risk & EnergyRisk
COMMODITY RANKINGS 2015
#1 RESEARCH IN BIOFUELS

MARKET EXPERIENCE

GREENEA is an independent **brokerage** and consulting company founded in 2007. It specialises in **waste-based raw materials and biofuels.**

GREENEA offers its **services to companies using raw materials in their production as well as to various other players from the oleo-chemical, animal feed, bioenergy and biofuels markets.**

It was our conscious and strategic choice to position ourselves on the market of **raw materials that do not compete with the food sector.**

Founded in **2007**

Since 2011 our average annual growth is **18%**

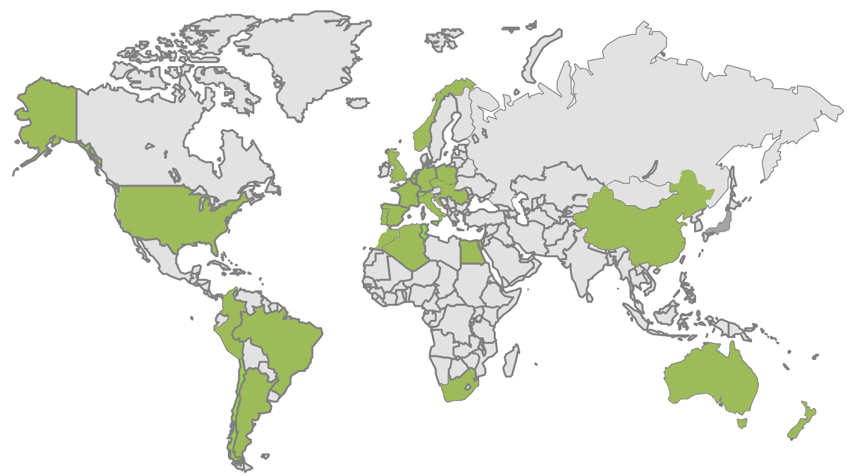
GREENEA OFFICES IN EUROPE

From our two offices in Paris and Prague we communicate with clients from all around the world thanks to our international and multilingual team.

We speak:

English, Spanish, Portuguese, Polish, German French and Italian

WIDE INTERNATIONAL PRESENCE



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