



26 February 2013

Realising the potential of advanced biofuels

K. Riis Nielsen, Novozymes A/S

NOVOZYMES IN BRIEF

Food and Beverages

Household care

Bioenergy

Agriculture

Wastewater
Solutions

BioPharma

Textiles

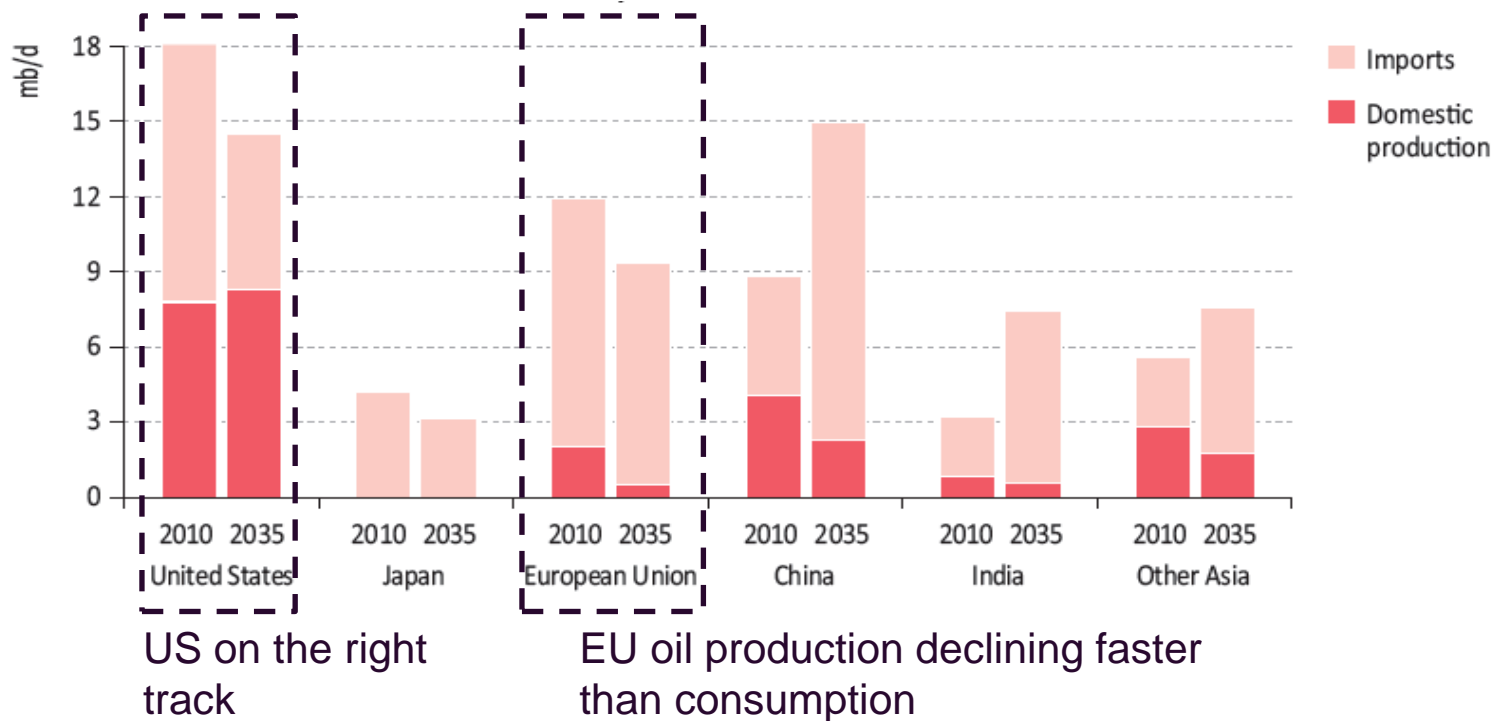
Leather

Pulp and Paper



EU DEPENDENCY ON OIL IS INCREASING

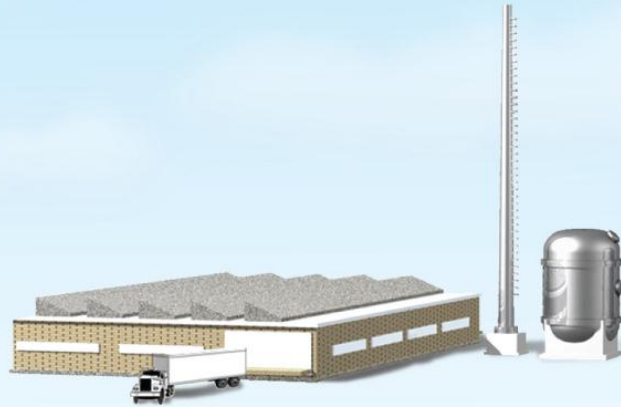
Oil demand broken into domestic production and import



BIOMASS



BIOREFINERY



PRODUCTS

Fuel



Materials & chemicals

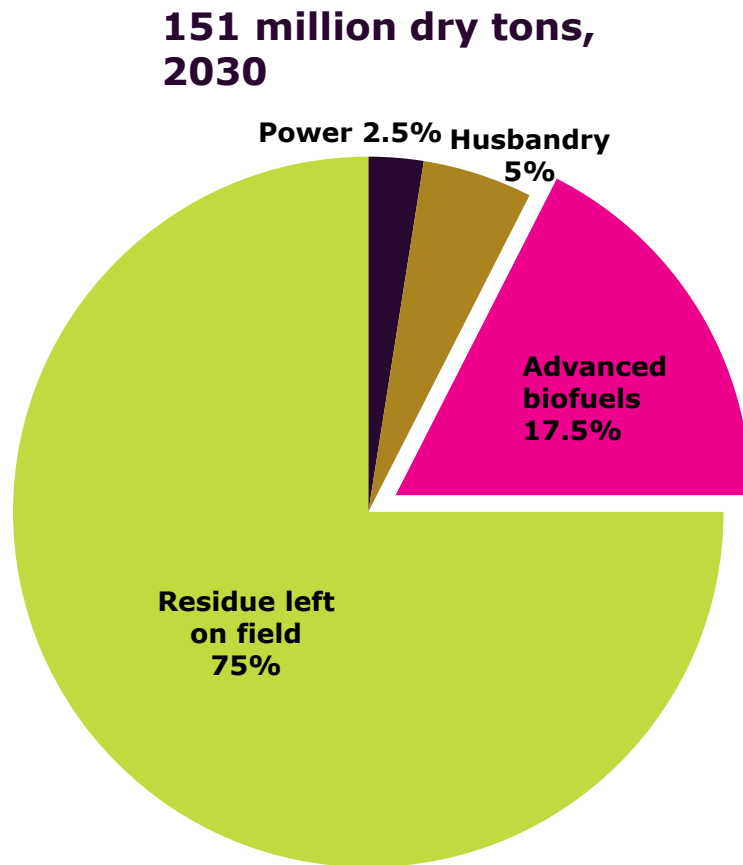


Feed & food ingredients



**THE BIOREFINERY AT THE CENTRE OF
THE BIOBASED ECONOMY**

BIOMASS RESOURCE IN EUROPE



- We assume a conservative maximum of 17.5% is available for biofuels production
- Collecting only 25% of agricultural residue is a conservative methodology that takes into accounts technical and ecological constraints
- This purposefully aim to **preserve soil quality, biodiversity, water and soils erosion and GHG emissions**

WHAT'S IN IT FOR EUROPE



Energy
security

The EU-27 can replace 68% of its annual gasoline consumption by 2030 with advanced biofuels



Jobs

Create almost 1.18 million jobs between 2010 and 2030 mainly in rural areas



Economy

European players would be the major beneficiaries, including 532 billion USD domestic engineering, construction and feedstock market

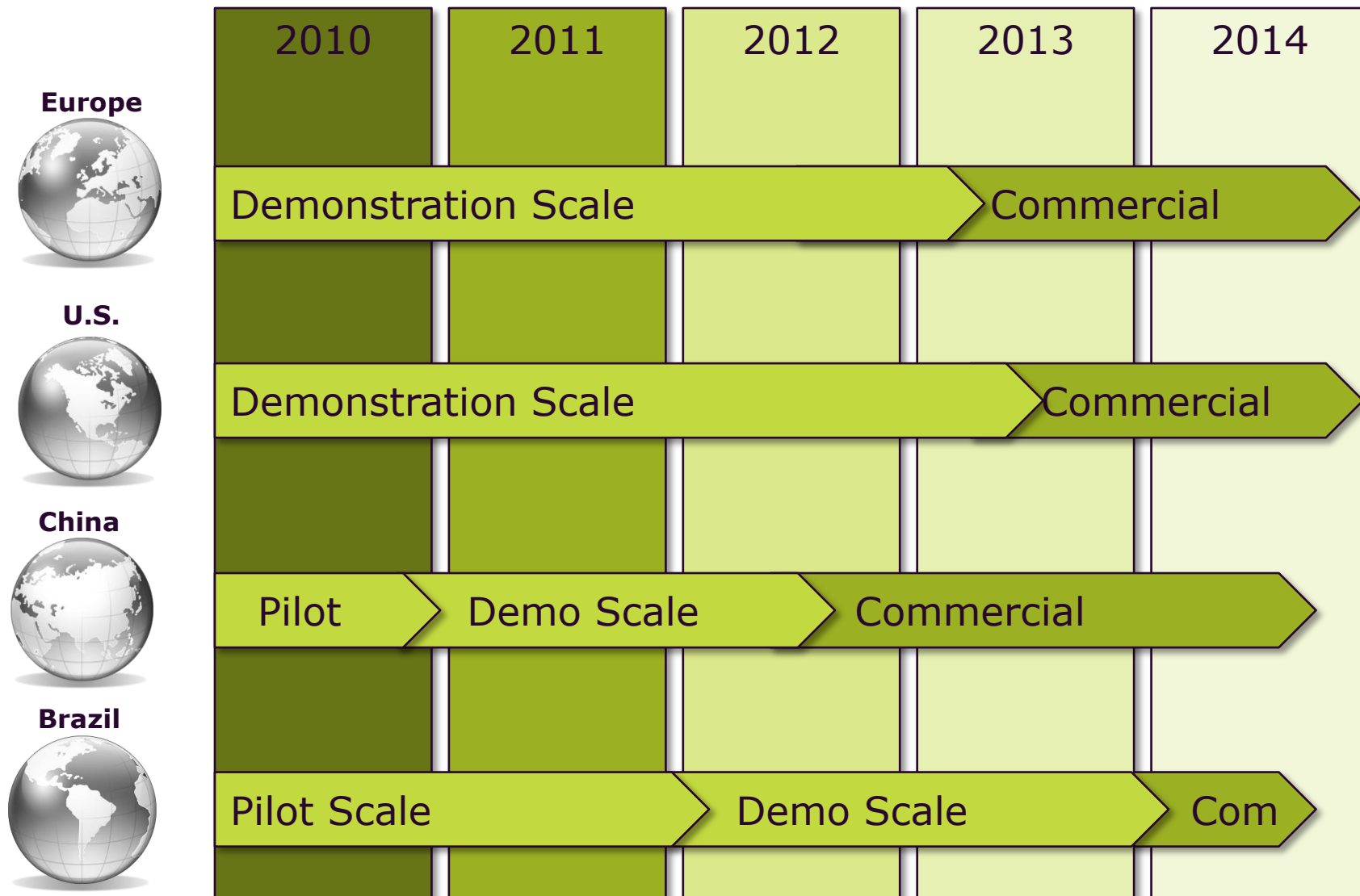


Environ-
ment

Save CO2 and reducing GHG emission from gasoline related road transport by 54%

THE RACE IS ON

Commercialization stage of advanced biorefineries



THE ROLE OF POLICY

Incentivise supply

- Support biomass development and collection



Secure demand

- Mandatory bioproducts targets
- Remove technical barriers e.g. blend walls

Trigger investment

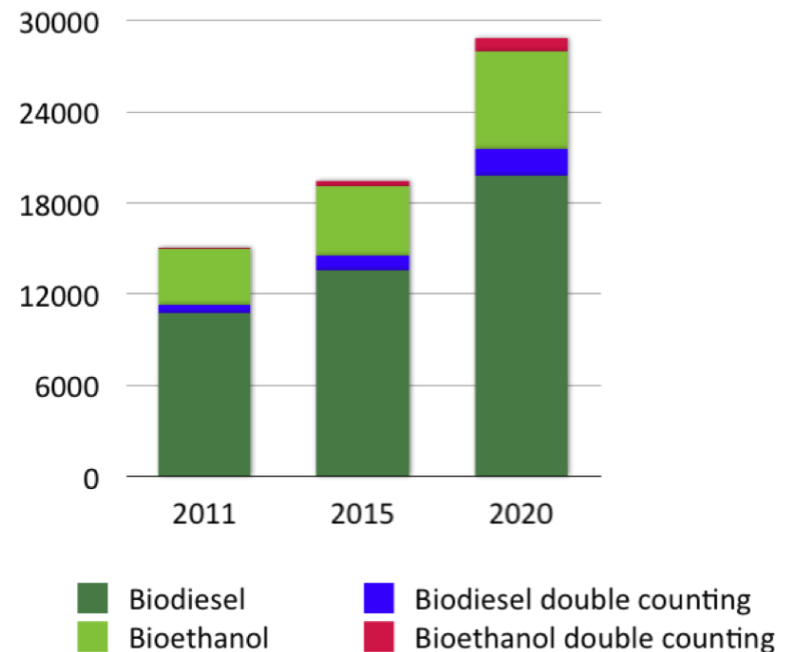
- Loan guarantees
- First of its kind commercial plants

THE EU RENEWABLE ENERGY DIRECTIVE (RED)

- SUPPORT DEMAND FOR BIOFUELS

- Existing measures within RED ineffective to kick-start new bio-industry
 - Double counting is a perverse mechanism that lowers the EU's renewables ambitions
 - Does not help most innovative technologies
- Policy revision supportive of advanced biofuels but many unknowns:
 - Discrepancies between RED and FQD targets
 - Effectiveness of instruments to promote advanced biofuels deployment in question

Ktoe



Source: National Renewable Energy Action Plans.

THE NEW BIOFUELS POLICY FRAMEWORK

RECOMMENDATIONS

- Foster the deployment of advanced biofuels through a dedicated, realistic and ramping-up carve out up to 2% by 2020;
- Develop relevant sustainability criteria for the material's collection and production of these advanced fuels.
- Such policy should be comprehensive
 - Restore investors' confidence by setting ambitious GHG reduction targets beyond 2020;
 - Use other legislative tools to address the existing petrol/diesel split in favour of the less pollutant fuel (ETD);
 - Implement an ambitious investment support programme for first-of-its kind commercial scale advanced biofuels plants



THANK YOU