



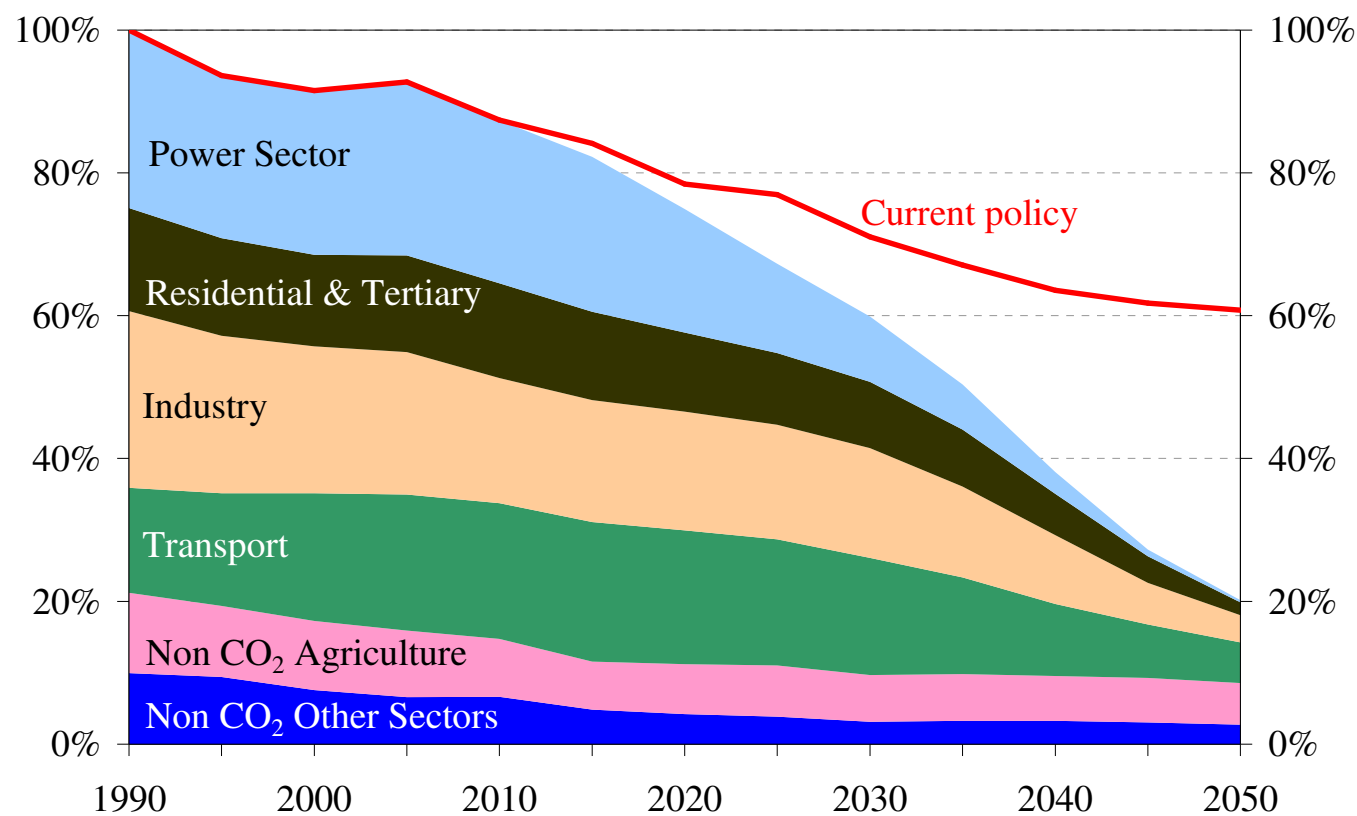
The role of advanced biofuels in the EU's energy and climate strategy

Kyriakos Maniatis

Principal Administrator
DG Energy, European Commission



Low Carbon Road Map Trajectory





In 2050....

*We are likely to need around **100 Mtoe of biofuels** that saves substantial amounts of GHG emissions (75% and more).*

***Today we use around 14 Mtoe**, but including estimated indirect effects, these biofuels only **save around 20%** GHG emissions compared to the fossil fuels they replace.*





The Policy Framework for renewable transport fuels

Fuel Quality Directive

- 6% greenhouse gas reduction target in carbon intensity of road transport fuels in 2020

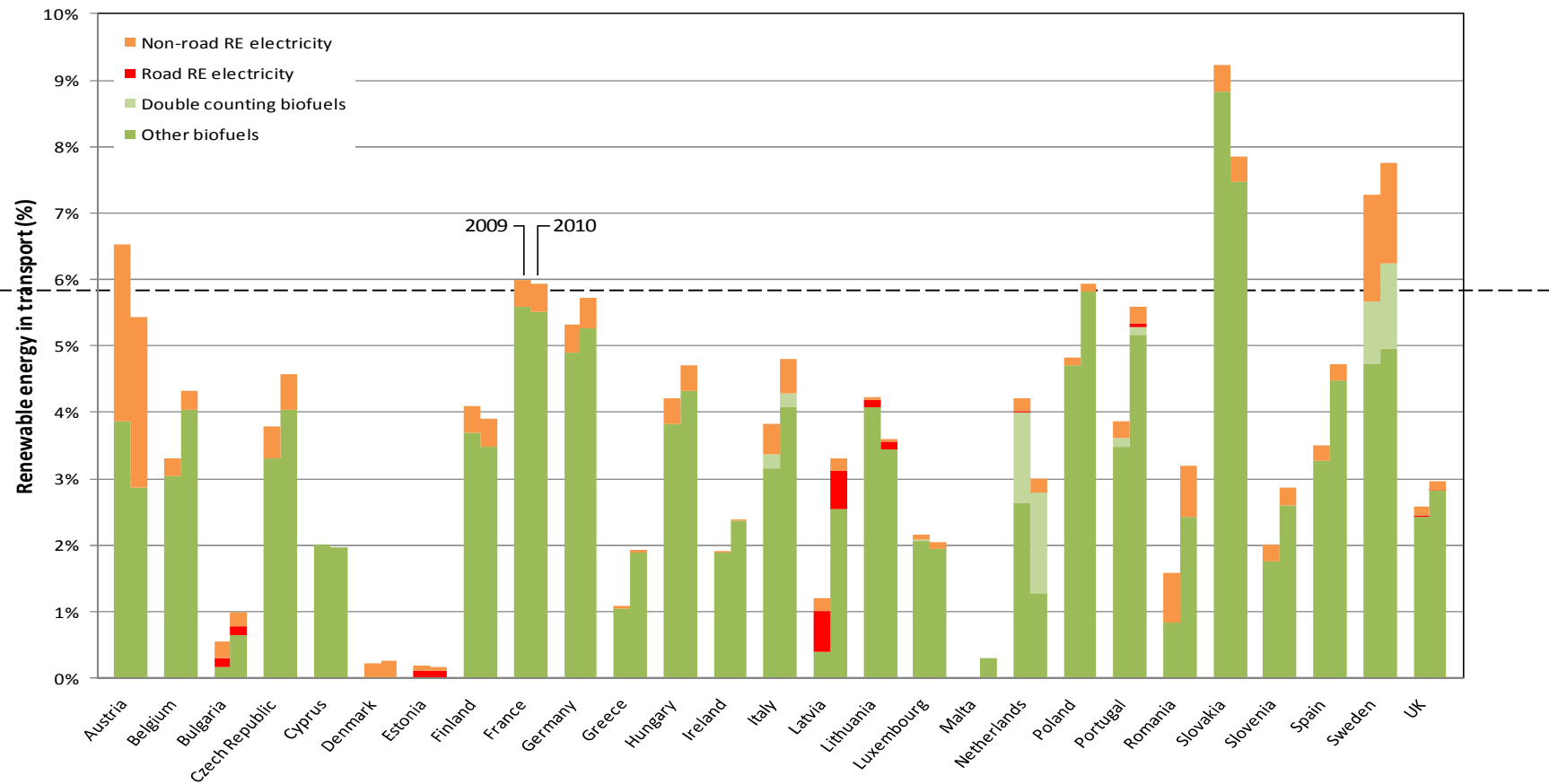
Renewable Energy Directive

- 20% share renewable energy by 2020
- 10% renewable energy in transport by 2020

Significant contribution to both targets expected to come from biofuels



Current use of biofuels in the EU





Sustainability criteria

- ❖ *Biofuels and bioliquids to be counted towards the targets must comply with sustainability criteria:*
 - **minimum 35% GHG savings, rising to 50% by 2017 (60% for new installations by 2018)**
 - **to safeguard land with high carbon stocks no conversion of wetlands, undrained peatland or continuously forested areas**
 - **to safeguard biodiversity, no raw materials allowed from sensitive areas (primary forest, grasslands, protected areas)**



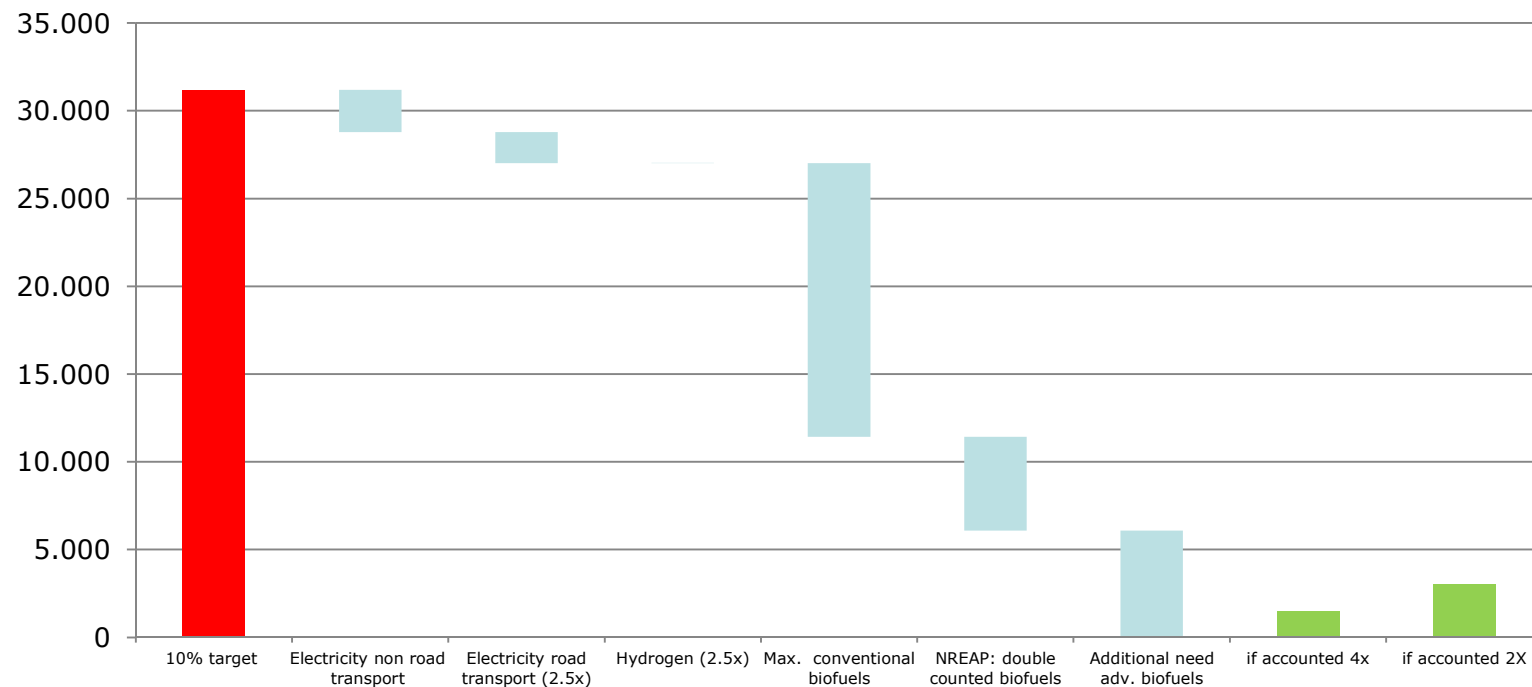


The Commission proposal on ILUC:

- **A limit of 5% to the amount of 1st generation biofuels that can count towards the Renewable Energy Directive targets**
- **Enhanced incentives for advanced non-land using biofuels (quadruple accounting)**
- **An increase to 60% greenhouse gas savings requirement for new installations**
- **ILUC-factors included in the reporting of greenhouse gas savings in both Directives**



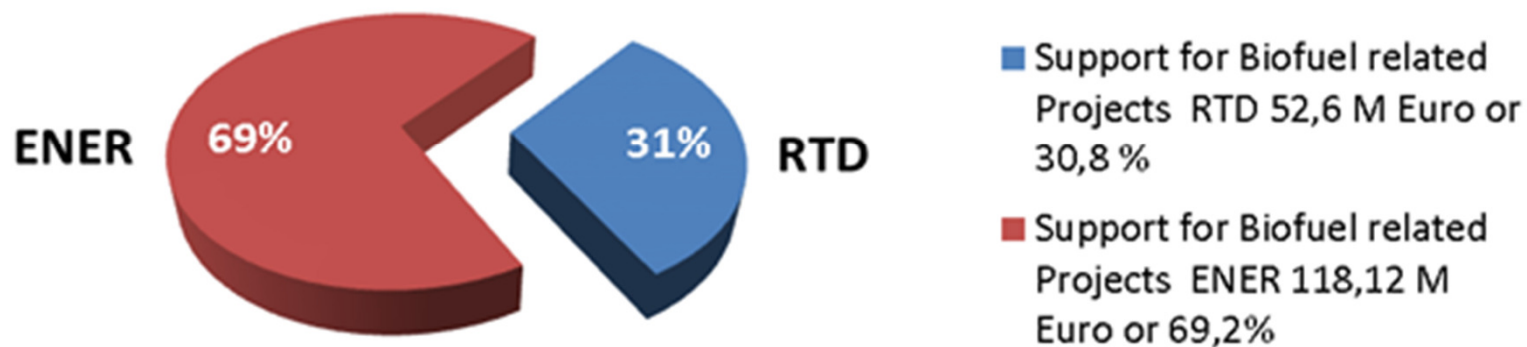
Implications for meeting 2020 targets: Example



**Need for advanced biofuels about 6000 ktoe.
15 plants (100 ktoe capacity) producing quadruple counted advanced biofuels sufficient**

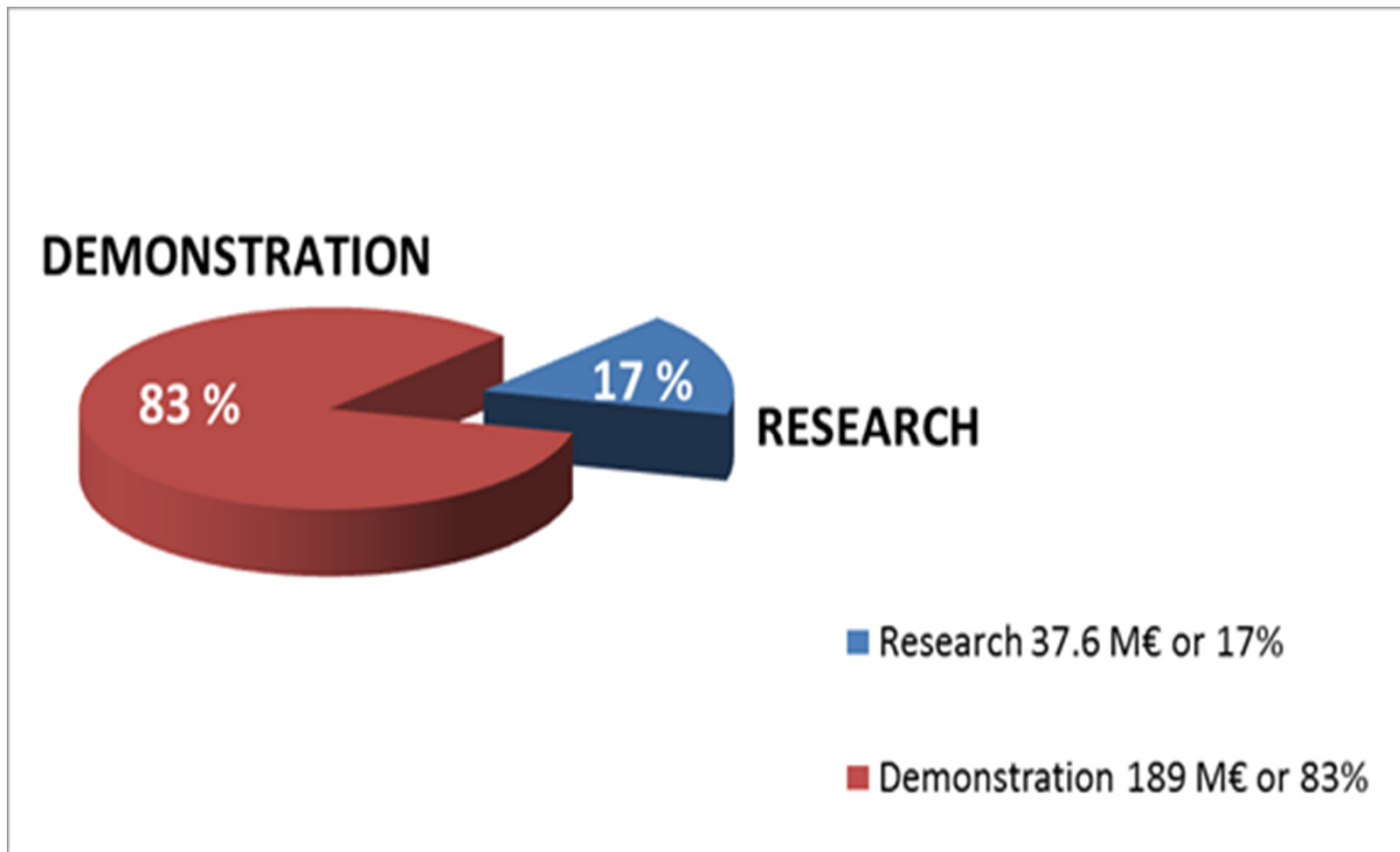


FP7 budget distribution for biofuel projects 2007-2012



Total EC Support about 170 million

Total FP7 budget RD&D Biofuel 2G projects = 227 M Euro





European
Commission

Large-scale funded demonstration projects under FP7 (ENER)

EC Cluster	Biofuel	Contract Acronym	Coordinator	Technology Provider	Biofuel	EC Support € M	Biomass	Production Capacity
Synthetic		OPTFUEL	VW	Choren Industries	Fischer-Tropsch	7.8	Wood	15,000 t/y
		BIO DME	Volvo	Chemrec	Dimethyl-ether	8.2	Black Liquor	600 t/y -150 days operation)
LG Ethanol		BIOLYFE	Chetex Italia	Chetex Italia	Ethanol	8.6	Various	40,000 t/y
		FIBREEtOH	UPM	UPM	Ethanol	8.6	Fibre	20,000 t/y
		KACELLE	Dong Energy	Inbicon	Ethanol	9.1	Straw	20,000 t/y
		LED	Abengoa	Abengoa	Ethanol	8.6	Corn res.	50,000 t/y
		GOMETHA*	Chetex Italia	Chetex Italia	Ethanol	19.0	Various	80.000 t/y
		SUNLIQUID*	Clariant	Clariant	Ethanol	19.0	Various	60,000 t/y
Pyrolysis		EMPYRO	BTG	BTG	Bio-oil	5.0	Wood	17,400 t/y
Algae		ALL-GAS	Aqualia	Feyecon	Biodiesel & biomethane	7.1	Algae	90t/ha.y algae on 10 ha
		BIOFAT	Abengoa	Alga Fuel	Biodiesel & ethanol	7.1	Algae	90t/ha.y algae on 10 ha
		INTESUSAL	CPI	CPI	Biodiesel	5.0	Algae	90t/ha.y algae on 10 ha

* Under negotiations

+ 15 Million Euro for 3 contracts on
Joint Biorefineries Call=128 M Euro

Total=113.1



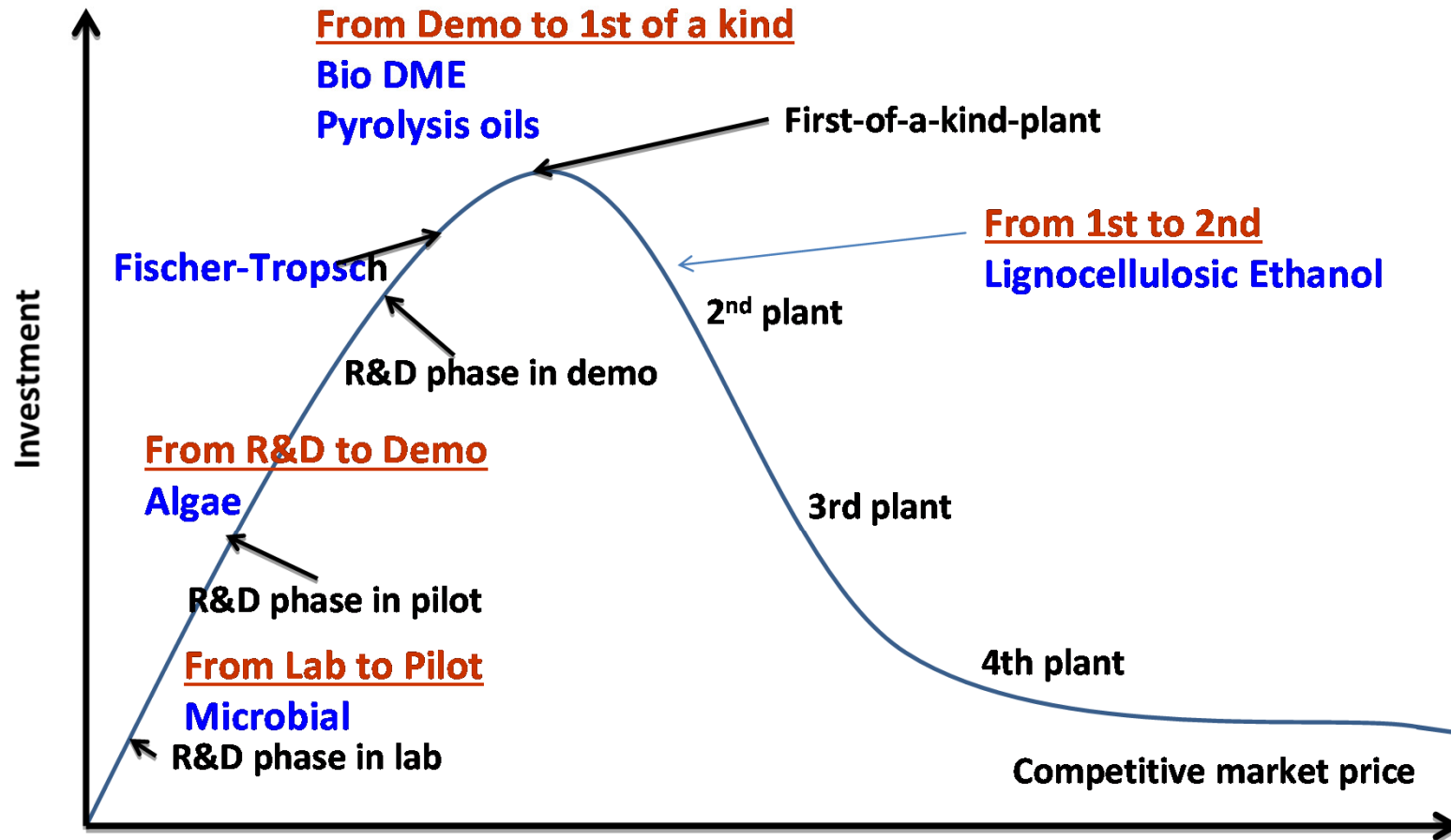
NER 300 projects

Project	Biofuel	Member State	Funding MEuro
Ajos BTL	Fischer-Tropsch	Finland	88,5
BEST	Ethanol	Italy	28,4
CEG	Ethanol	Poland	30,9
UPM Stracel	Fischer-Tropsch	France	170,0
Woodspirit	Methanol synthetic	Netherlands	199,0
GoBiGas Ph 2	Biomethane	Sweden	58,8
Verbio Straw	Biomethane	Germany	59,1

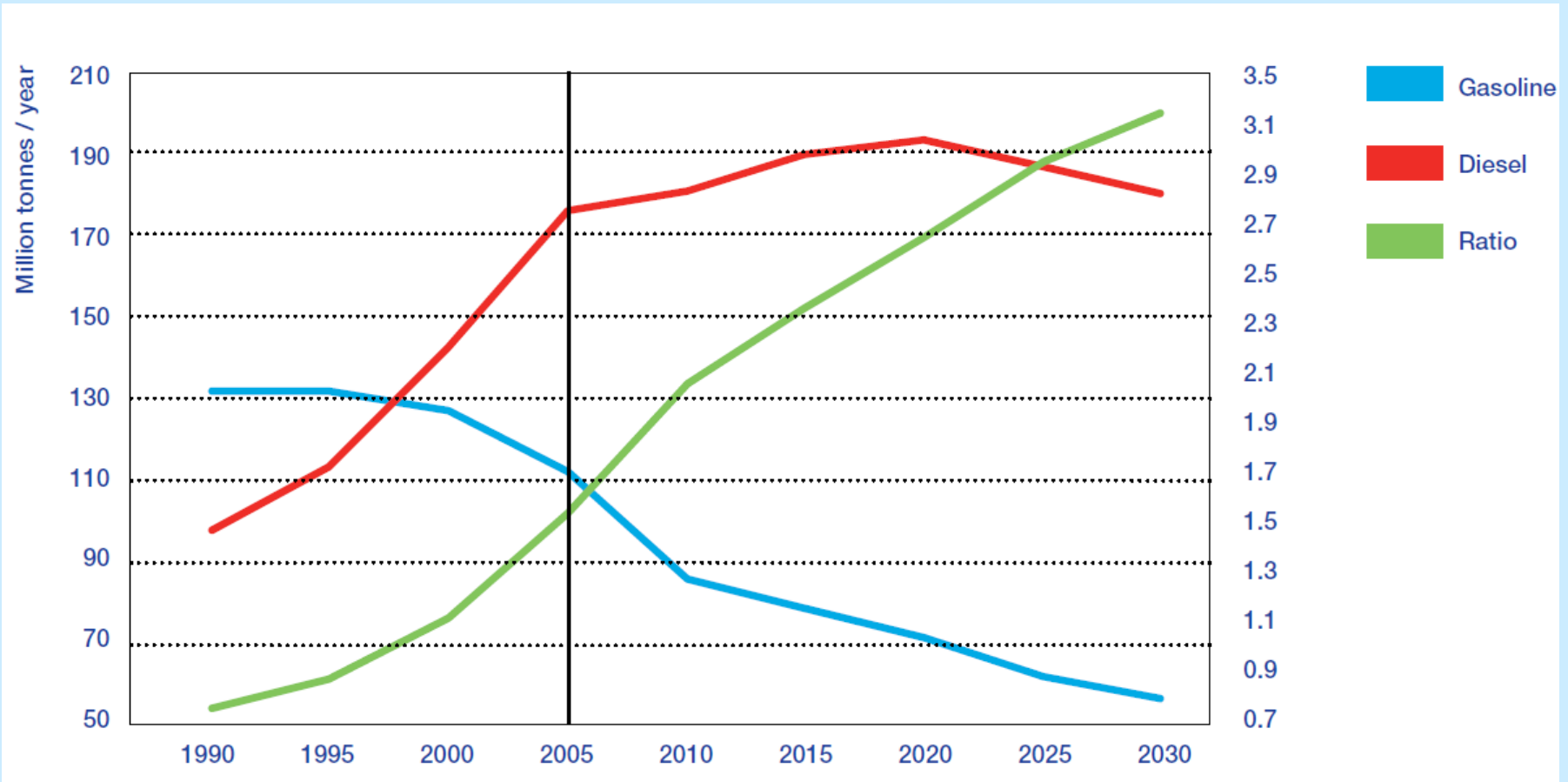




Technology Valley of death : Positioning of FP7 supported technologies:



Diesel/Petrol balance continues to increase



EUROPIA



The European Biofuels FlightPath Initiative

2 MTons of Aviation BioFuels in 2020 = 4% of EU fuel consumption

Cross Industry & government collaboration and consensus



By 2015:

- Set-up financial mechanisms
- Secure sustainable feedstock production to feed 3 refineries
- Construct 3 new refineries and launch Biofuel production
- Manage communication strategy

Objective → 3 Refineries
Cost → 1.300 M€

By 2018:

- Regular commercial flights using bio-jet fuel blends
- Construct 4 additional refineries
- Construct 2 additional refineries producing algal & microbial oil based aviation Biofuels

Objective → 6 Refineries
Cost → 1.700 M€

By 2020:

- Full deployment of at least 2 million tons of biofuels per annum for EU aviation

9 Refineries
and 3.000 M€ total Cost



DG ENER plans to create a Public-Private-Partnership with the industry aiming to examine how to use ethanol in heavy duty transport.

It will be built along the Biofuels FlightPath in Aviation approach.



Conclusions

- **Biofuels remain essential for addressing current climate and energy challenges**
- **Advanced biofuels are particularly important in this respect and are promoted through**
 - **Regulatory measures (ILUC)**
 - **RTD measures (Horizon 2020)**





Thank you!

Material on the **sustainability criteria** including the GHG methodology is available here:

http://ec.europa.eu/energy/renewables/biofuels/sustainability_criteria_en.htm

The **ILUC proposal** and **Impact Assessment** underpinning it are available here:

http://ec.europa.eu/energy/renewables/biofuels/land_use_change_en.htm

