



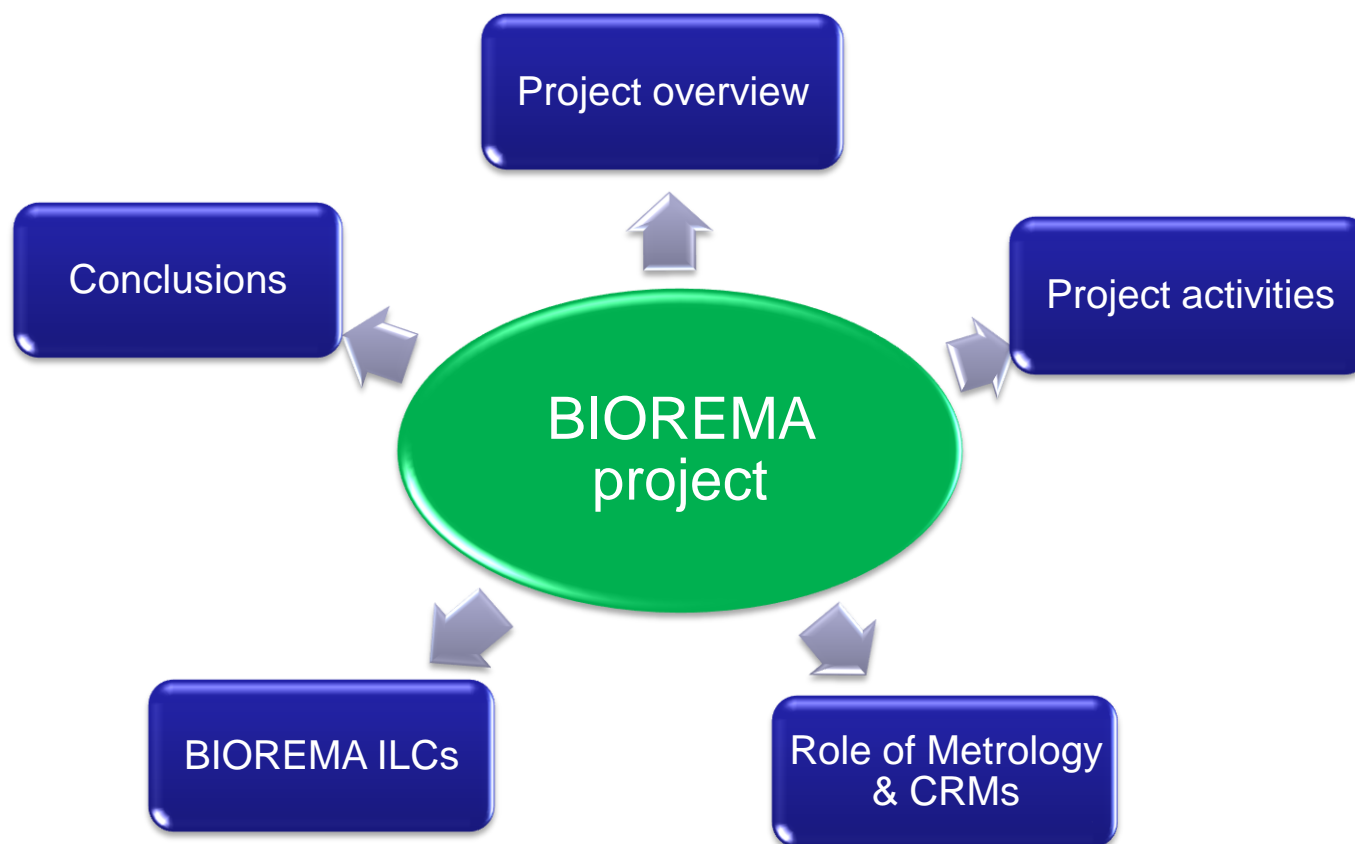
BIOREMA project

Annarita Baldan
Chair of BIOREMA

BIOREMA workshop, 27 October 2010, Brussels, Belgium



Outline





Project details



REference MAterials for BLOfuel specifications

Call:

- FP7 Cooperation Work Programme:
Theme 5 / Energy
- Coordination and Support Action
- Grant agreement 219081

Duration: 24 months

Start date: 27 November 2008

Project objectives



- ❑ Development of (Certified) Reference Materials: homogeneous and stable **biofuel test materials** (sugar cane bioethanol – E100 and rape seed FAME – B100) with well characterized **reference values**
- ❑ Information on current **quality of measurement results** by carrying out **interlaboratory comparisons** with these materials. The ILCs are organized for field laboratories specialized in the analysis of biofuels





Project background

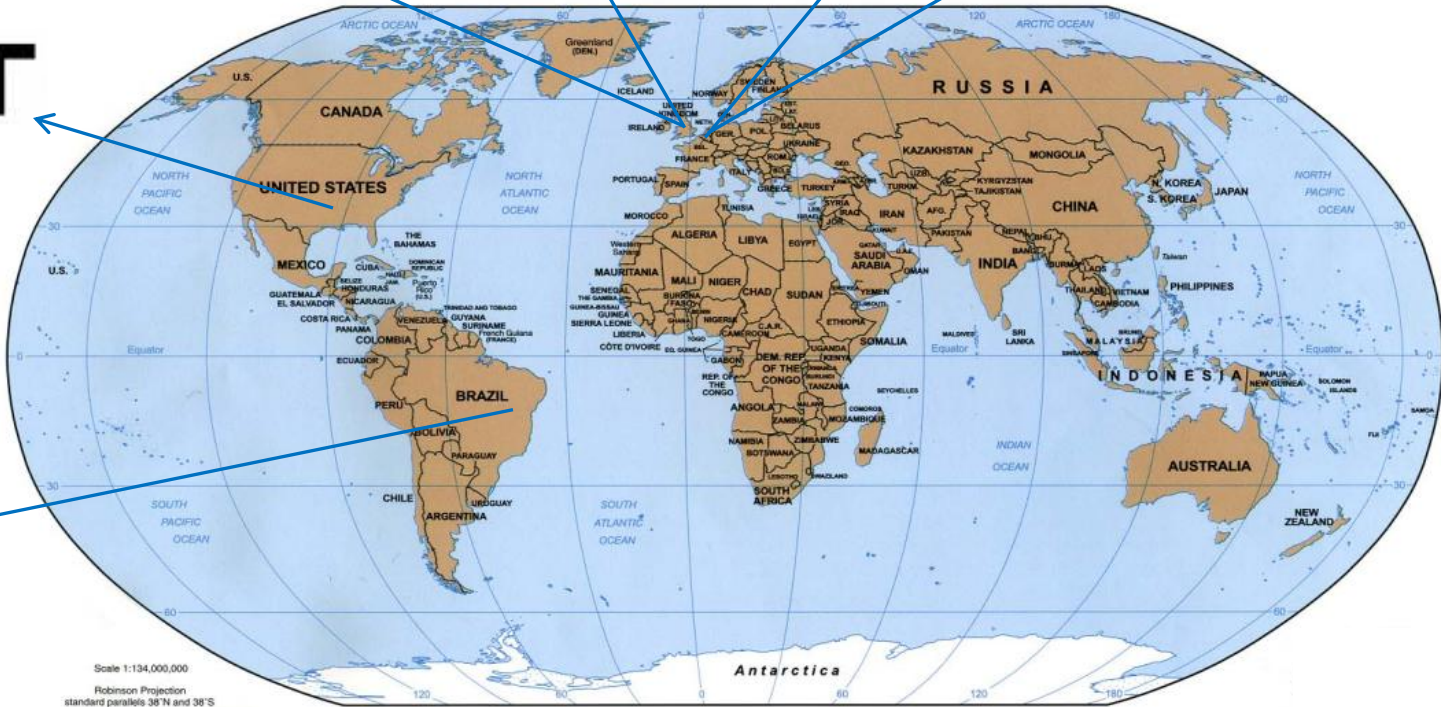


- ❑ Lack of (Certified) Reference Materials for biofuels
- ❑ Outcome of Tripartite Task Force (BR, EU, USA)
 - Proposal for compatible international documentary standards, “White Paper on International compatible Biofuel Standards”, December 2007
 - Classification of biofuels specifications (A,B and C)
- ❑ Come into force of EU RED (2009/28/EC) and EU FQD (2009/30/EC)





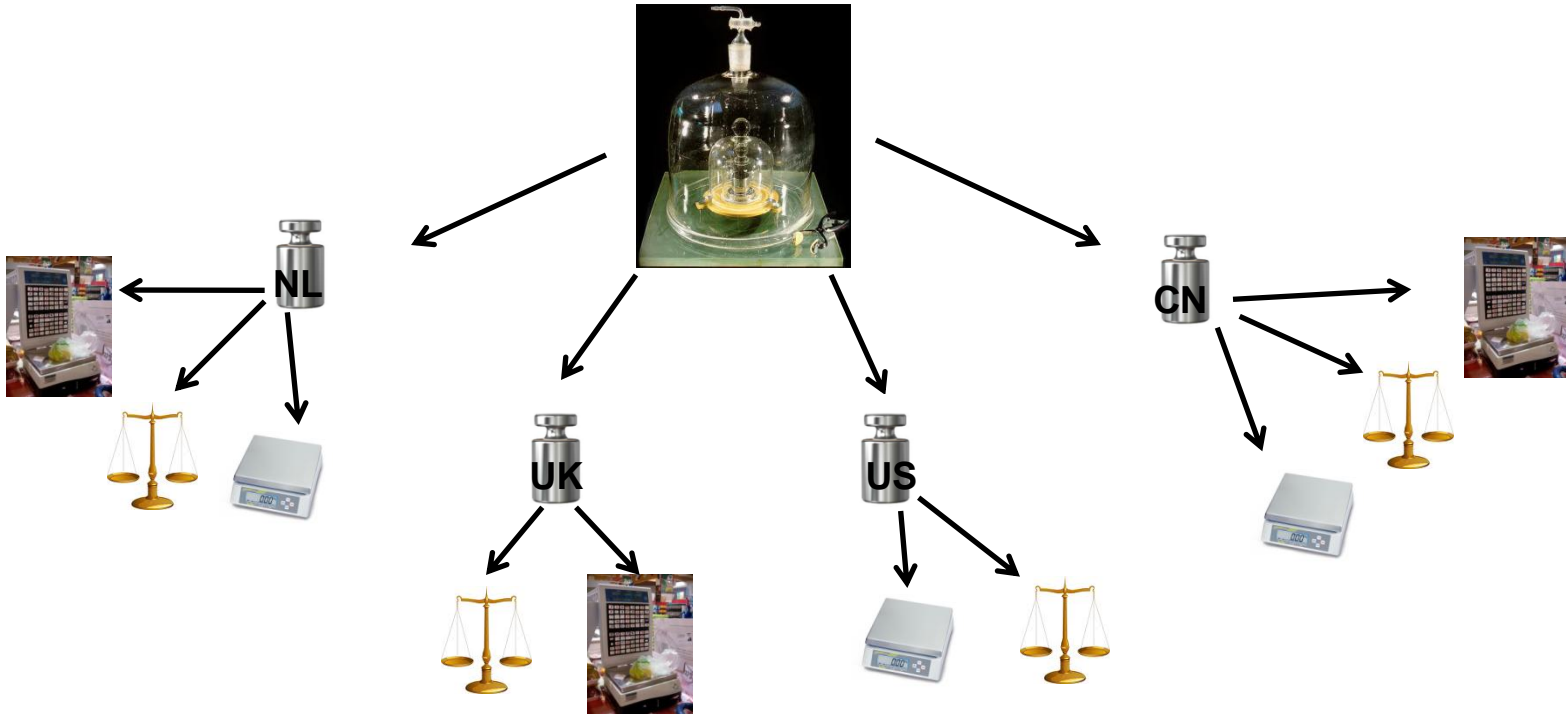
BIOREMA project partners



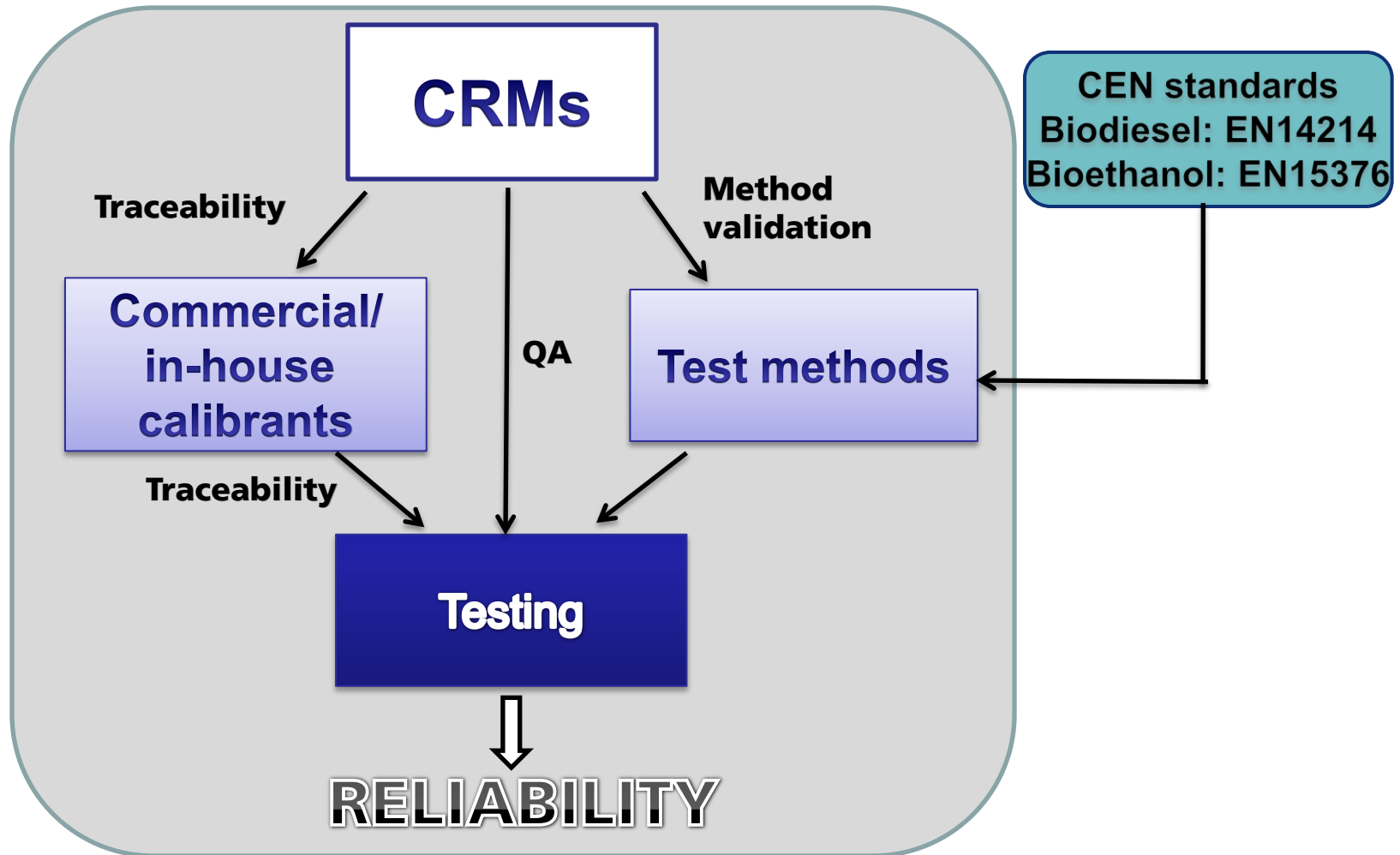
Role of National Metrology Institutes (NMIs)



Providing SI traceability to measurement results

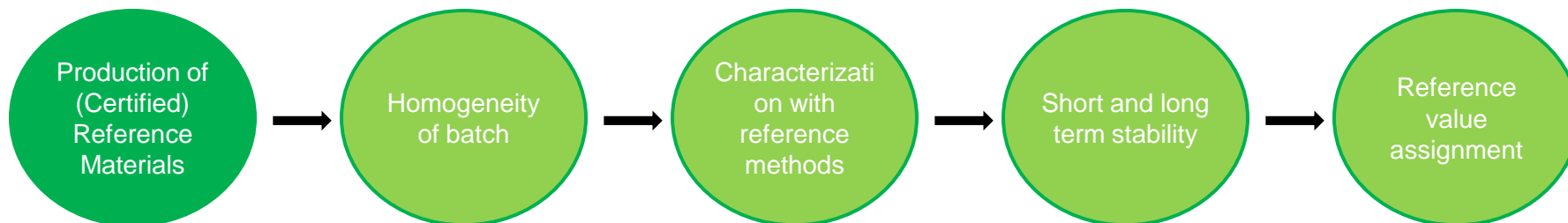


Why CRMs





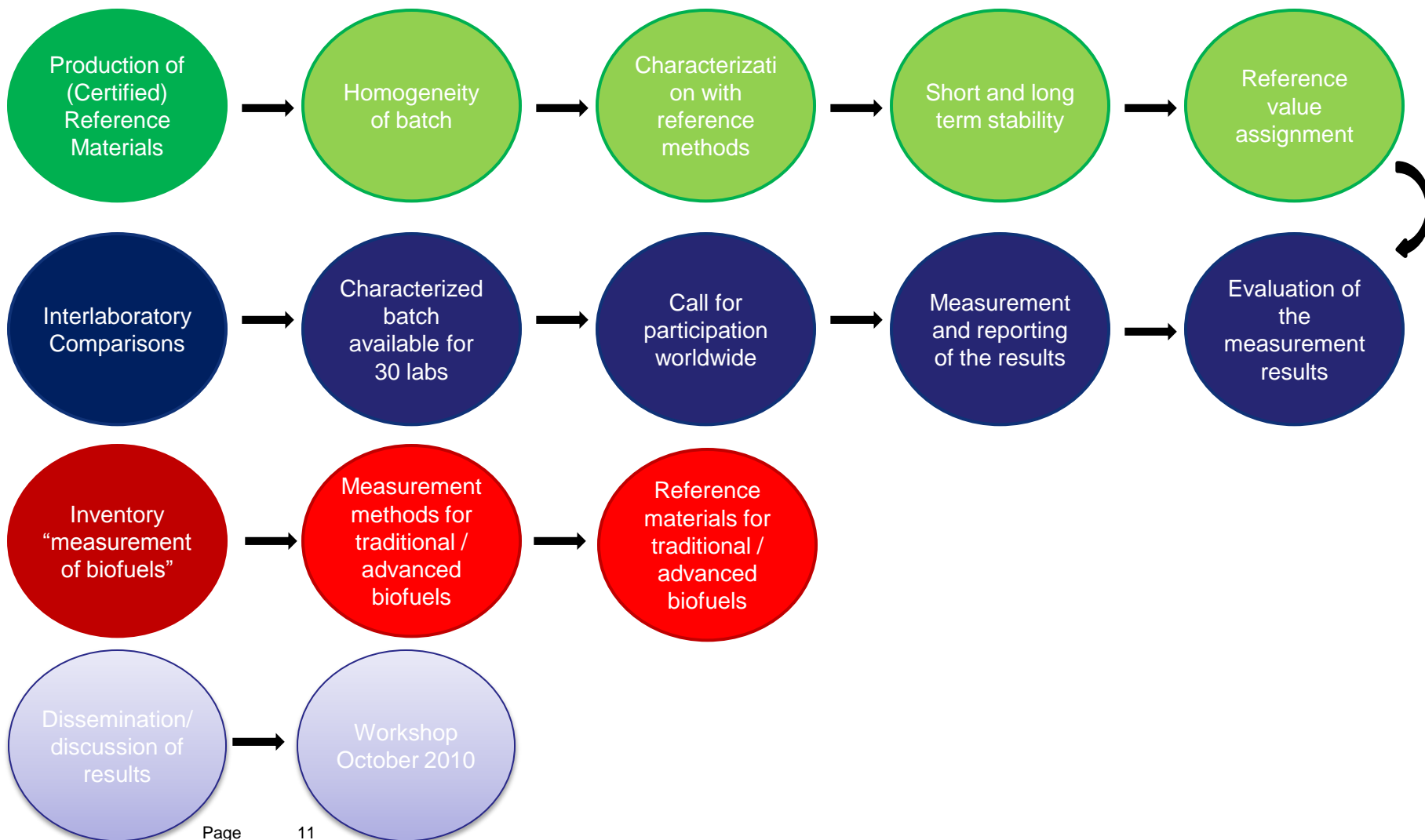
BIOREMA activities



	Bioethanol			FAME		FAME
1	Sulphur		1	Water	13	Triolein
2	Copper		2	Methanol	14	Ester content
3	Iron		3	Sodium	15	Linolenic acid methylester
4	Sodium		4	Potassium	16	Palmitic acid methylester
5	Sulphate		5	Sulphur	17	Stearic acid methylester
6	Chloride		6	Density	18	Sum of isomers C18:1, C18:2, C18:3
7	Ethanol		7	Viscosity	19	FAME with ≥ 4 double bonds
8	Water		8	Total glycerol	20	Oxidative stability
9	Density		9	MAG, DAG, TAG	21	Flash point
10	Electrolytic conductivity		10	Free glycerol	22	Acid value
11	Acidity		11	Monolein	23	Iodine value
12	pHe		12	Diolein		



BIOREMA activities





ILCs fact-sheet



Call for participation

- Maximum 30 participants per biomaterial
- More than 100 labs were contacted
- call closed: end of April 2010

Interlaboratory comparison

- Sample dispatch: 2nd half of May 2010
(one participant did not receive the samples)
- Submission results: 2 July 2010

	Bioethanol	Biodiesel	Remarks
Applications	15	25	10 applied for both ILCs
Submitted results	13	23	1 lab did not receive the samples 2 did not report results

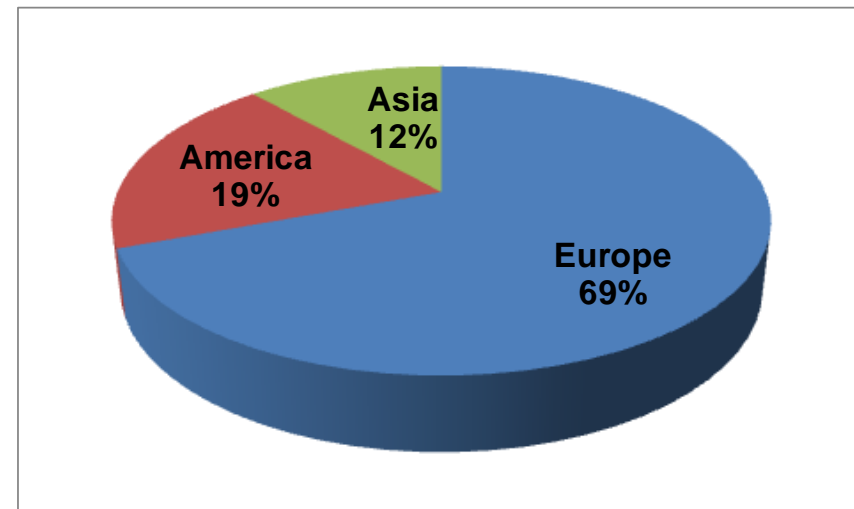


ILCs participants



Geographical distribution:

- ❑ Europe: Austria, Belgium, Estonia, France, Germany, Greece, Italy, Spain, Sweden, The Netherlands, Turkey, United Kingdom
- ❑ America: Brazil, Canada,
- ❑ Asia: India, Singapore, Thailand
- ❑ Africa: -
- ❑ Oceania: -





Follow up of BIOREMA

- ❑ Parallel worldwide “ Pilot Comparison” on determination of ethanol and water content in bioethanol fuel (May - Sep 2010)
 - Use of BIOREMA Bioethanol material
 - Comparison of NMIs measurement capabilities
 - Participants: Germany, France, The Netherlands, Turkey, Singapore, Thailand, China, Japan, United States, Brazil, Argentina, Kenya and South Africa
- ❑ Begin (June 2010) of a 3 years research project “Metrology for liquid biofuels” under the European Metrology Research Program (EURAMET)



Conclusions



- ❑ Positive example of collaboration among metrology institutes and useful exercise for establishing a common approach to the production of biofuels materials
- ❑ Production of biofuels (Certified) Reference Materials has been demonstrated. However, for several specifications, the assignment of an SI traceable value still need further research due to the complexity of the material.
- ❑ Conclusions on the quality of the measurement results obtained by biofuel testing laboratories in the interlaboratory comparison (ILC) will be drawn (together) at the end of this workshop

Thank you for your attention!

I look forward to a fruitful
discussion of the ILC results!!

