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Verification of CI and Prevention of Land Use Change in Global Biofuel Supply

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International Sustainability & Carbon Certification

Without secure verification of carbon intensity (CI) and prevention of land use change (LUC) low carbon fuel policy is at risk

Carbon intensity:

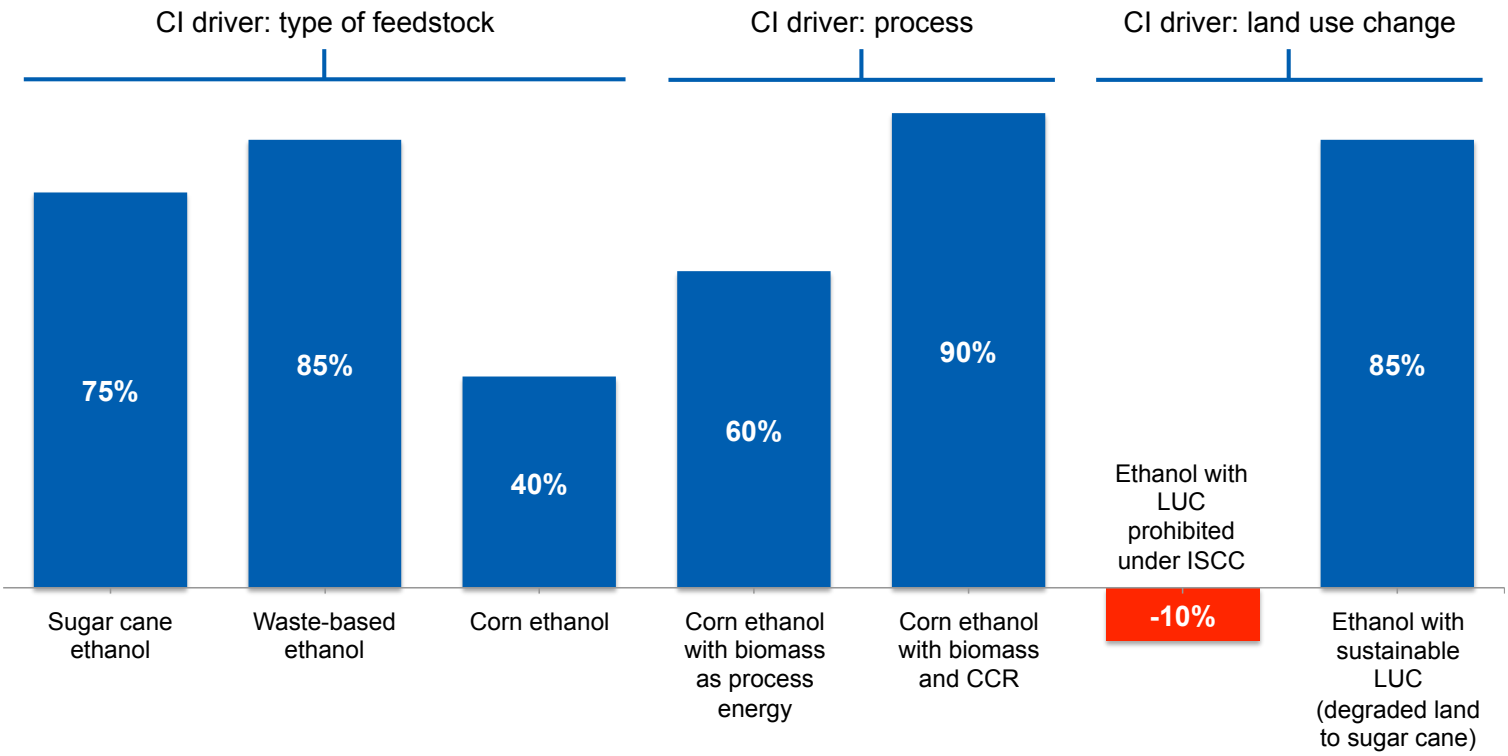
- CI values might not reflect reality with respect to
  - Feedstock
  - Process
  - Supply chain

Land use change

- Cutting or burning down of rainforests
- Loss of land with high biodiversity value or high carbon stocks
- High impact on CI, which can easily become negative

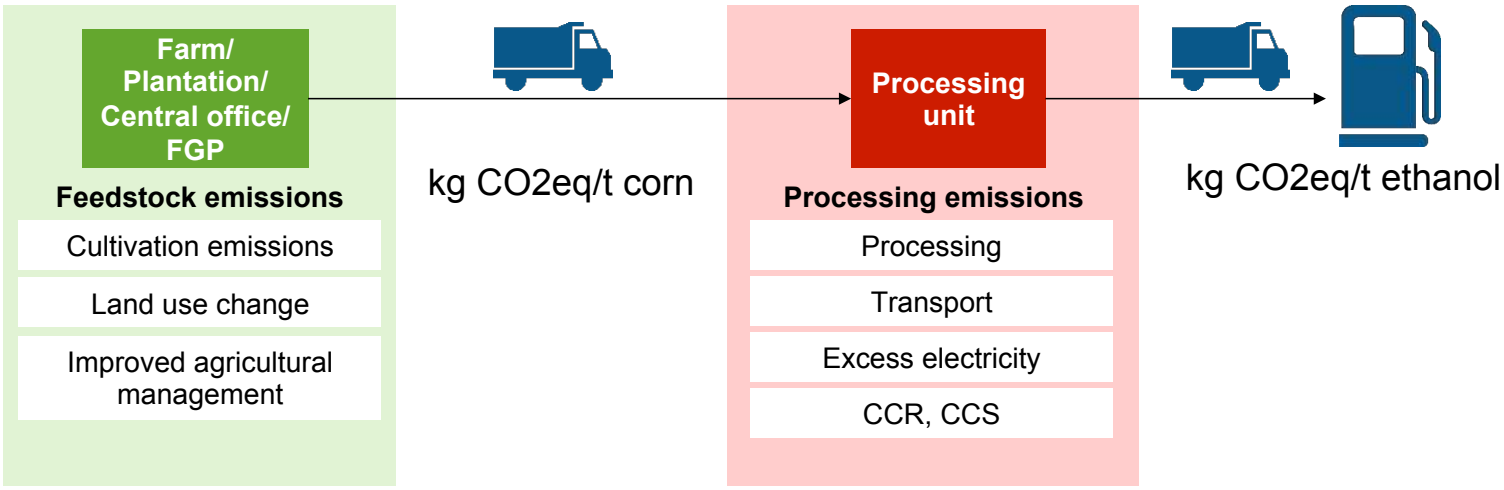
ISCC verifies key drivers of the CI number throughout the supply chain – Example ethanol

All figures are examples only



Low carbon fuels policy must protect no go areas and verify the type of LUC

ISCC verifies individual GHG calculations. Verification takes place at the supply chain element where emissions occur



Based on a defined methodology, ISCC guidance and specific on-site situation, companies conduct their CI calculations

Greenhouse gas (GHG) emission calculation for the production of bioethanol (fermentation and distillation)

meo CARBON SOLUTIONS

Meo Carbon Solutions GmbH
Hohenzollernring 72
D-50672 Köln

General data

Address	
Name	
Street, Number	
Postal Code, City	
Contact person	

Production capacity bioethanol

Time period of data input

1. Emissions related to raw material

Production main product			Source
Bioethanol production	12.100.000,0	L/annum	Calibrated tanks

Production by-product	Source
No by-products	

Production waste and residues			Source
Waste yeast	200,0	t/annum	Yeast production plan & effluent loadings
Other wastes	365.659,0	L/annum	Calibrated tanks

Main raw material			Source
Raw material	628.283	t/annum	
Greenhouse gas value of raw material	0,0	kg CO_2e/t	Categorization of raw material as waste. Individual and country specific analysis regarding the categorization as waste or as by-product may be required.

Conversion factor		
Bioethanol production	19,26	L Ethanol/ t raw material

Emissions related to raw material		
Raw material	**0**	**kg CO_2e/ annum**
	0,00	**kg CO_2e/L Bioethanol**

Source: Meo Carbon Solutions GmbH

Guarantee successful audit

- Specific calculator based on individual setup
- Calculation according to ISCC methodology
- Fully transparent calculation
- Easy to update
- All data sources, evidence, references, literature documented
- Usable for certification audit

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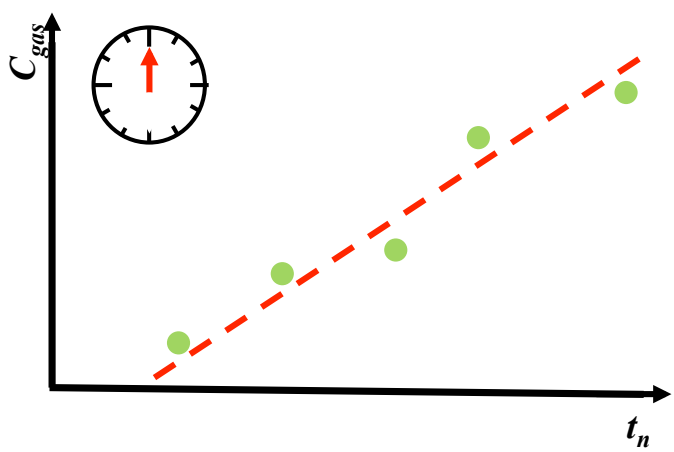
Specific situation on the ground – example palm oil mill



ISCC provides procedures and tools for secure CI verification. This can also be input to CI pathways

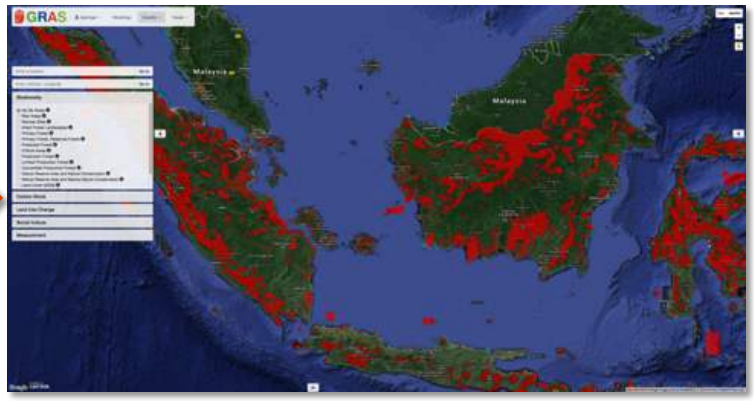
- ISCC ensures a level playing field with respect to GHG calculations and CI numbers reported
- ISCC GHG Training for auditors and system users
- Mandatory audit procedures, guidance, verification and reporting requirements to be used by auditors
- Auditors need to verify GHG calculation prior to the audit
- ISCC Integrity Program:
  - Upfront GHG verification by ISCC GHG experts

ISCC uses GRAS for sustainability risk analysis and the detection of land use change

GRAS
Global Risk Assessment Services

With GRAS sustainability can be checked from your desktop

Web-Tool



Biodiversity

Land Use Change

Carbon Stock

Social Indices

Bundesministerium für Ernährung und Landwirtschaft

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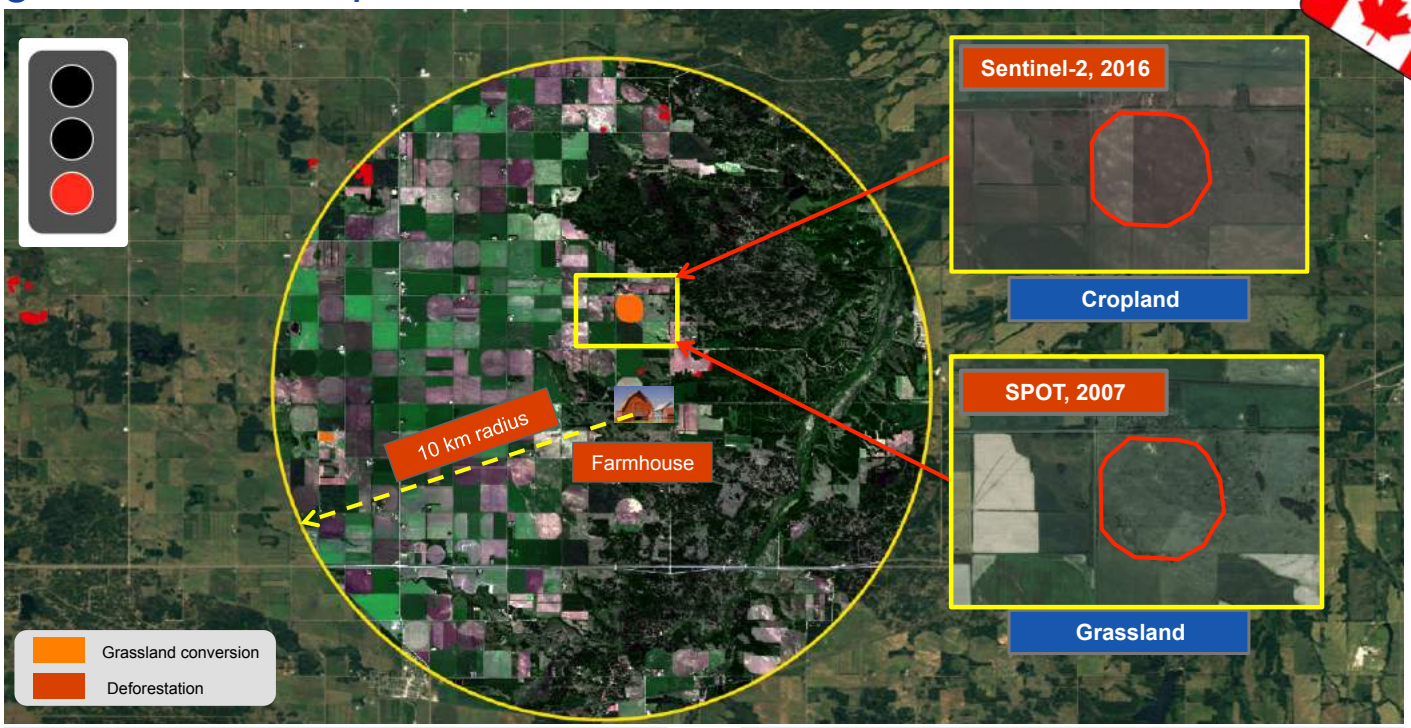
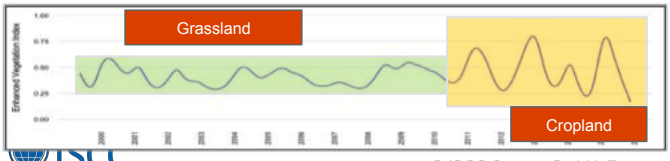
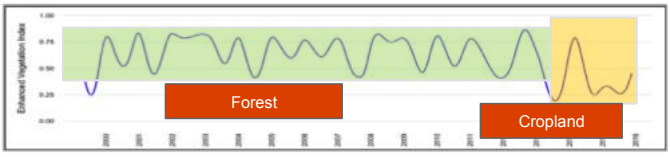
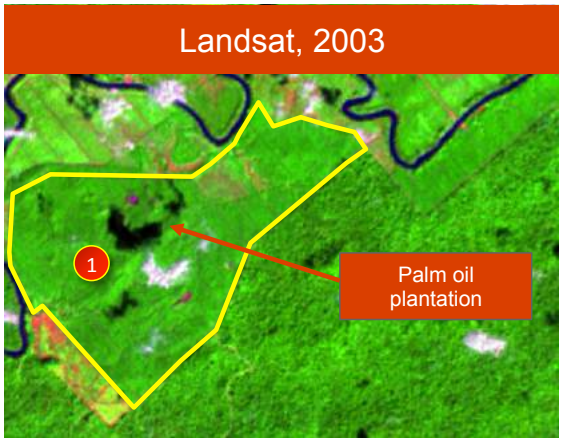
Example canola: GRAS can identify the conversion from forest or grassland to cropland in a buffer area around farmhouse

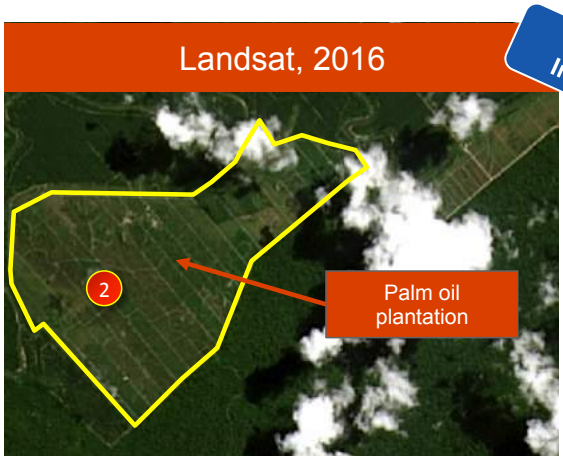


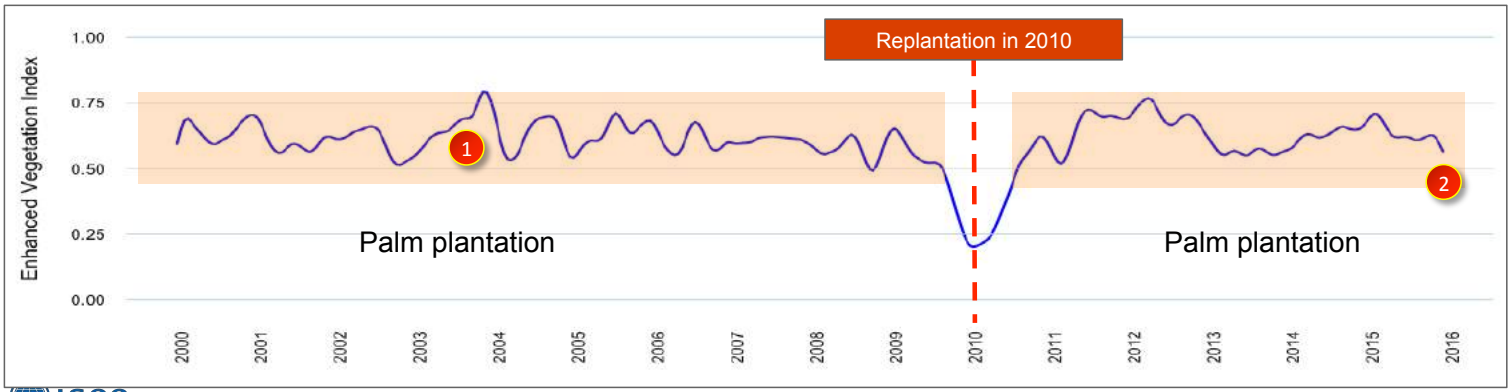


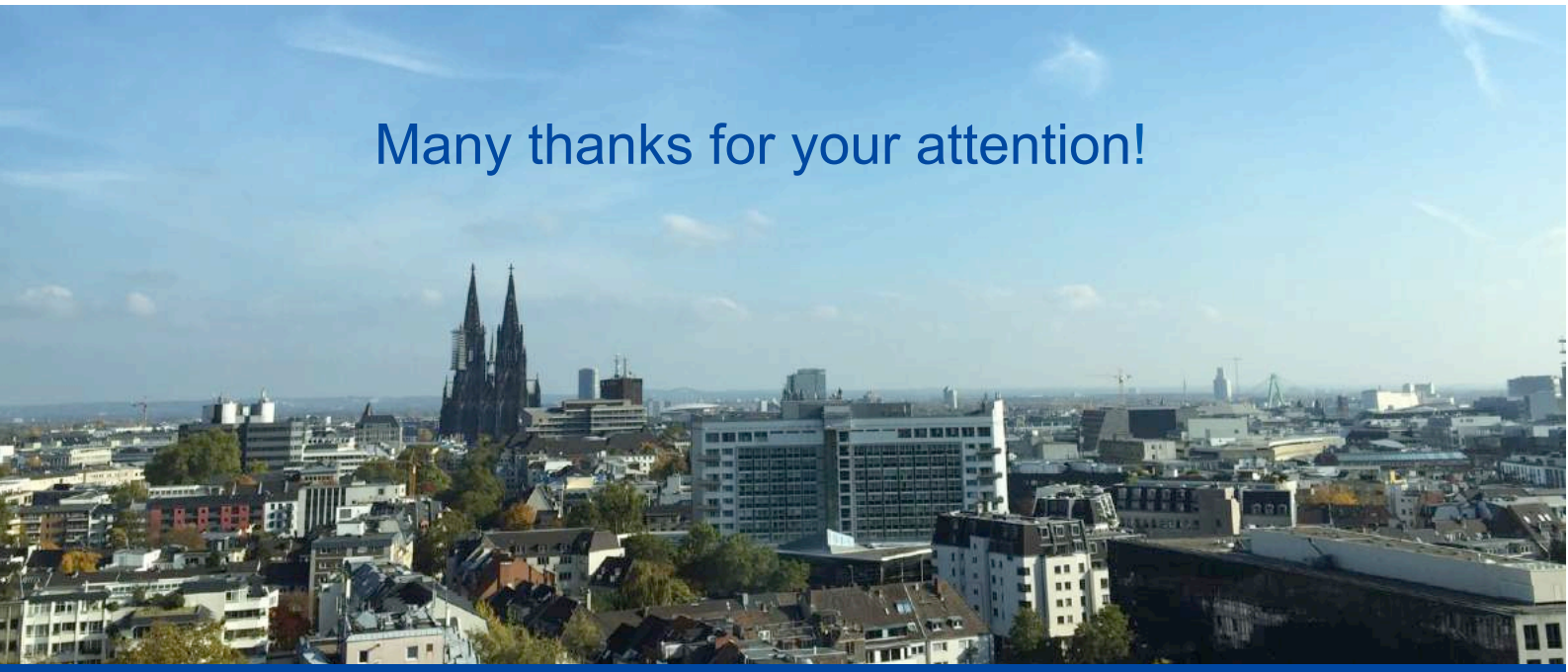


Example palm oil: GRAS can clearly identify replanting activities and does not show those as deforestation









Many thanks for your attention!

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