ICAO AVIATION AND SUSTAINABLE ALTERNATIVE FUELS WORKSHOP

ICAO Headquarters, Montréal, Canada

18 to 20 October 2011

Biofuels Sustainability Certification by 3rd Party Verification

RSB
ROUNDTABLE ON SUSTAINABLE BIOFUELS

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The Case for Voluntary Certification

- Voluntary standards used to improve production practices in many industry sectors
- Not all biofuels are the same; certification helps to distinguish between good and bad actors.

ISO 14001
Certified Environmental Management System

FAIR TRADE
CERTIFIED®

RSB
ROUNDTABLE ON SUSTAINABLE BIOFUELS

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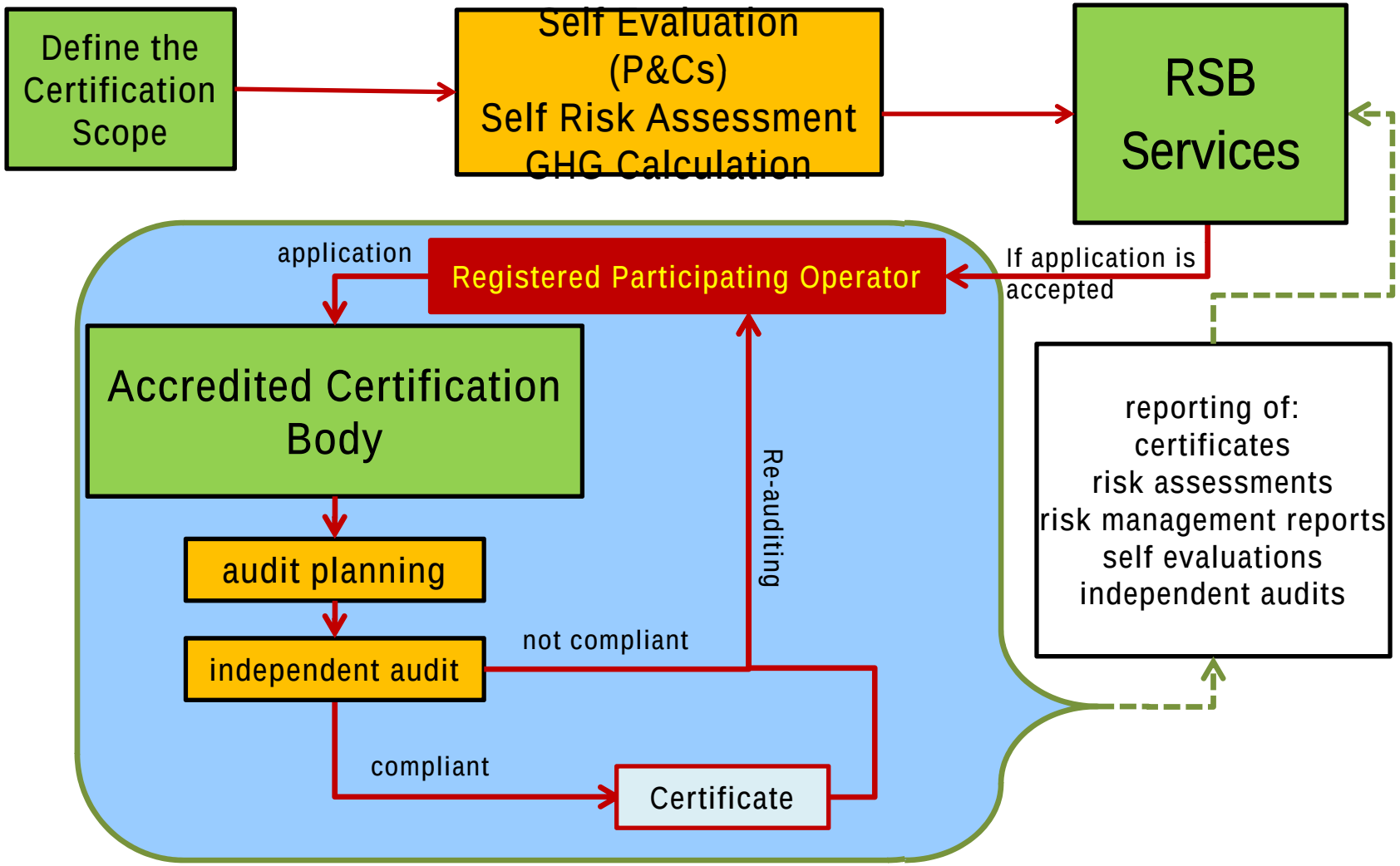
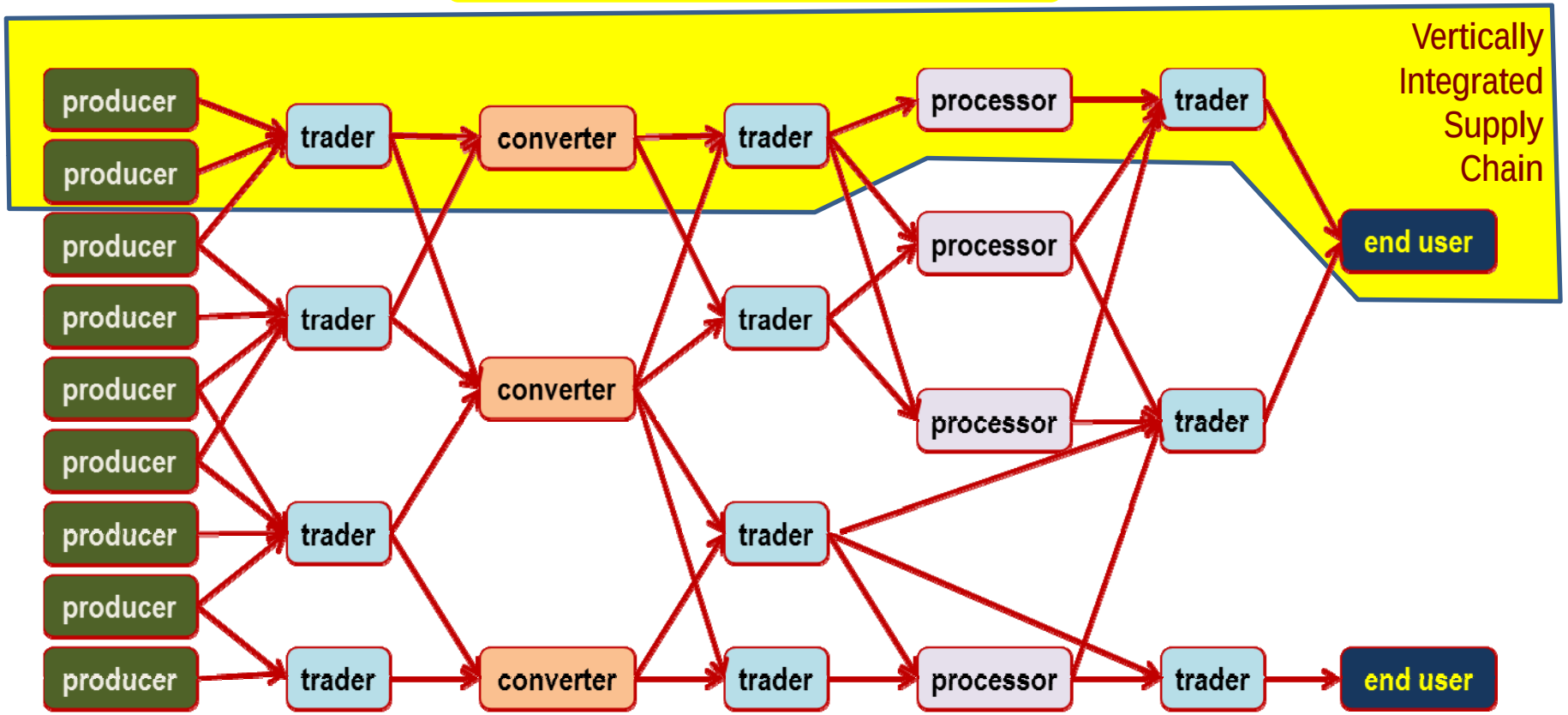
Overview of RSB Certification Process

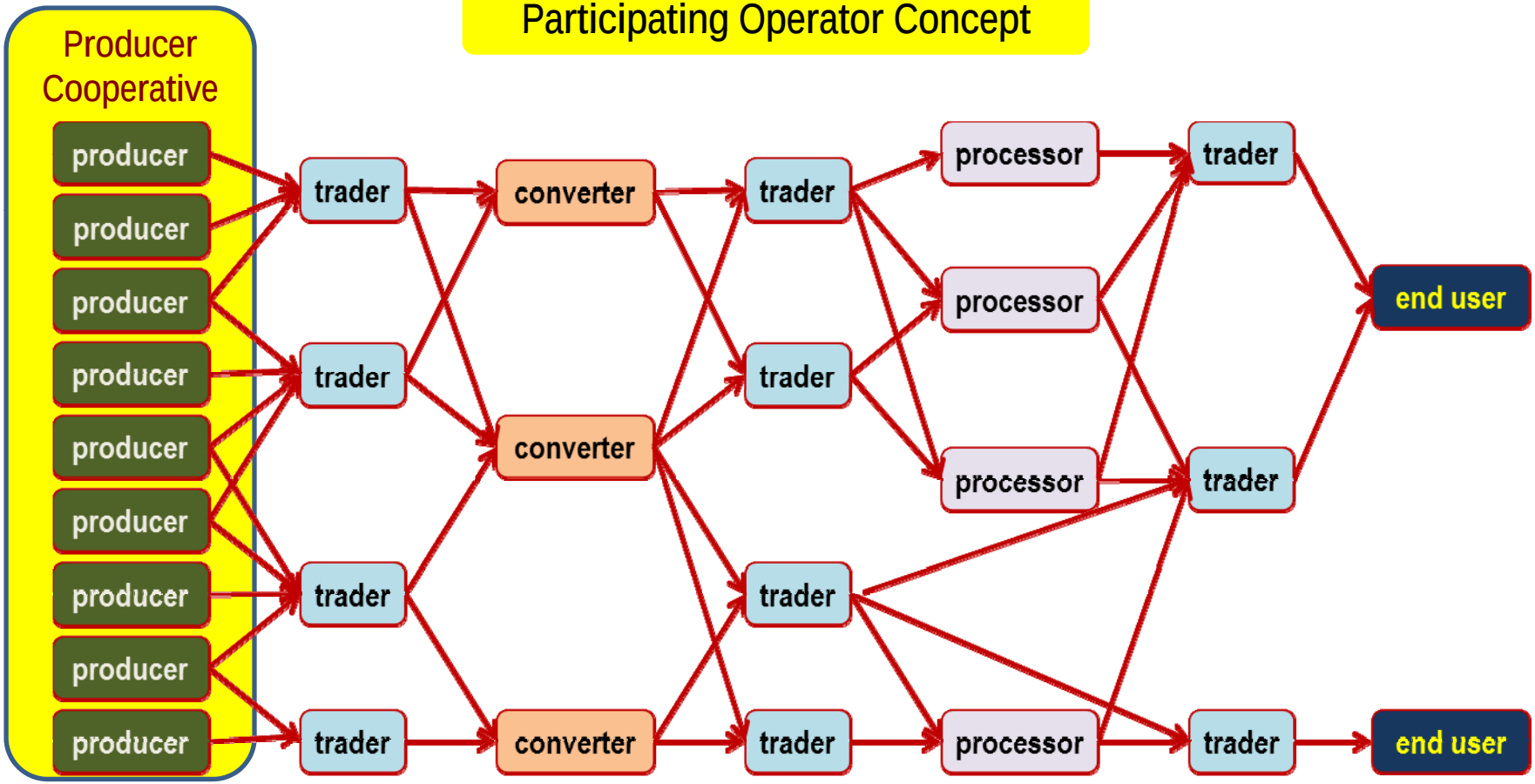


Vertically Integrated Supply Chain

Participating Operator Concept



Participating Operator Concept



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WORKSHOP

Self Evaluation against RSB Criteria

Principle 1 Legality	Principle 2 Planing	Principle 3 Greenhouse	Principle 4 Rights	Principle 5 Rural/Local	Principle 6 Food	Principle 7 Conservation	Principle 8 Soil	Principle 9 Water	Principle 10 Air	Principle 11 Tech	Principle 12 Land
= 1	= 18	= 0	= 44	= 14	= 9	= 29	= 11	= 29	= 7	= 32	= 12
= 2	= 0	= 3	= 3	= 0	= 0	= 1	= 0	= 0	= 0	= 0	= 0
= 0	= 0	= 0	= 0	= 1	= 0	= 0	= 0	= 0	= 0	= 0	= 0

Principle 1: Legality

Criterion 1a:

Criterion description: Biofuel operations shall comply with all applicable laws and regulations of the country in which the operations occur and with relevant international laws and agreements.

- ○ N/A
- ◉ In compliance
- ○ Not in compliance

Indicator 1.a.i.1:

Indicator description: The participating operator provides objective evidence demonstrating compliance with the applicable national laws and regulations.

- ○ N/A
- ◉ In compliance

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Self Risk Evaluation

	Risk factor class 1																							Risk factor class 2												Results
Risk factor:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	1	2	3	4	5	6	7	8	9	10	11	12	Results
Coefficient:	3	3	3	2	2	1	3	4	4	3	2	3	2	2	4	4	3	3	3	4	2	1	1	3	1	3	1	1	1	1	1	1	1	1	1	1	1	1	
Your choice:	5	3	5	5	3	4	4	5	4	5	2	3	4	6	3	5	4	3	4	3	5	1	6	4	5	2	4	4	4	5	5	3	4	3	3	4	4	4	

▾ Risk factor class: 1: General Risk Factors

The risk factors listed in the following evaluate the general characteristic of the operation(s) of the participating operator and their respective operating environment, and apply to all participating operators.

Risk factor: 1.15: organizational and decision making structures

This risk factor shall identify the risks associated with complexity and clarity of organizational structures, decision making structures, management structures, definition of responsibilities and access to decision makers in the operation(s) controlled by the participating operator. **This risk factor has a minimum weighting of 4**

- ○ no clear organizational structures and decision making structures defined; decision making not delegated but very centralized; decision makers not available and/or accessible;
  The risk factor above has a coefficient of 6 (highest)
- ○ organizational structures and decision-making mechanisms not communicated and implemented clearly and consistently; decision makers not available and accessible continuously;
  The risk factor above has a coefficient of 4,5 (high)
- ◉ organizational structures and decision-making mechanisms communicated and implemented clearly and consistently; decision makers available and accessible continuously;
  The risk factor above has a coefficient of 3 (medium)

Auditing Interval and Type

risk class	audit interval	audit type
1	12 months	desk audit
	24 months (+6)	office & field audit
2	9 months	desk audit
	18 months (+6)	office & field audit
3	12 months (+6)	office & field audit
4	9 months (+3)	office & field audit
5	6 months (+3)	office & field audit
6	3 months (+3)	office & field audit

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Certification Body Applications Received

SGS

SCS SCIENTIFIC CERTIFICATION SYSTEMS

LRQA

TÜV SÜD Industrie Service

Intertek

Control Union Certifications
Member of Control Union World Group

Rainforest Alliance

AGUTcert
member of the afnor GROUPE

BUSINESS ASSURANCE

DNV

NCS International

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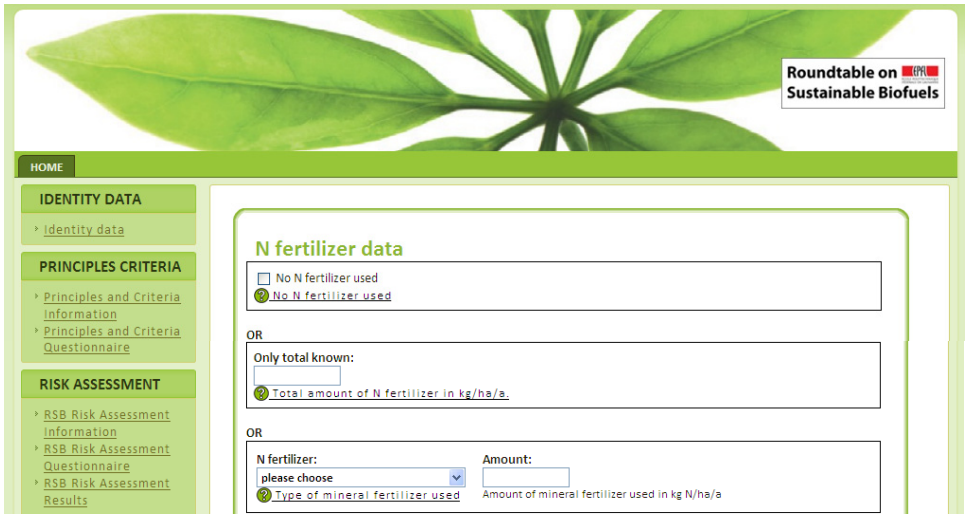
GHG Multi-Methodology Calculator

The Greenhouse Gas Calculator measures emissions of biofuels for each lifecycle production step, from farming to final fuel distribution.

Calculation Methodologies supported include:

- ❖RSB Method
- ❖EU Renewable Energy Directive (RED)
- ❖CH (MinOEV) Swiss standard (for tax-relief)
- ❖USA RFS2 – default data
- ❖California (LCFS) – default data

Directly accessible at:
www.rsb-services.com



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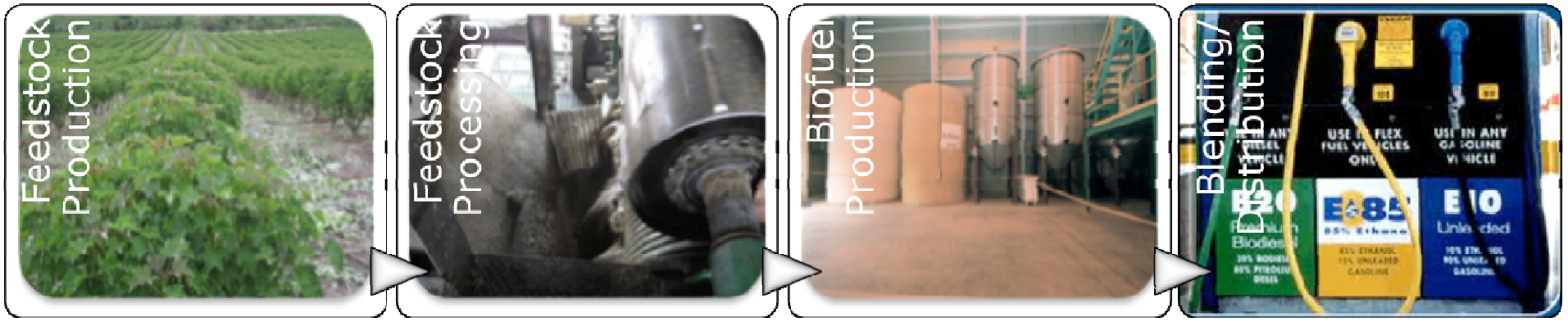
Scientifically Rigorous Approach to GHGs

- Based on attributional LCA modeling
- IPCC (Tier 1) direct land-use change emissions factors
- Ecoinvent database emissions factors for inputs
- Co-production allocation by economic value
- Global, average fossil fuel baseline
- **<u>Real operator input data, audited by third parties, across the entire biofuel supply chain</u>**



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GHG Calculation Factors

Cultivation

- Land Use Change
- Land Use Validation
- Mechanical work
- Mineral fertilizer
- Organic Fertilizer
- Pesticides

Feedstock Processing

- Feedstock Input
- Energy input
- Chemical & Water
- Main Output
- Co Products
- Default Pathway

Biofuel Production

- Feedstock Input
- Energy input
- Chemical & Water
- Main Output
- Co Products
- Default Pathway

Blending & Transport

- Inputs - share in blend
- Energy input
- Storage
- Transport Device
- Losses in Transport

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Results

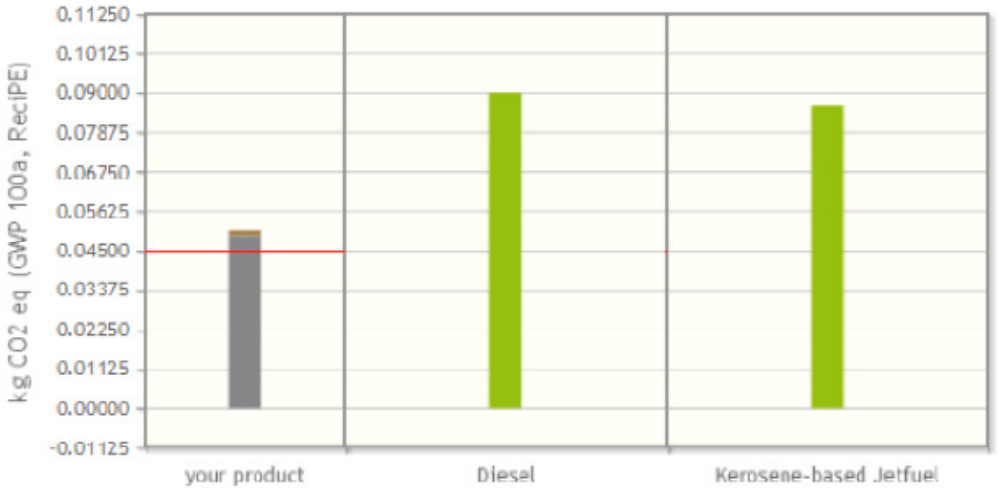
RSB RED

CALCULATION RESULT RSB

1.15756399 kg CO_2 eq/ kg main product

CALCULATION RESULT RSB

0.0507 kg CO_2 eq/ MJ



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Chain of Custody

Strong chain of custody requirements ensure that only biomass/biofuel that comply with the RSB standard are associated with RSB compliance claims from participating operators

3 steps in tracking and documenting RSB compliant product:

- acquiring RSB compliant product
- handling RSB compliant product
- forwarding RSB compliant product

Tracking models:

- Identity of Product Preserved
- Segregation of Product
- Mass Balance of Product
- Content Ratio Accounting
- Book and Claim

Thanks!

First certifications are currently underway. Please contact us if you would like to get involved!

Contact info:

Matt Rudolf

matthew.rudolf@epfl.ch

+1-919-533-4886