CONTROLUNION

Roles of Certification in Post Plastic

Deputy MD / Team Leader of Bio Energy

Henry Kim(김효준)

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CONTENTS

01 About Controlunion

CONTROLUNION

A global certification and inspection company with more than 100 years of history

Founded in the Netherlands in 1920,

Control Union is a global certification and inspection organization that provides global services through 270 branches in more than 80 countries.

Core services include an international eco-friendly certification program covering various industries such as textiles, agricultural and livestock products, marine products, food, cosmetics, and forests. In the field of inspection services, we provide a wide range of services ranging from cargo inspection to industrial inspection based on our expertise and experience gained over a long period of time.

Control Union Korea (CUK) established an independent Korea branch corporation in 2008 and started its business with various eco-friendly certification programs as the main focus.

103+ years of experience

270+ Offices and Lab

80+ country of operation

5,000+ employees around the world

Contolunion Korea Webpage

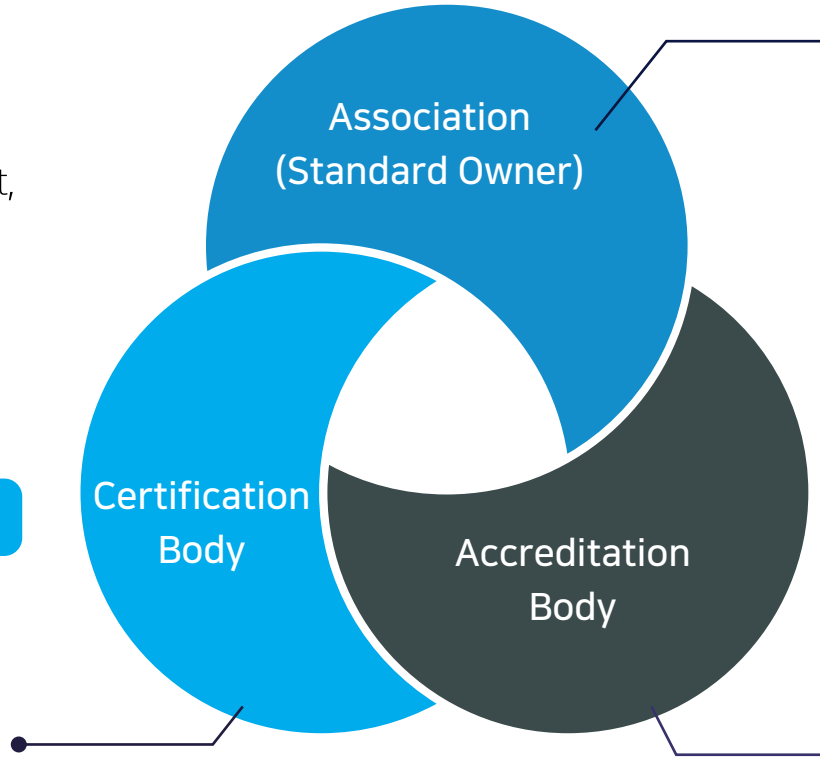
Contolunion Webpage

1 Introduction of certificate

- Description of Certification Structure

To ensure fairness, transparency, and reliability of the certification itself
The certification body organically performs its work with the association and the certification body.

- ISO 17065
(Requirements for institutions performing product, process, and service certification)



Association

· Ownership of certification standards
· Management of authentication criteria
· Managing the use of illegal logos
· Standards promotion and marketing activities

CONTROLUNION

· Confirmation of the compliance of the criteria of the audit ed organization
· an independent, objective and impartial examination
· Development and Improvement of Certification Standards

Accreditation Body

· a recognized institution registered with the association
· Management and supervision of certification bodies
· Confirmation of compliance with certification authority in accordance with ISO 17065

1 Introduction of certificate

- Description of Certification Structure

General Principles of Certification

The overall purpose of the certification is to provide all parties with confidence that they meet the prescribed requirements.

The value of certification is the trust of the general public established by fair and qualified screening by third parties

Principle factors affecting reliability

- Fairness: Conflict of interest, suitability assessment
- Eligibility: for certification bodies and personnel
- Responsibility: Responsibility for achieving compliance = Customer, objective evaluation responsibility with sufficient grounds = Certification authority
- Openness: Disclosure or accessibility of appropriate information
- Confidentiality: Confidentiality of information required to conduct conformity assessments
- Response to complaints: Manage through a balance of openness & confidentiality to complaint handling procedures for certified customers
- Risk-based approach: approach to risk consideration accompanying fairness certification

02 Post Plastic Strategy (Bio & Curcular)

2 Post Plastic Strategy

- Replacement & Circular

Core value : Sustainability

- Protection of Land with High Biodiversity Value or High Carbon Stock
- Environmentally Responsible Production to Protect Soil, Water and Air
- Safe Working Conditions
- Compliance with Human and Labour Rights and Responsible Community Relations
- Compliance with Land Rights, Laws and International Treaties
- Good Management Practices and Continuous Improvement

Core value : 3R (Reduce, Reuse, Recycle)

- Supply Chain verification
- Post & Pre Consumer definition
- Co product & Residue & Waste materials
- CoC Definition (ISO 22095)

2 Material Categories

Bio, B-C, Circular, Renewable based

ISCC International Sustainability & Carbon Certification

Regenerated Cellulosics · Global Organic Textile Standard GOTS · COSMOS ORGANIC · FSC · Certified Sustainable Palm Oil RSPO · PEFC PEFC/31-42-02

GGL green gold label · sbp

Global Recycled Standard · Recycled 100 claim standard · Ocean Bound Plastic · RecyClass

Bio


Corn


Canola


Sugarcane


Cotton

Bio-Circular


Tall Oil


UCO


Forestry residues


Straw

Circular


Mixed Plastic Waste


End-of-life tires


Waste textiles


CO2 (post-industrial)

Renewable


Hydrogen


Power-to-X

2 Bio Based

- Introduction of Sustainable criteria

1. Protection of Biodiverse and Carbon Rich Areas

2. Good Agricultural Practice

3. Safe Working Conditions

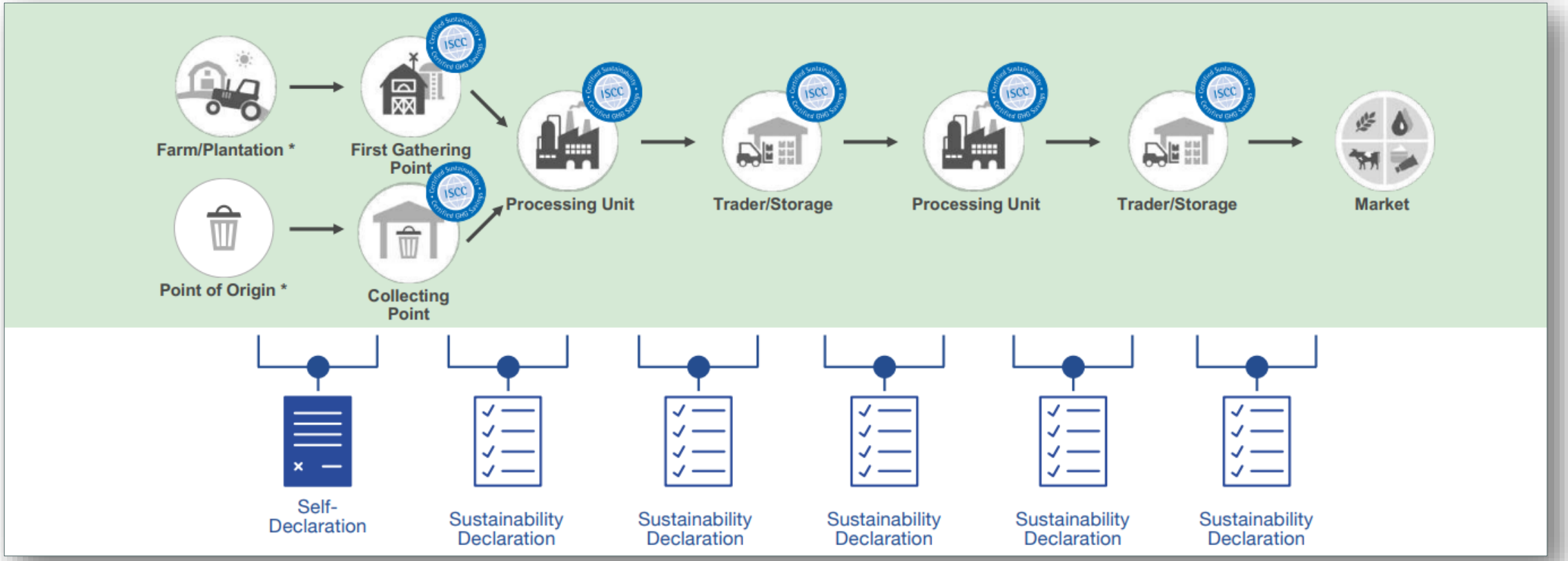
4. Compliance with Human, Labor and Land Rights

5. Compliance with Laws and International Treaties

6. Good Management Practices and Continuous Improvement

2 Traceability Example

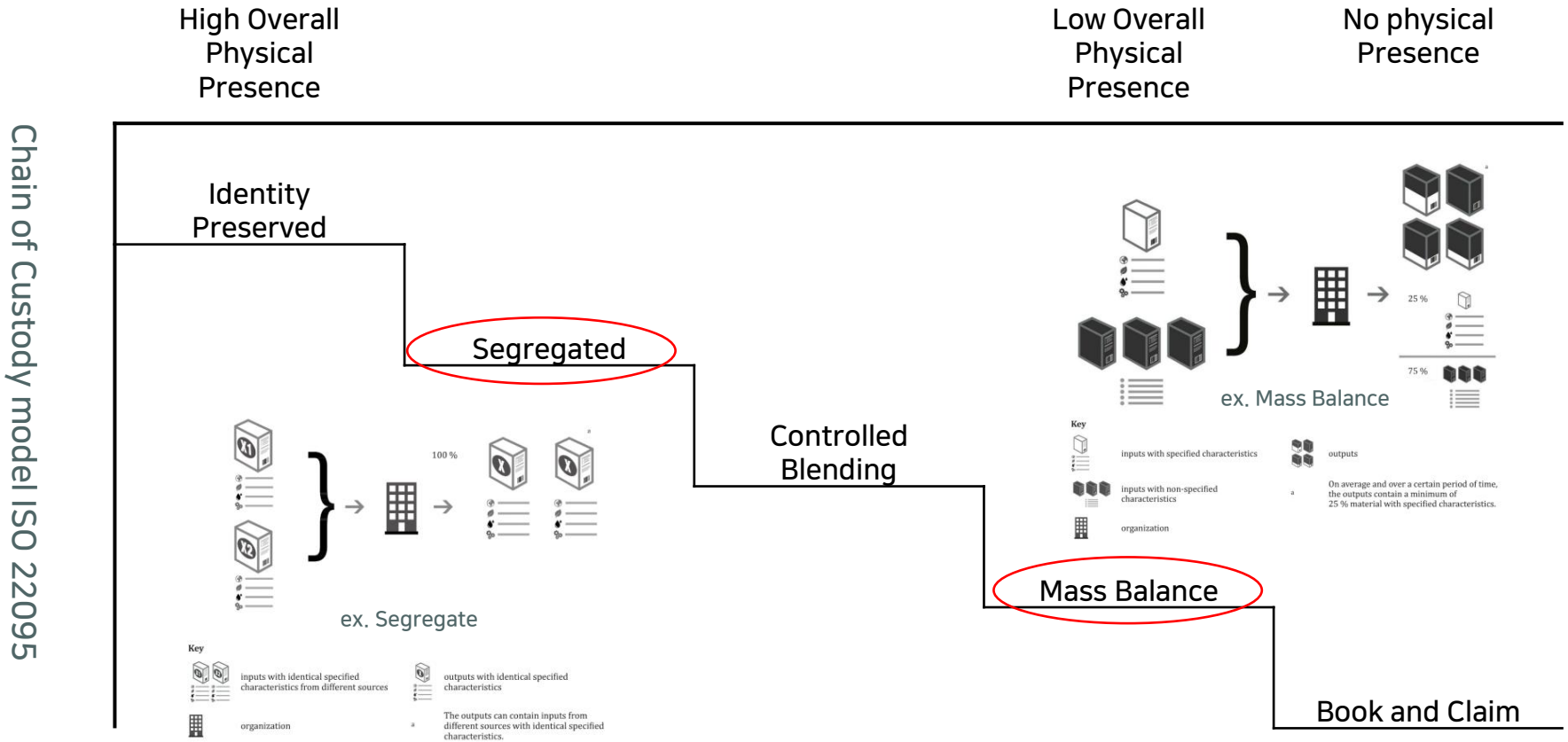
- Traceability



- **SC (Scope Certificate):** A certificate that a factory or organization within the scope of certification can produce according to certification standards
- **SD (Self or Sustainability Declaration):** Self-confirmation documentation for products sold by certified companies to prove their certification

2 COC modeling

- Chain of Custody – Definition)



- Recognition of MASS BALACNE based on ISO 22095 (Mix of certification and non-certification, determination of sales volume based on certified warehousing volume)
- MASS BALANCE CONCEPT IS RECOGNIZED IN THE PETROCHEMICAL GROUP INDUSTRY NOW

03 Next Step of Certification

3 Recognition

- RED II (Renewable Energy Directive)

RED (Renewable Energy Directive)

FQD (Fuel Quality Directive)

- To improve the targets of sustainable energy use in the transport sector of EU countries, a form of legal regulation has begun.
- Fuel benefiting from biofuels and state aid schemes is required in accordance with the RED directive "Biofuel products must be sustainable.

Sustainable production and cultivation of raw materials

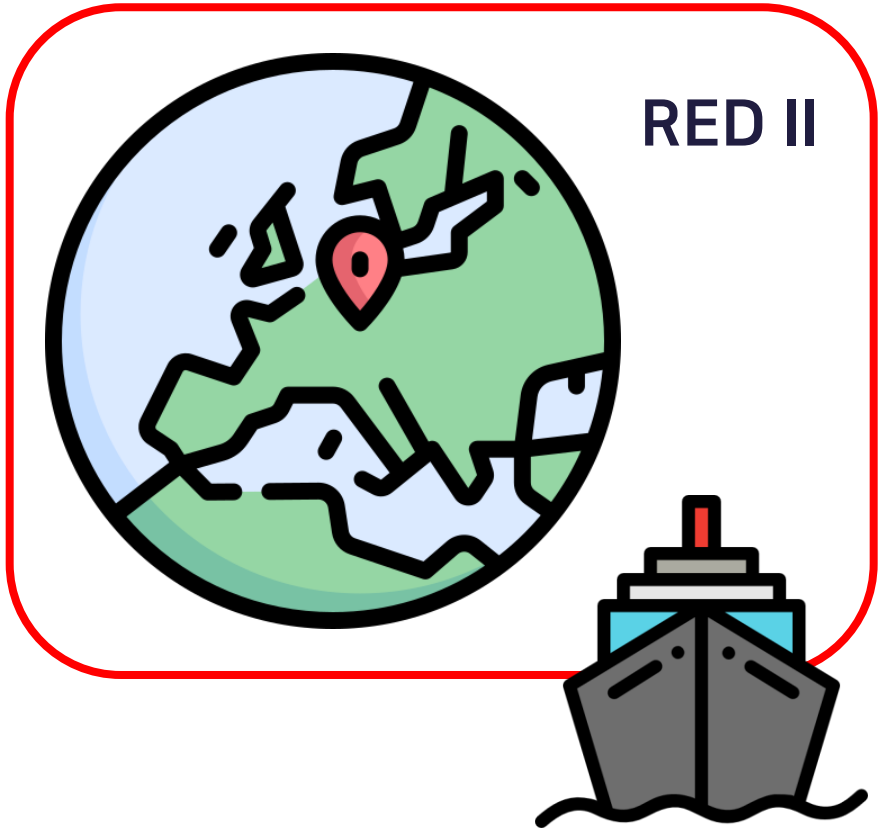
Traceability across the entire supply chain of sustainable products

Reduction of greenhouse gas obligations compared to existing fossil fuels

3 Recognition

- RED II (Renewable Energy Directive)

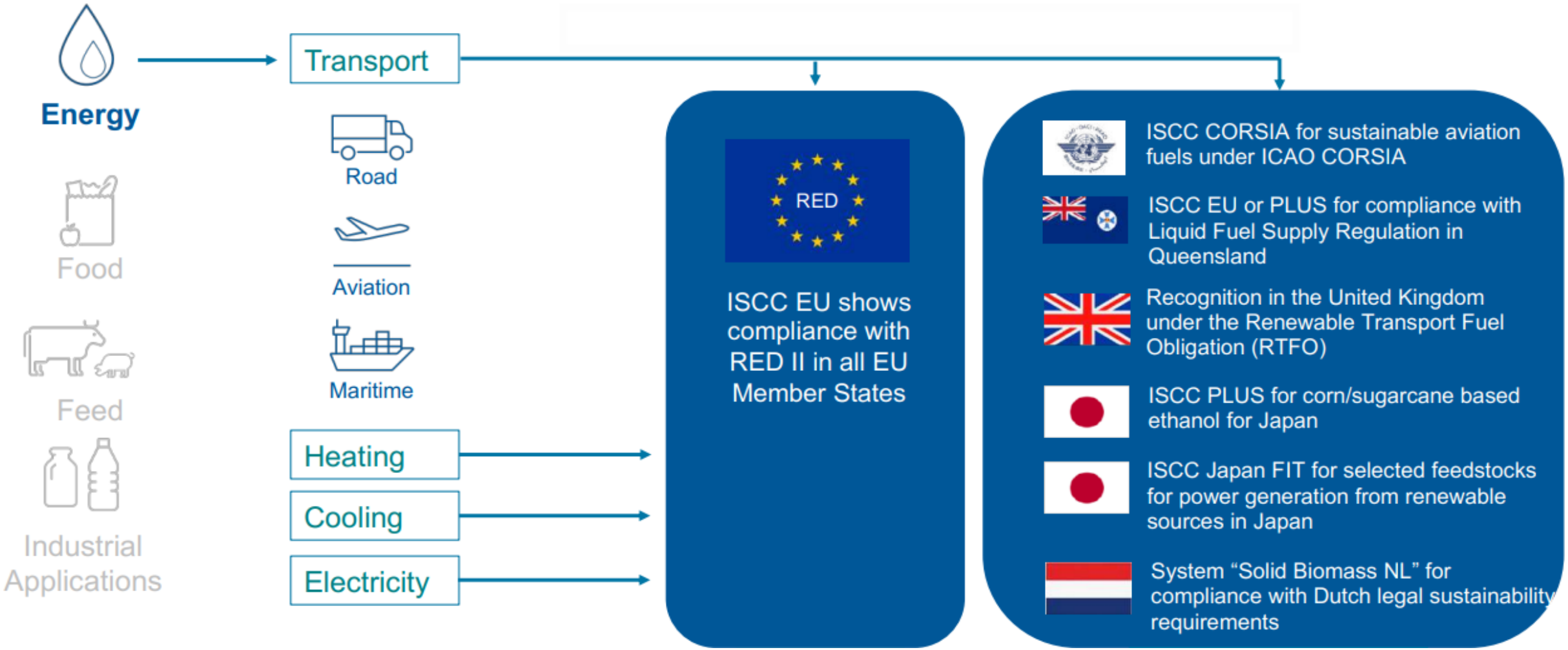
- Related Clause
- RED II (2018/2011) Implementing
- Regulation & Delegated Regulation EU 2019/802



1. Biomass Biofuels voluntary scheme (2BSvs)
2. Better Biomass
3. Bonsucro EU
4. International Sustainability and Carbon Certification (ISCC EU)
5. KZR INiG system
6. REDcert
7. Red Tractor Farm Assurance Combinable Crops & Sugar Beet Scheme (Red Tractor)
8. Roundtable of Sustainable Biofuels EU RED (RSB EU RED)
9. Round Table on Responsible Soy EU RED (RTRS EU RED)
10. Scottish Quality Farm Assured Combinable Crops (SQC)
11. Trade Assurance Scheme for Combinable Crops (TASCC)
12. Universal Feed Assurance Scheme (UFAS)
13. Sustainable Resources (SURE) voluntary scheme
14. Sustainable Biomass Program (SBP)
15. Austrian Agricultural Certification Scheme (AACS)

3 Recognition Example

- ISCC (Recognitions)



3 Carbon Credit (LCA)

-RED II Regulation Example

$$E = e_{ec} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr}$$

$\mathbf{E}$	: total emissions from the use of the fuel, (연료의 사용으로 인한 총 온실가스량)
e_{ec}	: emissions from the extraction or cultivation of raw materials, (원료의 추출 및 재배 과정에서 발생)
e_l	: annualised emissions from carbon stock changes caused by land-use change, (토양의 이용의 변화로 야기되어 탄소 축적의 변화로 부터 발생되는 온실가스)
e_p	: emissions from processing,(생산공정에서 발생되는 온실가스)
e_{td}	: emissions from transport and distribution, (운송 및 유통과정에서 발생되는 온실가스)
e_u	: emissions from the fuel in use,(사용 연료에서 나오는 온실가스)
e_{sca}	: emission savings from soil carbon accumulation via improved agricultural management, (농업관리 방식의 향상으로 인한 토양 탄소 축적의 저장으로 부터 오는 온실가스 저감)
e_{ccs}	: emission savings from CO2 capture and geological storage, (이산화탄소 포집 및 지리학적 저장에 따른 저감)
e_{ccr}	: emission savings from CO2 capture and replacement (이산화탄소 포집 및 대체에 따른 저감)

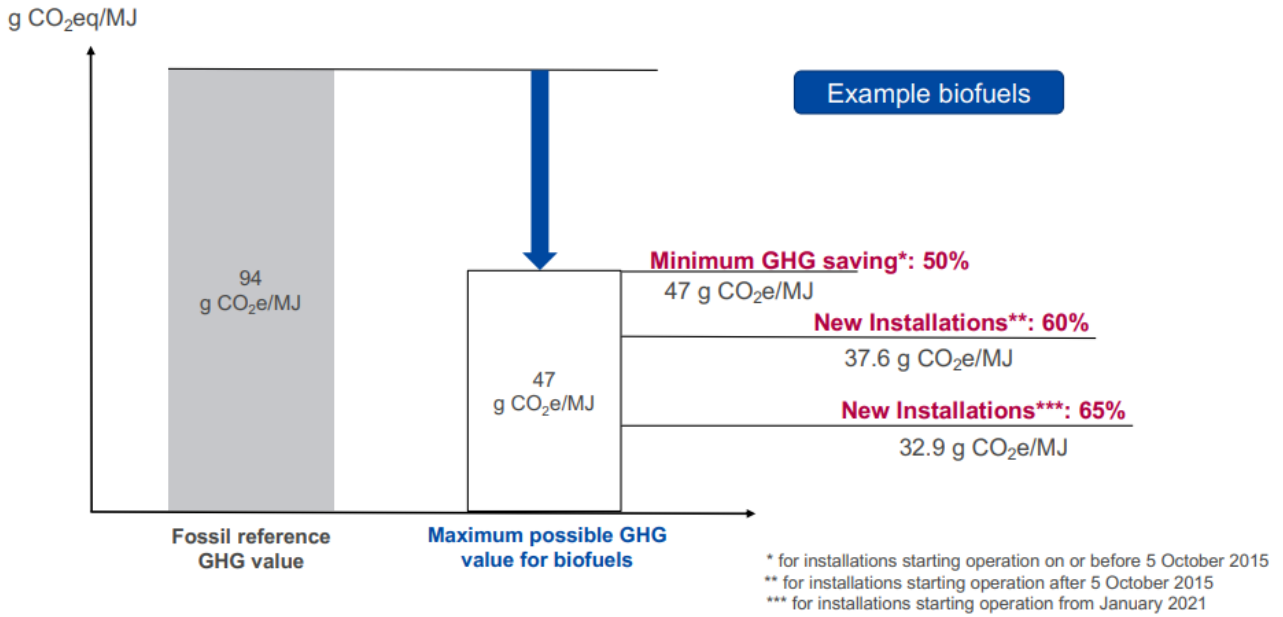
3 Carbon Credit (LCA)

-RED II Regulation Example

Step 1. Setting up a Saving Target according to the year of establishment of the factory

Start date of biofuel operations	Transport sector	Heating/cooling/ electricity
≤ 5.10.2015	≥ 50%	
6.10.2015 – 31.12.2020	≥ 60%	
≥ 01.01.2021 RFNBO´s Recycled Carbon Fuels	≥ 65% ≥ 70%* TBC	
01.01.2021 – 31.12.2025		≥ 70%**
≤ 01.01.2026		≥ 80%**

Step 2. Saving GHG Emission Evaluation with Existing Fossil-based Base



e.g.) Before October 5, 2015, the plant's Biofuels production should be 50% Saving Target & 47g Co2e/MJ per calorific value of product

04 Conclusion

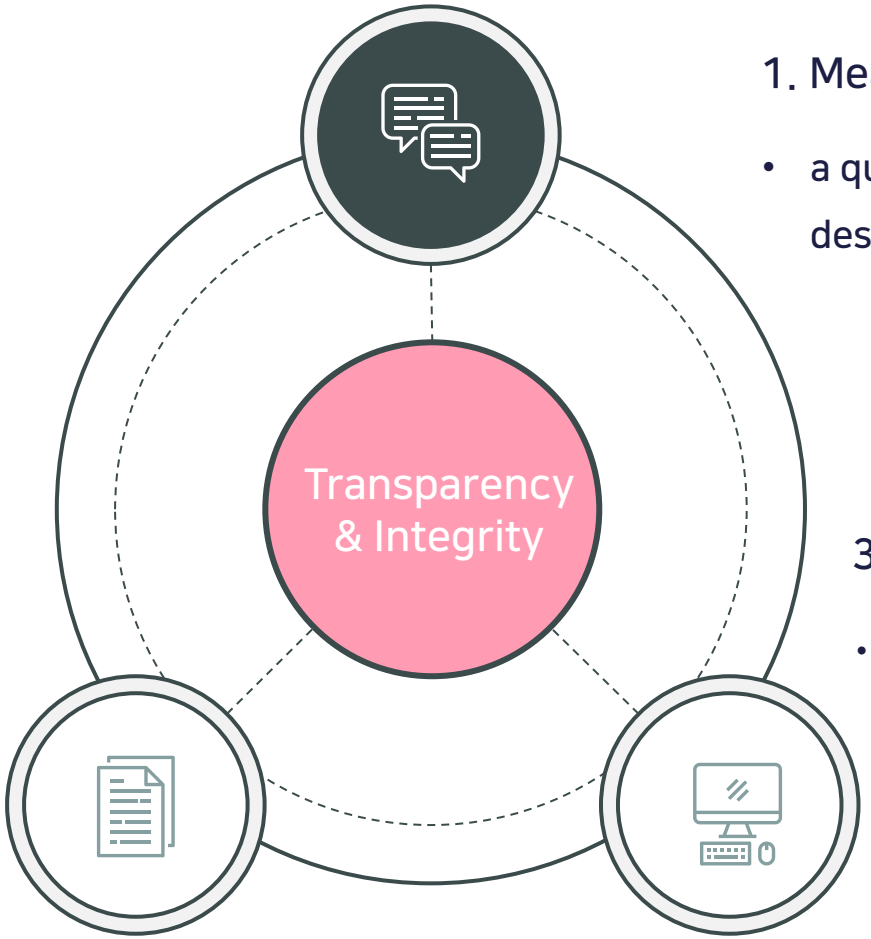
4 Certificate MRV

-Key Factor

Sustainable production

Traceability

Reduction of greenhouse gas



1. Measurement

- a quantitative measurement of the desired content

3. Verification

- Steps to independently assess the accuracy and reliability of reported data

2. Reporting

- Document and submit measured data in a standardized format

4 Risk Assessment

-Key Factor

- Improvement

Securing business transparency and reliability between transactions through authentication that ensures fairness with a third- party certification system

Improvement

Mitigation

- Mitigation

Sustainability, deforestation, supply chain confirmation, greenhouse gas reduction, etc risk-reducing effect

Thank you

컨트롤유니온코리아 홈페이지

컨트롤유니온 그룹 홈페이지

✉ bioenergykorea@controlunion.com
☎ 02-2281-9200