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# ISCC Certification

## Processing Unit Case Study

**Don Scott**

Technical Manager – ISCC Program  
[dscott@scsglobalservices.com](mailto:dscott@scsglobalservices.com)

# ISCC Certification Case Study: Ethanol Processing Unit



# ISCC Certification Case Study: Ethanol Processing Unit

- transport fuel (RED II) – ISCC EU
- industrial chemicals – ISCC PLUS
- aviation fuel or precursor - CORSIA

# ISCC Certification Case Study: Ethanol Processing Unit

- Typical certification scope:
- Processing Unit
- First Gathering Point
  - ◆ Farms

# ISCC Certification Case Study: Ethanol Processing Unit

- Processing Unit:
- Input material – Corn / maize
- Output materials
  - ◆ Bioethanol (corn)
  - ◆ Technical corn oil
  - ◆ Distillers' grains
  - ◆ Syrup
  - ◆ CO<sub>2</sub>

# ISCC Certification Case Study: Ethanol Processing Unit

- Processing Unit GHGs:
- Corn cultivation emissions
- Processing energy input
  - ◆ Electricity
  - ◆ Natural gas
  - ◆ Credits for renewable electricity
- Chemical inputs
- CO<sub>2</sub>
  - ◆ Carbon Capture & Replacement
  - ◆ Carbon Capture & Storage

# ISCC Certification Case Study: Ethanol Processing Unit

## ■ Conversion Factor

- ◆ How many tons of feedstock input are required to produce a ton of output?

## ■ Allocation Factor

- ◆ What fraction of the processing emissions are related to each of the outputs, based on energy content?

# ISCC Certification Case Study: Ethanol Processing Unit

## ■ Mass Balance

- Incoming quantities of ISCC materials relate to outgoing ISCC products through the conversion factor.
- Outgoing product has a specific GHG value and sustainability characteristics.

# ISCC Certification Case Study: Ethanol Processing Unit

- First Gathering Point:
- Supplying farms can be audited under the certification of the FGP.
- Every farm must demonstrate compliance with LUC requirements.
- Individual farms can be audited on a sample basis.

# ISCC Certification Case Study: Ethanol Processing Unit

- First Gathering Point:
- Farms must supply data to calculate GHG emissions of cultivation:
  - ◆ Area planted & harvested yield
  - ◆ On farm energy use
  - ◆ Seeds
  - ◆ Fertilizers
  - ◆ Plant protection products
  - ◆ Transportation
- CORSIA includes default ILUC value

# ISCC Certification Case Study: Ethanol Processing Unit

## ■ First Gathering Point:

## ■ Farm audit checklist includes:

- ◆ Protection of biodiversity
- ◆ Soil health
- ◆ Responsible use of nutrients
- ◆ Responsible use of pesticides
- ◆ Social protection for farm workers
- ◆ Food security

# ISCC Certification Case Study: Ethanol Processing Unit

- North American farms have a long history of investment in technology that increases yield through optimization of land and responsible use of inputs.
- Increasing focus on conservation in recent decades.
- Commodity infrastructure relies on fungibility for low-cost distribution.
- Chain of custody certification can be achieved when markets exist to reward the effort.

