Technical Specifications

MI5.5 - Carbon footprint of feed

Version EN: 1 January 2024

International

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Introduction

This Market Initiative (MI) document is created in cooperation between partners in the feed chain and GMP+ International. The main goal is to provide compound feed companies the possibility for the certification for feed of which the carbon footprint (CFP) is calculated according to the 'Protocol CPF berekening Nevedi' (afterwards: Nevedi Protocol). The Nevedi Protocol is designed to clarify the CFP of the delivered feed to livestock farmers, and in addition, to clarify the methane emission factors of the delivered dairy feed to dairy farmers.

1. Scope of this document

This MI-document contains the requirements for the calculation of the CFP of feed and its communication towards customers or third parties conform the Nevedi Protocol. By complying with the standard, the company ensures the correct implementation of the Nevedi Protocol. It does not provide a statement concerning the accuracy of the CFP data used by the Nevedi Protocol or concerning the sustainability of the feed for which the CFP is calculated.

This MI-document is applicable to the compound feed company, located in the Netherlands, producing and delivering feed to the buyer.

⊕ Helpful tip:

The Nevedi Protocol is a Dutch tool to calculate the CFP of feed. Therefore the scope of this standard is limited to Dutch companies. In the coming years this standard will be further developed to an internationally applicable standard.

2. Normative references

This MI-document must always be used in combination with the Nevedi Protocol and the R5.0 *Feed Responsibility Management Systems Requirements* which ensures the implementation of a Feed Responsibility Management System (FRMS). The combined use enables a company to provide feed in accordance with the Nevedi Protocol.

This document is to be used:

1. in addition to the GMP+ FSA module;
2. in combination with an equivalent feed safety standard (see TS1.2 *Purchase*), or;
3. without additional certification.

3.   Terms and Definitions

See F0.2 *Definition list.*

4.   System requirements

The company must show that it has access to the Nevedi Protocol.

⊕ **Helpful tip:**

    A company can gain access to the Nevedi Protocol through membership of Nevedi or by making a separate agreement with Nevedi for the use of the Nevedi Protocol.

The company must determine and document per animal category which feed materials, feed ingredients and/or compound feed falls within the scope of this standard.

Top management of the company must declare in writing that they provided to the auditor all necessary and relevant information for the assessment of compliance with the requirements of this standard.

The company must implement a procedure that describes how the company calculates CFP for feed and communicates the outcome to customers and third parties and must ensure that this procedure is continuously executed correctly.

5.   Input for the CFP calculations

5.1.   Composition of the feed

The company must document from which ingredients the feed is composed.

⊕ Helpful tip:

 The use of the recipe management tools can be helpful in determining the composition of the feed.

The company must document the weight of each ingredient that will be processed into the feed.

5.2.   CFP-data of feed ingredients

The company must select the CFP-data applicable for the ingredients of the concerning feed from the applicable Nevedi Protocol (see Annex 3a and 3b of the Nevedi Protocol).

⊕ Helpful tip:

 The use of the traceability system as described in document R5.0 *Feed Management Systems Requirements*can be helpful for the selection of the correct CFP-data.

If the company uses an ingredient for the production of compound feed for which there is no CFP-data available in the database, the company must use the CFP-data for the product group where the ingredient belongs to (see Annex 1 of the Nevedi Protocol).

If the company uses an ingredient for the production of compound feed for which there are multiple CFP-data specified by geographical origin available in the database, the company must use the CFP-data applicable for the specific geographical origin of the used ingredient.

⊕ Helpful tip:

 Chapter 4 of the Nevedi Protocol describes how the company must handle CFP-data specified for geographical origin.

If the company has no information available about the specific geographical origin of a feed ingredient, the company must select the CFP-data for the ingredient concerned without a geographical origin-specification from the database.

5.3.   Amounts of produced feed

The company that chooses to calculate a company-specific CFP-value for feed production, must document per production location which amounts (in tons) of feed are produced and extradited, distinguished to:

• Animal species: ruminant, pig, poultry, or other;
• Feed type: pellet feed (including crumbled feed) and mash feed, and;.
• Extradition type: bulk, bagged or big bag.

5.4.   Energy use feed production

The company that chooses to calculate a company-specific CFP-value for feed production, must document per production location which amounts of energy were consumed for the production of feed. This energy used must be distinguished in the following energy sources:

- Electricity (in kWh)
- Natural gas (in m^3/MJ/kWh)
- Biogas (in MJ/kWh)
- Biomass (in MJ/kWh)
- Diesel (in I/MJ/kWh)
- Propane (in I/MJ/kWh)
- Other fuels (in MJ)

For the electricity used, the company must demonstrate, via the power label of the energy supplier:

- which sources were used to produce the electricity that was purchased, and;
- the share of each source that was used. The total share of all sources used should add up to 100%.

6. Calculating the CFP of feed

6.1. General requirements for CFP calculations

The company must calculate the CFP in g CO_2-equivalents per kg feed.

The company must calculate the CFP according to the composition of the concerning feed.

The company that produces feed for dairy cows and associated young stock, must make a separate calculation for the four individual CFP indicators and for the total CFP of the feed.

⊕ Helpful tip:
   The four indicators of the CFP are described in § 5.1 of the Nevedi Protocol.

6.2. Selection of calculation method for CPF feed production

The company must select from the following list, which method is used to determine the CFP for feed production:

1. The default CFP-value for feed production, or;
2. The company-specific CFP-value for feed production.

The company must apply the chosen calculation method for all the feed produced.

When the company selects the first method, the company must calculate the CFP of feed in accordance with § 6.4. When the company selects the second method, the company must calculate the CFP of feed in accordance with § 6.5.

6.3. Requirements for company-specific calculation of the CFP of feed production

The company that chooses to make a company-specific calculation of the CFP of feed production, must do this with the Nevedi energy production tool 2024.

The company is only allowed to use the Nevedi energy production tool 2024, when the company possesses data concerning the amounts of feed produced and the energy consumption for feed production related to the same, most recent, consecutive period of 12 months.

⊕ Helpful tip:
   The energy supplier can only determine afterwards with which energy sources the supplied electricity was generated. The power label that was obtained in a certain year contains information that is applicable to the electricity supplied in the previous year.

The company that chooses to make a company-specific calculation of the CFP of feed production, needs to calculate a specific CFP-value for each feed category, according to the following subdivision:

- Animal species: ruminant, pig, poultry, or other;
- Feed type: pellet feed (including crumbled feed) and mash feed, and;.
- Extradition type: bulk, bagged or big bag

The company that chooses to make a company-specific calculation of the CFP of feed production, calculates the CFP-values for each feed category before the 31st of December, in accordance with the instructions of the Nevedi Protocol. The company will use these values for the CFP calculations performed in the following year.

6.4.   CFP calculation using the default CFP-value for feed production

The company must use the following calculation method for the CFP of the feed:

Step 1: Calculating the CFP of the total of the produced feed:

Ingredients (kg)		CFP-data (g CO$_2$-eq/kg)		Outcome
Weight $_{ingredient A}$	x	CFP-data $_{ingredient A}$	=	CFP $_{ingredient A}$
Weight $_{ingredient B}$	x	CFP-data $_{ingredient B}$	=	CFP $_{ingredient B}$
Weight $_{ingredient C}$	x	CFP-data $_{ingredient C}$	=	CFP $_{ingredient C}$
...				+
Weight $_{total feed}$			=	CFP $_{total feed}$

Step 2: Calculation the CFP per kg feed:

CFP $_{total feed}$ / Weight $_{total feed}$ = CFP $_{feed (g CO2-eq/kg)}$

6.5.   CFP calculation using the company-specific CFP-value for feed production

The company must use the following calculation method for the CFP of the feed:

Step 1: Calculate the company-specific CPF of feed production

The company calculates with the applicable Nevedi CPF feed production tool the company-specific CPF value for each relevant feed category.

Step 2: Specifying the CFP-data in the Nevedi Protocol

Column 'O' of the Nevedi database shows the default CFP-value for feed production. The company must replace the default CFP-value for feed production with the company-specific

CFP-value for feed production that applies to the relevant feed category, as described in § 4.1 and § 4.2 of the Nevedi Protocol.

Step 3: Calculating the CFP of the total of the produced feed:

Ingredients (kg)		CFP-data (g CO2 eq/kg)		Outcome
Weight $_{ingredient\ A}$	x	CFP-data $_{ingredient\ A\ after\ step\ 2}$	=	CFP $_{ingredient\ A}$
Weight $_{ingredient\ B}$	x	CFP-data $_{ingredient\ B\ after\ step\ 2}$	=	CFP $_{ingredient\ B}$
Weight $_{ingredient\ C}$	x	CFP-data $_{ingredient\ C\ after\ step\ 2}$	=	CFP $_{ingredient\ C}$
...				+
Weight $_{total\ feed}$			=	CFP $_{total\ feed}$

Step 4: Calculation the CFP per kg feed:

$$CFP_{total\ feed} / Weight_{total\ feed} = CFP_{feed\ (g\ CO2\text{-}eq/kg)}$$

7. Additional calculation of emission factors for methane production of feed

The company that produces feed for dairy cows and associated young stock, must make an additional calculation of the emission factors of methane production of the feed, according to the specifications described in *Appendix 1*.

⊕ Helpful tip:

The Nevedi Protocol contains separate methane emission factors for feed ingredients for this additional calculation.

8. Compensating the CPF-LUC indicator

8.1. The use of Satellite-based Land Use Change (SBLC) credits

⊕ Helpful tip:

The Nevedi Protocol allows a compound feed company to exclude the CFP-LUC indicator from the CFP calculation of the feed, when the company can prove that the CPF-LUC indicator of the soy(product) that is processed in the feed, is compensated via a SBLC verification statement. This is described in Annex 4 of the Nevedi Protocol.

The company that wishes to compensate the CFP-LUC indicator, must show that the SBLC verification statement that the company uses, states the following:

- The **name of the party X** that sells the SBLC credits to the compound feed company.
- The **name of end-user Y** (the compound feed company) as buyer of the SBLC credits.
- The **volume of SBLC credits** covered by the SBLC verification statement.
- The **country** where the SBLC verified soy was cultivated.
- The statement of the verifying party that:
  ◦ The party that sells the SBLC credits, has obtained these credits from a soy farm certified by a **FEFAC Soy Sourcing Guideline (FSSG) accepted soy scheme**.
  ◦ The SBLC credits represents soy for which **was verified by satellite data assessment that it was cultivated on land not converted nor deforested in the last 20 years.**
  ◦ The verifying party keeps a balance of:
    ▪ the **amount of soy harvested** from non-converted/non-deforested land;
    ▪ the **amount of SBLC credits issued** for this soy to the soy farmer;
    ▪ the **amount of SBLC credits transferred through the chain from the soy farmer to End-user Y**.
- The verifying party has verified and confirms that all credits transferred to End-user Y are covered by soy cultivated on agricultural lands that was non-converted/non-deforested for 20 years and are transferred within the period of validity of the SBLC credits.
- The date of issuance of the SBLC verification statement
- The identification of the party issuing the SBLC verification statement
- When the SBLC verification statement is accompanied by annexes, both the verification statement and the Annexes are provided with a unique code showing that the documents belong together.

A format for a SBLC verification statement is shown in *Appendix 2*.

The following requirements apply to the use of SBLC credits by the company:

- The company must show that only the CPF-LUC indicator of the CFP of feed, is compensated through SBLC credits.
- The company must show that the amount of SLBC credits that were purchased is equal to the amount of soy for which the CFP-LUC indicator is compensated.
- The company must show that for feed, produced with soy(products) not covered by SBLC verification statements, the CFP-LUC indicator is included in the CFP-calculation.

- The company must show that the SBLC credits where purchased and used to compensate the CFP-LUC indicator within in the same year, with two exceptions:
  - ◦ Credits purchased in year X, but not used in year X, can be carried over to year X+1.
  - ◦ When an insufficient amount of SBLC credits is purchased in year X, it is allowed to replenish this deficit in year X+1, provided that these extra SBLC credits were purchased before the 31st of January of year X+1.
- The company must communicate the use of SBLC-credits to the customer and make it clear that this means that the CFP of the feed does not contain the CFP-LUC indicator for the compensated soy(product).

9. Informing the customer

In addition to § 4.5.1. of the document R5.0 Feed Management Systems Requirements, the company must document the calculated CFP of the feed delivered to the customer and communicate it to the customer or third party, in accordance with the procedure the company has made.

For the positive declaration of the feed delivered to the customer, the scope 'Carbon footprint of feed' must be used.

When the company calculated the CFP of the feed with the use of Satellite-based Land Use Change (SBLC) verification statements, the company must communicate this to the customer.

Appendix I. Emission factors for methane production

When the company produces feed for dairy cows and associated young stock, the company, besides the CFP calculation, must also calculate the following emission factors for methane production per kg ingested product:

- The methane production per kg ingested product at 0% silage maize in the feed regime, expressed in grams of methane per kg product (EF_CH4_0)
- The methane production per kg ingested product at 40% silage maize in the feed regime, expressed in grams of methane per kg product (EF_CH4_40)
- The methane production per kg ingested product at 80% silage maize in the feed regime, expressed in grams of methane per kg product (EF_CH4_80)

The company must implement a procedure that describes how the company performs the calculation of these emission factors and communicates the outcome to customers and third parties. The company must ensure that this procedure is continuously executed correctly.

1. **Selection of the data**
The company must select the methane emission factors for the ingredients of the concerning feed from the Nevedi Protocol (see Annex 3a of the Nevedi Protocol).

If the company uses an ingredient for the production of the feed for which there is no methane emission factor available in the Nevedi Protocol, the company must use the methane emission factor for the product group where the ingredient belongs to (see Annex 1 of the Nevedi Protocol).

2. **Calculating the methane production per kg feed intake**
The company must use the following calculation method:

Step 1: Calculation methane production per kg ingested product:

Ingredients (kg)		Methane emission factor (g CO_2-eq/kg)		Outcome
Weight $_{ingredient\ A}$	x	EF_CH4 $_{ingredient\ A}$	=	Methane production $_{ingredient\ A}$
Weight $_{ingredient\ B}$	x	EF_CH4 $_{ingredient\ B}$	=	Methane production $_{ingredient\ B}$
Weight $_{ingredient\ C}$	x	EF_CH4 $_{ingredient\ C}$	=	Methane production $_{ingredient\ C}$
...				+
Weight $_{total\ feed}$			=	Methane production $_{total\ feed}$

Step 2: Calculation methane production per kg feed:
Methane production $_{total\ feed}$ / Weight $_{total\ feed}$ = Methane production (g/kg)

Appendix II. Format for SBLC verification statement

Verification statement
Statement number:
xxxxxxxxxxxxxxxxx

[Name of verifying party]

Confirms that

[Party X]

Has obtained SBLC credits representing a verification of 20 Years non conversion / non-deforestation from a soy farm/area certified by [**FSSG accepted soy standard**] in [**country**]. The commercialization of SBLC credits can be independent of the credits corresponding to [**the FSSG accepted soy standard**]

[**Name of verifying party**] has verified and confirms that these SBLC credits represent soy cultivated on land that was not converted nor deforested in the last 20 years. This was verified through analysis of satellite data. This means that the land used on these farms was already farmed land in [**month year**]

Volume sold covered by this statement:
Xxxxxxx [**FSSG accepted soy standard**] credits*
(* 1 credit is equivalent to …)

To be delivered to:
[**End-user Y**]

For these SBLC credits, [**Name of verifying party**] keeps a balance of: the amounts of soy harvested from non-converted/non-deforested land, the amount of SBLC credits issued for this soy and the transfer of SBLC credits through the chain from the soy farmer to [**End-user Y**].

[**Name of verifying party**] confirms that all SBLC credits covered by this verification statement and transferred to [**End-user Y**] are covered by soy harvested from harvested from agricultural land that was not converted nor deforested in the last 20 years and are transferred within the period of validity of the SBLC credits.

[Name/logo/address of verifying party]

Date of issue:
xx/xx/20xx

Manager

Feed Support Products

That was a lot of information to digest and one might ask, what is the next step? Luckily we can offer support for the GMP+ Community when doing this. We provide support by means of various tools and guidances but as each company has a shared responsibility to feed safety, and therefor tailor-made solutions cannot be offered. However, we do help by explaining requirements and provide background information about the requirements.

We have developed various supporting materials for the GMP+ Community. These include various tools, ranging from Frequently Asked Questions (FAQ) lists to webinars and events.

Supporting materials related to this document (Guidelines and FAQ's)
We have made documents available which give guidance to the GMP+ requirements as laid down in the module GMP+ FSA and GMP+ FRA. These documents give examples, answers to frequently asked questions or background information.

Find our Feed Support Products here:
Support documents
More information: https://www.gmpplus.org/feed-certification-scheme/scheme-documents/support/

We enable every company in the feed chain to take responsibility for safe and sustainable feed.