SEGES INNOVATION DAKOFO Dansk Korn & Foder

NOTAT

STØTTET AF
Promilleafgiftsfonden for landbrug

Title: Guideline for usage of PEFCR

Disclaimer: This version of the guideline may not be the latest and may therefore only be used after contact with DAKOFO (hge@dakofo.dk).

Background

There is currently a strong focus on initiatives in agriculture that can support the transition to climate-neutral food production. The animal sector carries a large part of the agricultural climate footprint, where the production and import of feed materials for animal feed make up a high proportion of the total climate footprint. The feed industry and agriculture are therefore working on strategies to develop and utilize new feed materials and feed concepts, which can help reduce the climate impact on livestock production. The Eu commission has developed a comprehensive guide that sets the rules for calculating the product environmental category rules (PEF) for products. The PEF method shall be studied before reading this guide, to get the general understanding of conducting a PEF study.

The European feed organization FEFAC, with the support of the European Commission, has developed a model for calculating the climate footprint of individual feed materials. This has now been formally approved by the European Commission and the EU member states. The model is called Product Environmental Footprint Category Rules (PEFCR) for feed for food producing animals (from here on known as PEFCR Feed). The PEFCR feed describes the needed data for conducting a PEF study for feed materials. This guideline must not be seen as a full guide to conducting a PEF study or be used before studying the PEF and PEFCR Feed. This guideline is to be used as a supplement to the before mentioned guides.

To support the use of PEFCR Feed, the international feed industry has developed a database based on PEFCR methods of feed materials used for feed production. It is important that feed producers in Denmark have the same approach to how climate impacts are calculated. The feed industry in Denmark, like the rest of the EU, has decided to use PEFCR Feed and the E.F- and GFLI-databases to evaluate and calculate the climate footprint of feed. Although we have an agreement on reference methods and data, there is also a need for guidelines for several prerequisites that form the basis for a standardized implementation. Therefore, DAKOFO and feed companies has developed this guideline document.

Climate footprint of the feed

When the climate footprint of the feed is determined, the methods described in **"**PEFCR: feed for food producing animals**"** are used based on data for feed ingredients from the E.F 2.0- (**until 30th of June 2023)** or the GFLI-database. However, as the PEFCR was only valid until 2021, it is for now not possible to conduct a valid PEF study using the EU Commissions EF-datasets for free. Therefore, when performing

PEF studies on feed, there will be two different options: one, being a license to utilise the EF datasets, and perform the PEF study according to the PEFCR; Two, choose to follow this guideline using the other options provided here called Alternative options to the PEFCR (AOTP).

PEF The climate footprint of the feed is tied up in four elements: Climate impact of the purchased feed ingredients, incoming transport from the site of feed ingredient production to the feed manufacturer, processing at feed mill, and transport from the feed mill to farm gate. These elements are described on the FEFAC Factsheet.

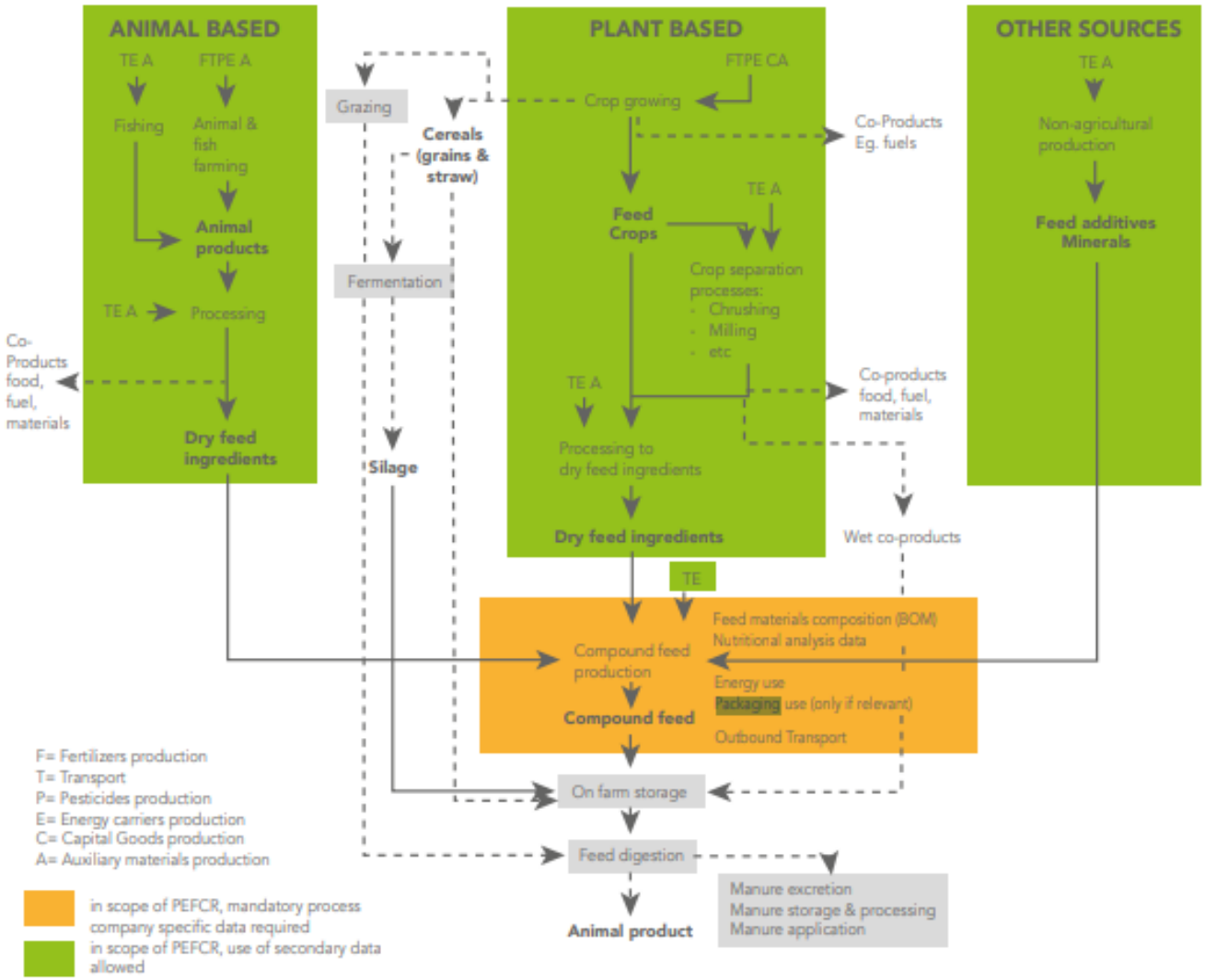

Figure 1. System boundaries of PEFCR Feed, also describing the processes that needs to be company specific data (from FEFAC: SR_Factsheet-key-elements-data-collection.pdf (fefac.eu))

Click here to go see a step-wise engagement plan for feed manufacturers on environmental foot-printing.

Danish guideline for implementing and application of PEFCR

1. When calculating the climate impacts for a given feed production, the calculation must include transport, the inclusive feed materials as well as the feed production itself – these are calculated according to PEFCR.
    a. Default data of feed materials must be drawn from the EF 2.0- (until 30th of June 2023) or GFLI-database.
    b. When data is lacking for a feed material
        i. For certain raw materials, specific climate data must be used that are relevant in the Danish context – these are calculated according to PEFCR.
        ii. For now, it is not possible to calculate PEFCR compliant data on organic feed materials.

AOTP. The default data for feed ingredients must be taken from the GFLI-database.

2. The climate impact from packaging must be calculated according to standard values of 15/25 kg bags and big bags respectively
    a. When lacking data on the plastic material, default data for packaging shall be collected from the EF 2.0 database (access here: Sphera). Both paper and plastic packaging materials are available, so it is possible to choose the most relevant dataset.

b. End-of-Life modelling must be accounted for.
AOTP. Packaging is not calculated unless primary data can be provided.

3. The calculations on the feed producer's own climate data are based on the previous
market year (Jan-Dec) and is updated once a year (April).

4. When communicating the climate data of individual feed ingredients, these data must be based on a 12-month average of the previous market year.

5. The climate impact is reported as gram of CO2eq/kg of feed delivered to farm gate.

6. The climate impact is including every data from all the four sub-elements.

7. The climate impact is declared as two values, one incl. LUC and one excl. LUC.

8. Climate data is declared with 3 decimal digits.

9. Economic allocation is applied, when more than one product is derived from a process.

10. Climate footprint of energy in the form of gas and electricity used in the feed production and other processes such as e.g., drying of grain, must be included (Company specific data). The usage of electricity and gas for administrative building etc. is excluded from the calculations. The same conversion rate is used throughout the industry – the unit used is Kwh.
    a. The default data for energy shall be collected from the EF 2.0 database (access here: Sphera).
        i. If the electricity grid mix is unknown, the specific dataset for the Danish average grid mix (Electricity grid mix 1kV-60kV; AC, technology mix; consumption mix, to consumer; 1kV - 60kV) shall be used.
        ii. If the technology of the used process steam is unknown, then the dataset: [Process steam from natural gas; technology mix regarding firing and flue gas cleaning; production mix, at heat plant; MJ, 90% efficiency] shall be used.

    AOTP. Primary data: The data of the energy consumption from production is taken from Energinet.dk. From this website, it is possible to find the specific energy consumption from your feed processing unit (only including the energy from the processing of the feed and feed ingredients – the daily energy used for other than feed processing is excluded), along with the specific energy grid mix and the exact emissions form the processing unit.

Secondary data: The default values for energy (gas, electricity, etc.) must be drawn from the Agri Footprint database.

11. Climate footprint from the inbound transport shall be estimated for both fractions: from production site to port and from port to feed factory. An example is given in the PEFCR Feed (page 67, chapter 10.1.6). It is up to the producer of the PEFCR study, to choose either primary or secondary data for inbound transport:
    a. In case of choosing primary data, following data is needed:
        i. the last known location of production of the feed, before the feed mill
        ii. the distance from the production site to the feed mill
        iii. the average transport scenario, of the feed ingredient pr. transport means.
    b. For the use of secondary data:
        i. Transport distances and mode-mixes from table 11.4.2-1 (Annex 6) shall be used.
        ii. Additional default data for transport shall be collected from E.F 2.0.
            1. Truck transport: if the truck type, total weight, and payload capacity is unknown, then the dataset: [Articulated lorry transport, Total weight 28-32 t, mix Euro 0-5; diesel driven, Euro 0 - 5 mix, cargo; consumption mix, to consumer; 28 - 32t gross weight / 22t payload capacity] shall be used.
            2. Train transport: if the train type is unknown, the dataset: [Freight train, diesel traction; diesel driven, cargo; consumption mix, to consumer; average train, gross tonne weight 1000t / 726t payload capacity] shall be used.
            3. Transoceanic transport: two datasets are available, depending on the transport of either bulk or containers.

AOTP. It is possible to measure transport distances via http://www.searates.com/reference/portdistance/ for oceanic transport and google maps or Eurostat for inland transport.

- If it is not possible to calculate the distance or determine the transport means, then default values from table 11.4.2-1 shall be used. If there is no data on the distance between two countries in the table, it is also allowed to choose the nearest location, as transport is only a minor contributor to the overall EF of feed (e.g., Argentina to Denmark is missing – use Argentina to Germany and ad truck transport to Denmark).
- Default values for the emissions of transport shall be drawn from Agri Footprint.

12. Outbound transport from feed producer to farm shall be based on company specific data.

1. One is free to choose from the four methods specified in the PEFCR Feed (chapter 9.1.4)

AOTP. The data for outbound transport can be declared as an average of the total transport from one factory to all receiving consumers farmgate (not separated into animal species).

13. Guidelines must be set for how to ensure that information about place of origin of a specific feed material is available for the buyer of the product e.g., buying soybean meal from Germany.

14. The companies should refer to these guidelines when applied.

15. When communicating results of the PEFCR – the communications shall include
    a. "Calculations are based on DAKOFO guideline"
    b. The impact category for GWP (both with and without LUC).

16. EF databases can be accessed via this link. The datasets of feed ingredients will be accessible from FEFAC via a specific node, while energy, transport and packaging datasets will be accessible via the Sphera/Thinkstep node.
    a. User guide:
        1. Follow the "link" to the main page of all approved nodes.
        2. Click on the link to the node you wish to register for.
        3. Read the "End User Agreement" to make sure you are allowed to use the data for free (not possible to use data for free until new update of the PEFCR feed). If you are in doubt, an email address is provided within that document, where you can send a mail to ask for permission to use the datasets. Accessing the data is free of charge, use of data to perform official PEF/OEF studies that are compliant to the PEFCR Feed is allowed with the free user account. If you use data for a non-official or not PEFCR Feed-compliant study, you must obtain a license beforehand.
        4. On the bottom of the home page, you will find a grey bar, with the "register" button in the bottom left corner.
        5. Here, you will have to add your information and agree to the terms and conditions.
        6. After your successfully register, you will receive an email, confirming you registration. Following this, the node provider will have to activate your account before you can access the data.

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References

[1] GFLI's website

[2] FEFAC's website.

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