



UEIL – Sustainability WG

Introduction to the Corporate Carbon Footprint self-assessment tool

Q&A

CCF Toolbox

Q: Why do we need to calculate our corporate carbon footprint ?

Companies which express a desire to reduce their carbon footprint or indeed strive for carbon neutrality must first identify and calculate the size of their CCF and identify where their 'hot-spots' lie. It is only when the 'hot-spot's are identified can companies take appropriate action to reduce their carbon footprint.

A Corporate Carbon Footprint is unique to each individual organisation and one should not assume that all companies in a particular part of the value chain have the same carbon footprint profile.

It's often quoted that 70-80% of a company's CCF is in the form the raw materials. This may indeed be true for many companies but there may be other stakeholders in the lubricants value chain who are more energy intensive and therefore will have a different set of priorities.

Q: Do you include transport and packaging in the spreadsheet / toolbox ?

We do include transportation certainly, and packaging should also be included in scope 3.

The contribution of transport and packaging for some companies may be significant but for others less so. Only by doing an analysis will you know if they are significant contributors to an organisations CCF and therefore need attention in the journey towards lower carbon or carbon neutrality.

Q: What's the difference between Corporate Carbon Footprint and Product Carbon Footprint ?

The corporate carbon footprint is the sum of the all the carbon that is associated with an organisation and its activities, and includes all Scope 1, 2 and 3 emissions.

One can estimate an average product carbon footprint by dividing the CCF by the total weight of product manufactured by the company but this will only give an average PCF. For companies that produce many different products, using different processes, raw materials and energy, this number may well be unrepresentative of the 'true' PCF for a given set of products; some products will be higher than would be expected if one were to do a more granular analysis; other may be much lower than might be expected.

More granular analysis allows for a better understanding regarding CCF and PCF 'hot-spots'.



Q: Is there a preferred way to assess a matrix-structured organisations and does it require significant resources ?

Calculating the corporate carbon footprint is a labour-intensive undertaking and requires the support of stakeholders inside and outside the organisation, including suppliers. Granular is better than high level analysis, as it makes for better decision-making and sharing of best practice across an organisation.

The more diverse an organisation, the more complex the estimation of corporate carbon footprint can be, especially for organisations that have facilities located in different countries or use independent third-parties, such as tollers. Still, the principle of analysis will enable the organisation to determine where the priority areas of action are to progress towards a reduced corporate carbon footprint.

Q: How frequently should we undertake a corporate carbon footprint evaluation ?

There is no specific guidance regarding when and how often CCF should be calculated but a good rule of thumb would be to do so when there is a significant change to an organisation's normal business practice or process, for example, new energy sources, new product launches, new production units etc. Some activities may cause a significant increase in CCF, in which case the organisation might want to consider new actions to mitigate or reduce their added carbon footprint.

Q: Why should we be concerned about corporate carbon footprint ? Is there any legislation which will drive corporate behaviours towards carbon-neutrality ?

Legislation and demands from industry stakeholders are increasingly requiring companies to become less carbon intensive.

All major governments around the world are setting targets to become carbon neutral, although they do vary in terms of specific dates. For example, Europe has set out its ambition to become carbon-neutral by 2050, with interim milestones along the way e.g. Fit-for-55.

Large multi-national organisations are following the lead of governments and demanding their suppliers reduce their carbon footprint and in doing so reduce the carbon passed along the value chain.

To ignore the carbon-reduction trend might be to place the future of the organisation in jeopardy; it is an opportunity to drive for competitive advantage.

Q: Where can I find the CCF Toolbox ?

The toolbox is available on the UEIL Sustainability website (toolbox button) and is available for use by all stakeholders, without limitation.

Q: Can you provide some guidance regarding auditing of CCF ? Can I do self-assessment ?

Whilst the toolbox is not endorsed by any third-party organisations or auditors, it has been designed to help companies gather information on their corporate carbon footprint, which can then be presented to a third-party auditor.

A key element of the toolbox is that it makes the organisation's footprint transparent to the auditor and to any other stakeholders to whom the company wishes to disclose information.



Unaudited self-assessment is not recommended as a basis for external communication; auditable and audited reporting is recommended best practice.

The toolbox has been used by several UEIL member companies already and has been adapted in response to feedback from an auditor.

Q: Against which standards has the toolbox being developed ?

The toolbox has at its core ISO 14040, 14044 and 14067 and the GHG Protocol. These are the standards that an auditor will refer to in conducting an audit of the CCF.

Q: Does the toolbox allow for the consideration of renewable energy ?

The second iteration of the toolbox (now on the UEIL Sustainability website) does take into account the use of renewable energy. This was a factor picked up by a third-party auditor and a recommended improvement to the toolbox.

We would welcome feedback from organisations that use the toolbox, so that further improvements can be made for the benefit of the whole lubricants industry community.

Q: How responsive have you found suppliers in providing accurate information for calculating scope 3 emissions to date ? Are there any areas of bought in products or services that have proved more troublesome to date?

At the current time there is quite substantial variability. This problem is exacerbated by the current lack of standards or guidance documents to enable suppliers to provide information to their customers.

Having said that, there is clear recognition that this is a priority requirement for the lubricants industry and steps are being taken to address the need for harmonised, consistent and transparent data for raw materials, services and finished products.

We must remember that Sustainability is a journey and progress in CCF and PCF reporting will be measured in terms of years.

Q: What you presented were all processes that contribute to your corporate footprint. Are there capabilities to track subtractions such as use of biogenic material, CCS/CCSU, offsets etc?

CCS = carbon capture and storage

CCSU = carbon capture, storage and use

Carbon 'subtractions' should be reported separately, so that there is transparency around actual emissions and off-sets. This applies equally to biogenic carbon, as it does to off-sets and carbon captured through other means.

Guidance for accounting for biogenic carbon can be found in the document 'The Product Carbon Footprint Guideline for the Chemical Industry' published by Together for Sustainability.

Whilst the application of CCS and CCSU off-setting may appear attractive, technologies required to capture carbon dioxide are at early stages of development and so this type of off-setting should not feature in current action plans and sustainability reports.



Q: What is meant by biogenic carbon ?

During photosynthesis, plants remove carbon (as CO₂) from the atmosphere and store it in plant tissue. This carbon is locked up in the plant carbon pool until it is released back into the environment.

Best practice is to report PCF with and without biogenic carbon subtraction.

On a cradle to gate basis, biogenic carbon can be subtracted from the product carbon footprint of the substance.

However, it needs to be noted that at end of life (cradle to grave), the CO₂ locked in the product will be released back into the environment and this needs to be accounted for and owned within the supply chain. Over-all, the emissions locked in and released from biobased materials are net-zero, excluding carbon required in different manufacturing and transport stages.

The release of CO₂ could be due to, for example, combustion or biodegradation.

PCF

Q: What is the current status regarding a common product carbon footprint calculation methodology for lubricants and greases ?

Defining a common methodology is a high priority task for the lubricants industry and for upstream and downstream stakeholders. It is becoming more common that customers along the entire lubricant value chain ask for product carbon footprint information for raw materials, energy, services and finished lubricants and greases.

The lubricants industry recognises the need to have common methods and standards and for transparency. Without them, a PCF number provided in isolation is meaningless.

Industry trade associations are working on PCF harmonisation, with an aspiration for global alignment. For sure, you will hear more about these initiatives in the coming months.

Q: As a lubricant and / or grease formulator, can I calculate product carbon footprint using my Corporate Carbon Footprint ?

Yes. Once you have established the total corporate carbon footprint you can in the simplest of terms estimate the average product carbon footprint by dividing the total corporate carbon footprint by the weight of product produced.

If an organisation has production unit or site-specific manufacturing carbon footprint data, an organisation could estimate the average PCF on a unit or site basis. This can be important when the production unit or site has particular types of energy supply which are of significance in the production process.

These are forms of top-down PCF calculations. The preferred analysis would be a bottom-up approach, which involves being able to calculate a PCF based on a specific bill of materials, including raw materials, energy, waste production etc.

For those who want to know more about an industry relevant PCF methodology, Together for Sustainability has developed a set of guidelines for the chemical industry.



Q: Given that scope 3 emissions are 70-90% of a typical footprint, do you have suggestions for how to obtain reliable intensity factors for these?

The first place to start is the suppliers and ask them, and if they cannot help, there are a number of commercially available databases for carbon footprints that you can access. UEIL does not recommend one over any other. Further information and guidance can be found in the Together for Sustainability Guidance for the Chemicals Industry.

In-Use Applications and Benefits

Q: Concerning loss of lubricant to the environment, is there any difference between mineral oils, re-refined oils, natural oils and synthetic lubricants ?

This question addresses two areas of sustainability: PCF and environmental pollution.

With regards to PCF, each of the different types of base oil will have their own unique product carbon footprint. PCF information should be available from the raw materials supplier and should be the first point of contact.

Until such time as we have harmonised approach to calculating PCFs, caution needs to be observed when comparing PCF of different types of base oil.

With regards to loss to the environment, this is always to be avoided whenever possible. At a PCF level, loss to the environment should be assumed to be a return of carbon to the atmosphere. On a PCF basis, fossil derived substances will result in a net increase in CO₂, whereas substances derived from natural oils will result in a near net-zero change in atmospheric CO₂, as CO₂ was removed during the growing phase of the natural feedstock. Any additional CO₂ associated with natural oils may be the result of type of energy used to make or transport the product.

Q: Can you explain footprint vs handprint – which should be the focus ?

PCF is the amount of carbon or carbon equivalents associated with a particular product. The handprint is the benefit that can be derived from the use of the product in a particular system. For example, the use of low viscosity engine oils can ensure the delivery of energy efficiency improvements in an engine, which in turn reduces the quantity of CO₂ emitted into the atmosphere.

Avoided emissions can be far greater than the carbon associated with a particular product or component. It is better not to compromise in-use benefits by selecting components only on the basis that they have the lowest PCF. Performance in use remains the priority, when avoided emissions are significant.

PCF is derived of upstream Scope 3 emissions.

Avoided emissions through use of products is considered downstream scope 3.



Recycling Waste Oils

Q: Has an assessment been made comparing mineral oil and re-generated Group I / II base oils ?

Re-refined mineral oil is part of a circular economy. Re-refined oils essentially enter the lubricants value chain with a neutral carbon footprint, so they are of great interest to formulators in their decarbonisation journey. However, it needs to be noted that if re-refined oils leave the circular economy and they are used for another purpose, for example, the generation of heat or power, the CO₂ emissions associated with the refined oil will need to be added back into the carbon equation, with appropriate ownership taken within the supply chain.

Q: Is there a process for collecting and recycling synthetic esters, oleochemical esters or natural ester based lubricants ?

Whilst there are some excellent collection and recycling schemes for mineral oil derived lubricants and waste cooking oil, there are no such recycling schemes available for naturally derived lubricants. The volume of ester-based lubricants currently used is a small proportion of the lubricants industry and therefore more complex to set up than collection and recycling schemes for mineral oil-based lubricants and waste cooking oil industry.