

PCF @ Bosch FAQs

- for external use -

Topic	Subtopic	Question	Answer	Links
PCF (Product Carbon Footprint)	Definitions	What is a Product Carbon footprint (PCF)	A Product Carbon Footprint is the sum of all greenhouse gas emissions caused by a product or service over its life cycle, expressed as carbon dioxide equivalent (CO ₂ eq.).	
PCF (Product Carbon Footprint)	Definitions	What includes a "Cradle-to-gate" PCF	Part of a product's full life cycle, covering all emissions caused in the upstream supply chain of a company as well as all emissions resulting from processes within the company until the product leaves the suppliers' gate	
PCF (Product Carbon Footprint)	Definitions	What includes a "Cradle-to-grave PCF"	A PCF covering all emissions over the complete life cycle of a product (incl. use phase and end-of-life).	
PCF (Product Carbon Footprint)	Definitions	How does a PCF differ from an MCF or CCF?	CCF: A Company Carbon Footprint includes all greenhouse gas (GHG) emissions of a company/organisation. This includes emissions from (1) own operations (Scope 1), (2) energy provision, e.g. electricity supply (Scope 2), and (3) the supply chain (Scope 3 upstream) as well as the use and disposal of products (Scope 3 downstream). PCF: A Product Carbon Footprint includes all GHG emissions related to a product including emissions from the supply chain, in-house production and logistics/transport. MCF: A Material Carbon Footprint is a subset of a PCF. It includes GHG emissions from the provision of raw materials (e.g. steel, copper, plastics, ...).	
PCF (Product Carbon Footprint)	Definitions	What are activity data?	Activity data: Data that describe technical processes to enable PCF calculation, e.g. energy consumption per component	
PCF (Product Carbon Footprint)	Definitions	What are emission factors?	Emission factors: Characterize the global warming effect of different GHG emissions in CO ₂ -eq., e.g. GHG emissions per unit of purchased energy or of 1 kg Methane. Unit is always CO ₂ -eq. (eq. for equivalent) to have a common denominator.	
PCF (Product Carbon Footprint)	Definitions	Which cut-off criteria do apply?	For automotive products: The current version of the Catena-X PCF rulebook (or alternative, applicable sector guidance) shall be considered for orientation, knowing that the requirements might not yet fully be addressed. For non-automotive products: The respective leading industry standard. In general, at least 98% of the BOM weight should be covered.	https://catena-x.net/de/standard-library

PCF (Product Carbon Footprint)	Definitions	Can you please clarify the various acronyms (eg. SOP, CPF, etc..). I am not an expert...	SOP: Start of production PCF: Product Carbon footprint Please get yourself familiar with the topic of Product Carbon Footprint calculations and the respective automotive standard, Catena-X.	
PCF (Product Carbon Footprint)	Definitions	Definition Scope 1, Scope 2, Scope 3 ?	see GHG Protocoll -> Link	https://ghgprotocol.org/
PCF (Product Carbon Footprint)	Definitions	Company Carbon Footprint is split into 3 scopes but no PCF. I do not understand what you expect as PCF scope 1, 2 and 3...	PCF consists of the emissions generated in scope 1, 2 and 3. Please get yourself familiar with the topic of Product Carbon Footprint calculations and the respective automotive standard, Catena-X. -> link auf GHG Seite (siehe Zeile 19)	https://ghgprotocol.org/
PCF (Product Carbon Footprint)	Requirements	Why does Bosch require PCF from its suppliers?	<ul style="list-style-type: none"> - Regulatory requirements e.g. EU Battery Regulation, CSRD, etc. - Customer requirements: target values, e.g. max footprint for raw materials or target values for products/components, etc. - Customer requirements for PCF value including outlook for SOP+x years for parts/components - Creating transparency in the context of achieving climate goals (OEMs, Bosch, suppliers) 	
PCF (Product Carbon Footprint)	Requirements	Can you give a little bit of background on all these PCF initiatives?	See Bosch Executive Supplier Call 2024	https://bosch.mediaspace.de/kultura.com/media/t/0_g3hkdbdx
PCF (Product Carbon Footprint)	Requirements	Why do we require PCFs in addition to CDP and SBTi?	CDP + SBTi is used by Bosch to track greenhouse gas reduction targets in the supply chain (Scope 3) on corporate level. However, due to regulatory and OEM requirements, we also need product-specific greenhouse gas emissions. In order to calculate specific PCFs of our products, we also need product-specific PCFs from our suppliers.	
PCF (Product Carbon Footprint)	Requirements	Does Bosch have any special requirements for PCFs that go beyond the standards mentioned?	Bosch is not requiring information that goes beyond what is required in typical standards & norms (or information that will be required in the foreseeable future).	
PCF (Product Carbon Footprint)	Requirements	How binding are the SOP future PCF figures? Considering material and market development - forecasting 5 years of EF development is rather tricky	We know, that data can still change in RFQ-phase but values given should be a conservative estimate. That means, based on today's knowledge the value given should be reasonably reachable with primary data. Also, an impact increase of 5% should be indicated.	

PCF (Product Carbon Footprint)	Requirements	Does Bosch only require a one-time PCF calculation for the product or will this be updated annually?	In new projects, it will become a standard requirement to provide a PCF and to update the PCF on a regular base in the future (once a year or if impact changes of more than 5% occur, acc. To Catena-X)	
PCF (Product Carbon Footprint)	Requirements	What type of documentation or reporting for the PCF does Bosch require?	As per now, fields and content as defined in the SupplyOn PCF App.	
PCF (Product Carbon Footprint)	Requirements	Consequence if PCF data has not been certified?	Currently, a certification is not mandatory, but should be reported (if available) via SupplyON. Target: Certified PCF or Certified Method based on CatenaX Standard for automotive products.	
PCF (Product Carbon Footprint)	Requirements	What should we enter if the requested information is not available within the company, yet, especially regarding the planned data?	We expect to start journey and learning. As we are starting initiative now we recommend also start learning.	
PCF (Product Carbon Footprint)	Requirements	Is it mandatory for all RFQ's because you can have a bench market or first RFQ before sourcing,... in some cases you don't know it yet as production location could be different as original planned	We know, that data can still change in RFQ-phase but values given should be a conservative estimate. That means, based on today's knowledge the value given should be reasonably reachable with primary data. Also, an impact increase of 5% should be indicated.	
PCF (Product Carbon Footprint)	Requirements	Not always the weights are known with first quotes if you make an estimate how to deal with that?	Estimation according official offer.	
PCF (Product Carbon Footprint)	Requirements	Will PCF be required for products already being supplied at some point?	Yes. Bosch starts with new RFQ, later extension to serial supplied parts will be possible Q2/2025.	
PCF (Product Carbon Footprint)	Process	How does Bosch request PCF data from supplier ?	There exists currently two ways to request PCF data from supplier: 1) for new products integrated into RFQC (new additional data fields) 2) for series products through ad hoc request using the SupplyOn PCF App 3) for materials in future "mass upload" using SupplyOn potentially	
PCF (Product Carbon Footprint)	Process	Do we get an email from each customer for them we are supplier in the BOSCH-group to know who of them needs these data of carbon footprint for which product or do we have to fill without any request from customer side?	You will get an RFQ including PCF request on PN level with each new RFQ.	
PCF (Product Carbon Footprint)	Process	Bosch planned go-live date for PCF data collection?	Go Live for each new RFQ by end of January 2025	

PCF (Product Carbon Footprint)	Process	Is this request only for automotive BU Bosch?	Bosch automotive sections starts, later extension foreseeable.	
PCF (Product Carbon Footprint)	Process	How quickly must we add the PCF Data for the regular QRF?	To consider the data PCF must be delivered together with the price RFQ, yearly update expected	
PCF (Product Carbon Footprint)	Process	If you don't have the PCF data on hand, can you submit a bid and then go back and enter the PFC data later?	No. To have the data considered within the sourcing process the PCF must be delivered together with the RFQ.	
PCF (Product Carbon Footprint)	Process	is there a data connection to have this info transferred via IT directly?	Currently Bosch is using SupplyOn as interaction platform. Later IMDS and/or Catena-X may derive as further standards over product lifetime	
PCF (Product Carbon Footprint)	Process	Is it necessary that the supplier has SupplyOn access to answer PCF request?	No. Either supplier will get access as registered SUPO user to the PCF-module or via email link from the RFQ. Both lead to the same PCF module.	
PCF (Product Carbon Footprint)	Process	Supplier PCF data changed (e.g. due to change of green energy mix) -> How should supplier update PCF data for Bosch?	An update of the PCF is required, when the PCF changed by >5% due to changes in the setup. In these cases, an updated PCF shall be provided to Bosch.	
PCF (Product Carbon Footprint)	Process	Can I also send my PCF data to Bosch manually (e.g. by email)?	No for data transparency and consistency only way will be the SupplyOn PCF app. (Also later C-X and IMDS will require Sustainability Input).	
PCF (Product Carbon Footprint)	Process	What is plausibility check?	Plausibility check analyses the data input comparing to a border average values to avoid wrong data inputs.	
PCF (Product Carbon Footprint)	Process	Do we have to fill out for each RFQ or just for each part number? As the data can be subject to change, can we link to a Company homepage?	Yes data need to be provided per RFQ per Partnumber/production location in our database. Provision on homepage would not be sufficient.	
PCF (Product Carbon Footprint)	Process	PCF will depend on the annual quantity required. Do I have to fill PCF for each and every year that a quantity is required for?	PCF update should be given once an increase in impact of +5% occurs. Additionally RFQ / update cycle is expected to be 1 year.	
PCF (Product Carbon Footprint)	Tools	Which LCA (Life Cycle Assessment) tools are available?	Umberto, LCA for Experts, openLCA, SimaPro, etc.	

PCF (Product Carbon Footprint)	Standards	What relevant standards are there or do I need to know?	<ul style="list-style-type: none"> - ISO 14067 (ref. to ISO 14040 & ISO 1044) - Catena-X PCF Rulebook (complemented by Catena-X Data Model) - Battery Directive – Guidance on PCF calculation - TFS (Together for Sustainability) -> Rulebook for chemical industry - ... <p>Note: this is a non-exhaustive list; please check for other applicable sector-specific standards)</p>	https://catena-x.net/de/standard-library
PCF (Product Carbon Footprint)	Calculation	What are BOSCH's requirements for the calculation of PCFs?	We accept recognised standards and methods for the Product Carbon Footprint (PCF) calculation that are based on the international standard ISO 14067 (referring to ISO 14040 and ISO 14044). In addition, depending on the type of product, we request to use sector-specific guidance such as the Catena-X PCF Rulebook for automotive products, which is also based on the mentioned international standards and provides further specifications and enable more comparability between different PCFs.	
PCF (Product Carbon Footprint)	Calculation	We can calculate PCFs according to ISO 14067 (cradle-to-gate). Is this an accepted standard/calculation method, since in our self-adhesive industry there are no sector specific rules or catena-x methodology adopted widely?	The Catena-X (CX) rulebook is the preferred standard in automotive. It is based on the ISO 14067 and will be required in the medium term. Thus, the CX-rulebook in the latest version or an industry standard aligned with CX should be used (e.g. TFS, worldsteel, International Aluminum).	
PCF (Product Carbon Footprint)	Calculation	Can I calculate the PCF from open data sources myself, for example with Excel?	For the Calculation Tool, you are free to chose your preferred solution. Secondary Data sources should be renowned (not chatGPT), aligned with Catena-X requirements.	
PCF (Product Carbon Footprint)	Calculation	What kind of emissions and activities are to be considered in a cradle-to-gate PCF calculation?	<p><u>Major activities and emissions to consider:</u></p> <ul style="list-style-type: none"> - Greenhouse gas (GHG) emissions of purchased materials - GHG emissions of purchased parts/components - (Direct) GHG emissions caused during manufacturing processes - GHG emissions caused by transportation - GHG emissions caused by purchased energy - additional activities as defined by sector-specific guidances such as the Catena-X PCF Rulebook in its current version <p>Note on exclusion of activities and emissions: In general, exclusions shall be avoided as far as possible. However, aligned with the Catena-X PCF Rulebook, some activites may be neglected (e.g., construction of buildings and machines, MAE, etc.).</p>	https://catena-x.net/de/standard-library

PCF (Product Carbon Footprint)	Calculation	What exactly do I need to calculate a PCF?	The Bill-of-Materials (BOM) is typically the basis for PCF calculation. During the PCF calculation the BOM is supplemented by adding information on (i.a.): - information about gross-weight and origin (or even material carbon footprint) of purchased material - information about manufacturing processes: energy demand, amount of consumables, direct emissions... - information about transport & packaging: Packaging type, weight, amount of km and vehicles on each transportation step - Energy carriers and GHG emissions caused by purchased energy: CO2-eq/kWh (for heat & electricity)	
PCF (Product Carbon Footprint)	Calculation	May I please enquire on where we can retrieve Scope 3 upstream emissions data? From my understanding, the majority of Southeast Asian manufacturers do not report Scope 3 emissions today. Perhaps we can make this a non compulsory input.	Suppliers are obliged to determine emissions throughout their supply chains. First get data from your supply chain (primary data) if not available secondary data (databases) may be used but must be indicated (primary/secondary-share).	
PCF (Product Carbon Footprint)	Calculation	If we only have the global PCF values and it the ones linked to Scope 1, 2 and 3, how can we fill in the survey?	Please get yourself familiar with the topic of Product Carbon Footprint calculations and the respective automotive standard, Catena-X. Thereby, suppliers are obliged to determine emissions throughout their supply chains. First get data from your supply chain (primary data) if not available secondary data (databases) may be used but must be indicated (primary/secondary-share).	
PCF (Product Carbon Footprint)	Calculation	What can be the consequences if the data is not 100% correct and it turns out afterwards that it needs to be adjusted?	We know, that data can still change in RFQ-phase but values given should be a conservative estimate. That means, based on today's knowledge the value given should be reasonably reachable with primary data. Also, an impact increase of 5% should be indicated.	
PCF (Product Carbon Footprint)	Calculation	We can only estimate the CO2 output, before we manufacture the product, how exact must this data be?	We know, that data can still change in RFQ-phase but values given should be a conservative estimate. That means, based on today's knowledge the value given should be reasonably reachable with primary data. Also, an impact increase of 5% should be indicated.	
PCF (Product Carbon Footprint)	Calculation	What if we have no PCF Data available? e.G. for Standard Catalogue products? Or if we are still on Scope 1 and Scope 2 Level?	We expect to start the journey and learning. As we are starting initiative now we recommend also start learning. Suppliers are obliged to determine emissions throughout their supply chains. First get data from your supply chain (primary data) if not available secondary data (databases) may be used but must be indicated.	
PCF (Product Carbon Footprint)	Calculation	Is there comparative data for certain processes such as hardening or raw materials or similar?	Yes, but will be not provided by Bosch.	
PCF (Product Carbon Footprint)	Calculation	If we do not have or know the PCF scope #'s we can receive that information from our customers ?	Suppliers are obliged to determine emissions throughout their supply chains. First get data from your supply chain (primary data) if not available secondary data (databases) may be used but must be indicated (primary/secondary-share).	
PCF (Product Carbon Footprint)	Calculation	How to account for emissions related to scrap, wastewater and waste treatment?	Emissions from treatment of waste, scrap, and wastewater shall be accounted for in all PCF calculations. Note: The Catena-X PCF rulebook requires the application of the cut-off logic. Accordingly, all output streams with a significant economic value are considered recyclable materials and therefore no emissions from their treatment have to be accounted for in the producing system (upstream impact of the corresponding materials shall be considered nevertheless.).	
PCF (Product Carbon Footprint)	Calculation	What means primary/secondary data in the context of PCF calculation?	Primary data is a quantified value of a process, or an activity obtained from a direct measurement, or a calculation based on direct measurements. Secondary data can include data from databases and published literature, default emission factors from national inventories, calculated data estimates or other representative data.	

PCF (Product Carbon Footprint)	Calculation	Requirements regarding primary/secondary data share?	Currently, Bosch has no specific requirements, but E21 is that primary data share is as high as possible. For a start, it is possible focus on GHG-intensive components and ensure that Scope 1&2 is primary data or at least supplier-specific (e.g. emission intensity of supplier specific electricity supplier)	
PCF (Product Carbon Footprint)	Calculation	How long does it take to calculate a PCF?	The time to calculate a PCF can vary substantially - it depends on the product under study. Typically, data handling and collection is the most time-consuming phase.	
PCF (Product Carbon Footprint)	Calculation	Where do I get secondary data (emissions data) for the calculation?	<p>Emissions factor data can be taken from various sources. Typical examples include ecoinvent, Sphera MLC, Carbon Minds, etc.</p> <p>In addition, secondary data are available from industry associations (e.g., Plastics Europe, World Steel Association, etc.) and public authorities (e.g., ProBas, published by German Umweltbundesamt, Defra, GREET, etc.).</p>	<p>https://ecoinvent.org/</p> <p>https://sphera.com/life-cycle-assessment-lca-database/</p> <p>https://plasticseurope.org/sustainability/circularity/life-cycle-thinking/eco-profiles-set/</p> <p>https://worldsteel.org/steel-topics/life-cycle-thinking/lca-lciform/</p> <p>https://www.probas.umweltbundesamt.de/</p>
PCF (Product Carbon Footprint)	Calculation	How to account for emissions that cannot directly be assigned to the product (e.g. energy of a production line)?	So far, there is no clear guidance available. However, this is currently in preparation, e.g. in CatenaX. Until a final recommendation is available, allocation based on reasonable, individual rules. E.g. production space, production cost...	
PCF (Product Carbon Footprint)	Calculation	What is the Primary Data Share (PDS)? Does this have to be calculated?	The Primary Data Share indicates the share of the PCF that was calculated using primary data. It shall be calculated and reported for a Catena-X Rulebook compliant PCF.	https://catena-x.net/fileadmin/user_upload/Standard-Bibliothek/Update_September23/C
PCF (Product Carbon Footprint)	Calculation	Who can support me with the PCF calculation	<p>A wide range of PCF consultancy. This includes i.a.:</p> <ul style="list-style-type: none"> • TÜV Süd • TÜV Rheinland • DFG • ClimatePartner • DEKRA • DNV • Shenzhen CTI International Certification Co., LTD • Arqum consulting Stuttgart • iPoint • GreenDelta 	
PCF (Product Carbon Footprint)	Calculation	I have no experience in the calculation of a PCF. Where do I get basic information?	There is a wide range of webinars available. One of them is the <i>Product Life Cycle Standard Online Course</i> offered in the context to the GHG protocol initiative. Another one a webinar offered via EDX. In addition, an online training is available via the Catena-X Academy	<p>https://ghgprotocol.org/product-life-cycle-standard-online-course;</p> <p>https://www.edx.org/learn/climate-change/the-university-of-</p>

PCF (Product Carbon Footprint)	Calculation	Which chain of custody models according ISO 22095 are allowed to allocate CO ₂ eq reduced materials to individual outputs?	Chain of custody models help to fulfill diverse customer requirements via Mass Balancing or Book and Claim. Chain of custody models are accepted if complying with external frameworks and norms (e.g., ISO 22095:2020; ISO/TC 308) as well as customer requirements (boundary conditions).	
PCF (Product Carbon Footprint)	Calculation	Can we really neglect the packaging CO ₂ footprint ? Reusable containers may have a clearly different footprint than discartable packaging ? Do you really not expect to obtain the impact of the packaging ?	Packaging should be included according to Catena-X rulebook, but cut-off rules can be applied, e.g. if the impact of packaging is below 3%	
PCF (Product Carbon Footprint)	Calculation	Our PCF's for the same item delivered to Bosch has always a different PCF value according to the production lot size. E.g. the PCF per piece or kg finished product is ten times higher if we only deliver 100 pcs or if we deliver 50.000 pcs. How can we deal wiht this fact if the Bosch item code is the same?	The PCF on PN level should be same, hence we are requesting the PCF on PN level.	
PCF (Product Carbon Footprint)	Calculation	If the PCF values will be used for benchmarking, how can you be sure that the provided values are comparable and if is fair to do so?	We know that different calculations methods can apply. For this reason, Bosch highly recommends to conduct the PCF calculation in accordance with the Catena-X (CX) rulebook (latest version), and CX certification is recommended once available (as CX is also aligning with other industry-standards like worldsteel, TFS).	
PCF (Product Carbon Footprint)	Certification	Does PCF data and/or calculation methodology need to be certified?	Currently, a certification is not mandatory, but should be reported (if available) via SupplyON. Target: Certified PCF or Certified Method based on CatenaX Standard for automotive products.	
PCF (Product Carbon Footprint)	Certification	Which organisations are available for the certification of PCFs?	A wide range of certification bodies exists. This includes i.a.: <ul style="list-style-type: none"> • GUTcert • TÜV Süd • TÜV Rheinland • DFGE • Carbon Trust • DEKRA • DNV • Shenzhen CTI International Certification Co., LTD 	
PCF (Product Carbon Footprint)	Certification	Which certified calculation methods are recognized by Bosch?	- ISO 14067 (ref. to ISO 14040 & ISO 1044) - Catena-X PCF Rulebook - Battery Directive – Guidance on PCF calculation - TFS (Together for Sustainability) -> Rulebook for chemical industry	
PCF (Product Carbon Footprint)	Sourcing	What sourcing relevance does PCF have for our customers?	First customers are already demanding PCF and/or commitment to (material) carbon footprint targets in order to participate in sourcing -> expected to become the standard in future	
PCF (Product Carbon Footprint)	Data	What happens with the suppliers' PCF data?	Used for further PCF calculations (internal + external). We don't pass on supplier PCFs to OEMs directly, but only in an aggregated form, if we don't have permission to do otherwise.	

PCF (Product Carbon Footprint)	Data	How you are processing this data and what are your goals to achieve?	Datas are processed to caclulate the Carbon Footprint of Bosch products and to derive further measures improving CO2 footprint	
PCF (Product Carbon Footprint)	Data	Are PCF data stored at Bosch? How long ?	Storage at Bosch internal database (e.g. EcoCube) -> unlimited due to compliance/auditing reasons.	
PCF (Product Carbon Footprint)	Data	How long are submitted PCF data valid / after what timeslot will be an update requested by Bosch	Bosch will request an update usually after each year. If the impact changes significantly (>5%), it should be sent by default.	
PCF (Product Carbon Footprint)	Data	How often does the information need to be updated? f.e. By constructive changes or regularly every 2 years?	According to the Catena-X (CX) rulebook, in terms of changes of +5% impact an update should occur, otherwise once per year in series.	
PCF (Product Carbon Footprint)	Data	How is the confidentiality of PCF data ensured (data security)	Ensured via NDA between delivering Company and Bosch. SupplyOn is a service provider for Bosch where confidentially is assured for your data in all cases.	
PCF (Product Carbon Footprint)	Data	Is there a history of the data entered in case the customer requirements change during the enquiry process?	yes	
PCF (Product Carbon Footprint)	BatVO	According to the EU Battery Directive, what does the battery contain?	Please refer to information published by the European Commission: Fig. 1 (p. 14) in https://eplca.jrc.ec.europa.eu/permalink/battery/GRB-CBF_CarbonFootprintRules-EV_June_2023.pdf	https://eplca.jrc.ec.europa.eu/permalink/battery/GRB-CBF_CarbonFootprintRules-EV_June_2023.pdf