



# Nordic Climate Forum for Construction 2024

Summary

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# Foreword

The Nordic Climate Forum for Construction in September 2024 in Malmö clearly highlighted how the Nordic region is simultaneously strengthening internal collaboration in meeting future climate related requirements.

The Nordic countries, Estonia and the EU Commission all shared the latest news and lessons learned on how to regulate the climate impact from new constructions, while Nordic authorities and industry stakeholders presented and discussed how new climate requirements effects the industry.

This report contains the answers on the questionnaire at the round table discussions at the Forum. The results are also commented shortly by the authorities.

The host of The Nordic Climate Forum for Construction 2024 was the Swedish National Board of Housing Building and Planning (Boverket). Head of unit Lena Hagert Pilenås at Boverket was responsible for the assignment at Boverket. Kristina Einarsson at Boverket was the project manager, and other contributors from Boverket included, Cathrine Engström, Thomas Johansson and Erik Olsson.

The Forum was arranged in Collaboration with Nordic Sustainable Construction. From the Nordic countries the following people participated in the arrangement; Helle Redder Mømsen and Mads Simonsen from the Danish Authority of Social services and Housing, Maria Tiainen from the Ministry of Environment in Finland, Elín Þórólfsdóttir from Housing and Construction Authority of Iceland, Ingunn Marton from Norwegian Building Authority and Hannamary Seli from Ministry of Climate of Estonia.

Karlskrona October 2024

Lena Hagert Pilenås  
Head of unit

# Content

Summary .....	5
Introduction and background.....	6
Results from the questionnaire.....	7
Round table discussion 1 Nordic harmonisation .....	7
Round table discussion 2 Input EU regulation .....	10
Open answers.....	17
Round table discussion 1 Nordic harmonisation .....	17
Round table discussion 2 Input EU regulation .....	30
Conclusions and comments .....	50
Annex 1 Program .....	51

# Summary

The Swedish National Board of Housing, Building and Planning in Sweden and the Nordic Sustainable Construction program invited the construction industry and construction authorities in the Nordics to the sixth Nordic Climate Forum for Construction that took place in Malmö on September 11, 2024. The structure of the Forum consisted of presentations in the morning and round table discussions in the afternoon. All together 174 people was taking part of the presentations in the morning.

At the roundtable discussions, 66 people from the authorities and from the Nordic construction value chain discussed what to focus on in our continued work for Nordic harmonisation of regulation. After the round table discussions, 60 people answered a questionnaire. In this report you find the result from the questionnaire.

Generally, the answers given to the open questions show a high degree of variation, and sometimes with opposing views. It shows that introducing regulation on climate impact calculations are complex. This is also the challenges the Nordic building authorities face in the efforts to harmonise the regulations. Taking different stakeholders view into account when designing regulations is therefore very important, to design cost-effective requirements.

Some commented that we should not work with harmonisation in the Nordics but focus on the EU. In the report it is highlighted that our aim in the Nordic harmonisation work is to contribute with our experiences from the Nordics to upcoming EU regulation. The Nordic authorities see it as important to influence future EU regulations. That was also one of the purposes with the Forum.

# Introduction and background

The Swedish National Board of Housing, Building and Planning in Sweden and the Nordic Sustainable Construction program invited the construction industry and construction authorities in the Nordics to the sixth Nordic Climate Forum for Construction that took place in Malmö on September 11, 2024. At the Forum, 66 people participated on site. The presentations in the morning were streamed and 108 people participated online. All together 174 people was taking part of the presentations in the morning. The recording and presentations can be found at Nordic Sustainable Constructions webpage<sup>1</sup>. The program for this year's Forum can be found in Annex 1.

Nordic countries are in the frontline globally in efforts to mitigate the climate change. Activities in the construction and real estate sector give rise to a large part of the climate emissions. Therefore, the green transition of the building sector is high on the agenda, and development of building regulations concerning climate emissions based on life-cycle assessments is ongoing in all Nordic countries, Estonia and beyond.

Read more about the Nordic collaboration in the roadmap “[Harmonising Nordic Building Regulations concerning Climate Emissions](#)” published in 2023. The roadmap sets out three strategic aims that pave the way for future collaboration on implementing climate declarations as a common starting point. The roadmap also gives an overview of the national carbon goals and time frames for introducing and developing regulation on climate emissions of buildings, and it outlines which modules are included in life cycle assessments in each Nordic country. Note that the latest update can be found from the presentations at the Forum in Malmö 2024.

The work package “[Nordic Harmonisation of Life Cycle Assessment | Nordic Sustainable Construction](#)” works towards harmonising normative methods for building life cycle assessments (LCAs) in the Nordic countries so that design and construction companies will be able to offer low carbon solutions in all the Nordic countries. As a result of the work package, there are now several reports, published during 2024, as knowledge base for the continued work with Nordic harmonisation.

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<sup>1</sup> <https://www.nordicsustainableconstruction.com/events/2024/september/ncfc-2024>.

# Results from the questionnaire

The structure of the Forum consisted of presentations in the morning and round table discussions in the afternoon. At the roundtable discussions the authorities and stakeholders from across the Nordic construction value chain discussed what to focus on in our continued work for Nordic harmonisation of regulation. After the round table discussions, they answered a questionnaire. In this chapter you find the result from the questionnaire presented.

The number of participants at the Forum was in total 66 persons. Answers on the questionnaire was given from 60 participants at the Forum, where 30 was from the industry, 20 from the authorities and 10 was researchers.

You find the results presented with a figure and short comments from the authorities. The open answers are found in the chapter “Open answers”. They are edited slightly only to increase the readability.

## Question – which category do you belong:

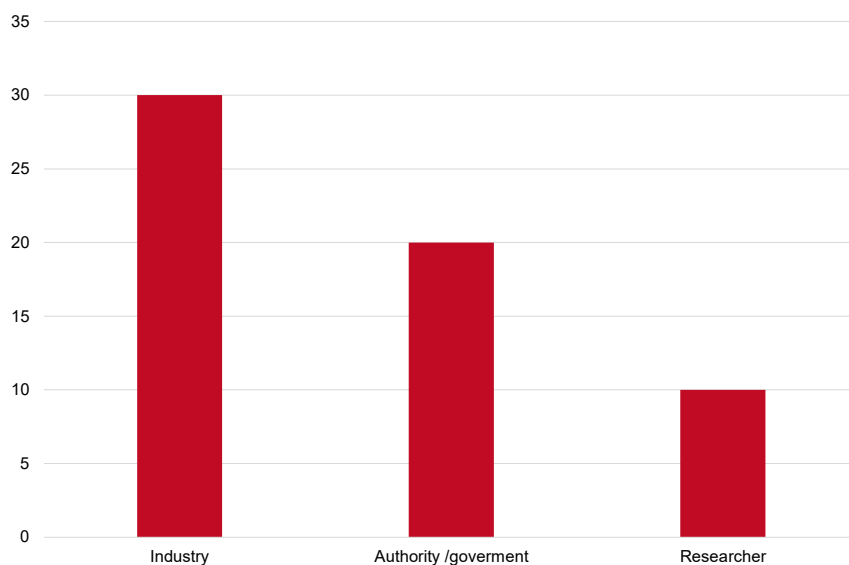


Figure 1. The number of participants at Nordic Climate Forum for Construction on 11 September 2024 in Malmö, from the industry, authority/Government and research.

## Round table discussion 1 Nordic harmonisation

### What to focus on in our continued work for Nordic harmonisation of regulation?

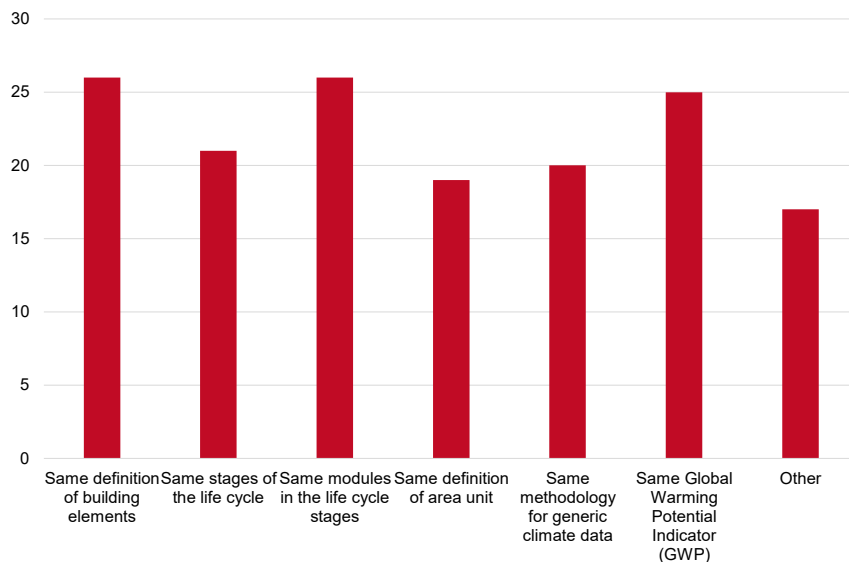
The Nordic countries have worked for harmonise regulation of climate impact in the Nordic region during several years. The harmonisation efforts have for example included collaboration on databases with generic

climate data, calculation methodology e.g., reference study period and calculation tools and how to manage reused construction products.

It is important that Nordic harmonisation makes it easier for the developers (and other stakeholders in the construction sector) to work in different Nordic countries. It is also important that regulation does not result in unreasonable administrative burden. Views and comments on the following questions from the Forum will be valuable in the continued Nordic harmonisation efforts with regulation on climate impact.

### Question 1.1

Which of the following is the most important to achieve Nordic harmonisation of regulation about climate impact (in near future)? Choose the three most important alternatives.



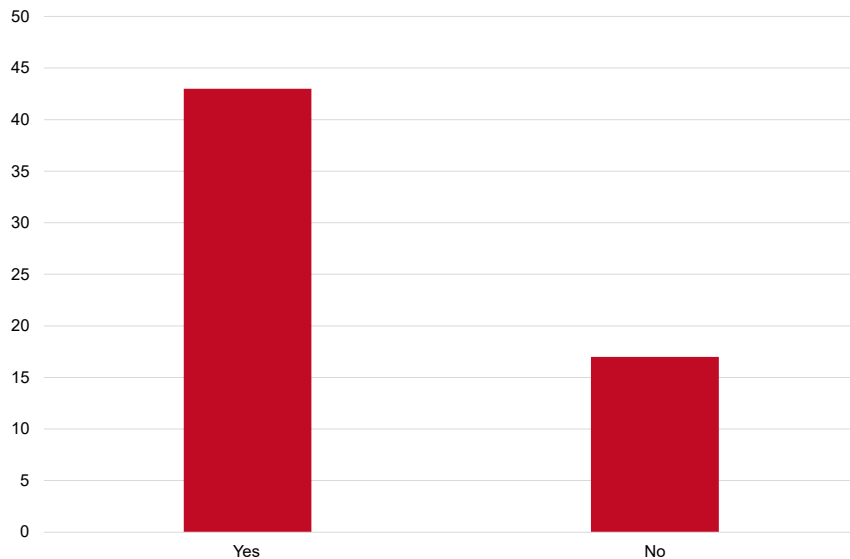
### 1.1 Comments from the authorities

All the alternatives have been chosen as important to harmonise. But the following three categories are the most important – same definitions of building elements, same modules in the life cycle stages and same Global Warming Potential indicator (GWP).

### Question 1.2

If you do not use product specific data, it is possible to use generic data. The values for the generic climate data in the Nordic countries are conservatively set, which means that the value is set higher than the average of the value calculated for the product group. Is it important to have the same conservative methodology for setting generic data (i.e. 20 % or 25 %) in the Nordic countries?



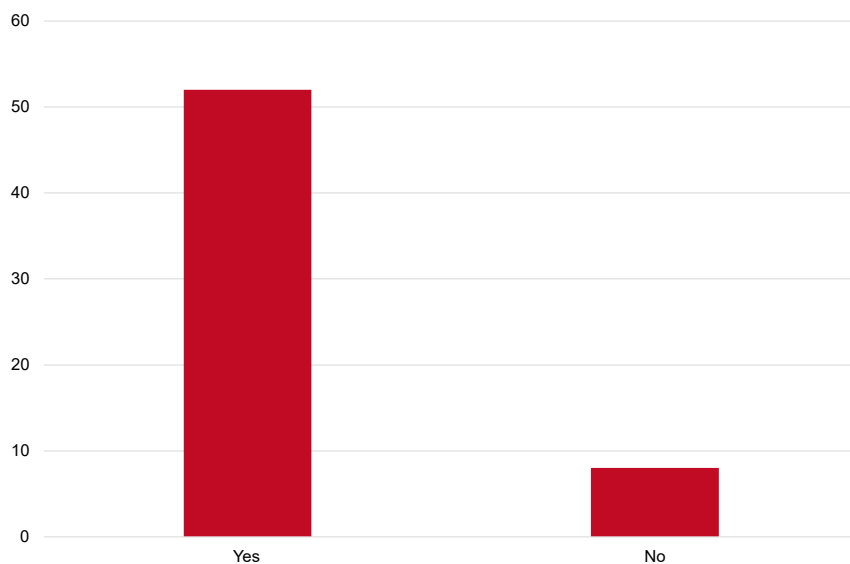


### 1.2 Comments from the authorities

A clear answer to have the same methodology for generic data in the Nordics.

#### Question 1.3

Do you think that the Nordic countries should use the same GWP indicator? (Note: the two indicators currently in use in the Nordic countries are GWP-total and GWP-GHG. GWP-total is the sum of GWP-fossil, GWP-biogenic and GWP-luluc [land use and land use change]. GWP-GHG is the sum of GWP-fossil and GWP-luluc.)

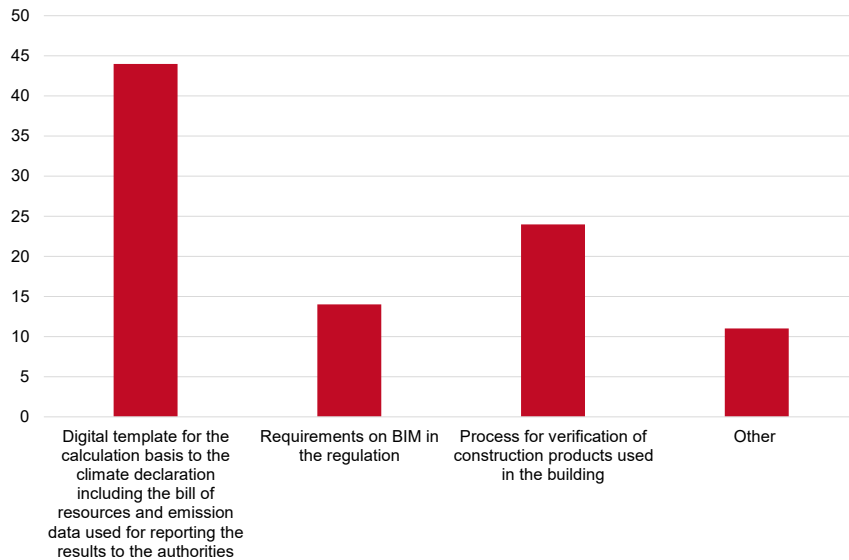


### 1.3 Comments from the authorities

Very clear answer to have the same GWP indicator.

**Question 1.4**

Increased digitalisation could help to decrease the cost of calculating climate impact (administrative burden). Which of the following is the most important to achieve increased digitalisation in Nordic harmonisation of regulation about climate impact (in near future)? More than one alternative is possible to choose.

**1.4 Comments from the authorities**

The template for the calculation basis should be harmonised. The verification process is also important. Less important is requirements on BIM.

**Round table discussion 2 Input EU regulation****What is important input from the Nordic countries for EU regulation?**

The Energy Performance of Buildings Directive has been revised. Article 7.2 requires that life-cycle GWP is calculated (a) from 1 January 2028, for all new buildings with a useful floor area larger than 1.000 square meters, and (b) from 1 January 2030, for all new buildings.

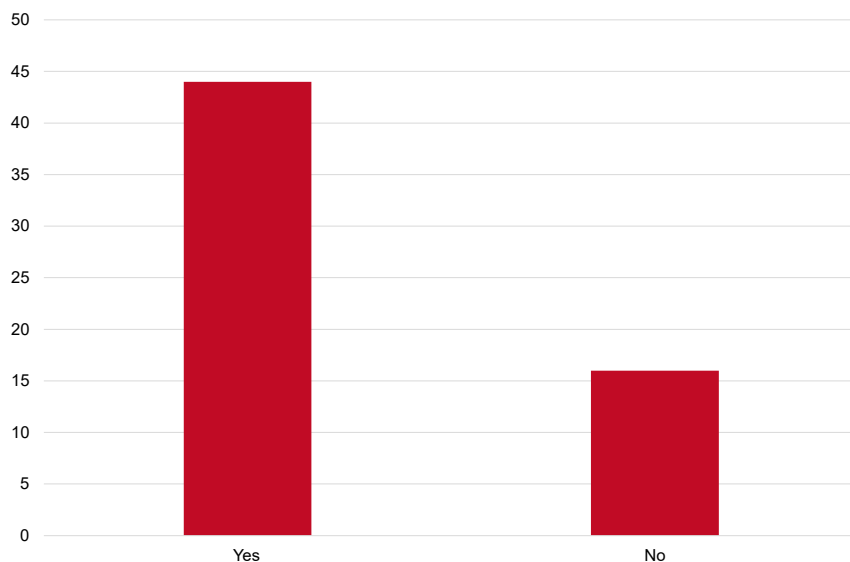
By 1 January 2027, Member States must publish a roadmap detailing the introduction of limit values for GWP with targets for new buildings from 2030.

The Commission will adopt a delegated Act by 31 December 2025. That will set out a Union framework for the national calculation of life-cycle GWP. It is important that the Nordic countries provide input into the work on the delegated Act. The Nordic countries are front-runners in regulating the climate impact of buildings and have important experience from the application of their rules which could help the Commission. It is

also important that EU regulation does not create issues for countries that have been early to introduce climate impact rules.

### Question 2.1

Climate declaration – Should legislators in the Member States have the possibility to decide which modules to include in the regulation according to EN 15978, based on a cost-benefit analysis and other national conditions?

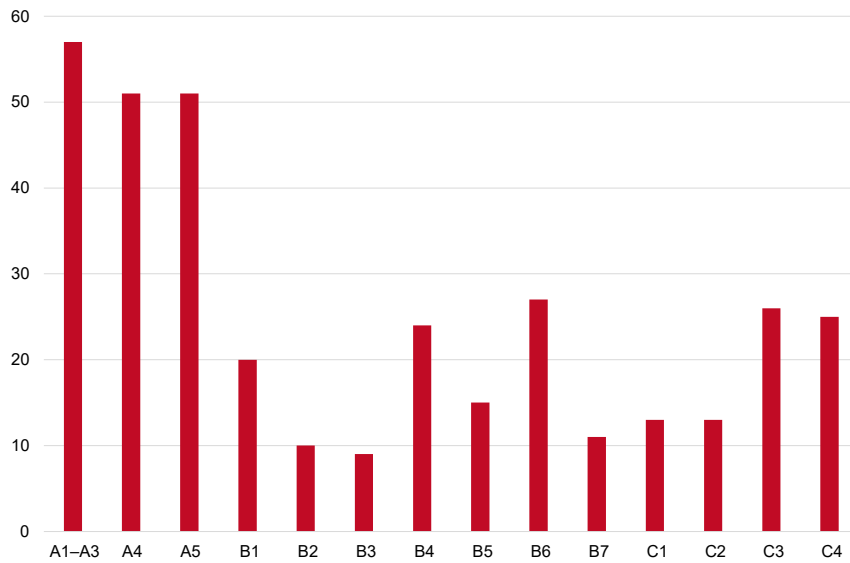


### 2.1 Comments from the authorities

Very clear that member states should have the possibility to decide which modules to include in the regulation. Answers to question 2.2 shows the most important modules. See also the answers in question 1.1 what we should aim for Nordic harmonisation of the modules.

**Question 2.2**

Limit value – Which modules are important to include when Member States introduce limit values for climate impact?

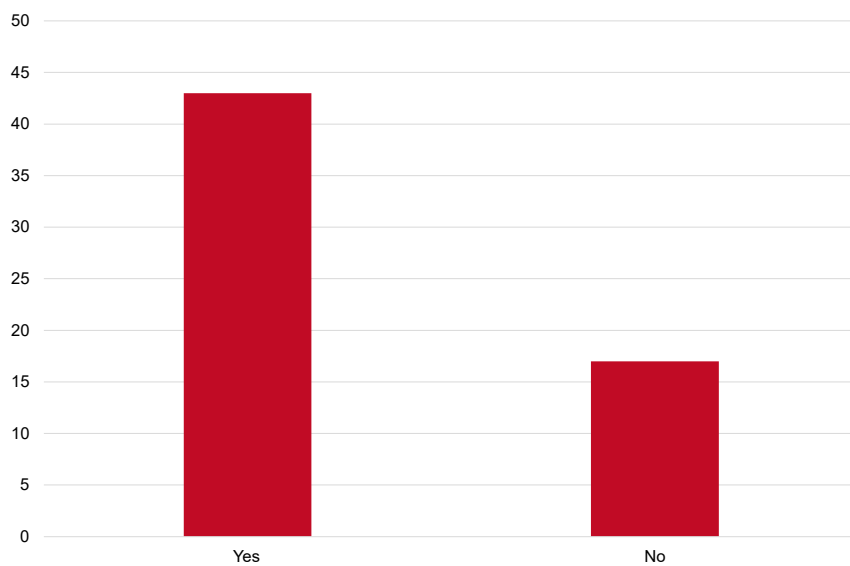


**2.2 Comments from the authorities**

It is a clear signal that the most important modules to include in limit values are A1–A5. When the scope is extended the next modules that are pointed at are B4, B6, C3–C4. It is interesting that a third has also pointed out to include module B1, which is quite unusual to be mentioned in connection with regulation.

**Question 2.3**

Is it important to declare the climate impact divided into different building elements in the climate declaration?

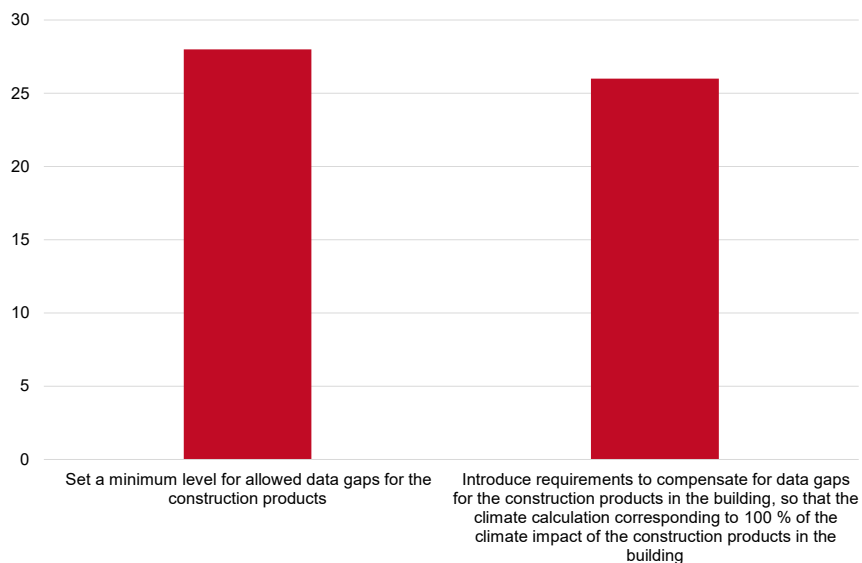


### 2.3 Comments from the authorities

It is a clear signal to declare GWP into different building elements in the climate declaration.

#### Question 2.4

How should you handle data gaps for the building elements and technical equipment (construction products) that cannot be calculated? For example, because of lack of quantities or climate data (generic or product specific data). More than one alternative is possible to choose.

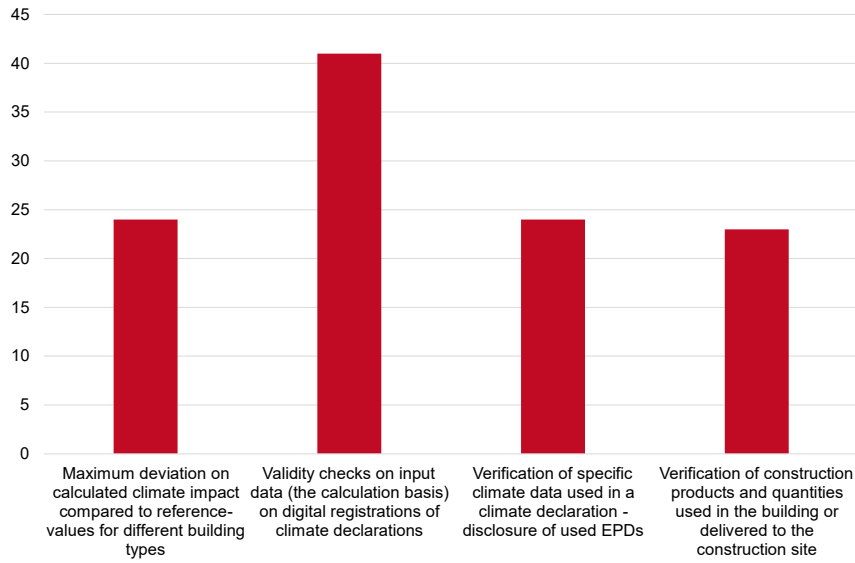


### 2.4 Comments from the authorities

Almost half of the answers says that a minimum level of data gaps should be set and to compensate for the data gaps. Many persons have left comments on other alternatives that we need to look closer into.

#### Question 2.5

What level of control of the calculation of GWP should be done by the authorities, including when limit values are applied? More than one alternative is possible to choose.

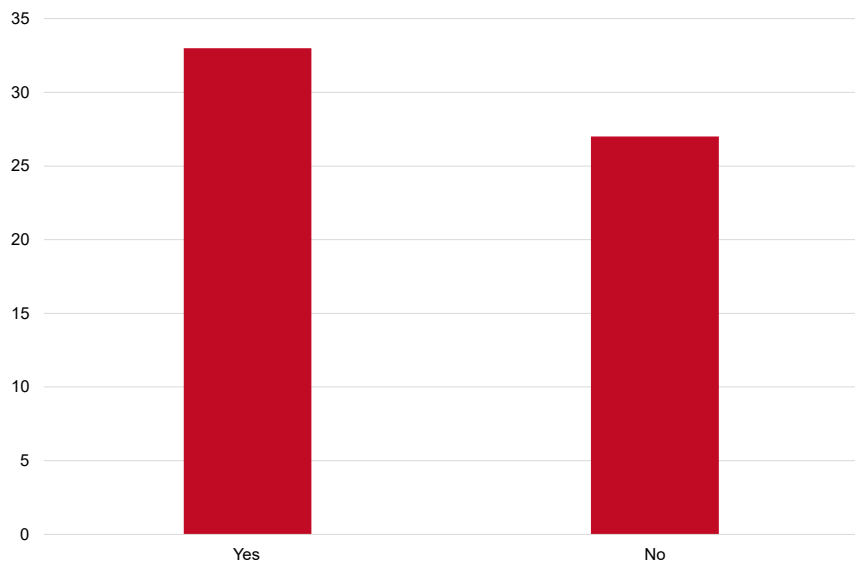


### 2.5 Comments from the authorities

A clear signal to make at least validity checks of registered climate declarations.

**Question 2.6**

Should we have a unified labelling of building elements and technical systems of a building (classification system) within the EU?

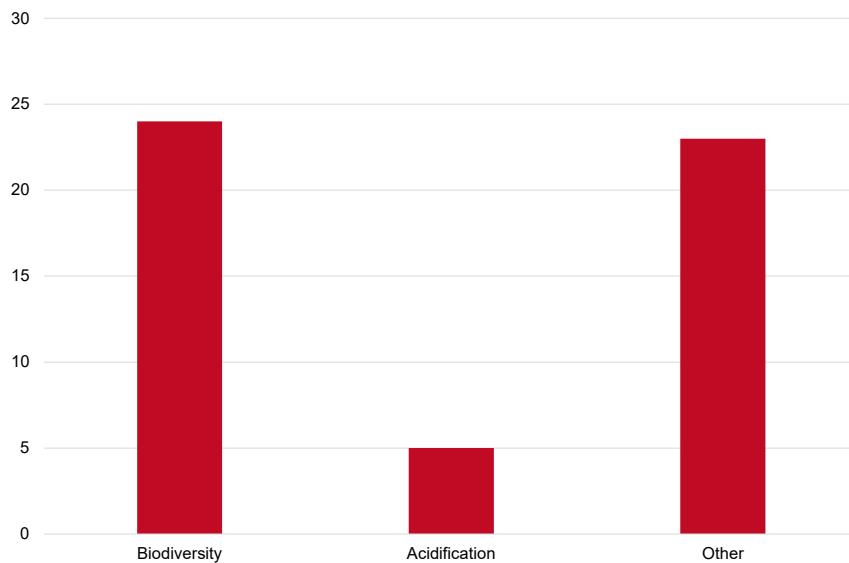


### 2.6 Comments from the authorities

Slightly more answer that we should have a unified labelling of building elements and technical systems of a building (classification system) within the EU.

**Question 2.7**

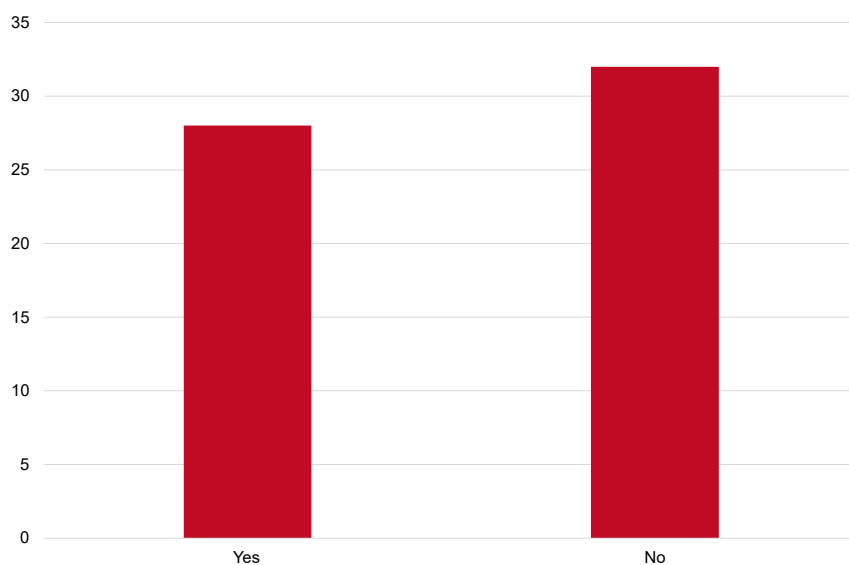
Are there other indicators we should consider a harmonised approach to?  
More than one alternative is possible to choose.

**2.7 Comments from the authorities**

We need to take a closer look at the open answers before any comments can be given since so many have given open answers.

**Question 2.8**

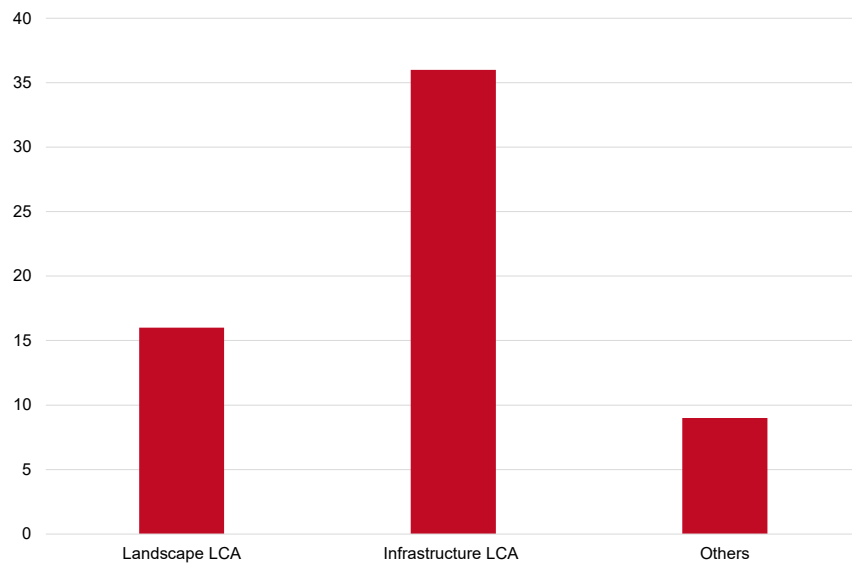
Do you have other proposals for Nordic harmonisation of regulation on climate impact for buildings?

**2.8 Comments from the authorities**

We need to have a closer look at the open answers.

**Question 2.9**

Should we work with Nordic harmonisation of calculation methodologies for LCA in the following areas:

**2.9 Comments from the authorities**

The interest for Nordic harmonisation of infrastructure LCA is high. We need to look closer on the open answers also.



# Open answers

## Round table discussion 1 Nordic harmonisation

### What to focus on in our continued work for Nordic harmonisation of regulation?

#### Question 1.1

Which of the following is the most important to achieve Nordic harmonisation of regulation about climate impact (in near future)? Choose the three most important alternatives.

#### Open answers, other proposals:

- Most important to harmonize the structure of digital GHG-information, and to develop common PDTs for the different product groups. We need to create a common digital highway for EPD information in the Nordic countries.
- It is not possible to choose three - All definitions, modules etc must be similar if it should be possible to compare. This do not necessary says that the regulations and its limits need to be the same in different countries. If the Nordic countries are the first complete this harmonisation it is easier to take this to EU
- I question whether Nordic harmonisation is even possible when each country has their own building codes and standards. Harmonisation, where possible should be at the EU level. Also, is this harmonisation of methods or system boundaries?
- No more work om harmonisations needed. Put all efforts into helping EU to make a good and not to complicated GWF factor.
- Important to harmonize all aspects. Important to separate biogenic car-bon. Important to separate the ground works including piling, otherwise it will be very different to introduce meaningful limit values.
- Important to report the different life cycle stages/modules separately, to making inspection and bench marking possible.
- We need to be able to compare across the countries and therefore using the same methodology and same global warming potential is a must in order to compare apples to apples. It would be interesting to compare 1000 m2 of office building in Norway to one in Sweden. Is there any difference between them - and why is that, where does that difference come from?

- Same GWP is very important, however, if we harmonise the stages (all included, which is implied in EPBD) and even better modules, then the total result will be almost the same regardless of whether we use GWP total or GWP-GHG
- Avoid exceptions, like A1–A5, but without biogenic carbon. Better than to say A1–A5 and C3–C4.
- According to the EPBD all the LCA stages needs to be included.

### Question 1.2

If you do not use product specific data, it is possible to use generic data. The values for the generic climate data in the Nordic countries are conservatively set, which means that the value is set higher than the average of the value calculated for the product group. Is it important to have the same conservative methodology for setting generic data (i.e. 20 % or 25 %) in the Nordic countries?

#### Open answers, please give reasons:

- Important that this is streamlined so comparison is enabled. Big co-operations might exploit different generic data across the countries. Transparency.
- Generic data is especially important if LCA calculation is conducted in the building permit phase when actual products to be used are not known.
- Yes, but this is not a very important issue. The main goal should be to promote the use of product specific product information, and I find the development of generic data to be a sort of hindrance for this.
- As a priority and important to have the same methodology to be able to compare the same thing – if it should be a conservative methodology may be discussed.
- Specific data should always be used for as built, without any added conservative values to give a true picture of emissions.
- This will lead to greater comparability of limit values, climate impacts and most of all identical incentives for manufacturers to publish EPDs.
- Not very important as with CPR and EPBD comes the necessity to calculate the actual values.
- It's important to have the same methodology either way. I don't agree with it being conservative but if that's the way we decide to go it should be similar.
- It's important to reduce the room for errors and to be able to compare apples with apples.

- No. This question has different reasons depending on the product group.

For products used for building services it is important to have good generic data available. The amount of different product categories is big, and it is unfeasible to have an EPD for each group separately. It would be nice to have same conservative factor in all countries, but one can live with different factors as well as long as the factor used is known. So, it is not important to have the same factor, just helpful.

Secondly, for “heavy” construction products the target should be to have accurate values for emissions. One can think that 10 -20 % of products used in construction cause 80 - 90 % of embedded emissions. For these 10 – 20 % the aim should be to assess the emissions as accurately as possible, for instance, with as built data when available reliably. As the main part of the emissions comes from the “heavy products” the answer is no. It is more important to assess the main parts accurately.

I cannot think of a reason why not harmonise here.

- Conservative values for generic data are recommendable but necessary from harmonisation perspective since it is a policy choice.
- I think it's better if the generic data reflect the average of the top 3 performing Nordic suppliers (many material producers are multinational), without any buffer.
- I think it is not that important to harmonize conservative methodology. More important is to set generic data that enhance the industry to do EPDs.
- Possible to compare.
- It's ok not to have same margin, as long as it's transparent how big is the margin.
- If someday, the aim is to compare LCA results (where generic data is allowed) between Nordic countries, it would make sense to have the conservative values approximately the same. If this is not the aim, then it doesn't matter whether it is 20 or 25%.
- Conservative generic data can be a good tool for creating an incentive to use product specific data, but the "level of conservativeness" should be the same. This to make sure that it will not lead to unfair competition.
- There will be a lot of variation anyway, depending on the current market in each country, anyway. In Norway there is no practice of conservative calculation.
- Everything that means more harmonized calculation is important.

- It is important to ensure consistency and comparability. Ensures fairness across borders and enables a more harmonized approach to both reporting and compliance.
- Conservative generic data is misdirected. Focus should be on direct measures on providing actual EPDs digitally and machine readable.
- Yes, in the yearly take is it important, but when the amount of EPD used for calculation for A1–5 is more than 80% I think that generic data shall take the conservative part away.
- If possible.
- It's good to have same, but not important since %-surcharge is easy to deduct/adjust (as long it is transparent what value was used).
- Then it is possible to compare between the countries.
- It should be easy to do in the same way. The conservative data makes it very hard to compare results.
- The same value will create better transparency.
- It could be preferable if the calculation will sum up the amount (%) of use of generic vs. specific data. This in order to measure how the development is performing. The goal is to have only use of specific data.
- The generic factors often already include a conservative choice about not using the most low-carbon materials within a product groups. Hence, the general data are representative of the model conventional (or climate wise worst) materials. Adding factors will serve to make the generic data even worse, but it will also remove the credibility and validity of the data. Hence, having similar conservative selection as part of creating the generic values would be beneficial. I.e. using the same criteria for selecting the dataset used for creating the generic value for a product group.
- The generic data will differ anyway due to generic values being calculated using country specific EPDs.
- Det borde inte finnas skäl till att vi har olika påslag inom Norden.
- The same methodology should be used in the Nordic countries. The use of these conservative values will clearly have a greater affect market decarbonization by incentivizing both the use and production of product specific EPDs when limit values are introduced.
- Would be more transparent. Same frequency for updating the generic values should also be something to discuss about.
- Not necessary to compare between countries - is it?

- That would leave out one more uncertainty, between the Nordic countries.
- Maybe it's not as important to have commonality in the generic data as the generic data should be used to a large extent in earlier processes i.e.. building permits. As the process moves on the calculation should be based to a larger extent on specific data i.e.. EPDs and therefore already be harmonised before final notice.
- It is good that the generic data is conservatively set as it encourages EPD production, but it would be good to have a common method. The best methodology would be the Danish one where the factor is calculated for based on deviation. This would treat different materials more fairly as the deviations are quite different for different material types.
- I don't really like the conservative value. Our customers want calculation without it and our suppliers mostly compare their values to the nonconservative value.
- To increase the similarity of results of climate calculations
- if the goal is to harmonise, this could be a relevant aspect to consider, e.g. using the same methodology. however, there will still remain differences such as buildings energy consumption, emission factors that will prevent 100% harmonisation.
- It should be 25 % for all Nordic countries (and I support setting conservative values) for generic data.
- Generic data is a good start in every case - and gives a possibility to enhance building projects & material /element industries - first in the Nordics & Estonia - later in Europe?
- It is a easiest to harmonize in the Nordic countries. Does not have impact on national conditions.
- There is no argument for doing different across countries. Although we tend to go away from generic data and use specific data on projects.
- It is better to have the same methodology, but the most important is that the generic values have a conservative value, thus the incentive for using specific data is there.
- We have not discussed this in detail, but I would say that it is important that we use data who contribute to fair international competitiveness, not only within Nordic countries but also in EU and in trade with the rest of the world.

- Would be good I think if possible but not super important. It is important to ensure it is transparent though, to be able to understand if it might impact the results when comparing similar case studies.
- To avoid cherry picking the best values based on nothing it is good to use generic data, when often the specific building material has not been chosen fx. early design. If the Nordics would agree on the same factor that would be very beneficial

### Question 1.3

Do you think that the Nordic countries should use the same GWP indicator? (Note: the two indicators currently in use in the Nordic countries are GWP-total and GWP-GHG. GWP-total is the sum of GWP-fossil, GWP-biogenic and GWP-luluc [land use and land use change]. GWP-GHG is the sum of GWP-fossil and GWP-luluc.)

#### Open answers, please give reasons:

- Transparency and comparison enabling.
- Need to separate GWP biogenic from the rest.
- It looks very difficult to harmonise the indicator, because different indicators are already in use, and it is not easy to change. Easier to accept the existing situation and to know differences. Also, to report results transparently in enough detailed fashion to see differences caused by different indicators.
- This depends on the life-cycles they include. If the C module is included, GWP-total is fine. But if the calculations do not include the C-module, we need to use the GWP-GHG.
- It will make it easier but, I do not think this question is possible to answer since the CPR will decide this and I do not think we could affect this.
- Should be reported for all indicators for transparency.
- No reason for not doing it.
- Too difficult for users to know the difference.
- GWP-total as will be required in EN 15978 and CPR and EPBD
- Separate GWP biogenic.
- It is best to follow the EN standard, but in the end, it is up to the Commission to decide. Anyway, in the Nordic countries, we must not jump off the "mainstream line" or the Commission's position on any grounds. That is according to EN 15804: The total global warming potential (GWP-total) is the sum of — GWP-fossil — GWP-biogenic —GWP-luluc. It is permitted to omit GWP-luluc as separate

information if its contribution is less than 5 % of GWP-total over the declared modules excluding module D.

- Concerning biogenic emissions and therefore bio/wood-based products it is important to include their actual emissions from raw material sourcing and manufacturing. Currently, there are doubts that the emissions data now presented for bio-based/wood-based products do not comprise all emissions on all stages.
- If countries continue focusing on upfront emissions, then there should be harmonisation.
- Isn't EU commission in the end giving a harmonized method for this?
- GWP-GHG could be used if only A-modules are used. GWP-total should be used when C-modules are in scope.
- If all the LCA stages are used, then yes.
- Possible to compare.
- Yes, why not :) But it's not possible for now as the module coverage is not the same.
- The same answer is true as before. In case the aim is to compare results between countries. The numbers will look very different if the other country includes GWP-biogenic and the other does not.
- It could make sense to harmonise the use of GWP indicator across the Nordics and EU.
- It is necessary to make it simpler to use GWP data in procurement and contract.
- Everything that means more harmonized calculation is important.
- GWP-total provides a more comprehensive assessment of climate impact because it includes emission from fossil fuels, biogenic carbon, land use and land use change. It aligns better with long term sustainability goals by accounting for the full range of emissions that contribute to global warming, not just those from fossil fuels.
- The Nordics should aim to facilitate reporting according to CSRD and ESRS E1, SBTi and GHG which says that biogenic should be reported separately.
- No. For those only ask for the full life cycle GWP-total is Ok and in fact the same result as using GWP-GHG. But if it is asked for declaration or limit values that only covers part of the life cycle GWP-GHG is the only alternative to secure a fair comparison.
- To compare results, and to handle separate A-modules. GWP-total is preferred. GWP-biogenic is important measure to take in account (but of course separated in the calculation).

- Rereading the question, I understand it differently. If/how to use GWP-total is depending on how C-modules are treated. But still same answer, yes good to use same, -biogenic should be taken in but be reported separately.
- Before we can use the same GWP indicator we have to have the same stages of life cycle stages and modules.
- Maybe EPBD will be of help when it is decided how to calculate.
- We think the right GWP indicator is GWP-total. It is important to calculate with all the sub-indicators for GWP.
- We need to be able to see the results for each module, A1-3, A4-A5, in each country.
- We can have one result for the whole lifecycle, (GWP total) and another for verified data A.1-A.5, then that needs to be GWP -GHG
- The same indicator should be used, and it should be the GWP-total, GWP-fossil, GWP-biogenic and GWP-luluc. This is more in line with future EU advancements and easier to understand. Whereas the GWP-GHG is inherently difficult to understand, and, in principle, the indicator is already covered by GWP-fossil and GWP-luluc.
- We will have to use the GWP indicators dedicated by the c-PCRs when developing EPDs and the EPBD will have to harmonise with the CPR/c-PCRs so we cannot choose. The argument that biogenic carbon over a wood-products life time is zero is seriously wrong. Anyone doing a carbon balance calculation for a managed forest will see that the biogenic carbon stored in the product is just a small part of the biogenic carbon flows for the forestry ("the wood factory"). You can see a managed forest as a factory with carbon fluxes and the result is allocated to the wood being produced in that factory. The carbon released in the C-module is not corresponding to the cradle-to-gate carbon allocated to that wood product. Please start doing serious IPCC/taxonomy aligned carbon balance calculations for forestry and stop using the very faulty assumption that biogenic carbon is zero over a wood product's lifetime!!!!
- Maybe not necessary but why not? It increases the comparison, and it certainly makes it easier for developers and the construction industry.
- The choice of GWP indicator is dependent upon how biogenic carbon is treated, thus a harmonised indicator should be used (ideally GWP-GHG since this excludes biogenic carbon).
- Yes, it would be helpful for comparisons but only if GWP-GHG and GWP-biogenic are presented as different figures.
- and it should hopefully be the same as future EU indicator.



- With the statement of what is included - should be GWP-total.
- When it comes to the last line, the numbers should be comparable.
- Definitely. Different indicators create a lot of confusion. The common indicator should be the one that is used in EPBD if one is defined.
- It's important that we use the same GWP indicator, but we don't really know which one that is the best. With the same GWP it's easier for suppliers to give us the value we want regarding which country we are from.
- Because different countries might choose to include different stages, e.g. in the limit values.
- It would be beneficial to use the same, especially when talking about biobased materials and comparison.
- Which GWP which should be reported depends on which modules are included in the regulation. If "only" A and B-module, GWP-GHG must be used, and not GWP-total.
- Because it is confusing to get different indicators because of which countries you do the LCA.
- We think the right GWP indicator is GWP-total. It is important to calculate with all the sub-indicators for GWP.
- Yes, using different indicators, only leads to confusion.
- The use of which data depends on if the C-stage is included in the calculation.
- So, if the stages are harmonized, the GWP indicator should be harmonized.
- I cannot answer this question since we have not discussed it in detail. Harmonisation on a high level is however good.
- Yes, would be easier to understand and compare case studies with regard to module A1–A3 – which is what we need to act upon today and which normally has a proportionally large impact of the WLC.
- If going for total – it is very important that the biogenic part is still reported separately. Otherwise, we will not know the level of emissions happening today – which is primarily what we need to act upon.
- To be able to compare results. Or just report all.

**Question 1.4**

Increased digitalisation could help to decrease the cost of calculating climate impact (administrative burden). Which of the following is the most important to achieve increased digitalisation in Nordic harmonisation of regulation about climate impact (in near future)? More than one alternative is possible to choose.

**Open answers, other**

- Verification and quality assurance essential.
- No, I'm sorry but as a first step the construction industry needs to learn how to work with digitalisation. Some house manufacturing companies could work with this but not the traditional construction industry.
- EPD digitalisation and template for reporting WLC for all building parts in a building.
- Harmonized machine-readable format and availability of EPDs.
- First, we need to have a lot of more simplified and harmonized definitions in place. But it's needed to simplify the calculations and to keep costs down.
- Standardized definition of building parts and volumes used in the buildings as well as harmonized definition for the data content of emissions.
- Digital template it's the easiest. BIM is a mess to go into. Process of verification is country dependent and therefore not really an option.
- It's more important to see what was built, than what was calculated in advance.
- It would be good if "real" data was used for climate report, i.e. the climate report is drawn up and officially announced only before the building is commissioned. Let all other assessment and "own carbon steering" remain voluntary. This would reduce the 'administrative burden'. When data and product models become automated/digitalized, the entire assessment is transferred to the project's own control (also via BIM), i.e. carbon data is one part of the constantly updated and accurate project information, right alongside euros and square meters/cubic meters.

In the assessment, the "accurate" EPDs and, for example, generic information can be used. In other words, just estimating which part of the building needs accurate information on a significant part of the building and which it doesn't.

- In the regulation we cannot demand the usage of BIM. We also do not have resources to verify the quality of LCA calculation. AI could be an answer.
- We think this is the first step for digitalisation since this is a useful tool for better understanding of the documentation and easier comparison between different calculations.
- “Set BIM requirements for the BIM model authors if a climate declaration is required during the building permit or as-built phase.”

“The classification of building elements in prEN 15978 should be considered as a starting point for developing LCA reporting requirements.”

“BIM should contain identifiers for element types in all design models.” The elements’ details should be attached to the LCA calculation phase to ensure correct emission data will be used.

A harmonised way of naming/identifying the different materials/sub-elements included in the element types would be needed.”

“The next development phase would be to define a machine-readable data structure to express the contents of component types (materials/layers) as they are currently presented in PDF documents.”

See the report <https://pub.norden.org/us2024-439/us2024-439.pdf>.

- A common digital template for calculation could be an effective tool to harmonise across the Nordics. But it must be led by the market.
- Don’t put all eggs (the digitalisation strategies) in the BIM-basket.
- Please consider the regulatory burden. The goal must be to simplify, not to impose more tasks for the industry.
- We think this is the first step for digitalisation since this is a useful tool for better understanding of the documentation and easier comparison between different calculations.
- It must be standardised, transparent.
- Increased digitalisation can maybe be introduced as voluntary options. The building industry has many sizes and the small and medium companies/projects will find this hard/difficult.

Process for verification is important so that the industri/companies will compete at same terms.

Maybe a certification scheme can be a part of a solution/approach so that the authorities not by themselves should make control.

- Maybe not necessary. But it would be good to have the same digital system. It facilitates för developers and the construction industry.

- A harmonised digital template (which includes the above-mentioned modules and GWP indicator) will help facilitate apples to apples comparisons of climate impacts across the Nordic countries. Some form of XML (with an agreed upon taxonomy, see what EFRAG has done with the CSRD and the ESRS taxonomy for example) will help facilitate such reporting, and hopefully LCA tool builders could implement the XML template. Additionally, verification will be necessary to ensure a fair playing field for all industry actors. Both the authorities and industry benefit from an efficient and fair verification process. The importance of verification is especially clear in the cases where declarations are required for buildings "as built".
- Process for verification is important to reduce the administrative burden and therefore the 1 thing I would pick from these ones
- Machine-readable EPDs with definite product IDs (like gtin codes etc.)

Digital template needs to be easy to use - common formats used in bill of resources, but with IDs of data used (generic database ID or epd ID)

- [Peppol?](#)
- Automating LCA from BIM would allow efficient calculation of LCA and steering the project through the design based on data. However, at the moment this data cannot mostly be used as the content of the models vary leading to unreliable results. Having requirements for data content in BIM would help to make the data more useful. This does not require same classifications etc. in each country. It is enough if there are common rules inside a country that everyone use as the conversions of standardized data are easy to do. On contrast, non-standardized data cannot mostly be used at all or requires huge amount of manual work which makes using it too costly.
- The most time-consuming stage in at climate declaration is to get all the specific data we need from our suppliers. We want a way that all suppliers automatically give us all the data we need always in a digital way. That way we don't need to email the suppliers and get and PDF that we must convert by ourselves and put into our climate calculation tool.
- Templates may be beneficial to both industry and regulators. requirements for BIM may be an additional burden for smaller projects. moreover, BIM models will only be of value, if they are updated from planning to as built.

Another suggestion is to integrate e.g. digital templates with industry solutions. E.g. construction companies can get an overview of

materials used per project based on the invoicing from suppliers of building materials.

- It should be investigated if BIM would be possible to require in the regulations. What are the consequences (positive and negative) – and not only concerning climate but planning in general.
- Digital template with description of the origin of the information.
- We think this is the first step for digitalisation as this is a useful tool for better understanding of the documentation and easier comparison between different calculations.
- Will be great to harmonize on digitalisation and tools used for template, declaration to authorities. Why are all countries seeking to develop own tools. Seems that Iceland is far on tool to actually report data to authorities, maybe it is time to re-use solutions that work in one country in other countries or actually co-develop. This may also reduce cost.

BIM: Not all projects are big enough for BIM, BIM might actually add costs.

- We are not able to answer this question since we have not discussed this in detail yet.
- To verify – which is important not least with limit values, digitalized formats would be valuable since it will not give much further value with regard to reducing climate impact at this stage – and therefore spending money just to report it is less relevant.

BIM – if there are values created for other purposes as well. But I hardly see that it is very important in particularly for these types of regulations that we talk about now.

To build knowledge regarding how the regulatory frameworks might lead to reduced climate impact etc, and for research purposes, it is highly valuable if more data like the BoR and characteristics of the building project is saved and can be accessed easily with API's.

Don't forget that digitalization also drives climate impacts!

- Most important is to digitalize the EPDs.

## Round table discussion 2 Input EU regulation

### What is important input from the Nordic countries for EU regulation?

#### Question 2.2

Limit value – Which modules are important to include when Member States introduce limit values for climate impact?

#### Open answer, please give reasons:

- Only calculate up-front carbon and not the scenario-based stages.  
We can only be sure of the up-front calculations.
- Verification possible.
- In modules A1–A5 a developer/design team can have the biggest impact. Replacement of materials B4 follows the same logic. B6 is already strictly regulated by EPBD energy performance minimum requirements. Because of the principle -1/+1 for biogenic carbon, C module has small impact and is often calculated with default values.
- The limit values should apply as total value for all the modules included in the national calculation methodology.  
If separate limit values are to be introduced for single modules, this should be A1–A3 and/or A5.
- WLC reporting as minimum. A1-A5 limit values as min. as this what the contractor can influence.
- Already available information
- Energy consumption and end of life have other regulations. In the future everything is handled in EPBD.
- The emissions of A-module are known and have an immediate impact on emissions and cutting of emissions. All other modules are based on assumptions on future development during the life cycle.
- Limit value need to include at least A1–A5, the part that is possible to validate.

According to my opinion we should include all and allow the use of pre-defined values for some parts, that we know are small. Perhaps all modules but A1-A5 and B6 (important with common scenarios for energy system and other parts that).

- B6 must be included in order to avoid negative cross implications. E.g. thinner insulation decreases emissions in stage A but increases emissions in stage B. B6 energy consumption and emissions are

already calculated for energy certificate purposes for the whole building.

- Upfront carbon is important as it is verifiable, for many countries B6 decreases in importance and energy is also regulated separately, but it is important to be able to see the trade-offs between embodied and operational, B4 is important when lots of technical equipment and fixed furniture is involved.
- There should however be flexibility in choosing the modules.
- B6 is very detailed and covered by our energy performance certificates, thus we don't see the need of including B6 module in the GWP calculation.
- Not scenarios, not about the future.
- Not include too many predictions about end-cycle, it is uncertain, and plans will change, at hopefully the buildings should last longer.
- EPBD states that in the future we need to document all stages and we in DK think that these are the easiest and most important modules to include.
- A1–A5 is clear. B4 has high impact especially for building technology. B6 is supporting energy efficiency but also promoting renewable electricity.

C3 should ideally solve the GWP bio issue.

- Including these modules ensures a holistic view of the building's environmental impact throughout its entire life cycle from raw material extraction to end-of-life disposal and beyond.
- Most important to report the climate impact of both the materials, transport, and construction site. That is the emission that has happened on the time of the report, and not depending on a scenario. For comparison across borders B6 should not be included.
- Don't EPBD and Taxonomy ask for a limit value for the full life cycle A to C?! The A1–5 modules are the most significant modules and the modules that we can control/verified. All other scenarios are scenario based.
- Important to include modules with actual emissions. Should not be necessary to have limit values on data based on scenarios (made up data), just increase administrative burden. Also other modules is covered by other policy instruments (EPC, energy requirement). However maybe required to be declared.
- A1–A5 can be verified (in near term). B1–B5 based on assumptions. B6 climate effects varies over time.

At least the result for A modules, and the rest should be handled separately.

- A1–A3 has the biggest impact.  
Maybe A4 to reduce long-distance transportation but today standard values are used. This will just differ between transport inside and outside the country. Does not influence the limit value that much.  
A5 can be included but does not influence the limit value that much.
- EPBD states that in the future we need to document all stages and we in DK think that these are the easiest and most important modules to include.
- The limit values have to be verified. Whole life cycle should GWP be separated.
- A1–A3 is the most important as this is where you can make a direct impact now, while the other are more in the future. Moreover, energy is already covered by other decarbonization strategies.
- It should be separate limit values for A1-A3 and A4-A5.
- Limit values should be set for individual modules, except for A1–A3 which should be grouped together. For modules with very low data quality and high uncertainty, authorities should provide generic values which are phased out over time as data availability improves over the next 10–15 years.
- No speculation in calculations, just the way the building is build.
- Full life cycle to be included, but energy use can also be regulated elsewhere.
- B6 is already mandatory but calculated in specific energy use rather than a GWP unit. B1 Carbonation? Biogenic carbon? Greenery? C1 should be more focused on circularity.
- It would be good to have minimum mandatory scope including all stages and at least modules A1-A5, B4, B6, C3-C4. Other modules can be optional and could be chosen by individual countries.
- I think there is good to have different limit values for different modules. It can be easier to handle.
- In general it should be the modules that have the largest impact and where it is possible to get data.
- Based on "reality". B2 and B4 should be based on
- The widest share? At least today's perspective.



- A is the only part that we can know about, compared to B, C and D. B is more assumptions than A. C and D are even more assumptions and guesses.
- EPBD states that in the future we need to document all stages and we in DK think that these are the easiest and most important modules to include.
- A stages are first priority since they are upfront, B and C stages tend to be calculated on a assumptions on the forecasts of the future.
- The most important is the life stage A.

The other modules are important, but the preconditions must be in place.

- The inclusion of all modules in the whole lifecycle is important to ensure competitiveness between different materials (different materials have their emission in different modules) and to minimize the risk for suboptimization. For instance, is B1 important for calculation of the carbonation of concrete in EPDs (which can be as much as 15 - 20 % of the emission during the production stage). C modules are important from a circular perspective.
- Yes, principally I think so. The rationale should be that the regulations deliver reduced climate impact. There are still different conditions in the member states about what are the hot spots regarding climate impact of a building's life cycle. The regulations should primarily steer towards emission reductions, and therefore it is good if a member state put focus on certain life cycle stages which are hot spots. In addition, the detailed regulatory context concerning e.g. how the implementation of the EPBD may still differ, as well as construction practices. The focus should therefore be put on creating good steering effects in the member state context about emission reductions. But would be good to have harmonisation in how the modules are handled and calculated.

Also, B6 for contexts where regulations not yet steer well in reducing these emissions, as well as when this is a big hot spot in the close future. Modules A4–5 are also good then to add, since these denote emissions happening today when the buildings are constructed, and do not happen in a far future, in which we can assume that more low-carbon technologies have evolved.

- I am very hesitant to spend too much resources on calculating the B and C stages.
- These are all modules that the design team can better in the initial design and has a chance to improve the environmental impact. Tender documents can have ambitions for these factors. Most important is the A1-A3 since it is usually the largest impactor.

Also, the C1-C4 modules but they are more guesses and happen further in the future and are harder to determine, if we would design a project with DFD in mind then that wouldn't translate in to the LCA results or have any effect on the C modules.

2.1. Only Yes if they are synchronized about which modules.

- Not any more work to do all stages. Important for reporting to banks (EU taxonomy), for all to see where the big impacts are (people think transport is important, but it is not), more possibilities to find improvements. But we need some standard scenarios and data on modules that lack data/have small impacts/are time consuming to collect data.

### Question 2.3

Is it important to declare the climate impact divided into different building elements in the climate declaration?

**Open answer, please give reasons:**

- Not as important as other points.
- Quality assurance and benchmarking.
- It is important to see from which building elements/components/materials the biggest carbon footprint is coming. This makes reporting transparent.
- Nice information, and available from BIM-models, but not crucial.  
At the same time, if the "as-built" performance is to be documented by invoice information, the emission data will not be allocated to single building elements.
- Should be reported in a matrix/table per life cycle per building part for transparency.
- Needed for control.
- Think of it as building blocks. When you need to declare it in different building elements you can use it for optimization and supervision.
- The standard does not allow for this. See the scope and preword.
- For learning but it would be a burden to declare in that level of detail.
- It makes sense to compare the products.
- To be able to prioritize efforts.
- This gives more transparency.
- Gives transparency.

- There is no reason to remove the detailing when you already have it from the calculation. All materials are divided into different construction elements so it does not make sense to remove the detailing.
- Dividing the climate impact into different elements increases transparency and accountability.
- A building is not necessarily more sustainable because it consists of a sustainable component. It is therefore important to look at the building as a whole - and not the individual elements. This is also a way to keep it more simple and understandable.
- Keep it simple. Climate declaration is difficult, so we need to keep it as simple as possible. But the numbers should be available for verification and research.
- It will help us learn and understand and identify biggest reduction potential.
- This is important to make auditing/supervision possible and establish expected values per building element type.
- Increase administrative burden.
- Not that important, but advantage to distinguish structural frame and climate envelope from interior surfaces and installations.
- Then it is easier to evaluate which building elements are giving the biggest climate impact.
- Otherwise, it will be very hard to control.
- No not important it could be interesting for learning, but it is not essential.
- For the verifier of the climate declaration, it is much easier to verify correctness if the result is subdivided. You know in what range the climate shell result should be, the roof etc.
- For following up and supervision.
- Different countries have different definitions of building elements, as well as different building conditions. I am unsure about the value of this division so long as the same building elements are included.
- We should control the quality of calculations, but perhaps that should be based on even more information - the full calculation materials.
- More detailed data - which is already available in the calculation. Can give input to where to improve.
- Substructure and superstructure should to the minimum be able to be distinguished. ideally a common classification system would be used to differentiate elements/components. In an ideal model the calculation would be BIM-based using a common classification.

- It makes the results more transparent but as mandatory classification this should not be very detailed.
- I think it is important so we can get a better quality check of the calculation and also, it would be good for analyse that in the future.
- It can e.g. help improving quality and make easier supervision, but the level of detail needs to be considered, not the least from a cost-perspective.
- It would be beneficial - it enables stakeholders to work on reducing climate impact if information on different building elements is available. moreover, it would help transparency in the documentation.
- I'm not sure. Must be discussed more, especially if bill of quantities is used as source for the declaration (and such bill of quantities are split into building elements).
- Would help the future impact calculation of the possible renovation and transformation extension cases.
- To check the quality of the
- Yes, for many reasons like quality assurance, understanding where to improve and drive changes.
- For better verification but also for experience and in early stage.
- Answer Yes only to choose one alternative since compulsory. We have never discussed this question in detail. To calculate all building elements in the whole building and the whole lifecycle is however important.
- For the purpose of validating declared data, by the authorities.
- For the purpose of interpreting emission drivers better, to build better knowledge and data including for research purposes.
- Yes, for quality assurance and traceability. Also gives an overview of the impacts each building elements have, and gives a hotspot overview for the assessment.
- To understand how we can improve.

**Question 2.4**

How should you handle data gaps for the building elements and technical equipment (construction products) that cannot be calculated? For example, because of lack of quantities or climate data (generic or product specific data). More than one alternative is possible to choose.

**Open answers, please specify:**

- Not understood.
- I have no clear opinion as answer to this question.
- Is it possible to set both minimum levels and requirements to compensate for data gaps?
- Compensate with standard values and/or develop competences for calculating them.
- Did you mean setting a maximum level of allowed data gaps? CPR and EPBD will solve this issue.
- The problem with data gaps is that you are not aware of them. I think it might be a good idea to make the constructor fill if certain products are included. To help them think of common data gap.
- Use of generic data.
- If there is no available EPD for that building part, like a fire alarm as an example, there should be created a generic EPD for all to use, if no better option.
- Usage of generic data.
- DK think this is the best way because if there is a lack of data you can use the most similar data. In that way the calculation will be a bit uncertain but will state the full amount.
- Introduce "mandatory" generic data for the data gaps. Unless the same is meant by "compensating" in the option 2.
- It is difficult to answer, but it needs to be as simplistic and correct as possible. Also it should be recognised that there - at the moment - is a variation in the data quality that we should work on improving.
- I have no idea.
- Both are valid.
- (Compensation for the gap is more important than minimum level.)
- Why give climate data to something you don't know the impact of.
- Define what is 100%. We need to agree on what is 100 %.... this is complicated, and we need to agree in what is good enough.

- A minimum level could maybe take into account where the impact is the biggest so there can be differentiated levels.
- Will be better with time, when digital interactions improve the bill of materials.
- To be sure that declaration is for 100% of the building.
- A competent authority should provide an overview for which building products it is known there are neither generic nor product specific data. In this way there is a common list over which product categories are acceptable as part of a data gap. Alternatively, could authorities have an exhaustive lists of all data points which need to be included in a calculation, and this list serves as the basis for conducting a gap analysis.
- Difficult question depends highly on what is included and what is not.
- Minimum level of data caps should follow the EN standards 5 % cut-off rule. This should be packed up with a list of building elements that will have to be included and also with which kind of elements (e.g. screws) are considered minor and will have to be left out. If any of the elements in the defined minimum scope are missing, they should be estimated as part of the calculations. In EU level.
- I think the Swedish way works good but more data of the coverage rate should be included or at least that you declare what things you don't have in your calculation.
- Assist by developing generic data for those products where potential data gaps exist.
- Must be discussed further on how this can be done in legislation.
- Focus on emissions from the biggest emitters.
- The Swedish approach makes sense.
- Some smaller parts (ref NS 3720) can be dismissed.
- We have not discussed this question in detail so I cannot give an answer of how to manage the issue I am afraid.
- If you are going to compare results you must have it. Also, for benchmarking and for authorities to check if the results are reasonable.

**Question 2.5**

What level of control of the calculation of GWP should be done by the authorities, including when limit values are applied? More than one alternative is possible to choose.

**Open answer, please specify:**

- While GWP calculation results are reported in machine readable format, many automatic checks could be implemented.
- The authorities should supervise, but not control the emission calculations in every building project. The responsibility for producing correct emission declarations should be on the ones responsible for the building project.
- Check calculations are done according to standards e.g. EN15978.
- Develop a probability-based check of impacts to identify major deviations.
- Might study how market surveillance for construction products works. Or the Tax Agency. Study something different every year.
- Alarm on deviations in datasystem.
- The supervision is crucial to the introduction of limit values.
- Automatic quality supervision of the climate declaration. The more detailed input you have, the more accurate automatic control you can do.
  
- If there is not so strict supervision, think about having knowledge demand on the person doing the climate calculation.
- Validity checks if there is a possibility to use digital tools and for instance AI.
- However, we should be aware of keeping administrative burden under control. Perhaps some sort of sample checks are a solution and/or (half)automated solution (data check).
- We need more structured data, that can be checked and verified automatically. That would help us do analysis and check up on more projects than today where it's only 10%.
- If the case is picked out by the authority for control, they should check the validity of the input data.
- The first one could probably be checked "automatically" from BIM. Others create costs...

- The answer to this question depends on the authorities' abilities/competences to do it.
- All those aspects must be controlled and validated. The first bullet should be complemented with reference values for building element types. Are those within the expected span, the calculation for the building will also be correct.
- If the case is picked out by the authority for control, they should check the validity of the input data.
- We need to develop a way to reduce the manual work done, by standardisation.
- 3rd party review or use of certification schemes driven by the building industry instead of handled by the authorities.
- That would practically be possible without requiring a huge effort in retrieving documentation and checking data. Most errors/problems could be identified here.
- Stepwise. If a declaration don't pass a control step, it will be controlled at next level.
- If the requirement is to provide a declaration for "as built", so then verification of actual products and quantities is a good idea, but this might require physical inspection and presence. The contents of a control should take into consideration the purpose of a control regime – are we trying to make sure that people are following the regulation? At a minimum there should be a form of automated control to make sure that all required modules are included, and values are met. On a random basis, then there should be a full control of the calculation which includes quantities and list of which EPDs are used. These random checks might serve as a mechanism to ensure the rules are followed.
- The two-step model used by Boverket is very potential:
  - Random checks by experts to some part of the calculations.
  - Expert check of delivered data.
  - If something suspicious is found, more detailed check including asking more evidence including signed documents from manufacturers that the specific product is used.

Pre-check phase could also include automated controls and highlighting declarations with weird values. This will require a decent set of background data to set up the checks and warning signs.

- I think you can do a lot of checks with machine learning to reduce the time-consuming control.
- Check of the level of documentation - does it appear complete.



- Regulate climate impacts as the same way as other issues in the legislation This means that this can vary within the countries.

Digital systems (for instance a combination between bill of quantities and machine readable EPDs/digital product passes) will be able to do such verification.

- Do the authorities have enough resources?
- If the case is picked out by the authority for control, they should check the validity of the input data.
- We have not discussed this question in detail so I cannot give an answer I am afraid.
- I think details in the building inventory to be included in calculations is as important.

The last two points are also good, but need to be considered in relation to the costs of doing so.

### Question 2.6

Should we have a unified labelling of building elements and technical systems of a building (classification system) within the EU?

#### Open answers, please give reasons:

- Not important for the calculations, but harmonisation is good.
- There is more important focus.
- Not important.
- If possible but there is a loooooong way until we would reach that.
- But classification systems should be unified.
- That would be nice. But that is complicated to change this.
- If the question means some kind of ontology, this should be a task for standardization.
- We will have more transparency if we have classification system set for building elements and technical systems. This might somewhat also create innovation.
- They can be linked without the harmonisation. We need a translation model.
- Businesses operate across borders.
- We see this as almost impossible, there are a lot of different ways to label the construction elements in EU and it will be very hard to convert everyone to one classification system.

Instead, it will make sense to try mapping some of the most used systems up against each other to transform information between different systems.

- Every country has their own costing etc other building classification systems. If implementing new and common one it would need lots of resources.
- You can link various classification systems through EN15978, see Appendix B: Comparison between prEn 15978, ISO 81346-12, CoClass, Talo2000 and ICMS <https://pub.norden.org/us2024-439/appendix.html>.
- The CPR?
- Why not?

The process for DPP will push the process to have a common datamodel for the European construction industry.

- Consistency is important for harmonising. It increases transparency. Helps streamline the submission of climate declaration and GWP calculations, reducing administrative burdens.
- Now I cannot see the meaning of this. ...but a common classification on building element types is applicable, and why not develop common data temple with the most essential properties for an specific data element type. Is this not part of the new DoPC
- Don't think this possible.
- It doesn't have to be exactly the same, but it should be "cross-reference", official translation between the systems.
- In long term perspective maybe. But I think this will be a huge task and there will be limited results in such an approach on the short term. So, it is better to have a more flexible/agile approach because we need to make the road will driving.
- Or at least have correspondence tables that could be used to compare across different systems.
- Impossible.
- The starting points are so far apart.
- A common foundation will be cost effective in the long run.
- Emphasis on yes!!
- The various classification systems can be easily linked / transformed as long as the data is standardized to some known classification. This is not a priority.
- That would be good, but it will be hard.

- Do not know enough of positive and negative impact that it might have, or if it is possible.
- That would not only support calculation/harmonisation of calculations of climate impact but can also be beneficial in other context, e.g. development of material passports to facilitate e.g. reuse, building passport.
- The CPR will regulate labelling/classification of building element if needed (probably through delegated acts)
- Differences are so big between EU countries: eg. climate factor.
- Easier when reusing
- This is a bigger question, if possible yes.
- Same again, we have not discussed in detail, but generally, we have to rely on unified systems within the EU.
- Would be good but it is doable?
- It makes comparison easy and if combined with the material passport idea then traceability and recycling/reuse would become easier.
- We need this to be able to compare. New EU regulation says banks need to report their financed emissions - they need input from their costumers (building developers). This needs to be harmonized.

### Question 2.7

Are there other indicators we should consider a harmonised approach to?  
More than one alternative is possible to choose.

#### Open answer, other – please specify:

- Most important to focus on GWP and to harmonize this. Eu-taxonomy is handling the other indicators.  
But if so biodiversity is the most important other indicator.
- GWP is already a big challenge. In principle, energy and carbon footprint are the most important in global warming context and we should not have too many key performance indicators.
- At the moment, harmonisation of carbon emissions is enough.
- I don't know.
- All indicators in EN15978/EN15804.
- No, too early, because it would compromise the other ongoing and needed harmonisation and development activities.
- No.

- Nordic collaboration is not the right forums as this kind of requirements will eventually come directly from the EU.
- I would love to have some input on biodiversity stress from construction materials. Can we have some indicators.
- I don't have enough knowledge of this.
- Circularity.
- Circularity indicators
- Recycled and reused content of building materials. Comprehensive occupancy rate of building.
- Dont know.
- Circularity.
- I think carbonization is the most important to harmonize, I lack knowledge about the other suggestions.
- Maybe biodiversity but this indicator will have very different impacts from site to site so it will be difficult to compare the indicator from one site to another.
- Indicator that helps better to assess circularity.
- It will probably be difficult to harmonise on these areas as it is very much dependant on local conditions.
- I have no idea!
- No
- Handling of temporary sink effects as a GWP contribution.
- Biogenic carbon. Embodied as well as external balancing (compensation).  
Balancing of carbon impact.
- Maybe biodiversity but this indicator will have very different impacts from site to site so it will be difficult to compare the indicator from one site to another.
- Maybe just focus on the definition of the terms and how to address to the building industry.
- EPD is already harmonising many impact categories.  
Biodiversity does not have a clear indicator and it would be relevant to have a harmonized approach and understanding across borders.  
We must be careful not to start working on too many things at the same time.
- Don't know.

- No, may be in the future.
- Certain indicators can be contradictory to global warming potential, for example biodiversity, land use or eutrophication. I think other indicators should be included as part of a potential digitalization of EPD values such that individuals can decide what is more important - for example, acidification or global warming – but I am concerned that trying to harmonise a balance between potentially conflicting indicators might be too limiting.
- Circular economy regulation. Especially in the city level. How circular products are locally accepted.
- Harmonising assessments of development plans, at least regarding the need of resources for substructures.
- Biodiversity is not covered by EN standards at the moment. According to some studies buildings account for 30 % of biodiversity loss over the whole life cycle and most of that comes from the material manufacturing. Adding these impacts to be part of EN 15804 EPDs would allow to steer these impacts on building level.
- I really don't know. I only know climate impact.
- Perhaps other than environmental impact categories, such as indicators connected to circularity that can strengthen the regulation on climate impact calculations.
- Mineral resources such as sand, clay etc.
- Let's "fix" the climate first – it's more than difficult - also see 2.9.
- We have no answer, but we have to remember that there are not only one indicator of sustainability and that different indicators may come in conflict. We have to take more indicators than climate emissions into account to optimise and make good choices from a lifecycle perspective. Circularity and biodiversity will in some situations come in conflict with carbon emission for instance. What to prioritise?
- I think biodiversity is important, do we have a synchronized way of measuring that? It could end up becoming very subjective depending on the project and plot.  
Resource use should be considered more, the use of scarce materials.
- Important to focus on all the problems with carbon accounting first. Unsure if we will manage to harmonise biodiversity. This has to be solved in another way.

**Question 2.8**

Do you have other proposals for Nordic harmonisation of regulation on climate impact for buildings?

**Open answer, please give proposals:**

- The same Building elements (i.e connections and so on).  
But the Building culture is different from country to country, and we have to have respect for this. It would be bad if the cultures (i.e Norwegian Wood construction) changes due to legislation.
- My compliments to: Harmonised limit values report - very good and detailed report. It would be nice if it would be updated with regular intervals because a lot of development is happening in this field.
- Greater focus must be placed on regulatory compliance and preventing fraud.  
The focus must be on the end product because many are replaced in production and are not at all the same as in the design phase
- Harmonise result reporting templates.
- Very important to develop a strategy for isolating the building-level steering effect and the wanted/unwanted effects on building location. This is due to the inclusion/exclusion of deep foundations (soil quality), energy (grid availability), solar power generation...
- There are a lot of development needed with the currently known initiatives.
- I would love to have an overview of the regulation in Nordic countries driving climate impact and preventing efficient use of the existing building stock. And use of circular products.  
Is this done?
- Circularity
- Standard energy performance, based on local dimensioning outside temperature.
- If we use decarb scenarios for B4 and C modules we should probably look at harmonising the way of doing this.  
Method for renovation could be the next theme to look at in terms of harmonisation.
- Carbon handprint of buildings.
- Integrating BIM in actual life together with harmonised requirements on BIM (i.e for construction permit a BIM shall be provided and based on the volumes and quantities of materials, the initial GWP can

be calculated). This would help the calculation to be quicker, more automated, less burdensome.

- It would be nice to investigate some kind of harmonisation in the Nordics when it comes to projection of energy emission factors.
- I think it's best to regulate less but with more consistency and greater harmonisation, rather than picking "new topics".
- Have focus on measuring the same. (Apples and apples)  
Keep it simple, 80% is close to perfect.  
Don't let the perfect stop the good work.
- Emission factors for energy i e Nordisk elmix.
- We should try to address resource efficiency to support circular economy as a complementary indicator to GWP...
- Circularity, digitalisation
- Connect this work with the development of digital logbooks, what do we need to full fill the requirements for digital logbook.
- Emission factors for energy use (B6).
- Helping the circular economy of buildings how to convert buildings to be used for different purposes (office to apartment).
- Building services.  
Service life /renewal rates or scenarios.
- A digital way to receive and send data between suppliers and contractors.
- More projects on digital development which will indirectly be important regarding regulation (since costs need to be reduces to be able to meet ambitious future climate regulation - radmp)
- Underground structures - connected with planning.
- It would be nice to investigate some kind of harmonisation in the Nordics when it comes to projection of energy emission factors.  
Combined efforts on biogenic carbon and storage.
- Maybe scarce resources that are limited in availability.

**Question 2.9**

Should we work with Nordic harmonisation of calculation methodologies for LCA in the following areas:

**Open answer, other – please specify:**

- Priority is still Building harmonisation.
- Start with one area and then, after 3-6 years after implementation it is possible to take another.
- No
- Do not know. Maybe we should ask the authority “Transport administration”.
- Communities. Changed land use.
- Changed landuse.
- Infrastructure LCA is also needed, since it requires very big volumes of materials. When setting requirements on infrastructure, it will initiate innovation in material production.
- Even if it is not regulated the same way, but for the industry it is positive to have common Nordic methods. And for public procurement there is a need for harmonized requirements.
- No opinion.
- Infrastructure LCA is important and relevant for global warming impacts. Should be similar to buildings and relatively easy.
- No, may be in the future.
- Areal development LCA, city development LCA, growing cities how to mitigate climate impacts.  
Also, ways of converting buildings to different use.
- Building services.
- No suggestion.
- It is important to understand and define methods for declare requirements regarding UNs Biodiversity framework.
- Infrastructure LCA has the highest priority as it has the largest impact, but also landscape as it will link to other key upcoming consideration.
- Focus on areas with biggest/most emissions.
- We have not discussed in detail so we cannot give an answer. Generally, lifecycle perspective is positive.



- Yes, can be good. Regarding infrastructure, previous research work with Nordic countries exists, which ought to be departed from then.

Landscaping is of interest since it could be somewhat easier to do harmonisation from start then. There is a need also for better climate data, which could be good to work together on. A special topic related to landscaping would be to try to develop a unified approach regarding how to deal with loss of carbon pool, loss of carbon sequestration effect as well as assessing the carbon sequestration in greenery, trees and ground. Would be good and is possibly a good timing for it.

How to deal with prospective LCA, these calculations would also be good to harmonize. This concerns for example future climate data for low-carbon products or carbon-sequestering products etc.

Climate declaration for renovations is another topic, as well as moving towards integrating some kind of assessment also of demolition that takes place before new build. Would be good if these regulations could create better incentives for avoiding demolitions today.

Definitely try to join forces with regard to impacting the development of the delegated act so that the experiences of the Nordic countries, being early in introducing these regulations, would really be considered in this process.

Perhaps also have a joint approach in how to interpret the changes and additions in the revised EN 15978 standard when this will be launched.

Finally, would be good to evaluate the set-up of funding for the harmonisation projects that has now been led by the Nordic Innovation. I definitely see a risk that these projects often become too much consultant-led and shallow. Either much more careful specification of what the projects should deliver need to be done, or more of research institutions ought to be involved. The current set-up with the bids have at least hindered my university to engage in these projects.

## Conclusions and comments

We are grateful for the valuable input provided on the open questions. Detailed conclusions from the answers given by the participant are not presented in this report. The reason is that they need further analysis. But the Nordic building authorities will take these into account in the future harmonisation efforts.

Generally, the answers given to the open questions show a high degree of variation, and sometimes with opposing views. It shows that introducing regulation on climate impact calculations are complex. This is also the challenges the Nordic building authorities face in the efforts to harmonise the regulations. Taking different stakeholders view into account when designing regulations is therefore very important, to design cost-effective requirements. The Nordic Climate forum for Construction is an important arena for this.

However, a comment is needed, about the answers that we should not work with harmonisation in the Nordics but focus on the EU. We, the Nordic authorities, want to highlight that our aim in the Nordic harmonisation work is to contribute with our experiences from the Nordics to upcoming EU regulation. There is no contradiction in that, we see it as important to influence future EU regulations. That was also one of the purposes with the Forum.

# Annex 1 Program

- 9.00 **Opening words** Kristina Einarsson, Boverket, moderator
- 9.10 **Greetings** from the Swedish government  
*Andreas Carlsson, Minister for Infrastructure and Housing, video*
- 9.15 **EU outlook** and update about relevant EU policies on climate impact from buildings and construction products  
*Phillippe Moseley at European Commission and Luzie Rück at Viégand Maagøe contracted by the European Commission*
- 9.45 **Nordic outlook** State of the art of the Nordic regulation and highlights from Nordic Sustainable Construction  
*Thomas Johansson at Boverket and Helle Redder Momsen at Nordic Sustainable Construction*
- 10.15 **Experiences from decided climate regulation from the authority's** Detailed information and experiences in Denmark, Norway and Sweden. How has it been received, what works well and less well. Proposal on harmonisation.  
*Niels Bruus Varming at Danish Authority of Social Services and Housing in Denmark, Ingunn Marton at Norwegian Building Authority and Kristina Einarsson at Boverket in Sweden*
- 11.20 **Experience from decided climate regulation from the industry** What to focus on in Nordic harmonisation? How has it been received, what works well and less well. Proposal on harmonisation.  
*Christian Mølholm and Marcus Hedman at NREP in Denmark, Ben Toscher at Norgehus in Norway and Jeanette Sveder Lundin at Skanska in Sweden*
- 12.10 **More on upcoming regulation** in Finland, Estonia and Iceland  
*Maria Tiainen at Ministry of Environment in Finland, Hannamary Seli at Ministry of Climate in Estonia, Elin Thorolfsdottir at Housing and Construction Authority of Iceland*
- 13.30 **Introduction to round table discussion** Lessons learned from the construction industry from introduced regulation. What should we focus on in the continued Nordic harmonisation of regulation? What obstacles exist in the construction industry in the Nordics? What needs to be harmonized for increased digitalisation? Discussion of threshold levels? How to increase comparability with different system boundaries? Input to EU regulations.
- 13.40 **Round table discussion 1**
- 14.50 **Round table discussion 2**
- 15.50 **Sum up**
- 16.00 **End**







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