# Summary

## *Summary of the Round table discussions held at the Nordic Climate Forum for Construction, August 27, 2020*

The Nordic Climate Forum for Construction gathered representatives from authorities, industry and academia within the construction and real estate sector. The main goal for the conference was to continue the work on Nordic harmonization on regulations and climate emissions from buildings from a life cycle perspective. Around 100 people attended the conference, and all Nordic countries were represented. The agenda for the Forum can be found in Annex 2 of this document.

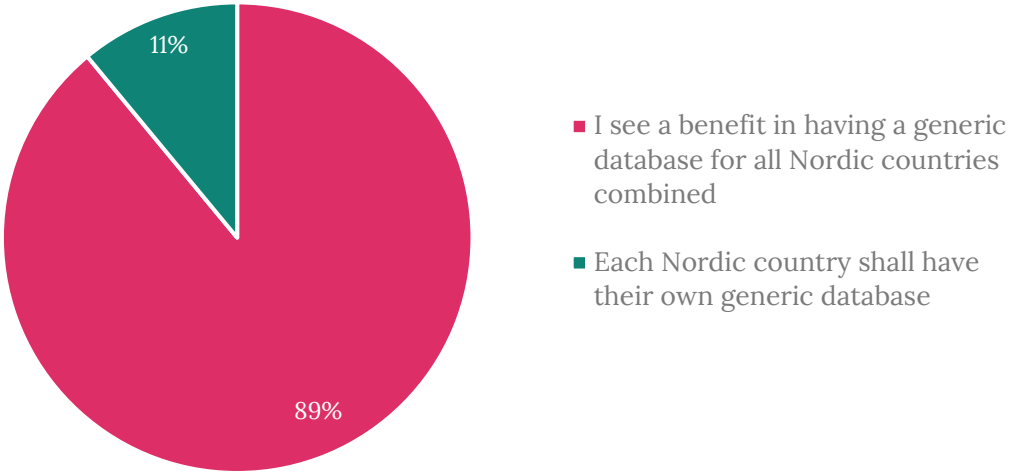
The conference was held online due to Covid-19 and the program for the day can be found in Annex 2. Presentations on status and current issues started the day that continued with two Round table discussions. The first one focused on a Nordic database for generic data and the second on the upcoming regulations in the Nordic countries with Sweden's upcoming climate declaration as the example. All attendees were asked to fill out a form with their own answers after each Round table and it is these answers that are summarized in this document. This means that the opinions expressed in the document does not represent the opinions of Swedish Life Cycle Center or the dialogue Forum for LCA, climate and buildings.

The questions from the forms can be found in Annex 1.

# Round table 1: Generic database

*The first Round table discussions focused on a Nordic database for generic data. All participants were asked to fill in a form after the discussions. 66 people answered the form and it is the answers that was given in the form that is summarized below.*

## 1.1 What is your opinion about a generic database?




## Comments on 1.1 What is your opinion about a generic database?

### Risks and possibilities

Risks

- A joint project might take longer time to get started and the most important factor is speed; climate change is not waiting.

  Possible solutions: One way to speed up the process could be to start at country level and then merge the databases together later. A combination of joint and separate databases is another suggestion, it could be joint for imported material outside of the Nordics but also contain country specific generic data. A third suggestion is to start simple with A1-A3 stages (of the buildings life cycle[1]) and then add more stages later. Thou it is important to work towards including all stages (A-D).

[1] A1-A3 Product Stage, A4-A5 Construction Stage, B1-B7 Use Stage, C1-C4 End-of-life Stage, D Benefits and loads beyond the system boundaries

- It will be time consuming to maintain and keep up to date.
- There might be too many differences between the countries. The same construction material can also have different CO2 values depending on the country of origin and some parts of the life cycle can also differ a lot e.g. A4 (transportation to building site) for Iceland.

### Possibilities

- A joint database would make more reliable and realistic data available that will give calculations closer to the Nordic reality.
- It is good to collaborate regarding the issues of data methodology.
- The joint database strengthens status of data as an important asset.
- Without data the legislation will not give the intended outcome.
- A joint initiative will save resources.
- Making data available will favor comparison among countries which could be a favoring factor when working with cross-border project.
- It can make producers compete to lover their emissions which could lead to market growth and improved products.
- For a small country like Iceland the joint database could be very valuable.
- The database could be used to be used as background-database for both buildings and for Environmental product declarations (EPD) when no other data is available.
- Can support in creating a common ground and create a baseline for Nordic low carbon building assessment.
- It could enable national benchmarking schemes and it might speed up the process of regulating emissions from construction.
- Might also strengthen the Nordic countries in a European context and possibly influence on the EU level.

## Building the database

It is important that the database is open for everyone and that it is comprehensive. One suggestion is that it could be based on the existing open hybrid IO-LCA databases with global coverage that already exists. There is a wish for the possibilities to make connection to national tools and an open database will in turn make it easier for LCA and Building information model (BIM) tool developers to build interfaces.

The collection of data should be done on a national level to make sure that the data is representative for each country. The database should be built so that it is easy to filter out data for each country and easy to shift between generic and specific data when both are available.

## Wishes for the data in the database

It should:

- Include uncertainty
- Show manufacturing country and be specific for products produced in different countries
- Be on a detailed level

- Be complete using mass and monetary balancing (in = out)
- Be representative to incentivize choosing products that has a better environmental performance
- Be transparent
- Not be too generic
- Be aligned with EU commission actions and standards
- Reflect the different energy mixes between the Nordic countries
- Be both generic and specific and not show average Nordic values
- Include future scenarios based on realistic and transparent procedures.
- Have realistic values based on Environmental product declarations (EPD)

## 1.2 How could a generic database help in the life cycle assessment of construction?

### Early design phase

In the early design phase, generic data is important to support in design choices. The data availability that comes with the database will probably enable more accurate early assessments. It will also support architecture and design of buildings with lower climate impact.

### Generic vs specific

If no other data is available generic data is good to use but for the later stages of the life cycle the database should support the use of more specific information, e.g. EPDs. To make that as easy as possible the database should support digitalization and machine-readable information according to standards.

If there is no push towards specific data, there is a risk that the database will not stimulate improvement in products. On the other hand, if legislation or other initiatives pushes for that it would make sustainability a competition parameter and it might motivate manufactures to prepare EPDs.

### Data availability

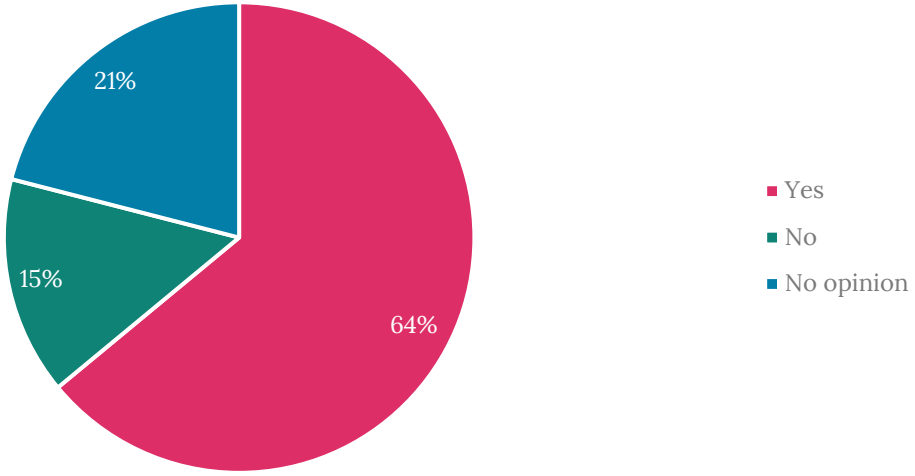
A joint database could contain more data than one for each country and that might make the assessments better and closer to reality since the data quality might be better. It will also enable comparison and can make an assessment both quicker and more reliable.

Access to data can also lower the threshold for making LCA calculations for non-specialized professionals which become a great chance to learn about climate impact from construction.

### Industry perspective

Access to the database might lower costs for the industry, both overall and especially when it comes to making LCA. The Nordic market would probably benefit from having access to a Nordic database.

## 1.3 Should we develop a generic database of structure types*? (*e.g. a wall construction)




## **Comments on 1.3** Should we develop a generic database of structure types*? (*e.g. a wall construction)

When selecting and agreeing on structure types the process must be transparent. The process itself must overcome some obstacles like common functional units, what variations to include and how to best represent the different building methods in each country. It would be easy to compile if data in the database is machine readable. Since it has been done in LCA-byg in Denmark and Baubook in Austria knowledge from their processes might be of value.

**If yes, why?**

- If specific for a country
- It helps show that new materials are possible to include in structure types
- It is more important than a database for material and products
- Good for benchmarking
- It makes calculations quicker and easier, saves time
- It is helpful in early design phase
- It would make it possible to gain a quick overview of impact from building elements
- It could support in selection of main materials
- It makes it easier to choose the best solution

**If no, why?**

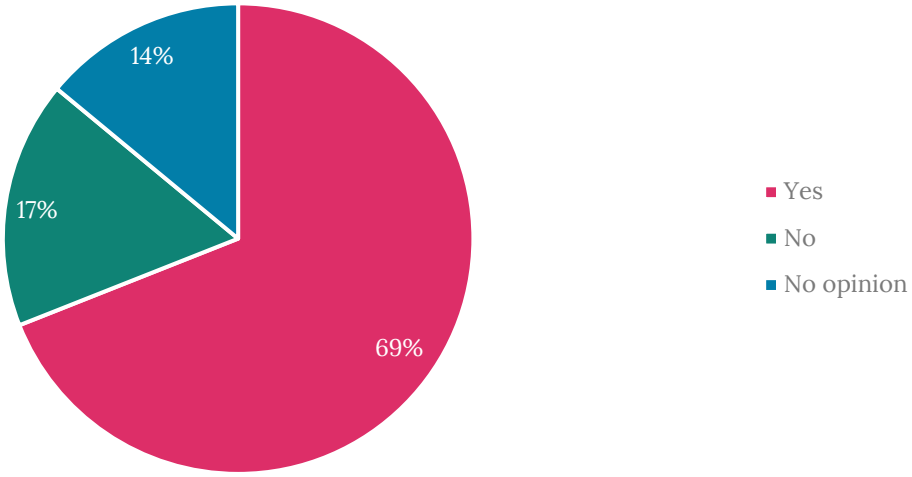
- It is not appropriate for technical building systems
- It will kill innovation and reflection
- It is not prioritized
- It is better to set a max emission value for a construction part

- It should not be used as a final LCA
- The variety of the data and structures would create huge mass of data to be managed.
- Simplifying too far may cause large deviations with the real life
- Work for better BIM tools instead, as BIM develops it might be possible to get data directly in the BIM system
- Importing material to software would solves that issue without having to have a separate database

**Yes and No**

- If it is possible to disaggregate the structure to see underlying building parts
- It is mostly useful for renovations
- Only if it adds to a generic materials database
- It must allow for calculation of special structures to promote innovation

## 1.4 Should a Nordic database describe the climate profiles of generic products from outside of the Nordic countries?




## Comments on 1.4 Should a Nordic database describe the climate profiles of generic products from outside of the Nordic countries?

**Imports are part of the market**

The database needs to contain products that are used in the Nordic countries not only produced here since trade is international. If it is not included, the data would not reflect reality. To limit the number of products the start could be to include the imported products that are most used e.g. the products that are used in e.g. more than

50 % of the building stock. It is important to balance the resources spent on building the database and focus on keeping it up to date over time.

### Importance of collaboration

If, in the future, each country or region has its own database, they should be designed for collaboration. That will ensure that over time both the generic and specific data will be available and can be combined into one database if needed. Until then, one solution might be to import data for non-Nordic products from other databases e.g. Ecoplatform. To get this working the data must have the same quality as the Nordic data, and it needs to include all stages (A-D).

### For completeness and arguments

If imported products are not included there is a risk that the LCA will be uncomplete or that the data used does not reflect reality. Good arguments are needed for choosing the best performing product and products that are imported can have a completely different emission profile than the same product produced in the Nordic countries. If the Nordic generic average is used for both products the arguments for choosing the best product is lost. This might also be true if the generic value does not reflect the marginal suppliers, whether national or international. The comparison between different products and different origins is an important value and including imported products can increase competition and incentivize improvements.

## 1.5 How should the database be designed to help the digital life cycle assessment (i.e. digital format)?

### The database should:

- Contain data in detailed and open format and have an API to be able to connect to and change tools (e.g. BM, LCAbyg, oneclickLCA, 3Dmodels, Revit)
- Contain data in ILCD[2] + EPD format
- Be in Machine-readable format
- Be based on or linked to existing EPD databases
- Be compliant with existing databases
- Be browser based
- Tested with common tools before going public
- Have a good interface
- Should be easily accessed and translated into all Nordic languages
- Provide data in a "database-format" that links all construction-products to a unique ID
- Refer to relevant EN standards, follow smart CE-marking processes.

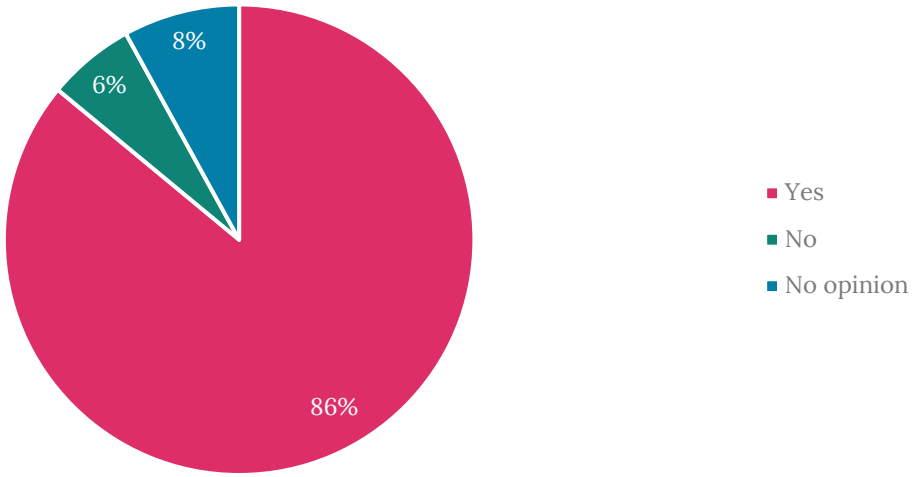
[2] International Reference Life Cycle Data

The structure of “LCA-Byg” from Denmark and the way it is used by DGNB certification could be an inspiration. A cooperation with other countries within EU could also be fruitful.

# Round table 2: Regulations

*The second Round table discussions focused on regulations. Before the round table started all attendees was given a presentation about the upcoming Swedish regulations regarding climate declarations as the example to discuss. All participants were asked to fill in a form after the discussions. 48 people answered the form and it is the answers that was given in the form that is summarized below.*

## 2.1 From your perspective, are the presented regulations moving the Nordic region in the right direction of lower carbon emission from construction?



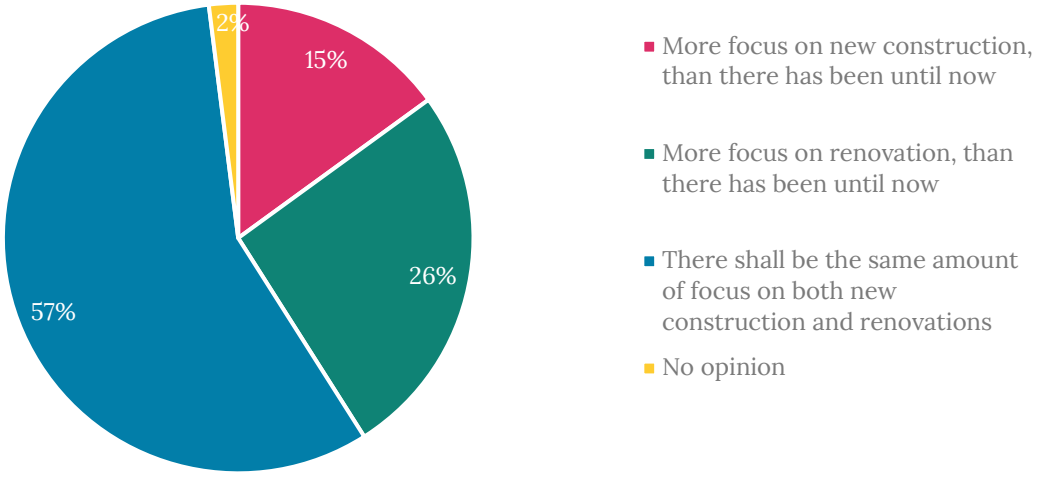

## Comments on 2.1 From your perspective, are the presented regulations moving the Nordic region in the right direction of lower carbon emission from construction?

Speed is important and regulations are in some ways not keeping up with the rapid development in the building sector.  When it comes to Nordic harmonization it is important to not let that slow the process down but rather go for collaboration before harmonization. Harmonization could on the other hand lead to bigger markets if rules for e.g. fire and acoustics were the same in the Nordic countries.

The Nordic countries should not be afraid to regulate, it will boost other initiatives too and trigger the innovations and business models necessary to move towards low carbon construction. Goals and limit values are an important part of the legislation that needs to be set, and the limits could be set higher in the beginning and then decrease as we move towards the goal of a low carbon building sector.

It is important to include the whole life cycle of the building. If the regulation is not holistic but only set requirements for some of the life cycle the most sustainable solutions will not be chosen, and it might lead to sub optimization.

## 2.2 How much weight should be put into renovation vs. new construction in terms of climate regulation?




### Comments on 2.2 How much weight should be put into renovation vs. new construction in terms of climate regulation?

There is a need to have different focus for renovation of existing buildings and new buildings. Existing buildings have a huge potential when it comes to material and embodied carbon as well as use phase emissions. Renovation are important since heating stands for a big part of GWP for a building and there is a need for more energy renovations and to define requirements for all buildings with no planned energy renovations.

In a circular economy perspective, there is also need for more strict requirements when renovating - not demolish unless necessary and reuse materials on site. It is better to maintain existing buildings than demolishing them and upcycling their waste since new buildings have a huge climate impact compared to existing buildings.

## 2.3 How can regulation on climate emissions from buildings support circular economy?

**Requirements or legislation**

By requiring data and correct digital logbooks of materials downstream it will enable re-circulation of materials into new value chains. If the limit values for emissions are being

lowered continuously, it might force a more substantial use of reused material since recycled material have lower emission values. Regulations also needs to allow the use of used material and/or recycled material. The legislations could go further and include requirements to use recycled or reused material, that might incentivize and enhance an increase in reused and recycled products. “Future built” in Norway has defined a standard that could serve as inspiration.

### Data

There is a need for LCA data on recycled and reused materials as well as virgin material so that there is a possibility to compare a reused material a new one and include reused/recycled material in the building LCA. LCA is an important tool for moving towards circular economy.

### Promote construction for recycling

To capture the value of materials there is a need for setting requirements for demolition practices and recycling. A mapping of the resources in a building could be part of the delivery from the constructor to the building owner at the end of the project to make sure the owner has full information about the building’s resources. There is also a need to enable and create incentives for moving towards modular building components and reusable building components.  and design for disassembly. To ask for module D in the building LCA or a carbon handprint could be ways to give credits when designing for disassembly. To do this data and calculation methods needs to be defined to be able to include this in the LCA.

## 2.4 In what way do the Nordic countries want to influence the development of relevant EU initiatives (CPR, Levels, EPD vs. PEF)?

### Together we are stronger.

If we harmonize our regulations and measurements, we can influence more effective and have a common strategy for influencing on the EU level. This could include CPR[3] (upcoming revision), Level(s)[4] and EPD. All of those should be aligned with each other and with other upcoming legislation to prevent double work for companies. They should also be easy to understand so that companies of all sizes could work with e.g. Level(s) and be able to create an EPD.

### Level(s)

We need to work towards reassuring that Level(s) is not developed in a way in which it is no longer possible to use a national calculation method. If there is a joint vision for CO2 legislation in the Nordic countries it could help steering Level(s) towards the Nordic

[3] Construction Products Regulation
[4] The European framework for sustainable buildings

vision. Denmark and Finland have contributed a lot in the test phase and there might already be a Nordic footprint in Level(s).

### CPR

The Construction Products Regulation (CPR) lays down harmonized rules for the marketing of construction products in the EU. The ongoing revision of CPR is important. The revised CPR should use EN 15804 for declaring performance on BWR7 in order to have building level results without sub-optimization. The Nordic countries should support the implementation of EPD information into the CPR /CE-mark of construction products. And support the digitalization of the CE-mark, so that information can be easily included in e.g. BIM models.

### EPD (and PEF)

There is a need for Product category rules (PCR) that supports the development and documentation of recycled and upcycled materials as well as new biomaterials. The Nordic countries have a great potential to enhance the bioeconomy within the construction sector. To improve EPDs there is a need for quality requirements and more open information on energy use then today.

PEF is at the moment not commonly used for construction products.

## 2.5 What would be an important next step for the harmonization of the regulation in the Nordic region?

### The most common suggestions for next step

- Continue the work with the database and providing data that can be used across the countries.
- Harmonize which modules and building elements are included in LCA and in the database.
- Develop harmonized system boundaries and methods.
- Harmonize definitions (e.g. m2, scope of energy calculations, scope of LCA, limits for kWh and CO2-emissions, daylight requirements, fire requirements, acoustics).

### Other suggestions

- Set a joint goal and timeline for low carbon buildings
- Leave room for innovations!
- Continue the collaboration and continue to share experiences
- Harmonize regulations, start with an overview to map the differences, and get a greater understanding of why the differences exist.
- A harmonization of carbon emissions of building materials would be a great first step.
- Common view on the CPR update
- Focus on building materials

# Annex 1: Questions for the Round table discussions

## Round table 1: Generic database

| 1.1 What is your opinion about a generic database? | | | | |
|---|---|---|---|---|
| | I see a benefit in having a database for all Nordic countries | | Each Nordic country shall have their own | No opinion |
| Comments: | | | | |

| 1.2 How could a Nordic generic database help in the life cycle assessment of construction? |
|---|
| |

| 1.3 Should we develop a generic database of structure types*?<br>*e.g. a wall construction | | | | |
|---|---|---|---|---|
| | Yes | | No | |
| Comments: | | | | |

| 1.4 Should a Nordic database describe the climate profiles of generic products from outside of the Nordic countries? | | | | |
|---|---|---|---|---|
| | Yes | | No | |
| Comments: | | | | |

| 1.5 How should the database be designed to help the digital life cycle assessment (i.e. digital format)? |
|---|
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# Round table 2: Nordic regulation

| 2.1 From your perspective, are the presented regulations moving the Nordic region in the right direction of lower carbon emission from construction? | | | | |
|---|---|---|---|---|
| | Yes | | No | |
| Comments: | | | | |

| 2.2 How much weight should be put into renovation vs. new construction in terms of climate regulation? |
|---|
| More focus on new construction, than there until now has been |
| More focus on renovation, than there until now has been |
| There shall be the same amount of focus on both new construction and renovations |
| Comments: |

| 2.3 How can regulation on climate emissions from buildings support circular economy? |
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| 2.4 In what way do the Nordic countries want to influence the development of relevant EU initiatives (CPR, Levels, EPD vs. PEF)? |
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| 2.5 What would be an important next step for the harmonization of the regulation in the Nordic region? |
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# Annex 2: Program for the Nordic Climate Forum for Construction

**10.00 Opening words**

*Lise Aaen Kobberholm, Deputy Director at the Danish Transport, Construction and Housing Authority and moderator Maria Rydberg, project manager at Swedish Life Cycle Center*

**10.10 Status and current issues from authority, industry and academia**

**Authority:** *Anders Brodersen Jensen, project manager, The Danish Transport, Construction, and Housing Authority*

**Academy**: *Harpa Birgisdottir, Senior Researcher, Department of the Built Environment, Aalborg University Copenhagen*

**Industry:** *Christine Collin, Senior sustainability consultant, Rambøll*

**10.55 Coffee break**

**11.02 Nordic ministers give their greetings**

**11.15 Nordic database**

*Matti Kuittinen, Senior Advisor, Ministry of the Environment of Finland, Thomas Johansson, Expert Environment and Climate project manager, National Board of Housing, Building, and Planning, Tarja Häkkinen, Senior specialist in low-carbon building*

**11.40 Nordic regulation**

*Kristina Einarsson, Expert Environment and Climate project manager, National Board of Housing, Building, and Planning*

**12.05 Lunch break**

**12.50 Introduction to roundtable discussions**

**13.00 Roundtable discussion 1**

**13.50 Coffee break**

**14.00 Insights**

**14.10 Roundtable discussion 2**

**15.00 Insights**

**15.10 Conclusion and way forward**



*All information in this document is from the answer's participants at the forum gave in the questionnaires that they filled out during the conference. The opinions expressed in the document does therefore not represent the opinions of Swedish Life Cycle Center or the dialogue Forum for LCA, climate and buildings .*