European Commission

HIGH LEVEL CONSTRUCTION FORUM

Meeting report

Enabling collection, interoperability and sharing of data

31 May 2022, 13:00 – 15:00, Virtual Meeting

DG GROW

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Welcome by the European Commission

Mr Pieter Staelens, Policy Officer, DG GROW H.1., European Commission, opened the event by welcoming all participants. He further gave a short introduction to the High Level Construction Forum (HLCF) and explained that the construction ecosystem is not the easiest of ecosystems to enable the collection, interoperability and sharing of data. This is caused by the high number of different actors and supply chains that feed into the construction ecosystem. Mr Staelens explained that the European Commission is aware of all the challenges, but also convinced of the importance of increased data sharing. He further explained that the European Commission is currently in a phase where they support contracts and projects that contribute to the specific implementation of enhanced data sharing through better collection and improved interoperability. This session of the HLCF contributes to this discussion and fits within the framework of co-creating the transition pathway. The final transition pathway for the construction ecosystem will be published by the end of this year. Mr Staelens thanked the two co-chairs and the Technical Secretariat of the HLCF for organising this session, introduced the topics of the two panels and handed over the floor to the co-chairs.

Opening Remarks

Mr Juan A Morillas, BDP and Shareyourgreen design

Mr Juan A Morillas thanked Mr Staelens for the introduction and introduced himself as an architect with a particular interest in data. He thinks that data will provide clues and information that are needed to make building design more sustainable. Mr Morillas explained that most designs were focussing on the operational carbon emissions, and forgetting the embodied carbon. However, this has started to shift in past years, and there has been more awareness regarding embodied carbon. In his work, he further noticed a lack of knowledge and data on embodied carbon, green building design and materials, which is why he started Shareyourgreendesign[1] as a platform to share knowledge. Mr Morillas further emphasized the importance of everyone's contribution towards creating a much larger database. A good database is important because it is needed to determine whether the decisions are taken correctly. This is not just useful for designers, but also for contractors and developers as well as other stakeholders that want to ensure that we make the right decisions.

Mr Patrice Godonou, Swedish Wood

Mr Patrice Godonou thanked Mr Staelens for the introduction as well and explained that Swedish Wood[2] is part of the Swedish Forestry Industry Federation. Mr Godonou is interested in the HLCF because it covers a lot of information regarding standardization, which is something he works with daily. He is currently working with Eurocodes and standards for building products. These standards are also used to produce life cycle assessment (LCA) and ISO standardisations by different committees. He is also part of the Swedish national standardisation committee as well. His day-to-day work is related to issues of handling data from different perspectives. The questions that will be raised during the session are therefore important to him. Mr Godonou also emphasized the importance of knowing where to start, what needs to be done and what needs to be discussed. He stated that it is not possible to start from scratch, since many stakeholders have been working with different databases. Therefore, it is important to find a way that will smoothly integrate these different databases. Mr Godonou

[1] https://www.shareyourgreendesign.com/.
[2] https://www.swedishwood.com/.

further emphasized that it is important to know who will use the data, from whom to whom it will go, with what purpose and at what cost. He concluded by saying that it might also be an option to solve problems along the way, instead of having a perfect idea. These are all issues that need to be discussed.

Panel discussions

Part 1: Discussion on data availability, roles and responsibilities of stakeholders

The first panel discussion was moderated by Mr Morillas, who introduced the different panellists and asked them to shortly introduce themselves.

Ms Cynthia Andersson, Sustainability specialist at Skanska Sweden

The first panellist to introduce herself was *Ms Cynthia Andersson, Sustainability specialist at Skanska Sweden*. She works in the internal support department, called sustainable business development. Her day-to-day work in this department has less to do with the early planning stages, and more to do with the construction stage. She also works with different development projects. Ms Andersson's work also has a lot to do with third-party environmental certifications. Her job is therefore a bit of a blend. As a part of the environmental certifications, she has a supporting role where she answers questions about construction, building or chemical materials. To do this, Ms Andersson searches for the correct information and sends this to the Sweden Green Building Council for an application. Because of the variety of her work, she sees a lot of different perspectives and spends a lot of time on issues regarding the collection and the sharing of data.

Mr Hansueli Schmid, Project manager at Lignum Holzwirschaft Switzerland

Mr Hansueli Schmid, project manager at Lignum Holzwirschaft Switerzland, introduced Lignum as an umbrella organisation of the whole wood value chain. Within this organisation, he works on different technical topics regarding durability, digitalisation and sustainability. Mr Schmid also represents Switzerland in the European Confederation of Woodworking Industries, CEI-Bois in Brussels. Additionally, Mr Schmid is chair of TIMBIM. This initiative aims to digitalise the properties described in harmonised European standards of construction products in wood and provide this as machine readable template to all the manufacturers in the wood industry. Mr Schmid is also part of the product steering committee of Building Smart International, which is an international organisation that coordinates software companies and supports the exchange of data needed in the planning of construction. The organisation also exchanges on generic properties for early planning stages and aims to connect the specific information of the industry with the planning environment.

Ms Sidonie Immler, Partner and Architect for Specifications at Foster + Partners

Ms Sidonie Immler, partner and architect for Specifications at Foster + Partners, shared that she has been working in the sector for 18 years and in the last 5 years, she has been working in the technical department. Here, she produces specifications for F+P projects. Therefore, Ms Immler is directly involved in choosing products and getting these specifications right. She further noted that sustainability has always been an important element for Foster + Partners. Ms Immler herself is also

certified as a LEED AP. Embodied energy is also an important topic in their office, and they make sure that in every project the embodied carbon is calculated for every stage. Ms Immler is also part of LETI (London Energy Transformation Initiative) and she is helping with the writing of a brochure where specifications for low-embodied or zero-embodied carbon are explained. Ms Immler closed by stating that she is highly interested in sustainability, creating more transparency across the value chain and how everyone can strive towards the goal of zero embodied carbon.

Open discussion

Mr Morillas thanked everyone for their introduction and opened with a first question focusing on the different stakeholders involved in the industry and how these all can work together to collect and share data? In particular, Mr Morillas noted that Ms Andersson works mostly at the last stage of the production process and he was wondering how all the knowledge is transferred from the design phase to this last phase.

- Ms Andersson stated that next to issues of embodied carbon, many other things need to be considered as well, such as the REACH legislation on chemicals and which chemical products we use. Due to the many environmental certifications and now also with the EU taxonomy, the number of questions related to product specifications and construction are numerous. Many of these questions have not been solved or answered during the design question. Ms Andersson gave an example of a nursing home, where also stricter rules on fire safety and accessibility (e.g. wheelchair accessibility for fire exits) come into play. In general, the larger issue is handled correctly during the design phase but many detailed questions come up during the construction process. There is no systematic way for solving these problems and take these answers and use it for the next project. This is an issue with data. Sometimes even customers demand a certain certification, and in other cases, financial institutions will give a better interest rate when the certificates are better. The sector will need to agree on a base level so that customers will want to profile themselves as ‘green customers’. This will increase the demand for this type of information, and manufacturers will need to supply more data.

Mr Morillas thanked Ms Andersson for her interesting answer and asked a follow-up question directed at Mr Schmid; how can all these different products be put together and how can everyone work together here to collect and share data on this?

- Mr Schmid explained that there is currently a dilemma, where there are increasing requirements for buildings and increasing information about the performance of construction products. Engineers and architects get overwhelmed to match and prove all the different requirements in building codes with the performances of construction products and systems, reducing the time available for other important issues. In addition, performance and requirements should be brought together in the earliest planning stages, when important changes still can be made. The language of an important stakeholder, the computer, is still forgotten here. All the information on products must be readable by a machine. In order for the algorithm to recognise the different properties of products, a common Data dictionary is needed to make entities, categories and properties machine readable and interoperable at the same time. This digital framework can be broken down from international to European and even national levels. In the wood sector, this has already been started on European level with the initiative TIMBIM. However, it would be ideal if it would be an integrative process of

standardisation, to transform the content of construction product standards into the machine-readable language, just as it is translated in human readable language today. This machine-readable language could be published in an open CEN Data Dictionary, where all the participants in the planning can pick up the machine-readable identification of a property.

Mr Morillas thanked Mr Schmid and directed the next question towards Ms Immler, asking her how she then collates all these products and assembles them.

- Ms Immler started that from an architect's point of view, one needs to roll it back a little and focus on embodied carbon and how it is addressed at the design stage. At this initial stage, one needs to see how one can design out embodied carbon. This can then carry through all the different stages of the project. For this to work, data and transparency are needed on products and ingredients as well as benchmarks to compare designs with each other. Additionally, targets are needed to know what to achieve. Data is out there, but this is not enough yet and is quite fragmented. A recent initiative addressing this fragmentation is the Built Environment Carbon Database (BECD)[3] in the UK. It is important to bring the data together and to decide on benchmarks for different building types to have more standardised measurements. Lastly, Environmental Product Declaration (EPD) are becoming more prevalent, which is encouraging, however, the comparability of EPDs is not always given despite standardisation, which makes them sometimes difficult to understand and read. Optimally, these need to be understandable for laypersons and people that are not experts in standardisations or even in life cycle costing.

Mr Morillas summarised the points made by Ms Immler. First, data needs to be collected, it should then be shared and then benchmarks need to be established. This leads to the next question; how can the EU and governments incentivise the collection of data?

- Mr Schmid stated that the wood industry is highly motivated to introduce the collection of data in the planning stage. However, in the early planning stage, it is often not possible to use already specific data. Therefore, governments should manage a database of generic EPDs, which should be representative of most of the construction products used and can be applied in the earliest planning stages. In public procurement, generic EPDs create a common convention which allows a fair and reproducible view of the environmental impact - even before the tender. Switzerland already has such a generic database (KBOB), which is very similar to EPDs but it is simplified to the life cycle stages of production and disposal and covers the two most important indicators like primary energy (PE) and global warming potential (GWP) but also shows stored carbon in construction products. As one cannot expect SMEs to generate specific EPDs for all their products the national generic EPDs create at the same time an important fallback level to ensure in any case an environmental impact evaluation without gaps. A common framework is needed, where these different EPDs can be shared. He added that EN15804 provides such a framework, which defines life cycle stages and their indicators.

Mr Morillas thanked Mr Schmid for his answer and gave the floor to Mr Godonou, who was monitoring the questions and comments from the chat. The first question from the audience came from a participant representing Construction Products Europe, who highlighted that product manufacturers

[3] https://www.becd.co.uk/.

deliver a lot of information, which is done voluntarily (via EPDs) and mandatorily (via DoPs). However, the topic of data ownership should also be addressed, since availability, roles and responsibilities are fine but monetising are rarely or never discussed.

- Ms Andersson stated that this is a good point and that this has been a large issue in Sweden, where they have databases that collect manufacturers' information. Two main databases are used, which are in 80% of their projects a requirement where they have to establish a digital building logbook. The data on materials are taken from these databases and then added to the logbook. These databases give an environmental life cycle sustainability evaluation of buildings and chemical products. However, the business model of these databases is that they own that information. It becomes their information, which they can sell. In a recent meeting with stakeholders from Sweden, it was concluded that the final customers should take action. It is not the construction companies, nor the manufacturers or the owners of these databases, but it is the final customers that choose which database should be used and which certification they require. Therefore, the final customer needs to push for this change.
- Mr Morillas added that he often hears from contractors that, once they get involved in the process it is too late and there is very little that they can add. However, these contractors often have a lot of experience. This circles back to the first question, on how everyone can work together and be more collaborative. It is currently a very linear process and this should change.
- Ms Andersson added that the global trade identification number for products is also very important. If there is a database where every product has the same global trade identification number, one can use this. It is then not needed to have one forum or database for climate information and another one for REACH compliance or another one for emissions and other aspects that come in when building materials are chosen.

Mr Godonou thanked Ms Andersson for her answers and introduced the next comment, which was raised by a representative from the Finnish Ministry of the Environment of Finland: *"Regarding "data" I would like to point out that also the interoperability of different life cycle stage scenarios should be considered. They have an important role in LCA and may vary region by region. For example, different waste legislation (C3-4) or decarbonisation of energy (B6) are typical examples."*

- Ms Immler noted that this is a relevant issue and she thinks that this is something that should be made a lot more standardised for comparability. She often comes across the problem where they use one product in Europe and know that it has an EPD, but the same product in the US might not be covered by an EPD, where it comes from a completely different factory and has different credentials.

In the comments, there was also agreement with the comment from the Finnish Ministry by a company representative from BIM Sources who added that "*requirements and benchmarks will always be very different, depending on the region, purpose, time, stage, tool etc. However, the data should be "multi-purpose" (serving different requirements and to be used in many different tools) and in ownership of manufacturers. This principle is very important to achieving a solution. With ECO Platform we are working on this solution on environmental product data for EPD (aligned digital format, common quality & verification)."*

- Mr Morillas agreed with this point, adding that there are many differences between countries and even within those countries. There needs to be a common ground, otherwise, it will be

more difficult. One should also keep in mind that when this is done within Europe, it will be easier to see what is happening in the rest of the world.

Responding to a comment from Paul Surin (IBM) on standard ISO 22057:2022 'sustainability in buildings and civil engineering works', which provides a specific description of how to transfer such information in a digital form. Mr Schmid informed, that based on this standard, life cycle stages and environmental impact indicators have been recently included in the buildingSMART Data Dictionary (BSDD)[4]. This is a basic framework for digital collaboration with life cycle stages and indicators based on one common machine-readable language. The data is openly accessible via an Application Programming Interface (API). It also helps to break down the requirements of the building to all the building products in the building. The conclusion is that there should be one integral process in standardisation to translate the content in a machine-readable format like it is translated in any other human-readable language. Mr Surin also added that we should not be compiling data into a centralised proprietary database arguing that "we now have a common international framework and I do not think we need proprietary databases. There will be databases dictionaries as soon as these are following the framework allowing the interoperability we should not have an issue."

Mr Surin added that manufacturers must add the asset to the database and product owners need to own the data because there should be no difference between data and product and the ownership. He further highlighted the importance of responsibility for the quality and security of the data. It is not just about having an API, but also about the functional requirement and issues of security and reliability. If one uses that information and that information is inaccurate, a building might fall apart and currently, it is not clear who then would be responsible.

Mr Godonou thanked Mr Surin for his contribution and introduced the next comment from the audience, which came from a representative from the European Council of Civil Engineers. The comment stated that if a database is created, then the data must be available to everyone and in particular also SMEs and not only to the big players.

- Mr Schmid referred to his earlier comment that SMEs are sometimes not able to provide their EPD and that there should always be a fallback scenario with generic national values, as there will always be products in a building without an EPD. In these cases, the gaps in the environmental building assessment can be filled with generic national values, which can be used as well in the early planning stage. Mr Schmid also supports the point made by Mr Surin that the sovereignty and responsibility of the data must stay with the manufacturers. They need the possibility to provide their data in a decentralised way and that means also, that the product needs to be identified with a unique identifier.
- Adding to this discussion, a representative from Construction Products Europe commented that the current Commission proposal for the Construction Products Regulation is to make the EPDs part of the legal framework, which will completely change the game because everyone will be responsible for their data. This will change the nature of equities. Mr Schmid responded and stated that he hoped that it will be mandatory. However, it should still be possible for associations to create their common EPDs to provide a solution for SMEs. Mr Schmid hopes that at least Primary Energy (PE) (With its sub-values for renewable/non-renewable as well as

[4] https://www.buildingsmart.org/users/services/buildingsmart-data-dictionary/.

materially/energetic use) and global warming potential (GWP) become mandatory basic requirements, which must be declared. However, there are many other diffuse qualities/properties, like reusability and reparability, mentioned under sustainability in the draft, which are not covered by the existing EPD Standard EN 15804. They are not measurable and depend often on how they are installed in the respective building. Such information can be declared with not more than a due diligence system. Such self-declaration can be found in the EUTR, and it works fine. It is not possible to impose an ISO Label Type I (Traffic light assessments) with a duty of third-party certification, on manufacturers, especially not SMEs.

Mr Morillas thanked Mr Schmid for his answers and introduced the final question of the discussion: what is the first step in your view, to make all this work and your life easier when it comes to data sharing?

- Ms Immler noted that **it is going back to two things: incentive and collaboration**. First on **incentives**, if something is been made mandatory, it will be obliged. Operational carbon is set in building regulations and you just have to comply with certain targets and standards in each country to get a building permit. Some incentives can be done in the construction sector, but if it is mandatory it will be a completely different ball game. Secondly, **collaboration** is very important, and the client is an important stakeholder in this case. It is important to get the clients on board. If it is mandatory, then a client has to go with it to get his building built. Bringing clients to the table, upskilling the design team and maybe generally the construction industry, so everybody knows what we are talking about is important. Transparency and collaboration from day one are key, so everyone knows what is going on. Finally, we should look at different types of construction contracts. There are contracts where the contractor comes in early, which could be a big change.
- Ms Andersson noted that she has a different perspective than most other people present in the meeting. She believes that the various green building schemes from the different green building councils and **the different environmental certifications, which will facilitate benchmarking and transparency, will take out the smaller companies**. As said by Mr Schmid the small manufacturer will not be able to have product-specific EPDs for every single product. This is according to Ms Andersson not desirable. The process will be made so difficult that only big players remain in the industry. Currently, only a few specialists know exactly what the specifications are asking for and this is part of the problem that needs to be addressed. A solution is branch EPDs or generic ones, however, these are not always accepted.
- Mr Schmid noted that to achieve a significant change in a short time, **generic EPDs need to be applied in the early planning stage**s and therefore to integrate the assessment of GWP and PE in the life cycle stages of production and disposal in the application for a building permit. When this is done, a positive change can be achieved - even by only raising awareness of those impacts. This calculation would rely on EPD according to EN 15804, which is an ISO label type III according to ISO 14025. All other kinds of labels, like ISO Label Type I (Traffic light assessments), should be up to the client. Additional assessments by a third-party certification allow for achieving a quality exceeding baseline requirements for products and buildings. This is part of the free market and the two types of labels should not be merged. There is a governmental part, which should rely on unweighted numbers calculated based on a generic EPD database or specific EPDs, while other labels based on ISO label type I with weighted numbers should rely on the free market.

Part 2: Discussion on standardisation, databases and interoperability of data

Mr Godonou welcomed participants back to the second panel. He then invited the three panellists for the second discussion to the virtual stage and asked them to introduce themselves and explain how their backgrounds relate to the topics at hand.

Mr Panu Pasanen, CEO at One Click LCA

Mr Panu Pasanen, CEO at One Click LCA, introduced himself and explained that data and standards are extremely important for his company. Mr Pasanen further explained that One Click LCA provides a software platform, which is the world's leading construction LCA software and a widely used construction product classical assessment software. They support about 65 to 70 different standards for performing LCAs. This includes the Swedish standards mentioned in the earlier discussion, Level(s), EPD standards and more. One Click LCA has a very high focus on the quality of both the outcomes and the inputs. The company works with almost all of the systems on the market.

Mr Jaroslav Nechyba, Director of the BIM Conception Department at the Czech Agency for Standardization

Mr Jaroslav Nechyba, Director of the BIM Conception Department at the Czech Agency for Standardization, explained that his department is responsible to support the delivery of the national BIM strategy, providing guidance, methodologies and standards as well as supporting the education of the public sector and the supply chain. Mr Nechyba also works on creating and implementing international standards, which is one of their most important activities. One of the key elements in the implementation of digital data dictionaries and data templates for the Czech construction industry. Mr Nechyba explained that they find it important to find one common course and definition for structured data. The most important activity related to this topic is the creation of a common data dictionary based on international standards.

Mr Paul Surin, Global Built Environment and EC&O Segment Lead at IBM Consulting

Mr Paul Surin, Global Built Environment and EC&O Segment Lead at IBM Consulting, introduced himself as the global lead of the engineering, construction and infrastructure operations at IBM. Mr Surin is also part of the CEN/TC 442 group on Building Information Modelling since 2016. Last but not least, he has been the chair of the Construction Products Europe Digitalisation Task Group. He highlighted that he used to work for a manufacturer contractor and is currently working at a global tech company, which provides him with a good view of different stakeholders across the value chain.

Open discussion

Mr Godonou thanked all three panellists for their introduction and opened with a first question on the many different ways *to* measure carbon emissions and asking which ones are the most mature and best suited for the construction industry today.

- Mr Pasanen explained that two types of standards exist. First, we have project standards. The Level(s) framework is part of this, which is based on European standards. Level(s) is a fairly

orthodox implementation of the European standards, as it is completely based on standards. Level(s) and the underlying EN 15978, while not being perfect, are mature and widely supported by the industry. They allow quantifying and to compare in terms of decarbonisation. However, they do not allow for perfect comparability. The second type of standards is the product standards, which include the EPD standards and EN 15804. These work quite well on the market, but they also do not work perfectly with some people passing off non-third party data as being third-party verified data. However, Mr Pasanen has some serious concerns with PEF, which is being pushed a lot by the Commission, but which increases the costs. More products must be documented so that more products can be compared. Data also needs to be more accessible and smaller players should be able to participate in the industry decarbonisation. Mr Pasanen highlighted that there are two good approaches both of which are based on European standards with EN 15804 and EN 15978, however with PEF he is worried about the cost structure it imposes.

Mr Godonou thanked Mr Pasanen for his answer and directed his next question to Mr Nechyba asking him how existing standards are suited for the collection, interoperability and sharing of data as well as what is missing from the existing data and what can we do more to reach our goals, departing from the existing standards.

- Mr Nechyba explained that most of his activity is related to these existing standards mentioned in the discussion. He further added EN 17412 as an important standard as it defines the level of information that is needed when using BIM. It is important to set up such individual levels for each requirement, for each organisation and each project as well as its specific purpose. When many actors start digitising, they start to collect as much data as possible, however, they lack a specific purpose on how to use the data. One of the key standards that Mr Nechyba uses in his work is based on this standard and focuses on the adaption of outcomes to the market. The second important standard that is used, revolves around the data dictionaries and the governance of those data dictionaries. There are many interested stakeholders, who are trying to push some kind of information inside these data templates and try to push certain requirements. It is therefore important to have well-organised governance of databases. In addition, the data should be clear and unique to avoid duplicates and it must be clearly defined for everybody what the property means and which values can be inputted. The final solution should be a machine-readable data structure so that different software solutions can be connected through APIs. The goal is to have reliable data, that does not need to be checked by humans. Currently, we are missing a structured format for those data requirements. TC 442 is working on this and it should come by end of this year or next year. This is the one aspect we miss as while the data is structured in databases, we need standardised formats for transmitting the structured data from data dictionaries to the industry.

Mr Godonou thanked Mr Nechyba for his answer and handed the floor to Mr Surin to reflect on the proposed EU Construction Products database. In particular, he asked Mr Surin about its feasibility, how we would be able to achieve it and what best practices there are regarding data collection technology for storing and extracting data for the right purpose.

- Mr Surin referred back to Mr Nechyba's comment agreeing that it is important to define the purpose. He added that best practices do exist mentioning the Port of Rotterdam and how

they collect different requirements from different data sets and different use cases. The key issue here is the existence of the multiple software platforms/applications developers on the market, which is exemplified in the increase of different databases which quite often reinvent the wheel. It is necessary to use a top-down approach paired with a bottom-up collaboration to answer the question of whether there is a best practice for data collection. There is always a best practice from an IT point of view, but it is more likely that we keep it as a BIM bubble in a silo as organisations often work disconnected from their IT department. The problem is not that the tools do not exist or that we do not have the means, the problem is that we work in silos.

- Adding to the silo aspect, Mr Pasanen stated that the whole nature of the construction industry is a fragmented value chain. This is a structural characteristic in most countries, which is not that easy to overcome. However, the data and tools are generally able to work across different stakeholders and between different tools. It is not completely desperate, but it requires the buyer to ask different suppliers to do it. If the client does not ask for or mandate cooperation, it does not happen naturally necessarily.
- Mr Surin made one additional comment on start-ups. Many start-ups claim to have API documentation for their database, but then when you discover that they do not have it or it is not ready yet. So they do not even look at what is the best practice in terms of a production-ready system and then they end up parasitising on manufacturers co-developing their tools and platforms. SMEs are then not able to afford it or will spend their whole budget on one initiative, and cannot afford to switch. The last point relates to interoperability, as it is almost impossible to move data from one database to another.
- Mr Nechyba agreed that the starting point is the client. He is the one who should be able to manage the project and the one who should put the requirements inside the project. Education and knowledge become therefore important for the client as they have to manage all the data and should set up the common data requirement to share the data. This will incentivise different stakeholders with different interests and motivations to put the data in one single place, where the information can be shared and linked.

Mr Godonou thanked the panellists for their inputs and directed a question to all three of them, asking them who should coordinate all the work related to the creation of a common database and whether it should be done at a national level.

- Mr Pasanen answered by explaining that it is a bit abstract, but it is about who has the problem that should solve it and take charge of coordinating. This is a purely market economy perspective, however, this responsibility is not always clear and in certain countries, such as Finland, Sweden, France and the Netherlands, the government see that the market will start to dysfunction and therefore step in to set requirements. In some countries, this is done more successfully than in others. Countries such as the four mentioned regulate building-level outcomes and have systems in place that work. In other cases, the intervention of the government slowed down the process. It is important to first determine what one wants to achieve before considering who should pick up the work.
- Mr Nechyba noted that the simple answer would be to cooperate through the CEN organisation and all stakeholders could contribute by putting outcomes and experiences forward through a national representative. However, beyond this, these standards must always be the general base and these should be adapted and implemented according to

country-specific needs. It is not possible to copy-paste the same standard to different countries. Each country has a different starting point, related to digital maturity and social levels. The role of the "smart government" is to find the right way to inspire and push the market to collaborate, because it will bring them all benefits. Therefore, Mr Nechyba also fully agrees with Mr Surin on the fact that silos are the bottleneck of cooperation and argues that national governments have the role to integrate these international standards to avoid this.

- Mr Surin noted that CEN covers Europe, but the global perspective should not be forgotten if we want Europe to be able to trade globally. In that case, a long-term strategy is required, which should include KPIs. This would provide a certainty, which business leaders need to see to know why they should do it. However, policies and strategies are changing roughly every four years. This makes it difficult to do business and invest. Additionally, we also do not reflect on failures. is important to review what happened and to learn from this. For example, he pointed to the Building Materials Bank and DigiPLACE to review what is happening there and what the next steps should be. This understanding is lacking, which may cause the silos because there is a genuine lack of information and mistrust. Lastly, the development of standards should be changed. This process is currently too slow, access should be increased and prices should be equalised.

Mr Godonou thanked the three panellists for their responses and gave the floor then to Mr Morillas to call on some questions and comments from the audience.

- A representative from the Ministry of Environment of Finland argued that "PEF is the suggested method for the Carbon Border Adjustment Mechanism (CBAM), which as we know deals with products that are materials that are mostly used in construction (cement, steel, aluminium)." Therefore, he believes that the move towards PEF would create a significant issue as most of us who are working in construction have a certain degree of allergy towards PEFs and would favour EPDs. This is a very important point of coordination.
- An attendee representing Cobuilder agreed that a silo mentality is holding back the construction sector since too many people want to be seen as 'the hero' that solved the world's problems.
- Mr Surin added that the silo mentality might not be on purpose, but it is important to do something about it and change the industry as it will not work this way. The high level needs a proper strategy that includes KPIs to provide a proper direction at the European and international levels. In addition, by sharing what has been done in various countries particular the things that have not gone right, one can learn from each other's mistakes.
- Ms Anderson raised a question on what was said by Mr Surin and Mr Pasanen, highlighting that if we are all transparent and share everything, what about the free market and proprietary information based on which businesses have built their business model? They have worked hard to develop a quality product that works and is environmentally friendly, so maybe they do not want to be transparent as other people can come in and take it. She agreed that there needs to be a part free market and part accountability paired with controls to push the market forward.
- Mr Pasanen responded that almost all systems allow masking some of the data, so there may be a third-party verification that it is according to requirements and the specific rules. However, no building or chemical manufacturer would make a single EPD if it requires them to disclose their detailed recipe, because their whole R&D investment is based on it.

- Adding to the discussion, Ms Immler explained that data should be shared at the product level but should also be shared post-occupancy, to see how a building is fairing and to calculate the total embodied carbon of a building. However, here there is also some reluctance from architects and clients to share in cases where measurements can be done in different ways and are not always comparable and can be changed to look more or less favourable. This is where we then go into when making it mandatory to share operational data.
- Mr Morillas responded that from the experiences of his work developers and designers are indeed reluctant in sharing this kind of data, as they do not want to be compared with each other. Therefore, it is important to find a way to share this data anonymously.

Mr Godonou thanked the commenters and then raised a clarification made in the chat about Level(s). This clarification stated that "Level(s) is a framework, which can be used as a perfect adapter from technical methodology to different regulations for alignment of methodologies/schemes for critical aspects of sustainability on building level (e.g. whole-life carbon from building LCA)"

- Mr Nechyba responded by explaining that Level(s) must be dynamic. The construction sector is very colourful and each project, building or company is different. There will always be a need for a dynamic data dictionary as it should be possible to translate data from point A to point B. This translation is also very important to establish structured data. The owners can choose the purpose of the data. Based on this, different requirements can be set up. These requirements can be different for each project
- Mr Pasanen noted that with Level(s) he was referring European building sustainability assessment methodology. Whether Level(s) is a perfect adapter for different regulations depends on the regulatory objectives. National regulations are made for national policy objectives and commitments, e.g. for decarbonisation. The assessment methodology may be adapted to give the required results to allow for achieving that goal. This process of matching policy objectives to the standard method does not tend to work perfectly. However, looking at national requirements, having a national adaption of a certain method is understandable, because it will allow predicting whether a country will meet its commitments.

Mr Godonou thanked everyone for their answers and both co-chairs of the session raised a final question, asking panellists what they believe is a realistic time frame to create a meaningful database for European countries, and whether the different carbon benchmarks should be aligned and agreed upon between different countries?

- Mr Pasanen responded by connecting to his previous comment, arguing that government benchmarks must be using a different methodology considering that national policy objectives and political compromises differ in each country. There is low value in sharing these benchmarks which are based on different methodologies. In that case, **national databases are working quite well because they are better understood and are easier to communicate**. This is also where there is currently the most traction in the market.
- Mr Surin stated that he does not believe in **creating a centralised common database is the right solution as it involves too many risks**. Instead, if we have a framework and both manufacturers and governments understand what are the policies, then we can create common data templates and data inquiries. It is key that national bodies collaborate with industry in such a framework and that we move towards multi-cloud or hybrid-cloud environments and the democratisation of the application landscape.

- Mr Nechyba fully agreed with Mr Surin and is also not a supporter of any kind of central information system. We can see this in the IT industry, which is also moving in a different direction. Instead, small-scale solutions, which are interconnected with each other and are secured, interoperable, have clear ownership and are easy to update with each manufacturer updating their data. For this **to work, we need common data templates, common definitions of the standards, common ways how to communicate and share data and then create a kind of marketplace**. In conclusion, it is important to find a solution that is connected based on international standards.

Closing Remarks by the co-chairs

Both co-chairs thanked the panellists and the participants for their contributions and then concluded the webinar:

- Mr Morillas stated that he found it interesting to see what the different panels and the audience had to say about the database and the difference between national targets. He stressed that if **we want to achieve the 2030 and 2050 climate goals and targets, ambitious benchmarks are needed,** so certain countries are not left behind. It is also important to incentivise all countries to follow the countries with more ambitious targets.
- Mr Morillas further emphasised the **importance of working collaboratively and sharing knowledge across the value chain**. The focus of this session was mainly on manufacturers and producers, however, designers have an important role as well. Many easy wins can be achieved during the early design, planning and detailed design phase. Architects and developers or designers, in general, have a huge responsibility to be mindful of the design and the type of material they plan to use.
- Mr Godonou noted the necessity of benchmarking as mentioned by Ms Immler. However, he highlighted also the contrary point of view as mentioned by some who stated that benchmarking, of carbon measurements, for example, will not be a solution due to the different realities in countries. This is something for all of us to consider, **maybe there is a way forward on benchmarking based on the general methodology**.
- Mr Godonou further referred to Mr Schmid's comment that the solution to the problem is to **collect requirements and information and make them readable for different stakeholders**. This is in line with a point made by Ms Andersson, who explained that from the beginning of a project to the end of it, many things might have changed. For example, a concept for a project might be developed based on specific client requirements, however laws or requirements can change by the time the production is completed. It is important to have a method or system that can accommodate these potential changing requirements.

Next steps and closing remarks by the European Commission

Mr Staelens thanked the panellists and co-chairs for their participation in the discussion. He further summarised some of his key conclusions from the discussions:

- People get overwhelmed by the many requirements and different systems and platforms that exist and are being used, therefore all new initiatives on digitalisation and standardisation should make an effort to make life less complex.
- Furthermore, it is important to take SMEs into account, as data must be available to everyone and not just to the big players. Due to this, there is a need for cutting out costs and

complexities so that SMEs do not have an unfair burden to comply with regulations. In this regard, interesting ideas were shared about using generic or fallback EPDs.

- There are many good practices in terms of data sharing and bringing stakeholders together in the Member States, however, they are relying on a coalition of the willing in many cases. It is therefore important to keep pushing for data sharing and interoperability on the European level as the market is inherently international. An important issue here is the governance of databases to guarantee security and machine readability.
- In terms of further developing databases and data dictionaries, it is important to avoid a silo mentality. This is now creating some kind of BIM bubble, which is not always taken into account in the wider economic picture. The developments should not appeal only to the IT department, but also to the procurement and marketing departments.
- One needs to realise that the business models are not always effective or in line with wider policy goals. On the one hand, database companies gather data to then resell it, while on the other hand, it is important to realise that developers and manufacturers need to monetise as well somehow.
- As a final comment, Mr Staelens highlighted that the European Commission sees these dedicated sessions as part of a larger process to engage with as many stakeholders as possible. The European Commission always aims to attract as many relevant people as possible to these meetings within the High Level Construction Forum.

List of participating organisations

Organisations	Organisations
BDP	Ministry for Housing of France
BIM World Munich	Ministry for Innovation and Technology of Hungary
Boverket - Swedish National Board of Housing, Building and Planning	Ministry of Regional Development and Public Works of Bulgaria
CEI Bois	Foster and Partners
Cobuilder	IBM
Construction Products Europe	Insinööritoimisto KJ Oy
Consulting Donath	Kellen Company
Copper Alliance	KTH Royal Institute of Technology of Sweden
Czech Standardization Agency	Lignum
Danish Housing and Planning Authority	Luxembourg Institute of Standardisation, Accreditation, Safety and Quality of Products and Services
EMI – Hungarian Construction Quality Inspection Institut	Ministère de la Transition écologique (France)
Environment Agency of Luxembourg	One Click LCA
Eurogypsum	Permanent Representation of Sweden to the EU
European Builders Confederation	Plastics Europe
European Calcium Silicate Producers Association	Shareyourgreendesign
European Council of Civil Engineers	Sixense Group Romania
European Environmental Bureau	Skanska
Ecorys	Small Business Standards
ECSPA	Sustainable Public Affairs
EUMEPS	Svenskt Trä (Swedish Wood)
Eurolux	TEPPFA - The European Plastic Pipes and Fittings Association
European Commission, DG GROW	Technology Enabled Construction Cluster - TEC
FEICA - Association of the European Adhesive & Sealant Industry	UNE – Spanish Association for Standardisation
European Commission, DG JRC	VCI - Verband der Chemischen Industrie
FEICA Secretariat	Vialis Engineering SA
FIEC	VINCI
Federal Ministry for Digital and Transport of Germany	Norwegian Directorate for Building Quality
Ministry for Ecological Transition of France	WIEHAG
Ministry of the Environment of Finland	

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