

22 November, 2022

Sven Bienert MRICS REV,
Managing Director
CRREM Initiative
CC' CRREM Steering Group

Re: Feedback on the proposed amendments to the CRREM global pathways

Dear Sven

Thank you for the opportunity to provide feedback to your consultation on the proposed changes to the CRREM energy and emissions intensity pathways for buildings.

The World Green Building Council (WorldGBC) is a global action network of 70+ Green Building Councils, representing 35,000+ industry members. Our network has transformed entire industries by driving the built environment to be net zero carbon, healthy, equitable, and resilient. Our leadership in each country has given us access to industry leaders along with detailed insights into the energy and carbon performance of buildings. Green Building Councils (GBCs) are well positioned and have deep experience on what is needed to decarbonise the sector and are working within it to deliver it.

WorldGBC has an ESG working group within its Sustainable Finance Taskforce made up of leading GBCs from every continent. The ESG working group has the objective of driving global thought leadership on ESG and aligning efforts on sustainable finance and ESG reporting. I am writing to you today on behalf of this working group.

We appreciate your contribution to the global discussion on decarbonising the built environment, and strongly support your mission to make decarbonisation measurable and manageable, as it aligns with our work over the past two decades.

We are aware of recent feedback from our member councils and their industry members about CRREM, the tool, the approach to date, and the lack of consultation with the sector. The feedback, if not addressed, will likely lead to CRREM's brand being impacted, and its adoption and influence diminished. In particular, there are concerns with the following:

1. **Governance:** Given CRREM's importance and mission, your governance and consultation model does not reflect best global practice. Decarbonisation pathways that will affect the global real estate sector cannot be developed largely in isolation from markets outside of the European Union. More specifically, it is lacking critical real estate expertise and global representation.
2. **Transparency:** Openness and sharing of methodologies, assumptions, purpose and intended outcomes with stakeholders and the industry is critical to the successful development and adoption of CRREM's pathways. CRREM needs to

disclose and be more explicit about its ultimate purpose, interpretation, intended consequences, methodology, assumptions and limitations.

3. **Market Relevance:** CRREM needs to perform in-depth reviews and sensitivity analyses of its results to ensure the outcomes are relevant and appropriate to different market and country circumstances.
4. **Stranding Risk:** CRREM needs to better explain its concept of “stranding risk”. Our community feedback emphasises that CRREM’s current approach is simplistic, inconsistent with other metrics, and potentially miscommunicated. This reflects the lack of consideration for relevant local, regional, and national policies, investment strategies, building attributes, climatic variation, and other factors not considered in CRREM pathways. Consequently, CRREM results show assets being at risk of stranding when they shouldn’t and vice versa. It is worth noting that these differences are not rooted in individual parameters; rather, conceptually different approaches to understanding and communicating stranding risk.

We are concerned about this commentary as it speaks to the ability of CRREM in including important stakeholder groups and insights in the development of decarbonisation tool. We believe that the approach you have taken to date will hinder the conversation on decarbonisation and potentially cause confusion amongst real estate asset owners and managers, those whom we all agree need to take urgent action to decarbonise.

It is our genuine concern that if these issues are not carefully and robustly addressed, this will impact the building sector’s use and understanding of decarbonisation pathways such as yours. This will also have a negative effect on leading tools for decarbonisation that have been developed and adopted by industry in countries across the globe, including, but not limited to CaGBC’s Zero Carbon Building™, DGBC’s ParisProof, DGNB Klimapositiv, Australia’s Green Star, LEED Zero, Singapore’s Green Mark or the forthcoming UK Net Zero Carbon Building Standard.

It is important for CRREM to understand and work with the multiple market transformation strategies already in place worldwide. Decarbonisation pathways and roadmaps, and the definition of stranding risk is market specific and depends on national climate change policy, industry investment and support. There is no science-based approach that will work without considering how all of these will work together to achieve our goals.

We would like to work with you over the coming year to help CRREM to evolve and address these concerns that our members are raising. We also want to actively partner with you to create opportunities for the finance sector and the real estate sector to discuss how existing tools and standards can work with and complement each other to deliver on market transformation.

We also want to thank you for the time you took on November 3rd to speak with our ESG working group. Call participants noted your willingness to hear their feedback. Several of them also endorsed your willingness to work with them once they reached

out. Please find attached their detailed feedback to your presentation and publicly available consultation materials.

We need to move all buildings to be fossil-fuel free, highly efficient, and demand responsive, in parallel to grid decarbonisation. Tools like CRREM can provide an avenue for discussion and analysis, provided their capabilities and limitations are properly understood by users, and they are understood as a complement to, rather than a replacement of or simple proxy for leading standards, government policies, and corporate strategies. We are committed to collaborating with you to ensure our joint efforts drive the right outcomes, unlock investment into decarbonisation, and ultimately achieve a better planet.

We look forward to your response to this letter. Julie Emmrich, who leads our Sustainable Finance Taskforce, will be in touch to arrange a follow up discussion about next steps.

Kind regards

Cristina Gamboa
CEO, WorldGBC

And the following members of the WorldGBC and ESG Working Group

Organisation	Representatives
Canada Green Building Council (Canada GBC)	Thomas Mueller, President & CEO, WorldGBC ESG Working Group, Canada GBC
Dutch Green Building Council (DGBC)	Annemarie van Doorn, Director, DGBC Martin Mooij, WorldGBC ESG Working Group, DGBC
France Green Building Council (Alliance HQE & GBC France)	Marjolaine Meynier-Millefert, President, Alliance HQE GBC Hanane Elhayek, WorldGBC ESG Working Group, Alliance HQE GBC
Green Building Council Australia GBCA	Davina Rooney, CEO, GBCA Jorge Chapa Chair WorldGBC ESG Working Group, GBCA
Green Building Council Indonesia (GBCI)	Iwan Prijanto, Chairperson of the Board of Directors, WorldGBC ESG Working Group, GBCI

Green Building Council Italia	<p>Marco Caffi, CEO, GBCItalia</p> <p>Stefania Striato, WorldGBC ESG Working Group, GBCItalia</p>
Hungary Green Building Council (HuGBC)	<p>Zsombor Barta, President, HuGBC</p> <p>Daniella Huszár, WorldGBC ESG Working Group, HuGBC</p>
Korea Green Building Council (KGBC)	<p>Young Cheol Kwon, President, KGBC</p> <p>Ian Yoo, WorldGBC ESG Working Group, KGBC</p>
Malaysia Green Building Council (MalaysiaGBC)	<p>Mitch Gelber, CEO, WorldGBC ESG Working Group, malaysiaGBC</p>
Singapore Green Building Council	<p>Yvonne Soh Executive Director, Singapore GBC</p> <p>Benjamin Towell WorldGBC ESG Working Group, Singapore GBC</p>
UK Green Building Council (UKGBC)	<p>Julie Hirigoyen, CEO, UKGBC</p> <p>Tom Wigg, WorldGBC ESG Working Group, UKGBC</p>
US Green Building Council (USGBC)	<p>Peter Templeton, CEO, USGBC</p> <p>Chris Pyke, WorldGBC ESG Working Group, USGBC</p>
WorldGBC	<p>Stephen Richardson, Director Europe, WorldGBC ESG Working Group</p> <p>Carolina Montano-Owen, Circularity Accelerator Programme Coordinator, WorldGBC ESG Working Group</p> <p>Julie Emmrich, Sustainable Finance Lead, WorldGBC ESG Working Group</p>

Technical feedback as part of the CRREM Global Pathways V2 PUBLIC CONSULTATION

Dear Sven

Thank you for the opportunity to provide feedback to your consultation on the proposed changes to the CRREM pathways for buildings. We, the ESG Working Group of the WorldGBC Sustainable Finance Taskforce, would like to congratulate you on CRREM's continued use by the finance and investment community. CRREM is building on work done to date by all of us to generate further interest in decarbonising the built environment. We look forward to continuing to support your efforts to ensure CRREM is a robust and globally applicable, and complementary tool for the decarbonisation of the built environment.

The feedback is based on the presentation given at the ESG Working Group call on 03 November, publically available materials posted on your website, and feedback received from the members of each GBC.

In summary:

- We welcome the updated v2 pathways. They represent an improvement and additional opportunity for collaboration.
- We would like to work with CRREM on providing data or assisting with analysis, briefings, or similar.
- We see great opportunity for the CRREM curves to be used to provide valuable metrics for governments and large scale investors to see how the entire sector is performing.

However, more work is needed:

- CRREM needs to provide more transparency. Each assumption in the model compounds to show a result in the pathways - the wrong assumptions will hinder progress and drive investment elsewhere. Assumptions should be documented and published, by country, on the CRREM website.
- More sensitivity analysis is needed to understand the impacts of CRREM on the built environment. The curves should be improved further, and sensitivity analysis on the results at a local level should be done.
- More education is needed for users and partners of CRREM. Multiple GBCs report misuse of CRREM by investors, or misinterpretations of what the curve represents in reporting mechanisms such as with GRESB. In the medium to long term, this represents a significant reputational risk for the CRREM initiative.
- Increased collaboration is needed. Interpretation of local data sets from one country to another could result in the wrong curves. GBCs worldwide are willing to help, and WorldGBC would be happy to facilitate.
- Governance for CRREM needs to consider a diverse set of views and perspectives which would contribute to better and more balanced outcomes. The exclusion of WorldGBC and GBCs around the world from this consultation is a concern. More importantly, it diminishes the quality of the discussion and the results. Collaboration is key in achieving our common goal.

Whilst the update to CRREM is timely, we believe that more should be undertaken to align building typologies (their definitions), review the data and assumptions, ensure grid emissions projections are based on regional scenarios, and sensitivity analysis be done on the results. Without this information, it can be easy for CRREM to be misinterpreted and conflict with recommendations and work already happening on the ground.

The value of CRREM in worldwide discussions on decarbonisation

The global standardisation of decarbonisation in the built environment has the potential to attract money for net zero carbon buildings and unlock policies to move sectors that fall outside the traditional sustainable finance pathways.

WorldGBC's approach to drive transformation through our Global Commitment for Net Zero Carbon Buildings was the first to enable the conversation at scale - CRREM has certainly brought the investor community to consider the carbon risk of buildings, and has helped in this conversation.

CRREM's new partnership with SBTi is welcome, but concerning. CRREM was designed to be a carbon-risk tool. It should not be used as a target setting framework. While the two are similar, they have different purposes, metrics, and approaches. We encourage CRREM to discuss with SBTi its purpose, and encourage it to form additional partnerships with credible, verifiable, rating systems worldwide that are driving net zero buildings. This approach would provide an opportunity for CRREM and the entities that manage these systems, to create a shared view of how the multiple tools benchmarks, and regional approaches can work together.

CRREM's approach to setting pathways over time is also welcome. GBCA, UKGBC, DGBC and SGBC (in collaboration with the government agency BCA) have all published pathways or roadmaps that aim to drive decarbonisation in their countries. We encourage you to work with those and other countries to review pathways and assumptions to ensure that roadmaps and pathways correlate. These roadmaps and pathways were developed considering local conditions - which are critical to identify where to drive investment in our built environment forward. We are encouraged by those conversations that have already taken place, and would welcome the opportunity to continue them forward.

Like GBCs worldwide, CRREM's focus on both carbon and energy is welcome. The revised energy pathways acknowledge that the first version was potentially unclear, and in some cases perhaps provided, inadvertently, the wrong information to its users. However, the revised approach does not yet provide valuable or usable information at an asset level. More technical feasibility analysis is needed, and perhaps assumptions and information significantly reviewed.

Concerns with CRREM as it currently stands

The following are opportunities for improvement for the CRREM curves and the CRREM tool, that we believe will result in better outcomes:

- **CRREM's top-down approach is not fully transparent.** We believe that more should be undertaken to align building typologies (their definitions), consumption data (measured and or proxied), and grid emissions projections based on regional scenarios (or range of scenarios including aligned to Nationally Determined Contributions - NDCs). We welcome the links to the data sources, and the write up of the methodology, however, the documentation of this as well as the transparency of the factors and associated projections complete with the accessible calculations (or models) should be made readily available.
The curves should also include a confidence range. While the entirety of the built environment should be under a particular curve, individual buildings may not be able to, depending on the original spread of buildings in the data set.
- **CRREM is not aligned with regional needs or policy benchmarks.** As CRREM is a risk tool, aimed to drive an understanding of the impacts of local regulation on the

potential for a portfolio to decarbonise, this lack of alignment may give an incorrect view on what is needed.

- **Local weather and grid conditions are currently not well represented.** While we are heartened by the recent updates to Australian data, based on your work with GBCA, we also believe that updates are needed elsewhere.
- **Embodied carbon is a significant proportion of our built environment's emissions but not reflected in CRREM.** While embodied carbon is a difficult topic to address due to lack of data, CRREM has the potential to drive significant retrofits in the built environment. This means that for new developments, and existing buildings refurbishments, CRREM should include the value and impact of embodied carbon.
- **Building typology is similarly not currently fit for purpose in all geographies.** CRREM's use of typologies is welcome, but it would do well to increase the transparency of what each means, and increase the variety. CRREM should also be aware that assets are classified with different definitions across countries. Industrial in some countries may include manufacturing, in others it only refers to logistics. These nuances may not be apparent in the data review that CRREM has done. This links back to the first point - being able to open up the calculations and assumptions would allow us to identify how these have been derived nationally .
- **Universal understanding of Past Versions** - CRREM V1 has been used by property investors, financiers and property companies to demonstrate a positive 1.5°C alignment, however, this has been through the comparison of their electrical energy consumption, converted to carbon dioxide (CO₂) emissions to compare with the CRREM V1 CO₂e reference pathways - giving the misunderstanding of high performing property portfolios. Whilst this is not the direct fault of CRREM, the inclusion of F-gases and onsite combustion needs to be made even more explicit. The CO₂ pathways will help with this, however, the point remains that making this highly visible is critical.

Concerns with the changes to CRREM in the v2 pathways

- **CRREM's updated pathways are welcome but more analysis is needed prior to their release.** The revision of the energy pathways to be about energy demand is welcome. At an initial glance, this helps move CRREM into a more useful tool. However,
 - There is now a potential discrepancy between the carbon dioxide emissions (CO₂) and energy (kWh) curves. where projecting using IEA international power decarbonisation pathway gives an intensity (kgCO₂/m²) lower than the CRREM CO₂ reference curves. Transparency on grid projections assumptions and calculations are needed, for example is CRREM using NGFS REMIND, IEA Net Zero, or bespoke analysis?
 - CRREM has also detailed a renewable energy demand limit. This is a number that is calculable today for a building. In certain countries, the limit specified by CRREM is not feasible based on technology progressions, particularly as on-site solar does not provide any energy benefit. This number would be determined by the assumptions related to the energy share, and should be transparently peer reviewed. WorldGBC members would be happy to assist.
 - CRREM also fails to take into account normalisation for hours used and occupancy. If CRREM is to be used at an asset level, it should understand the impacts of both driving energy demand and carbon emissions. A more dense building may use more energy, but might be overall better than two buildings hosting the same amount of people.

- **CRREM's easy to understand curves is both its greatest strength and weakness.** GBC's worldwide have learned the value of understanding how distinct emissions scopes are decarbonising.
 - Due to the lock-in effect of fossil fuels, it is important for investors and real estate to move to decarbonise scope 1 fuel sources as quickly as possible. For example, in some countries, the CRREM carbon curves would lead an asset to extend the lifetime of cogeneration or gas-fired heating systems as that would assist in ensuring the CRREM curves are met, especially as the transport and distribution of such fossil fuels would typically not be accounted for in the emissions analysis.
 - As most scope 2 emissions come from the grid, understanding the predicted grid decarbonisation factors in the CRREM projections becomes critical for driving change. For example, in countries with a rapid expected rate of grid decarbonisation, CRREM might show an asset requiring a deep retrofit from a carbon perspective. A rapid decarbonising grid however would require that asset to be electrified.
 - CRREM would also do well to acknowledge the value of market-based mechanism in showing that an entity or an asset is being run responsibly. Ultimately, the inclusion of an energy curve driven by renewable energy generation means that an indicator exists in CRREM to identify location based benchmarks. CRREM should also be aware that in most cases, the Energy benchmarks will drive decarbonisation of the buildings. It should do sensitivity analysis to ensure both curves are aligned.

Issues with Governance and review

As noted in this document, we are encouraged by CRREM's willingness to work with GBCs once approached by them. Australia, UK, and Netherlands all took efforts to reach out and work with you to provide you with data and feedback. But, CRREM needs to do more to reach out to other countries' property sectors.

There are a number of items that CRREM should consider to improve its collaboration and feedback practices.

- The first version of the curves were not presenting information appropriately, in particular the energy curve. That pathway should not have been released in its first form, as the energy pathways were easy to misinterpret. That feedback was something easy to see should CRREM have approached WorldGBC or even some building experts.
- The feedback processes for CRREM are rushed, and are not allowing enough time for individuals or entities to provide appropriate feedback. There doesn't seem to be an appropriate mechanism for CRREM to review the feedback prior to the final release, and discuss with the multiple entities that took effort to communicate with CRREM what the outcomes from that feedback may be.
- It is unclear what response CRREM will provide to all the feedback, and whether a transparent response will be provided to all items raised by all entities submitting this. It is common practice for industry standards to do this, and we encourage CRREM to follow suit.
- CRREM is reliant on country level information to work, but is not able to identify country level responses or issues. Additional participation, or a review of

governance, or a partnership with an entity such as WorldGBC would allow it to receive updated information regularly, understand the impacts of decisions made by the Steering Group, and have a clear sounding board for any upcoming changes to the methodology or curves.

WorldGBC and its members have ample experience running multistakeholder, multi-issue, international governance groups. We would be happy to discuss how to evolve CRREM's governance to drive better outcomes in the built environment.

Recommendations for further action

CRREM should take immediate action to ensure it can maintain the trust of the investor and real estate communities. It should:

- Call for a refresh of its governance to make it more inclusive and bring in additional real estate and property expertise. It should also consider bringing persons with experience managing buildings at the asset level so that it can understand the implications of assumptions and recommendations.
- Communicate with all its partners and data users to make sure they are not using CRREM incorrectly, by showing assets as stranded when they are not, and to make sure the language used around CRREM is appropriately identified as an enabler of discussion.

Longer term, CRREM should,

- Actively engage with the WorldGBC and national GBCs when developing pathways especially at the national / local level.
- Review the feedback provided in the above and make proposals for improvement.
- Make transparent all assumptions and data entries behind the calculations of the different pathways available for in-depth review.

Future Collaboration:

The ESG Working Group sees great opportunity for the CRREM curves to be used to provide valuable metrics for governments to see how their entire built environment is performing. The average and aggregated method of calculating the CRREM curves would be perfect for this, and a great aid with policy formulation that can happen in conjunction with the national GBCs. WorldGBC would welcome the opportunity to work with CRREM on a research project understanding the risk profile of each country's built environment for policy makers and investors / as well as financial institutions.