

1. How does CRREM align with EPBD local implementation?

The EU's EPBD cast was intended to harmonize EPC rating methodologies across EU member states, which we strongly support. EPCs do not integrate CRREM at this stage, but the concepts are moving closer together, as the EPBD recast intends to incorporate actual building energy performance (beyond design-based / theoretical ratings) into how buildings earn a specific level EPC ratingTherefore, we cannot claim alignment with local EPBD implementations. We would support industry advocacy to steer the EU toward greater alignment towards the science-based CRREM Pathways.

2. Are there any plans to make an API available to send data to CRREM and receive a CRREM Misalignment Year?

Not at this time. If we learn that there is more interest for this, we're happy to explore possibilities.

3. Curious about how CRREM will define transition risk - will it consider impact to asset value practically? E.g., in markets without regulation (e.g., BPS, EPC requirements), how will this be defined?

CRREM itself does not define transition risks. Rather, as a starting point, CRREM looks to the Taskforce for Climate Related Financial Disclosure (TCFD) for how it thinks about transition risks, and the means to which they materialize. According to the TCFD, transition risks are categorized into four areas: (1) policy and legal, (2) market, (3) technology, and (4) reputation. Regulatory driven risks such as building performance standards and EPC rating requirements fall into the first category; however, the other three are also relevant for real estate investors. For example, installing gas boilers could present transition risk from a technological and market perspective, as well as reputational. Market risk also stems from institutional investor demand for energy efficient real estate assets, or discounting assets that need updated HVAC systems or other energy efficiency upgrades. These are assessments each investor and manager will need to make for themselves as these transition risk drivers are less black and white than regulation-based transition risk and require active judgement calls.

4. How does CRREM intend to ensure appropriate alignment / integration with other emerging standards (e.g. NZCBS)?

Alignment to other emerging standards is an important focus area for CRREM. It is not our intention to add to reporting burdens or confusion in the market. Therefore, we are proactively building relationships with important institutions and standards. For example, we are already aligned with / integrated into SBTi and the Net Zero Investor Framework from the Institutional Investor Group on Climate Change (IIGCC) references CRREM as the methodology for setting alignment targets for real estate. We are continuously seeking and building new partnerships across the industry. We would appreciate your advocacy to help communicate the importance of alignment with CRREM.

5. Are there any sector/regions which will be prioritized in terms of expansion?





Soon, we will launch a market sounding to gather where there is most interest for new pathway developments. The CRREM Foundation Board will use this insight to define its priority pathway research and development efforts.

6. Do you have any idea to revise guidance on the whole building energy approach? specifically requiring landlords to collect tenant electricity which at times has legal barriers to obtaining in countries such as Germany.

No, the current intention is for CRREM to remain a whole building based assessment.

7. Are there going to be technical Q&A sessions later on if we need more insights or information on the pathways?

You are always welcome to send technical questions to info@crrem.org.

8. In the updated CRREM visuals, the grey shading around the pathway appears uniform across all years. Since the shading is intended to represent market-average dispersion rather than scientific uncertainty, wouldn't it make more sense for this band to be wider in the near term (reflecting greater variability in current building performance and grid decarbonization) and narrower toward 2050 as standards converge and the carbon budget tightens? Could you clarify the rationale for keeping the grey band constant, and whether a tapered approach might better reflect reality?

We have not projected a range / distribution of values into the future, so for now this is a simple visualization for the sake of helping the market to better understand that CRREM stems from a market average and that there will always be buildings that deviate from the average.

9. How do you plan to extend the list of building classifications to better reflect asset types with unique consumption patterns (e.g. hotels with extensive spa/pool facilities, or purpose-built student accommodation with high amenity provision and fast resident turnover/ data centres)?

Please see Question 5 answer.

10. Do you have a plan or strategy to interface with governments, regulators, policymakers and/or standard setters to embed CRREM pathways into policy, zoning, or building codes?

Policy decisions are often very difficult to intervene with. Our best route would be to have the market endorse CRREM, and then encourage its lobbying organizations to support an integration of CRREM into policy and regulation. We can also work with other advocacy groups that are active in policy engagement.

11. What's the plan to accelerate CRREM's integration into valuation and underwriting models used by lenders and investors—especially for transition risk pricing?





This is one of our key focus areas. We want to give investors and market players the appropriate tools to ask for the right information, and a framework for how transition risks can be integrated into underwriting across the capital stack.

12. When will you be working outside Europe to improve pathways, particularly for APAC?

CRREM has just launched a review of our global energy pathways that will be undertaken by its newly established Technical Council. Furthermore, we will conduct a market sounding to gauge which property types are in highest demand. In all cases, all work will be global in nature and not isolated to any region. In addition, as part of our new governance structure, the regional advisory committees will help us to strengthen our presence and the scientific integrity of the pathways in the different markets.

13. Will the CRREM tool include in the future pathway for Real estates building such as Student accommodation? currently we use a proxy such as residential but this does not reflects the specific feature for student accommodation

Please see Question 5 answer.

14. How often are periodic updates expected to the pathways in the future?

We are currently working on a governance document that defines the procedures and timelines for changes and developments to CRREM Pathways. Our intention is to stick to the three year cadence, but this cannot be confirmed until the CRREM Foundation Board approves this governance document in December.

15. Do you have plans to implement pathways for other asset types like universities?

Please see Question 5 answer.

16. How the transition risk can be explained to asset owners? Currently CRREM is a tool used widely but asset owners do have also other metrics such as EPC, Energy Benchmarks, Nabers, SBTi

Asset owners have global portfolios with a large number of assets. They also generally access the real estate market indirectly (through managers). Therefore, they need a simple common assessment tool that can be applied across their portfolio in a systematic manner. These other tools are helpful, but many are regionally focused making it difficult to utilize across the full portfolio.

17. Could you advise the timeframe on the new visualisation way of pathway, using a gradient fade around the mean pathway? When the deviation values from the average pathway can be advised?





We have not prioritized publishing distributions around the mean at this stage. For now, it is our intention to demonstrate that the CRREM Pathways reflect a market average. This important element of CRREM's methodology was previously lesser known, so this is our first step in highlighting the market based nature of the CRREM Pathways.

18. Very positive that CRREM has also been embraced by SBTi. However, we now see a difference in how SBTi applies the pathways, introducing a correction based on current performance. In practice, this creates an inconvenient nuance when your performaning better than the CRREM pathway. Do you see an opportunity to optimize, so that SBTi follows the pathways exactly?

Thanks for pointing this out, we've heard it a number of times. Would be great if this could also be raised as an issue directly to SBTi. For now, we will keep it on our list for our next touch points with them.

19. As CRREM becomes increasingly embedded into institutional reporting frameworks, how do you envision aligning with financial materiality standards under CSRD and IFRS S2?

We have seen instances of some investors referencing CRREM as a practical proxy / alternative indicator to SFDR energy inefficient assets principle adverse impact (PAI) metrics, given that these metrics are very difficult for indirect investors to source for their global portfolio. For example, the SFDR PAI for real estate references EPC ratings, which are only available for European assets. We would support as much alignment and integration with both regulatory and voluntary reporting standards as possible.

20. Are there any thoughts around either including embodied carbon in the current approach or as a separate set of pathways? Does CRREM see a role for itself on this topic?

We fully recognize that operational carbon is only half the story. Including embodied carbon in the CRREM framework – either integrated with or alongside operational pathways – would indeed make for a much richer decision-making tool. However, developing embodied carbon pathways with the same level of scientific robustness and methodological consistency as CRREM's current operational approach would require a very extensive and complex research effort. Data quality, consistency across asset types, and regional comparability are still evolving in this field. That said, we closely follow developments in embodied carbon research and acknowledge its growing importance for achieving full life-cycle decarbonization in the built environment.

21. Will you expand to further asset types e.g. Co-Living, PBSA, BTR, Data Centres, and provide more flexibility within the current asset types to account for variations e.g. a b&b versus a luxury Hotel & Spa. If so, what is the timeframe for these updates?

Please see Question 5 answer.





22. When defining decarb pathways, how will the degree of BACS and the use of BEMS (integrated with AI) be considered (if considered)?

The current CRREM pathway methodology does not directly factor in the level of building automation or digitalization along the decarbonization trajectory to 2050. However, these elements are indirectly reflected in the starting point of the pathways: CRREM baselines are derived from actual consumption data for the respective asset class and geography. If BACS or BEMS increase operational efficiency and lead to lower EUI levels, a building would therefore enter the CRREM pathway with a lower initial intensity value. In other words: while automation is not an explicit variable in the current pathway methodology itself, its impact is captured via improved performance in the baseline consumption.

23. I have a technical question about CRREM /SBTi alignment, since Scopes 1-2-3 differentiation is relevant for SBTi but not really in CRREM's methodology. This issue is particularly visible in your methodology when you clearly 'erase' Transport and Distribution losses in the Emission Factor and Targets for electricity consumptions. My question is: could you confirm that it was an exception? e.g. that other Scope 3 Emissions for energy consumption is still taken into account?

SBTi explicitly differentiates Scope 1, 2, and 3 emissions (direct, indirect from purchased energy, and other indirect respectively). CRREM, on the other hand, is asset-level and use-phase focused, meaning it accounts for the total operational energy-related emissions of a building, regardless of who "owns" or "controls" them in corporate accounting terms.

Transmission and Distribution (T&D) losses are not included in the emission factors for electricity. This treatment was indeed intentional, but not because CRREM disregards Scope 3 in general. Rather, it was done to avoid double counting and to stay aligned with the building-level energy consumption data available to asset owners.

CRREM assumes the final energy consumed at the building boundary (e.g. the electricity measured at the meter). The emission factor used therefore corresponds to delivered electricity, not generated electricity. T&D losses occur upstream of the meter, and their emissions are already covered under the national grid-average emission factor. The boundary setting was defined in cooperation between CRREM and the SBTi to ensure consistency between both frameworks, reflecting CRREM's focus on use-phase emissions while aligning the methodology with SBTi principles. In this way, the CRREM decarbonization pathways can be applied within an SBTi assessment. This exclusion of T&D losses is therefore not an exception in the sense of ignoring other Scope 3 categories, it's a boundary decision consistent with the building-level (operational) focus of CRREM.

24. Will CRREM publish a roadmap for countries that will be added in the coming years into the CRREM models?

Please see Question 5 answer.





25. One of CRREMs strengths is its simplicity to use, but this makes it less applicable in some areas e.g. within country climate zones or asset use e.g. budget vs luxury hotels. Do you aim to keep it simple or make it more applicable?

Our aim is to make it decision useful. This will be require a balance between simplicity (for ease of use) and applicability (for meaningful insight). In some instances, more detail may be materially helpful, in other instances not necessary. This will be a constant balancing act for us to try to manage as best we can.

26. Regarding the "how to use CRREM" in your guidelines, will you link it to the different stages of an asset/fund life cycle as well? For instance, when it comes to Due Diligence, I got different feedback in the way it is used or not used at all. Maybe this specification could be helpful in this regard.

We are not intending to produce different guidance for investment lifecycle stages. However, we are intending to add clarity to how different investment strategies (e.g., core, value, opportunistic) may contextualize the CRREM Misalignment Year differently for assessing transition risks. These will often be explained in the context of intended exits. New development is another area where we have identified possibilities to further clarify.

27. Is there an option CRREM will also include embodied carbon pathways, as there's a lack of an international standard / benchmark?

Please see question 20.

28. How do you look at using market-based approach, using known emission factors based on energy contracts to asses the alignment of one or more assets with the CRREM path?

We do not see it as a best practice means to improve asset performance, as the reduction can be "sold away" the moment an asset changes ownership. That said, our Technical Council may decide to take a more formal position on this.

29. Do you plan to separate "process" energy from "building" energy at some point, e.g. for industrial, data centers and other use types with high share of "process" energy not related to the performance of the building?

CRREM's Technical Council will govern any methodology changes. In terms of process energy, we follow the IEA's split between real estate energy and industrial energy consumption.

In general, process loads that are not included in the building's energy budget—such as loads for electric vehicles or manufacturing processes—can be excluded from a CRREM analysis. When publishing a CRREM analysis, it is important to reference this transparently.

We recognize that further guidance from CRREM on this topic would be helpful to clarify what should and should not be included in a CRREM analysis.





30. Do you plan to develop an « accreditedation » training for consultant to improve the quality of the calculations and thus provide better insight to Asset Manager?

We see consultants as a very important role in our industry. We would like to see improvements in the quality and consistency of CRREM analyses done by consultants, and we therefore are exploring ways to achieve this. Accreditation is indeed an option.

31. Some of the new state of the art developments involve very high racked warehouses, say 35-50m height, fully automated and/or temperature controlled which could appeared to be misaligned in CRREM. Is there a way to take into account other parameters and perhaps add more dimensions in the assessment beyond the m2 plan area?

We want to encourage the market to understand and explain where, how, and why a given asset might deviate from the market average. The example given here could be one of these utilization-based deviations that does not per se indicate a poor quality building.

32. Will you also put focus on more clearly defined harmonised scientific standards for emission factors? (E.g. applying equal standards for accounting for things like upstream carbon emissions, accounting for imports/exports, with or without certificates of origin, etc...)

CRREM's Technical Council will govern location-based emission factors. Harmonization and consistency are both goals in this governance.

