# Public consultation comments and responses

## Basic Chemicals Criteria

### Documents Supporting this document

Information to support issuers and verifiers is available at https://www.climatebonds.net/standard/basic-chemicals as follows:

1. Basic Chemicals Background paper: Contains details on why the criteria were chosen
2. Basic Chemicals Criteria document: the complete Criteria requirements.
3. Climate Bonds Standard: the umbrella document laying out the common requirements that all Certified Climate Bonds need to meet, in addition to the sector-specific Criteria (Climate Bonds Standard V3.0 | Climate Bonds Initiative).
4. Basic Chemicals Frequently Asked Questions

For more information on the Climate Bonds Initiative and the Climate Bond Standard & Certification Scheme, see www.climatebonds.net/standards. For the documents listed above, see www.climatebonds.net/standard/Basic Chemicals

| No. | Category | Question | Feedback received | Response |
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| 1 | Criteria for new plants vs existing plants | 1. Do you consider it necessary to set additional criteria for new assets? Is the distinction and criteria proposed for new plants appropriate? Refer to section 4.2.1 of the criteria document and 4.3.1 of the background document. | Additional criteria for new assets are necessary for a pair of related reasons;<br>a. Chemical plants are typically large capital expenditures and require substantial amount of time to construct (Smith, 1999).<br>As such, incorporating the best practices and current technologies in its initial design is far more cost-effective than subsequent retrofits to the current state of technology. In many cases, retrofitting can be way too cost-prohibitive even if there is substantial financing with a pricing benefit.<br>b. While Section 5.2 indicated that the average life of plants is 30 years, the asset life can range 25 to 50 years (depending on the type of chemical and specifications) (Smith, 1999). In addition, the objective here is to ensure a continual uplifting of emission intensity/waste metrics across all plants over time. Imposing a higher standard for new facilities is the optimal way to accomplish this objective especially if the plants are expected to degrade in their environmental impact as they age. | Considering the long-life cycles of chemicals production facilities and the potential lock in risks we will not certify new virgin fossil-based production facilities. Alternative resources should be used, including secondary biomass, recycled material, CO2, low-carbon hydrogen, and renewable energy. |
| | | | For the capital investment relating to energy used, there is no option to take those using LNG as an energy source. Energy from LNG is necessary especially for higher temperature with strong firepower or high temperature steam supply. Boilers and burners are mostly reliant to coal or oil due to the cost competitiveness. It is impossible to switch 100% of them to electricity or heat from clean energy such as geothermal, waste heat recovery, systems, etc.<br><br>We propose to add capital investments relating to LNG heating/power supply equipment with the conditions of not locking in to LNG for the future but having a transition pathway to switch to methanation or green hydrogen.<br><br>For biomass as a feedstock, wood with FSC certification and with other relevant certification should be eligible. If the forest are managed in sustainable way, and it is verified by a third party, thinned wood, PKS, etc. should be included.<br><br>It is unrealistic to rely heavily on green hydrogen. Is it possible to consider temporarily using blue hydrogen with the | |

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| transition pathway to greener hydrogen? | |
| | I agree that it is necessary to set additional criteria for new assets. Such new assets present an opportunity to implement low carbon technologies through the optimization of design and construction of the facility. New facilities do not need to deal with the retrofit of existing infrastructure to accommodate new technologies, which can be costly and can limit the effectiveness of the new technology.<br><br>I think excluding the use of fossil gas in new facilities (even with CCS) is ambitious, yet defensible. However, it is worth noting the IEA's NZE scenario, for example, does include natural gas and oil products use in chemical feedstocks (with CCUS) in 2050 (International Energy Agency (2021), Net Zero by 2050, IEA, Paris. Sections 2.4 and 3.2.). There is no specification of whether this might be in new or existing plants. |

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| | | | Yes. Existing, carbon-emitting assets are undoubtably required for an orderly transition, so you are right to include these assets as eligible under your stringent constraints. From a philosophical perspective, we want to see CBI certification help these assets transition to lower-carbon processes or feedstocks. This is where we find the most additionality with labeled issuances. However, new assets that aren't yet at risk of being stranded should be required to meet much stricter constraints. The additionality in this case is the actual construction of low-emitting facilities, not the improvements needed for the asset's transition. In our view, this is the most effective way to promote an orderly transition. | |
| 2 | Coal-based production exclusion | 2. Projects using coal for energy or feedstock purposes are not eligible. Please comment on this exclusion. | To start, it is important to make a distinction with regards to the type of financing.<br>a.Use of Proceeds financing ("green"loans/bonds) require the proceeds to be used on Eligible Green Projects as set out in the Green Loan Principles or Green Bond Principles. For this reason, projects using coal for energy or feedstock would not be eligible for this as it would not qualify as a GreenProject.<br>b.Sustainability-linked financing: Sustainability-linked financing can be used for general corporate purposes and is performance based by requiring companies to achieve a set of agreed sustainability targets.<br>Excluding projects for using coal for energy or feedstock purposes<br>from sustainability-linked financing would be draconian and potentially impractical given the current state of technologies.<br><br>Our stance is, coal-based projects, whether used for energy or for feedstock purposes, should not be totally excluded but should be considered eligible<br>only if there is a feasible transition plan that consists of a gradual shift in energy/feedstock mix.<br>While alternatives to coal and gas exists, the technology and understanding of these processes have not been developed to make it cost-effective to deploy at scale.<br><br>Case Study: Methanol IRENA's report (IRENA, 2021) on methanol indicates that the production costs required to produce methanol from coal and/or gas costs c. USD100–250/ MT, while bio-methanol, which is methanol using biomass as feedstock could cost between USD455– | Based on the CBI actions not pledges principle, we do not consider a transition plan ambitious enough for industries relying on coal. We will keep the coal-based production exclusion for assets and entities as well, given the high GHG emission levels, low process efficiencies and other environmental impacts from coal-based production.<br>Although there are some hybrid projects that mix coal and alternative feedstock like biomass or recycled content, the percentage of alternative sources is low and can lead to greenwashing. |

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| | | | 1013/MT, and e-methanol, which is methanol produced using renewable carbon dioxide captured from renewable sources, could cost between USD1120–2380/MT.<br>. IRENA expects the costs for bio-methanol and e-methanol to fall substantially to range between USD355–USD884/MT, and USD290–630/MT respectively, in 10 years' time. Despite this, it would not be in parity with production from fossil fuels.<br>Moreover, IRENA estimated that methanol made from biomass and renewables made up <1% of total methanol produced, with coal making up c. 35% and gas making up the remaining c. 65%. Consequently, mandating a hard shift away from coal would make the production of methanol extremely costly and using gas as feedstock to make up for the shortfall in coal is not a sustainable and viable option either.<br>A soft transition away from coal is required. Corporates should seek to reduce their reliance on coal and being exploring alternatives to coal and gas-based methanol, while waiting for improvements in science and technology.<br>For similar reasons, there should be a gradual shift away from coal as an energy source, due to the widely known challenges of using renewable energy: 1) there is not enough renewable energy being produced, and 2) the intermittent nature of renewable energy.<br>Should coal as an energy source be excluded and renewables not able to meet the demand, this would serve to drastically increase the production costs of methanol and reduce the production of chemicals. This would eventually result in shortages of methanol.<br>The second challenge relates to the intermittency of renewable energy, would mean that great volatility in the operations of methanol production plants. This is not feasible for the current operating model of chemical plants.<br>Our experience with chemical clients reveals that these plants operate close to 7000-8000 hours annually. This translates to 19-22 hours daily. Intermittency would adversely impact the economic viability of the industry. These bottlenecks will be likely solved technologies around renewable energy gradually improve, particularly around low increasing efficiencies, smart grid, or<br>a redesign of the underlying processes in the plant. | |

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| | | | Hence, projects using coal for energy should not be wholly excluded but should be considered eligible only if it is being used as a transition tool in the meantime. | | |
| | | | I do believe it is not necessary to use coal for energy but it is necessary to use other less carbon intensive fossil fuel such as LNG until the less carbon intensive technology will come to realize, such as hydrogen.<br>For those who currently heavily rely on coal fire, it is another option for them to switch coal to biomass. If the asset are planned to switch from 100% coal fire to 100% biomass in the future, this should also be included as one of the transitionary green.<br>We think LNG is especially necessary for making own electricity power supply, as well as heat supply. Especially for heat and steam supply, it is impossible to rely 100% on electricity. Consequently, they temporarily need to rely on LNG for supplying high temperature heating and steam for the process of chemical production. | | |

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| 3 | Fossil gas + CCUS eligibility | 3. Is the use of fossil gas with CCS as a feedstock or fuel an acceptable measure?<br>See section 4.2.3 in the Criteria document | We think that the measure is acceptable as it aligns with the Net Zero Emissions by 2050 NZE (IEA, 2021). NZE by 2050 requires declines in both coal usage and the process energy intensity in chemical production<br>• Coal-based chemical industry poses a huge threat as emissions intensity are higher than natural gas-based production, accounting for 28% of process energy used in chemical production<br>• NZE by 2050 Trajectory requires share of coal to fall to 20% by 2030. And in the NZE by 2050 Scenario, the average process energy intensity of primary chemical production should decline 12% from the current level by 2030 Coal-based processing should be replaced by fundamentally more efficient methods such as natural gas-based processing. Coal produces 95.74 kg CO2 per million Btu, while natural gas produces 52.91 kg CO2 per million Btu, emitting almost 50% less CO2 than coal. Usage of CCS alongside with fossil gas is feasible.<br>• CCUS can contribute 38% of the emissions reductions needed in the chemical subsector, making it critical.<br>• Despite limited CCUS globally, momentum for CCUS is growing rapidly across regions, with countries adopting of economy-wide decarbonisation targets for 2050.<br>• Estimated costs for carbon capture in coal-fired power plants cost $20-132 per ton and $49-150 per ton for natural gas power plants. Despite so, natural gas with CCUS is still the preferred option.<br>• Comparing total 100-year CO2e emissions between natural gas and coal with CCS/U, natural gas CCS/U produces 230-481 g-CO2e/kWh while coal CCS/U produces 282-1011 g-CO2e/kWh. | Although we are aware of regional differences, we should not certify fossil-based assets without CCS or CCU.<br><br>In regions where storage is not technically feasible or there is not infrastructure available, CCU can be implemented. Fuel and feedstock substitution are also an option for fossil-based processes where CCS is not feasible. |
| | | | Yes, it surely is at this moment until the innovative technology such as using ammonia and/or hydrogen for heating and steam supply.<br>Instead, we need to ask for issuers to make sure that they have clear roadmap which makes the power plant not locked in to the fossil fuel including LNG but plans to switch the feedstock from LNG to other cleaner no fossil fuel feedstock, such as hydrogen,<br>ammonia in the future.<br>Please be mind that CCS is not currently technically and geographically possible globally. I propose to add the conditions use of fossil gas needs the clear plan not to | |

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| | | | lock-in on fossil gas in the future, instead of the conditions to add CCS. | |
| 4 | Biomass from primary sources exclusion | 4. Eligibility for biomass as an energy source is restricted to secondary organic streams, (i.e. materials usually discarded or classified as wastes from another primary use, e.g. residues from agriculture, organic matter from agroindustrial processing). Primary biomass such as wood and dedicated crops are eligible only for feedstock purposes if they meet specific sustainable sourcing criteria requirements. Please comment on this restriction and refer to section 3.3 in the background document and section 4.3.3 in the criteria document. | The restriction in the use of biomass is necessary. The immediate benefit of this restriction is reducing the depletion of resources, especially where trees are cultivated solely to be used as an energy source, as well as promote a more circular economy.<br>While there is not much literature specifically for methanol when considering biomass as an energy source, the aim is to reduce leakage and improve circularity. Restricting biomass to secondary organic streams ensures that waste would be repurposed, reducing the net waste.<br>The restriction of biomass to primary organic only if they meet sustainable sourcing is also necessary. IRENA's renewable methanol report (IRENA, 2021) provides a detailed perspective into the different types of biomasses (that adhere to the restriction), ranging from farmed wood to waste wood, black liquor, and municipal solid waste, and shows that there are well-established case studies for corporates and projects to reference when developing and operating a project, suggesting that the science is ready/almost ready to be applied on a large scale. Over all, the restrictions for biomass are fair, and would help to promote circularity, reduce leakages and absolute waste. | No action needed. Climate Bonds will keep the restriction to use only secondary sources. |
| | | | We believe it necessary to keep consistency of the eligibility of biomass in multiple sectors. As such, we agree to refer the current proposed criteria requirements. However, we may consider the possibility of transitioning phase for using thinned wood, certified PKS, etc | |
| | | | Robust safeguards around bioenergy and bio-feedstocks are a good idea. There is still much uncertainty around GHG accounting and emissions allocations for bio-based feedstocks. | |

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| 5 | Recycled feedstock content percentage (30%) | 5. For recycled feedstock content, what might be an appropriate threshold that is suitably ambitious yet realistic for best-practice measures in the sector? For example, would 30% be a suitable threshold? See section 3 (table 1) in the Criteria document | Increasing the recycled content in feedstock accomplishes two major objectives; (1) reducing the cradle to gate emissions and (2) improving the circularity of processes. For this reason, increasing its content over time is a very sensible approach. However, at this point, the 30% threshold might not be suitable for widespread adoption as it may be too high depending on the country's situation.<br>Through the Background document, it is mentioned repeatedly that feedstock availability differs by location and the same can be said for recycled feedstock.<br>Different geographic regions have different recycling realities and regulations with varying thresholds<br>•California's legislature passed a bill in 2020 which requires 50% post-consumer recycled content in plastic bottles by 2030.<br>•U.K.: Any plastic bottle sold from April 2022 that does not contain at least 30% recycled plastic will be charged 200 pounds per metric ton.<br>•In the E.U., PET bottles must contain 25% recycled content by 2025, and 30% recycled content in all bottles by 2030.<br>•South and Southeast Asian countries which rely heavily on imports are following E.U., with Indonesia planning to scale its recycling capacity and India announcing that industrial packaging produced in the state must include at least 20% recycled material.<br><br>The availability of recycling infrastructure varies globally thus affecting the availability of recycled feedstock<br>•China imposed strict import restrictions on certain plastics and minimum levels of contamination for imported materials, hinders the use of recycled materials in the country.<br>•Countries that rely heavily on recycled materials imports such as Malaysia, Thailand, Vietnam, India and Turkey face higher trade inflows after the ban, triggering concerns given their poorly developed plastics recycling facilities and relatively weak environmental and treatment standards.<br><br>Recycled feedstock use depends on the availability of recycled plastic of known and appropriate quality.<br>•Lack of information on the chemicals in the plastics, such as where the feedstock's source materials are sourced from, what type of additives it contains, the recycled feedstock's composition, etc. | We will modify the minimum content of recycled material to promote more recycling processes:<br>20% in regions without local regulations for recycling or with lower percentages.<br>>20% in regions with local regulations. If it has a higher percentage, it should prevail. |

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| | | | • Previously used plastics may include that contain potential substances that could contaminate human or environmental health.<br><br>Reaching 30% recycled content globally will be a challenge for most companies and countries. Insisting on this threshold may also be harmful for humans and environment depending on how much content are contaminated in the feedstock. It would be practical to lower the threshold to 15%-20% which would satisfy most regions across the world and making it safer for consumption. To ensure ambitiousness, we would also push to increase the threshold every 3-5 years to be in line with the higher production standards | | |
| | | | I do not think it realistic for all the chemical sectors around the world. It is important to hear the possible number from the industries around the world with the science based rationale.<br><br>In addition, this is not a fair baseline for all issuers, since some of the chemical company has already implemented radical energy reduction efforts already and there is few room to improve the energy efficiency. But for those who have not introduce high efficient production equipment yet, can achieve more than 30% energy efficiency, even if they replace and introduce the same equipment | | |

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| 6 | Scope 3 qualitative strategies | 6. Are the qualitative strategies proposed to address scope 3 emissions appropriate for the basic chemicals chemical sector? Please refer to section 4.2.4 in the criteria document. | Scope 3 includes all other indirect emissions that occur in a company's value chain. This would include transportation, distribution (upstream and downstream), leased assets, investments, procured goods and services. Measuring this would be the biggest challenge for the chemical sector due to the number of stakeholders and stages in the value chain.<br>Once metrics have been established, the qualitative strategies to address Scope 3 emissions would include different steps to tackle each component in turn. We would also scrutinise the strategy to address emissions related to purchased goods and services over the term of the bond.<br>Examples includes;<br>• Evidence for low-carbon procurement policies; or<br>• Partnerships with suppliers with GHG emissionsreduction targets that can be measured; or<br>• Switching from fossil-based raw materials to alternative feedstocks such as biobased and recycled materials.<br>• For alternative feedstocks, results from a life cycle GHG assessment with a cradle-to-site boundary needs to be used to quantify scope 3 upstream emissions. | Although these measures do not include accounting of emissions, it aims to address them to some extent, being aware of the challenges of scope 3 emissions accounting. We should keep these qualitative alternatives and update the criteria with a quantitative strategy to set scope 3 emissions reduction targets once it is available. |
| | | | Regarding the scope 3, it seems to be too strong to express "issuers must" in this section, since scope 3 emissions are indirect emissions and there are limitations in its controlling power.<br>What about changing the wording from "must" to "recommend" to prepare low-carbon procurement policies, partnerships with suppliers, etc. | |
| | | | These strategies are aligned with SBTi alternatives to address Scope 3 emissions for chemical companies | |
| | | | It makes sense to include additional criteria for upstream scope 3 emissions. I do worry, though, about the effectiveness of including "Partnerships with suppliers with GHG emissions reduction targets that can be measured." As we know very well, it's difficult to assess the credibility of GHG emissions reduction targets, so asking chemicals companies to do this analysis is a difficult ask. I understand this is worded as having "reduction targets that can be measured," so it's not necessarily asking for credible plans (just measurable ones), but I worry that issuers might not actually be able to reduce scope 3 emissions through this option. It will all depend on the credibility of the supplier's GHG emissions targets, which issuers 1) are unlikely to be able to effectively assess and | |

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| | | | 2) have very little operational control over. The other two alternatives feel much more likely to have a real impact on scope 3 emissions. | |
| 7 | Scope 2 qualitative strategies | 7. Are renewable-based captive power generation, and renewable-based power purchase agreement appropriate to address scope two emissions of basic chemicals? | In a nutshell, yes. The Scope 2 Emissions of the chemicals sector are attributed to the indirect emissions from the generation of electricity and heat.<br>Using renewable-based power generation (captive or PPA) would be the starting point to addressing the Scope 2 emissions but not without an understanding of the nuances of renewable energy. Emissions-free technologies such as solar, wind, hydropower, geothermal and green hydrogen would be most ideal. Other renewable sources such as biofuels and biomass would still produce emissions (EIA,2021).<br><br>Our experience with financing power generation assets indicates that this is a far more complex endeavour as there would need to be a substantive amount of feasibility work to understand the availability of energy sources but also the load requirements of the facility. As such, in the interest of being concise, our stand is that a transition to renewable energy would reduce Scope 2 Emissions but optimising this against cost and reliability would require more careful calibration. However, renewable energy alone would not be sufficient without the electrification of processes especially with regards to the production of heat in the chemical processes. Heat is an important component in breaking up the compounds to produce the required end-products. Electrification of these processes (instead of fossil fuel combustion) coupled with renewable-based generation would be the comprehensive response to addressing Scope 2 Emissions adequately (Deloitte, 2020). | No actions required. When benchmarks do not address scope 2 emissions, these requirements will be part of the criteria. |

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| 8 | SBTi cross sectoral pathway to reduce emissions overtime | 8 – Is the SBTi cross-sectoral pathway the best to reference to decrease emissions over time? If not, what else should be considered for the chemical sector?<br>Refer to section 4.1 in the Criteria document, and section 4.2.2 in the Background document. | Apart from the SBTi cross-sectoral pathway, we also look to the Transition Pathway Initiative (TPI). TPI is a global initiative led by asset owners and supported by asset managers. Aimed at investors and free to use, it assesses companies' preparedness for the transition to a low-carbon economy, supporting efforts to address climate change. It uses publicly available data and an academically rigorous approach. Whereas the SBTi can be used by companies across the whole economy, the TPI focuses on assessing those sectors that contribute most significantly to greenhouse gas emissions, and currently provides assessments for about 300 publicly listed companies across 14 high carbon sectors.<br>They combined Resource Efficiency (RE) data with the targets' data set from the SBTi and the assessment results from the TPI, to see if there was evidence suggesting that resource efficiency companies were more likely to be signed up to one of these initiatives and how they were progressing.<br><br>They key difference between SBTi and TPI is that SBTi has an end target with no short-term target while TPI provides short-term thresholds to benchmark over time. TPI and SBTi should go hand in hand as companies in these sectors need to have short term goals before achieving long term goals.<br>Analysing the TPI results, it's important to note that less than 10% of companies in the MSCI World have been assessed by the TPI. Of the companies assessed, about 37% are considered to be either compliant with the National Determined Contributions (NDCs) set by national governments in the run-up to Paris, or with a (below) 2 degree world (limiting global warming to below 2 degrees above pre-industrial levels).<br>When only looking at RE positive stocks, this figure rises to 54%, an increase most visible in the "below 2 degree" category. One in four<br>assessed RE positive stocks fall within this most stringent category, versus only one in eight across the whole benchmark and less than one in twelve within the RE negative stocks. | A new decarbonisation pathway developed recently for the chemical industry by UTS will be adopted.<br><br>It could be difficult for a facility or asset to reduce emissions overtime following a decarbonisation trajectory continuously.<br><br>Assets: The carbon intensity benchmark must be aligned with the pathway. And both, the threshold and pathway must be reviewed and updated every three years.<br>Entities: Entities must reduce emissions overtime aligned with the pathway. |
| | | | I do not think SBTi cross-sectoral pathway fits to chemical sector. Like Japan, it is realistic to refer each country's roadmap for each industry, considering each unique geographical energy mix back ground, etc. | |

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| | | | The shape of a gently declining curve, like the SBTi cross-sectoral pathway, is not appropriate for these criteria. Normally, one new investment shows us certain reduction one time but the further reduction is not expected in a short period. Thus, the shape of the proposed curve would not match with real individual investments. | |
| | | | SBTi's cross-sectoral pathway is a reasonable reference for this purpose. Another reference may be IEA's NZE scenario, which includes projected emissions from the chemicals sector (although emissions are not broken out by product type), and/or IEA's Ammonia Technology Roadmap (for ammonia production). | |
| 9 | Meeting the carbon intensity thresholds | 9. Products need to meet specific carbon or energy intensity thresholds over the term of the bond. These thresholds are captured in Table 2. Two options are proposed. Please provide input on which of these options is more appropriate, particularly from a standpoint of being able to verify that an issuer continuously meets the thresholds, or level of ambition. Please refer to section 4.1 of the criteria document. | Between the 2 options, we are more inclined towards option a). A continued compliance approach culminating in a final target is more consistent with the strategy of TPI (Question 8) of establishing regular thresholds and verification that leads up to a net zero target in 2050 (SBTi). Having continued compliance ensures that at the end of the facility, the company should be in adherence and closer to its net zero target.<br>A side benefit of this approach is also providing the issuer with multiple milestones to achieve the certification and aligns itself more towards sustainability linked financing instrument timeframe if financing is needed for the transition to cleaner processes/business. | It was decided to leave the two options for applicants to choose from. |
| | | | I would recommend Option A to ensure continuous improvement.<br>Option B, in which the plant must fall under the threshold at the halfway point of the bond only, may not capture the plant's true emissions trajectory | |
| 10 | Adaptation and Resiliene Criteria | Do you agree with the assumptions that underpin the adaptation and resilience requirements? Is there anything else that needs to be considered? Consider the additional requirements for Chemical Hazard Assessment and other assessments required in the checklist – are there any other significant environmental risks that the checklist does not already cover?<br>Refer to section 4.3 and | We agree with the assumptions behind the A&R criteria. Ensuring that the project/asset is resilient to climate change through appropriate climate risk assessment and reduction is a sensible approach.<br>For chemicals-specific factors, we agree with the (1)identification and treatment of hazardous substances and (2) improving the reporting and disclosures of risks.<br>We noted a few issues that were not addressed in the A&R Checklist:<br>There are 4 areas that were supposed to be covered; | Threats to supply chain, and labour productivity/safety , including the potential migration of the workforce are out of the scope of Climate Bonds Resilience Principles. Thus, supply chain and logistic will not be covered by the check-list.<br><br>An accident management plan will be included as a requirement. |

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| | | Appendix 2 in the Criteria document and sections 5 in the Background Paper. | Capital assets, production, logistics & supply and labour. Of which, logistics and labour were not covered in the checklist. In addition, the list of resources provided on page 36 did not cover those areas.<br>2. In our project financing activities, we also necessitate the need for an accident management plan. Given the hazardous nature of the chemicals, it is important to ensure that there is a appropriate response plan to ensure that environmental impact of accidents (on-site/off-site) can be managed promptly and effectively. | |
| | Other | | The criteria for producing the Chlorine shown in Table 2 in the section 4.1are apparently far more strict than those for other products, and the logic behind them is unintelligible.<br><br>I think the criteria and background are very well presented and represent an ambitious set of benchmarks for the industry.<br><br>Electrification of processes makes sense as an eligible capital investment, but only if the increase in electricity consumption is associated with renewable energy use.<br><br>The use of coal and fossil gas are considered in the criteria for both energy and feedstock use. Was the use of oil products, such as naphtha, as feedstocks also considered? Oil products are significant sources of feedstocks as well.<br><br>Overall, I believe the criteria fulfill low-carbon aspirations for the Basic Chemicals sector. This is a thorough and well-reasoned approach.<br>Some chemical products are used to produce materials to decarbonise other sectors. For example EV cells, and certain polymers to manufacture wind turbines. Did you think about including these products in the chemicals criteria?<br><br>Setting criteria that promote recyclability and durability of end products could have a positive impact.<br><br>Waste management should be included in the criteria.<br><br>Water use criteria and targets should be considered, specially for regions with water stress issues. | Chlorine production relies on electricity, thus ensuring a low-carbon electricity will be key to certify a Chlorine production asset as a low-carbon one.<br><br>These criteria aim to promote the use of lighter feedstock.<br><br>Waste management and water use are part of other environmental impacts. By requesting a thorough environmental impact assessment, these aspects should be covered. |

Summary

| Question | Topic | Feedback Received | Response |
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| 1 | Criteria for new plants vs existing plants | Agreement on the necessity of having different criteria for new and existing assets; however, new production facilities should allow the use of fossil resources with CCUS until 2030 or 2040 (which is aligned with the IEA NZE by 2050) as part of the transition. | Considering the long-life cycles of chemicals production facilities and the potential lock in risks we will not certify new virgin fossil-based production facilities. Alternative resources should be used, including secondary biomass, recycled material, CO2, low-carbon hydrogen, and renewable energy. |
| 2 | Coal-based production exclusion | Participants supported this exclusion for production facilities or assets, but they suggested it should be different for entities/companies certification.<br>Coal-based projects, whether used for energy or for feedstock purposes, should not be totally excluded but should be considered eligible only if there is a feasible transition plan that consists of a gradual shift in energy/feedstock mix.<br>While alternatives to coal and gas exist, the technology and understanding of these processes have not been developed to make it cost-effective to deploy at scale. | Based on the CBI actions not pledges principle, we do not consider a transition plan ambitious enough for industries relying on coal. We will keep the coal-based production exclusion for assets and entities as well, given the high GHG emission levels, low process efficiencies and other environmental impacts from coal-based production.<br>Although there are some hybrid projects that mix coal and alternative feedstock like biomass or recycled content, the percentage of alternative sources is low and can lead to greenwashing. |
| 3 | Fossil gas + CCUS eligibility | What to do in regions without CCUS infrastructure and availability? CCUS is not technically available everywhere. Should we include a fossil fuels transition plan where CCUS is not avaiable? (Regional differences) | Although the TWG is aware of regional differences, Climate Bonds should not certify fossil-based assets without CCS or CCU.<br><br>In regions where storage is not technically feasible or there is not infrastructure available, CCU can be implemented. Fuel and feedstock substitution are also an option for fossil-based processes where CCS is not feasible. |
| 4 | Biomass from primary sources exclusion | Participants supported this exclusion | No action needed. The restriction will be part of the criteria. |

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| 5 | Recycled feedstock content percentage (30%) | Regional differences should be considered, including local recycling regulations and infrastructure. It was suggested to set a range of recycled content between 15-30% depending on local context. | We can modify the minimum content of recycled material to promote more recycling processes:<br>20% in regions without local regulations for recycling or with lower percentages.<br>>20% in regions with local regulations. If it has a higher percentage, it should prevail. |
| 6 | Scope 3 qualitative strategies | Participants supported these strategies. However they suggested to evaluate their real impact on emissions reduction. | Although these measures do not include accounting of emissions, it aims to address them to some extent, being aware of the challenges of scope 3 emissions accounting. We should keep these qualitative alternatives and update the criteria with a quantitative strategy to set scope 3 emissions reduction targets once it is available. |
| 7 | Scope 2 qualitative strategies | Participants supported these strategies. | No action needed. We will keep these restrictions to address scope 2 emissions. |
| 8 | SBTi cross sectoral pathway to reduce emissions overtime | The SBTi cross-sectoral pathway does not fit to chemical sector<br>The shape of a gently declining curve, like the SBTi cross-sectoral pathway, is not appropriate for these criteria. Normally, one new investment shows us certain reduction one time but the further reduction is not expected in a short period. Thus, the shape of the proposed curve would not match with real individual investments. | A new decarbonisation pathway developed recently for the chemical industry by UTS will be adopted.<br><br>It could be difficult for a facility or asset to reduce emissions overtime following a decarbonisation trajectory. So we could include the pathway requirement only for entities, and for assets only the carbon intensity benchmark, clarifying that it will be revised and updated periodically to ensure ambitious targets.<br><br>Assets: The carbon intensity benchmark must be aligned with the pathway. And both, the threshold and pathway must be reviewed and updated every three years.<br>Entities: Entities must reduce emissions overtime aligned with the pathway. |

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| 9 | Adaptation and resilience criteria | Pending to include labour and logistics aspects in the check list.<br>It is recommended including an accident management plan. | Threats to labour productivity/safety assessment, including the potential migration of the workforce, and supply chain and logistics vulnerabilities will be removed from the A&R check-list, given that it is out of the CBI A&R principles scope..<br><br>An accident management plan will be included as a requirement. |