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Why current carbon reporting standards fail to incentivize additional renewable energy development

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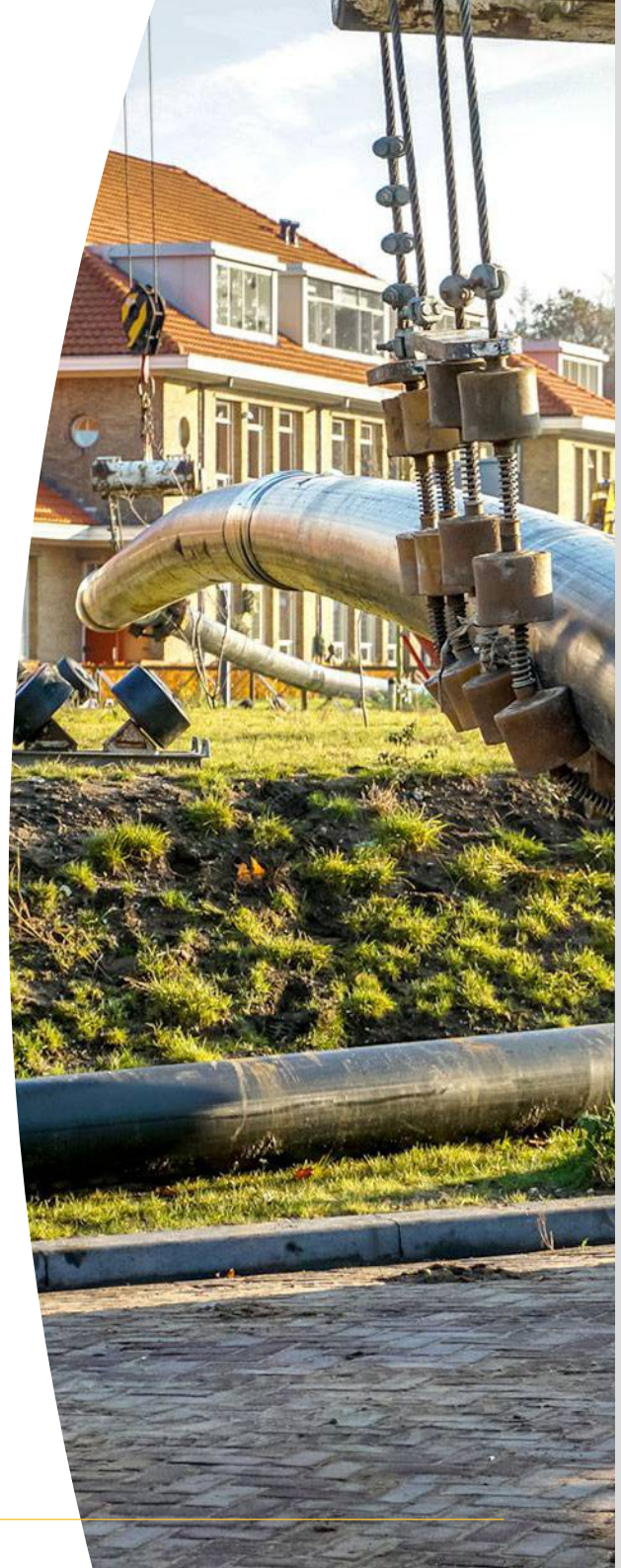
Reaching global net zero goals requires to shift focus from ‘passing the parcel’ to developing and building new renewable energy capacity.

The purpose of carbon measurement and reporting standards such as the GHG Protocol, SBTi and PCAF is to stimulate businesses to reduce their carbon emissions and combat climate change. These standards are useful tools for companies and investors in their path to decarbonisation. However, they are not suitable for stimulating the development of new renewable energy capacity because they do not differentiate between investments in new renewable energy plants (“greenfield” stage investments) and existing ones (“brownfield” stage investments). Under current sustainability metrics, investment in the development and construction of a new wind park has no additional benefit over an investment in an existing wind farm. In fact, greenfield stage investments are being penalised by such metrics, since the generated emissions during the construction phase are counted against them. In this paper, we propose new metrics for measuring investors’ contribution to the development of additional renewable energy capacity. This will improve transparency and accuracy in assessing their contribution to advancing the energy transition.



"Fostering the energy transition requires investors to develop new renewable energy projects rather than just possessing existing ones. The concept of additionality should be better reflected in investors' corporate ESG reporting."

EMMA TINKER
Chief Investment Officer at Asper Investment Management

INTRODUCTION TO CARBON MEASUREMENT AND REPORTING STANDARDS

The impact on climate change through companies' greenhouse gas (GHG) emissions is one of the most widely used and scrutinised indicators in environmental circles. The leading guideline is the GHG Protocol, developed by the World Resources Institute. The underlying principle of the GHG Protocol is that companies report the carbon emissions that are a consequence of their activities. Emissions generated as a direct consequence of these activities, such as through fuel or electricity consumption at the company's facilities, must be reported as scope 1 and 2 emissions. Emissions indirectly generated by a company's activities, such as emissions resulting from the production of materials used in the construction of a wind farm and the transportation of these materials to the site, are reported as scope 3 emissions. These different categories are relevant depending on materiality and the sector in which a company operates.

The increasing number of companies have been requested or even obliged to report on their environmental, social and governance (ESG) efforts. Sustainability legislation, reporting standards and rating methodologies use the GHG Protocol as a framework. For instance, MSCI's ESG metrics methodology factors scope 1 and 2 carbon emissions intensity into its 'environmental pillar' together with the percentage of investees that report their scope 1 and 2 emissions. The EU's Sustainable Finance Disclosure Regulation (SFDR) requires investors to report on a set of indicators, of which scope 1, 2 and 3 GHG emissions are part of. For financial institutions, PCAF developed a global harmonised standard for the way financial institutions measure and disclose their climate impact, with more guidance on how to deal with emissions from investments (one of the scope 3 categories). PCAF requires financial institutions to report on the scope 1 and 2 emissions of the financed project, and the scope 3 emissions when relevant. Notably, PCAF allows reporting of avoided emissions as a consequence of an investment, such as when renewable energy generation effectively displaces fossil fuel generation.

CURRENT ESG MEASUREMENT & REPORTING STANDARDS ARE INADEQUATE

The overarching focus of these reporting standards is to reduce emissions within a companies' footprint and its investors' portfolio. They are effective tools to capture decarbonisation efforts.

By setting strict boundaries around the reporting company, the GHG Protocol incentivises companies to regularly monitor emissions that are a consequence of their own actions and business decisions: Which is the largest emission source? Which emissions vary along with market circumstances and which emissions are a result of our own decisions? It also enables investors to monitor and manage their investment portfolio's alignment with net zero goals, for instance, by assessing the emissions intensity per euro invested, or the avoided emissions from renewable energy projects.

However, although the GHG Protocol is an effective tool for decarbonisation, it currently suffers from a major challenge which threatens to hamper the energy transition. This is the lack of differentiation between investments in 'additional' greenfield renewable energy plants - that are newly added to the total energy mix - and those in brownfield renewable energy plants that have been in existence for many years.

This lack of differentiation is counterintuitive, since the creation of new greenfield assets will, by definition, lead to a higher volume of renewable energy capacity installed and further avoided emissions, thereby bringing an 'additionality' effect. Additionality is a concept used in several areas but refers here to the delivery of outcomes that would not have happened without a specific intervention. Within renewable energy projects, it often refers to organisations directly adding new capacity for renewable energy to the national energy grid..

"Organisations can deliver on additionality by committing to and investing in greenfield projects in a way that allows them to finance new renewable power generation."

JISKA KLEIN,
Senior Sustainability Manager at Asper Investment Management

DEVELOPING AND BUILDING NEW RENEWABLE ENERGY CAPACITY NOT PROPERLY RECOGNISED

Investing in renewable energy projects, whether brownfield or greenfield, is generally preferable[1] to investing in fossil energy generation, as low or zero emissions are generated for a given amount of energy produced. Box 1 illustrates this: investing in companies A or B (100 MW wind farms) results in lower generated GHG emissions and higher avoided emissions than investing in company C (a 100 MW coal-fired power plant). Both greenfield and brownfield renewable energy projects result in zero scope 1 and 2 emissions, but the broader effects of these investment types are different: only a greenfield energy project will result in additional renewable energy capacity[2].The current PCAF methodology do not recognise this. Despite the clear difference in additionality, both greenfield and brownfield investments are allowed to "claim" the avoided emissions from the financed project. Moreover, as most greenfield developments are financed by investors with Develop & Sell strategies - meaning new assets are being built and sold over time - greenfield investors "lose" the credit of the avoided emissions of the assets on exit. They are further penalised by the requirement to include GHG emissions generated during the construction of a project, which will not be passed on to the brownfield investor. This perspective is also exemplified in the box below in the comparisonbetween company A and B. The consequence is that current carbon methodologies and standards do not incentivise investment into greenfield energy projects. Instead they encourage investors to prioritise existing renewable assets since both generate the same outcomes in terms of avoided carbon emissions and related ESG ratings. This lack of distinction can lead to excessive focus on transacting existing opportunities, a kind of 'pass the parcel' game where avoided emissions are exchanged without directly contributing to more renewable power production. Although the brownfield investor certainly contributes to maintaining constant renewable energy output through operation and maintenance, there is less added value in holding renewable energy assets than there is in developing them.

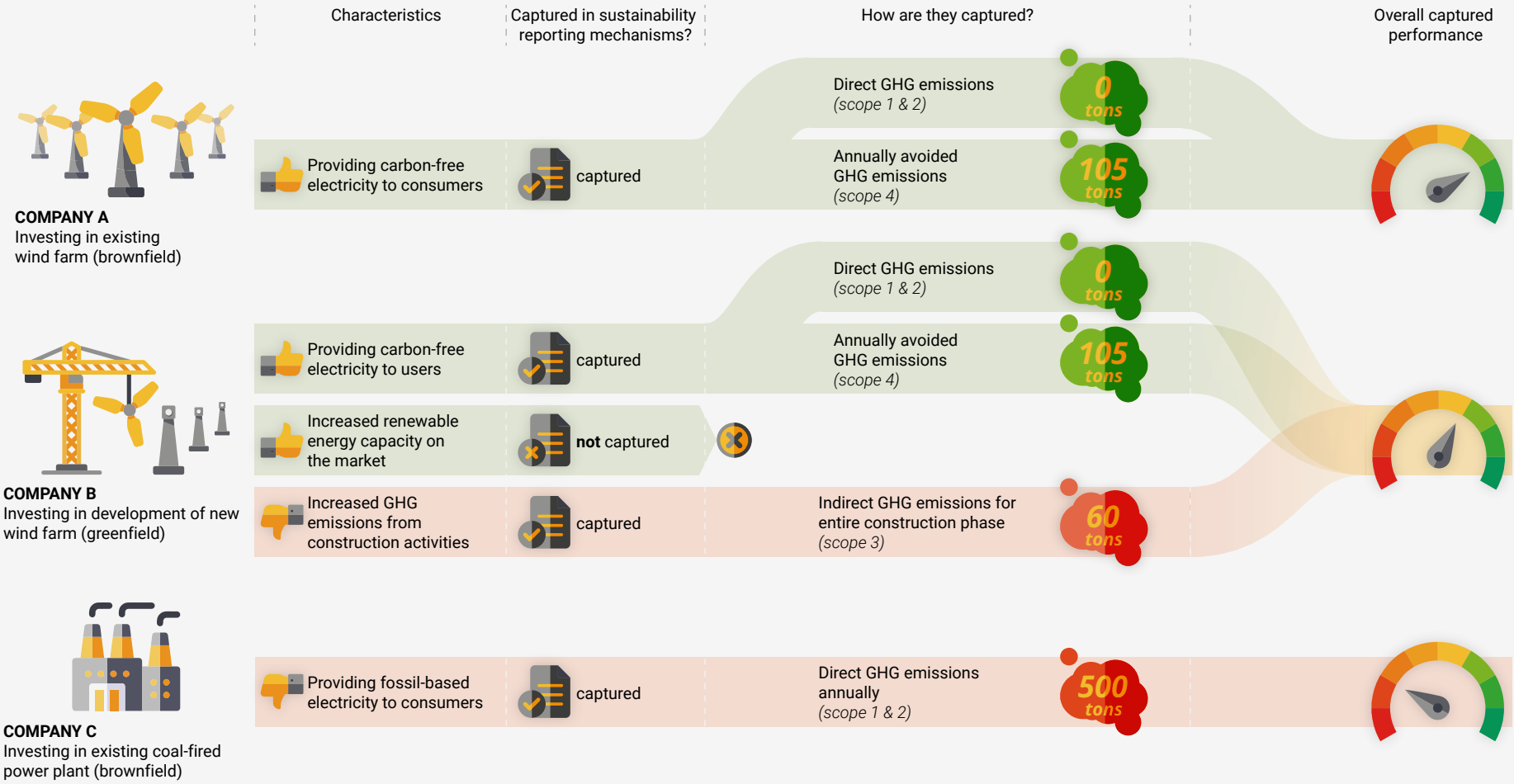
1 *An exception to this principle (which goes beyond the scope of this paper) would be presented by "cleaning up" investments into fossil fuel energy assets, which are made expressly with the goal of replacing the polluting equipment with renewable based technologies. These are therefore akin to greenfield renewable investments and would carry greater additionality than brownfield renewable investments.*

2 *We acknowledge though that a "brownfield" investor who acquires an asset from the original "greenfield" investor, can free up the latter's capital for a renewed investment in further greenfield assets.*

BOX 1: ADDITIONALITY OF GREENFIELD DEVELOPMENT IS NOT CAPTURED BY CURRENT SUSTAINABILITY REPORTING

We assume three companies within the energy sector in one country. Company A is an investment in an existing 'brownfield' wind farm, Company B is an investment in a new 'greenfield' wind farm, and Company C is an investment in an existing 'brownfield' coal-fired power plant. The investments in wind parks are providing zero-carbon electricity to the grid, while the investment in Company C generates carbon emissions since the generated electricity is fossil-based.

When applying the current metrics on Company A and B, Company B is being penalised for the construction-related emissions while not receiving any credits for the additional renewable electricity capacity it provides to the grid.



"To transition to clean energy at the speed and on the scale required, investors need to back the engineering companies developing these greenfield projects."

LUIGI PETTINICCHIO
CEO Asper Investment Management

Similarly, investors whose portfolios already have a low carbon intensity are placed in a difficult situation. While the portfolio-focus works well for incentivising carbon intensive companies or financial institutions to put solid plans in place to decrease their emissions, in the real world this runs into difficulties. Many funds and funds managers - such as those who specialise in renewable energy - start off with a low or even zero carbon emissions portfolio. Their expertise, especially for those with experience in greenfield stage investments, will be key to delivering the energy transition. However with the current portfolio-based approach, they face the difficult task of drafting an ambitious emission target for their portfolio from an already low baseline.

ADDITIONALITY: RECOGNISE INVESTORS WHO MAKE CHANGE HAPPEN

We need all hands on deck to help accelerate the energy transition by rapidly expanding the volume of investments in decarbonisation. To do so, it will be crucial to attract as much capital as possible into greenfield stage investments since they contribute to additional renewable energy capacity. Sustainability frameworks help to identify investments that do less damage and to define a decarbonisation path for funds and companies that pollute. However, they do not recognise the additional sustainability value created for soci-ety through the development of new renewable capacity. This means the development of new renewa-ble energy projects is not favoured over acquir-ing existing capacity, which could hamper the energy transition

SOLUTION: EXTRA SET OF METRICS TO CAPTURE ADDITIONALITY

As investor, you can choose to add new green, renewable energy to the grid, rather than simply acquire renewable energy assets developed by a third party. All financial institutions should be required to measure and report how they deliver ESG additionality, so it can be included in investors' decision-making upfront.

Just as managers must show they actively generate returns (alpha), we believe there should be questions about ESG value-add as a result of a manager's investment or ownership of the asset.

In light of the EU Taxonomy, companies and fund managers need to start disclosing the proportion of Taxonomy aligned economic activities (e.g. through turnover, CapEx and OpEx indicators) within their company or portfolio. These indicators will lead to more transparency on the allocation towards sustainable activities, but they still fail to differentiate between greenfield and brownfield investments. With metrics that capture additionality, financial institutions can be recognised and rewarded for taking up the necessary instrumental role for providing much needed capital to renewable energy development, thereby contributing to climate change mitigation and the energy transition. Furthermore, the metrics could lead to more attention being given by the sector to the often-overlooked development of more sustainable technologies and materials. This increased set of information could stimulate the industry to identify more opportunities to further reduce emissions.

We would like to call on sustainability and ESG frameworks like GRESB, PRI and MSCI to foster the energy transition by including a set of indicators that capture this additionality concept within carbon reporting standards or scoring methodology. The additional context provided by these metrics will lead to more trans- parency, reduce the risk of "greenwashing", and lead to a better understanding of how investments and investors are really contri- buting to the energy transition during their ownership. Measuring how investors actively make a difference to delivery of ESG goals in all stages is critical if change is to happen.

"By measuring or rating additionality, financial institutions are more incentivised to invest in greenfield projects that contribute to the energy transition. This includes organisations that are already well underway with their net zero strategy."

MICHIEL HUIJGEN
Sustainability consultant at Royal HaskoningDHV

PROPOSED METRICS TO MEASURE ADDITIONALITY

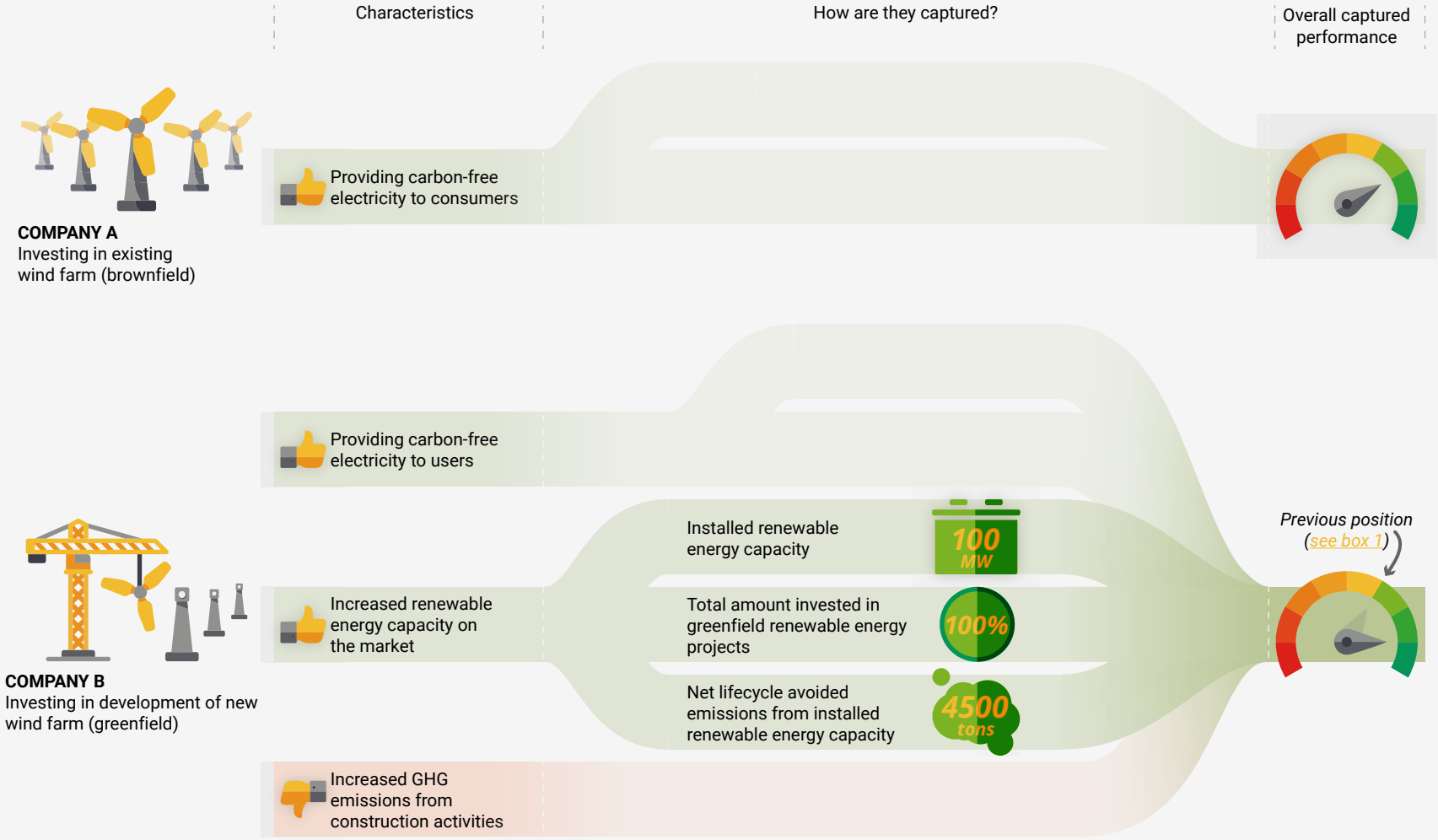
We conclude our paper with a proposed new set of metrics within ESG and sustainability frameworks that measure investors' efforts to contribute to additionality.

- **Installed renewable energy capacity**: The amount of renewable energy capacity installed (MW) and the total projected annual renewable energy generated (in MWh, GJ, or equivalent) per energy type (e.g. electricity, heat, fuel).
- **Total amount invested in greenfield renewable energy projects (annually and since inception)**: Total CapEx in greenfield energy projects aligned with EU Taxonomy 'green CapEx' indicator (in EUR, USD or other currency) or as a percentage of the total invested amount.
- **Net lifecycle avoided emissions from installed renewable energy capacity:** Company's net contribution to avoided emissions (in tons of CO2-eq), which is calculated by the total (projected) avoided emissions over lifetime minus the emissions from construction, maintenance and (optionally) end-of-life. Note: this indicator should not be mixed up with the regular GHG indicators reported according to the GHG Protocol.

These metrics will be able to capture the benefits delivered by greenfield projects and show how much new additional clean energy an investment has added to the energy mix due to the greenfield investment. They are intended to be used in addition to the existing portfolio perspective of the GHG Protocol and the PCAF Standards, as this perspective is still necessary for formalised emissions monitoring and reduction plans.

Measuring how investors make a difference to delivery of ESG goals is critical if we are to change the balance in favour of channelling investment towards projects and activities that maximize our progress towards the energy transition. **And we need that change now!**

BOX 2: APPLICATION OF PROPOSED METRICS TO CAPTURE ADDITIONALITY OF GREENFIELD STAGE INVESTMENTS (WITH COMPANY A AND B FROM BOX 1)



Appendix 1: Overview of set of metrics and suggested steps for further standardization

It should be noted that further principles, guidelines, and calculation methodologies are to be developed for these additionality metrics to be effective and sufficiently robust. Please find below a starting point for the development.

OVERALL NEXT STEPS FOR STANDARDISATION OF GREENFIELD RENEWABLE ENERGY PROJECTS
• Define what qualifies as renewable energy source • Define how metrics are affected in case of a mix of renewable and non-renewable sources • Define standards for what qualifies as a greenfield and as brownfield investment • Define criteria for how a greenfield development can be attributed to a reporting year (i.e., based on 1st year of operation or on date when investment decision is made)

Table 1: *Overall steps for allocating greenfield projects to investors*

METRIC	DESCRIPTION	POSSIBLE UNITS	NEXT STEPS FOR STANDARDISATION
Installed renewable energy capacity per energy source	The amount of capacity installed through investments of the reporting company for energy generation from renewable sources, divided in (a) electricity, (b) heat, (c) renewable fuel.	(Projected) annual energy production from capacity installed in the reporting year in MWh, GJ, or equivalent.	Define how the metric is divided in case of more than 1 investor or in case of capital subsidies.
Total amount invested annually in greenfield renewable energy projects	The total invested amount within a reporting year spent by the reporting company on greenfield energy projects.	Total EUR, USD or other currency invested in greenfield energy projects or as a percentage of the total invested amount.	Define criteria how investment expenses qualify as investments meant for project development.
Net lifecycle avoided emissions from installed renewable energy capacity	The projected avoided emissions over lifetime minus the emissions generated from construction, operation and maintenance and (optionally) end-of-life of greenfield energy projects developed by reporting company within a reporting year.	Tonnes of GHG emissions over lifetime.	Define criteria for how current and future avoided emissions are calculated Define quality criteria for emission calculation from construction or operation and maintenance phase.

Table 2: *Set of metrics outlined in more detail*

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