Proposal: Defining a ‘sustainable data analytics process’ to enhance the reliability of buildings’ sustainability data and their integration into financial risk analysis and decision-making

Background
Real estate is crucial for the successful transition to a low-carbon economy as it represents 40% of global energy consumption and emits about the same amount of greenhouse gas emissions. Under various scenarios, energy demand from the sector is expected to double by 2050 and direct and indirect CO₂ emissions to increase in the range of 50-150% without additional mitigation efforts1. In order to stay on the path below 2°C, buildings-related emissions need to decrease by nearly 80% from 2013 levels by 2050. This can only be achieved by consistently integrating the environmental externalities (“risks”) into financial decision making.

Why do we need this project?
Evidence on the positive links between buildings’ sustainability and financial performance 2, 3 is increasingly compelling and much work has gone into developing frameworks and tools for the industry, including guidance on sustainability metrics, to support practitioners with the integration of ESG and climate related aspects into their financial decision making. Yet, as of today, sustainability data remain insufficiently considered in risk assessments and resulting investment decisions. A crucial reason for this is that existing data on sustainability performance is often not considered as a reliable and accurate enough proxy for the actual performance.

Increasing the reliability of information on the sustainable performance of buildings is becoming a fundamental brick in the broader global effort to demonstrate and integrate the correlation between their sustainable and financial performance into decision making. It is particularly important to ensure that risk departments are involved in this effort to include sustainability considerations within risk assessments, and therefore systematically encourage sustainability in real estate.

Who is the main target audience?
This project targets all main financial industry groups (banks, investors and insurers) who deal with real assets and here in particular the ESG and risk management departments.

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3 Cf. Sustainable Real Estate. Implementing the Paris Climate Agreement. An Action Framework
Geographic applicability
Given the project’s objective of increasing transparency of the underlying data of a building’s sustainability indicators which is lastly based on physical data (such as kwh or scope 1 emissions) and thus applicable to all geographies, this project has a global scope.

Proposal
Taking forward the recommendations of the European Commission’s working group on energy efficiency (EEFIG) and UNEP FI’s previous work on Sustainability Metrics for the Real Estate Sector, Caisse des dépôts et consignations (CDC), in partnership with UNEP FI, propose to explore the feasibility of an “information rating process” to enhance transparency in relation to the quality of sustainability data on buildings.
This proposal has been initially developed
  a) To address the need of reliable information about the sustainability performance of buildings (e.g. energy efficiency, CO2 emissions) by financial institutions; and
  b) To engage risk departments on the integration of sustainability metrics as a key driver of the decision making process

While both regulatory and voluntary standards, labels and third party verification already exist, they are primarily used to show compliance with certain regulatory or other requirements, but provide no indication about the reliability of the underlying information. The resulting uncertainty of the currently available data (voluntary disclosure and certification as well as mandatory labels) cannot create the chain of trust that is indispensable for investments and loans to be directed to the sustainable and energy efficient buildings market segment and associated projects.

By analyzing and verifying how the sustainability data was produced (perimeter and method of calculation or measurement), the proposed process would allow to assess and disclose the level of quality and certainty of the data. Importantly, the project would not judge the performance of the building itself, but rather provide a qualitative assessment on the extent to which the data captures the actual performance of the building. Improvements in technology (e.g. the development of numerical tools applied to buildings) have made physical data, and the tracking of actual sustainability performance of buildings (incl. for example indirect upstream and downstream emissions), increasingly accessible at a lower cost. Comparing calculated available data to the actual physical data would allow to better understand the reliability of calculated data from different sources.

This data analytics process would enhance trust in the data and facilitate its integration into valuation, risk analysis and financing decision across the banking, investment and insurance industries. Ultimately, it would allow to scale up financial flows towards sustainable properties. An important objective is to start
and engage in a dialogue with risk managers on how the proposed process could facilitate the increased integration of sustainability metrics in risk analysis.

**Practical application of the ‘Data analytics process’**

Metrics/indicators that could be analyzed:

a) Energy consumption: What exactly is measured and how? Calculated energy demand vs. measured energy consumption (see graphic example below).

![Graphic Example](image)

b) CO₂ emissions: Direct scope 1 and indirect scope 2 +3 emissions and their boundaries.

Once information on the quality of the data is made available, it can be connected to financial analysis, evaluation and risk assessment methods such as a discounted cash flow analysis or Monte Carlo process to enhance the systematic integration of sustainability indicators into real estate investment decisions. The process would also be highly relevant to qualify green assets underlying green mortgages and green bonds.

**Output:**

The output of this project would be the development of a process to assess the quality of given data as illustrated below:

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INPUT: Sustainability data on the building and their sources

Analysis: Underlying information and parameters and rating on the basis of agreed criteria and scale

OUTPUT: Rating on the level of certainty of the data
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Ultimately, this process could be used either directly by investors with the capacity and resources to process the underlying technical data and/or by a third party organization that would deliver a certified information on reliability of technical data to financial institutions.

The project would be divided into two phases. The first phase could kick off in January 2017 and focus on analyzing existing data and their underlying information and parameters as well as identifying what information is needed by risk managers to be integrated into financial analysis. The first phase would
conclude with an interim document identifying a set of metrics for which increased transparency on data quality is needed.

The second phase would focus on determining the criteria and rating scale to be able to assess the level of certainty of data on a given metric. A series of workshops would be organized in key geographies to collect input from practitioners. The second phase would run until December 2017 and deliver an operational document explaining how the proposed data analytics process can be used as well as potentially a simple online tool allowing financial institutions to upload their relevant data and estimate the level of their reliability. During the second phase, we would engage with third party organizations that could potentially host and operate the process for financial institutions.

Further developments could be envisaged as a second step in 2018 to transfer the operation of the process to a third party or refine a possible on-line tool as well as to further translate reliable and transparent sustainability information into financial information.

**Tentative proposed work plan, output and timeline (detailed)**

**Phase I (January – June 2017)**
Desktop research on existing sustainability building data globally and their underlying assumptions and parameters together with a series of interviews with risk managers of property investors, banks and insurance companies to identify the sustainability information that is currently being considered in risk analysis and investment decision and to determine key deficiencies and needs. On this basis we can select a set of key metrics, indicators and labels for which the process of rating data quality could be applied

Output: Interim document analyzing existing data in different geographies and how they are produced, and describing the state of art in terms of current practices of sustainability information integration into real estate financial analysis and risk management of investors, banks and insurance companies.

**Phase II (July-December 2017)**
Development of the 'analytics process' in consultation with the industry i.e. a rating scale for the level of certainty of data according to agreed criteria for each type of metric. This could include work on the link between estimated and measured energy consumption data in various geographies. A series of technical workshops would be organized with risk managers in key geographies (Europe, NA, Asia, Australia), hosted by UNEP FI members, to present and collect inputs on the proposed 'analytical process'. Engagement with third parties to identify a technical partner that could take on board the process and operate it for financial institutions would also be conducted.

Output: Operational document explaining the functioning of the process to be used
directly by financial institutions and potentially a simple online tool

**Funding:**
- In phase I, the report and technical work would have to be conducted by a consultant or another independent organization, partially be funded by UNEP FI core budget
- Workshops in the different geographies should be hosted by UNEP FI/PWG members
- Other sources: CDC and other external partners, e.g. Climate KIC (EU focused), C40, WRI, foundations, Investor Confidence Project

**Other potential partners:**
- RICS, European Mortgage Federation

**Additional information**
EEFIG has recently started project phase II focusing on investment de-risking which aims to provide a data platform on energy efficiency investments and define underwriting standards for energy efficiency. Over the coming months, EEFIG will focus on banks and hold a series of interviews to identify the process and data requirements by banks. These findings will be very timely and could be fed into the project proposal at hand.

The Global Alliance on Building and Construction was launched at COP21 and currently gathers 24 countries to align the building sector with a two degree pathway. One of the main objective of this Alliance is to accelerate the financing of sustainable buildings and UNEP FI co-leads its finance working group. The proposed information rating process could serve as a deliverable to the Alliance ahead of COP22 to help it gain scale and further support from stakeholders.