

**ACT**

**SECTOR METHODOLOGY**

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Assessing low-  
Carbon Transition

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**Building  
Real Estate**

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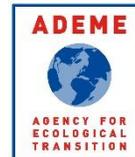


**VERSION 1.2 | OCTOBER 2022**

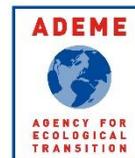
**ACKNOWLEDGMENTS**

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**AUTHORS:**



**FUNDERS:**



The development of the ACT Real Estate sector methodology was supported by the Climate-KIC.



The technical assistance for the current version of ACT was provided by:

**EKODEV &  
ARP-ASTRANCE.**

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## 1. Introduction

The 2015 United Nations Climate Change Conference (COP21) in Paris further solidified the global recognition of limiting dangerous climate change. Political agreement was reached on limiting warming to 2 degrees above pre-industrial levels. The project 'Assessing low Carbon Transition' (ACT) measures a company's alignment with a future low-carbon world. The goal is to drive action by companies and encourage businesses to move to a 2-degrees compatible pathway in terms of their climate strategy, business model, investments, operations and GHG emissions management. The general approach of ACT is based on the Sectoral Decarbonization Approach (SDA) developed by the Science Base Target initiative (SBTi) in order to compare company's alignment with a 2-degrees world, the application of which is described in the ACT Methodological Framework document [1].

Nearly 20% of the greenhouse gas (GHG) emissions worldwide are related to the building sector (scope 1, 2 and 3) [1]. This proportion is likely to increase due to world population growth, ongoing urbanization and easier access to property in emerging countries which will all contribute to the addition of 230 billion m<sup>2</sup> of new buildings within the next 40 years [1]. In the International Energy Agency (IEA) ETP Reference Technology Scenario (RTS), which considers only countries' existing commitments, global buildings energy consumption is seen to increase by more than 30% in the next 40 years while only by 5% in the 2DS (decrease by 7% in the B2DS) [10]. In terms of CO<sub>2</sub> emissions (including scope 2 energy emissions), this translates to a reduction of 85% by 2060 for the 2DS. To achieve that, energy efficiency measures (e.g. envelope improvement, technology performance etc.) coupled to a gradual electrification of building end-uses will be essential<sup>1</sup>.

The prominent role of the building sector in the fight against climate change reflects the need to assess companies involved in this industry and encourage them to achieve low carbon targets.

The particular position of the building industry in the economy makes it difficult to grasp the reality of it. Indeed, the sector covers different activities (real estate development, construction work, building management, etc.) operated by diverse companies. Therefore, assessing the building sector emissions requires a life-cycle approach, integrating all parts of the supply chain. This makes the building sector suitable for analysis via a SDA [3] and allows the ACT assessment to focus on quantitative indicators. Nevertheless, due to the complexity of the sector and its economic importance, other qualitative indicators (e.g. business models, etc.), are also highly significant when considering the alignment with a low-carbon future and should not be neglected or underweighted.

In order to better address the variety of issues related to carbon assessment in the building sector, two separate reference methodologies have been implemented to cover all the relevant stakeholders. The Construction methodology focuses on the low-carbon alignment of companies that construct and renovate buildings; whereas the goal of the Real Estate methodology is to assess firms whose main business is properties management.

This document is the ACT Real Estate methodology. Particular emphasis is placed on GHG emissions related to the building managed as an asset of the company - when GHG emissions released during the use phase are most relevant. Indeed, this phase is particularly relevant since it may represent up to 93% of total

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<sup>1</sup>The IEA ETP Reference Technology Scenario refers only to the use of buildings and excludes construction and raw materials emissions.

emissions over an existing building's lifetime [4]. More recent French data (2017-2019<sup>2</sup>) show that GHG emissions from in-use energy, considering all end-uses, represent 50% or less of the total GHG emissions of a new building over its life cycle. The assessment methodology also considers such factors as: locked-in emissions, R&D expenses in Climate Change Mitigation Technologies as well as low carbon transition plan. This information will feed simplified assessment models that aim to quantify the implications of initiatives such as installing smart building systems or taking part in the construction of "exemplary buildings". In addition to business model considerations, other qualitative indicators included are the company's stance on climate change regulations, awareness activities for clients and engagement with the supply chain. An experimentation phase is planned and will help test the methodology and collect feedbacks to improve it and make it more operational.

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<sup>2</sup> According to provisional results drawn from E+C- Observatory in March 2019. For new office buildings using electricity as in-use energy, given the low CO<sub>2</sub> intensity of French kWh, the in-use energy related GHG may be only 20% of the total GHG of the building life cycle. See <http://www.batiment-energiecarbone.fr/>

## 2. Principles

The selection of principles to be used for the methodology development and implementation is explained in the general Framework. Table 1 recaps the adopted principles that were adhered to when developing the methodology.

*Table 1 Principles for implementation*

Principles
▪ Relevance - Select the most relevant information (core business and stakeholders) to assess low carbon transition.
▪ Verifiability - The data required for the assessment shall be verified or verifiable.
▪ Conservativeness - Whenever the use of assumptions is required, the assumption shall err on the side of achieving a 2 degrees maximum temperature rise.
▪ Consistency - Whenever time series data is used, it should be comparable over time.
▪ Long-term orientation - Enable the evaluation of the long-term performance of a company while simultaneously providing insights into short- and medium-term outcomes in alignment with the long-term.

### 3. Scope

#### Scope of the document

This document presents the ACT assessment methodology for the Real Estate sector. It includes rationales, definitions, indicators and guidance for performance assessment. It is focused on the specific considerations and constraints that need to be taken into account when assessing the low-carbon alignment of the Real Estate sector.

#### Scope of the activities

The activities of the Real Estate sector may include:

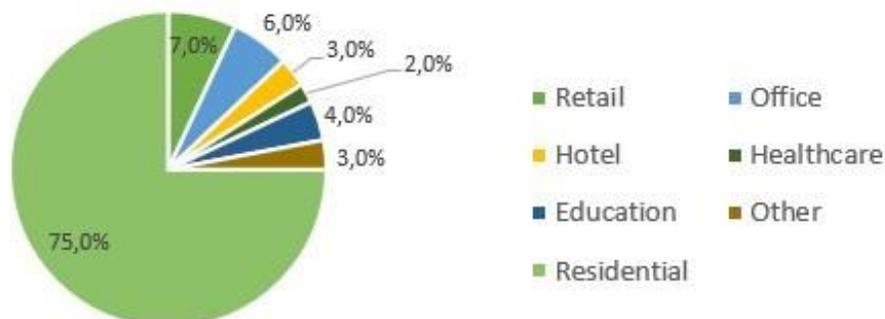
1. Asset Management: overseeing financial and strategic developments of Real Estate investments at asset level (maximizing property's value).
2. Property Management: coordinating day-to-day operations (building maintenance, work orders, rent collection).
3. Facility management: providing base services to building occupants (energy equipment maintenance).

All the activities mentioned above are included in the scope of the methodology as they are considered relevant for assessing the carbon footprint of a building.

#### Business Segments

The buildings managed by real estate companies greatly vary according to their physical characteristics and use. The scope is composed of different business segments established in order to emphasize specificities of each type of building. These segments are defined based on the use (i.e. commercial or residential) of the buildings and their types of occupancy. In the case of a mixed-use building (e.g. residential building with commercial stores in the ground floor), the business segment occupying the highest floor space area should be assigned. This breakdown represents the reference framework to be used when conceiving the sectoral benchmarks.

Residential buildings represent the vast majority (75%) of floor space in Europe [6]. Retail and offices respectively cover 7% and 6% of total floor area (see figure 1). The specific benchmarks cover those three segments. Furthermore, the methodology provides two specific benchmarks for the residential segment:



multi-family and single-family housing; as they are very different in terms of energy consumption and spatial organization. Besides, each of them represents a large part of the total floor space (see figure 2 with the example for France). Given the data availability and methodology simplicity, the rest of the business segments, which represent less significant shares of total floor area, are compared to the sector average. Besides, the adaptation of decarbonization pathways for such segments is very difficult.

Figure 1: Breakdown of floor area in Europe. Source: European Commission (2017).

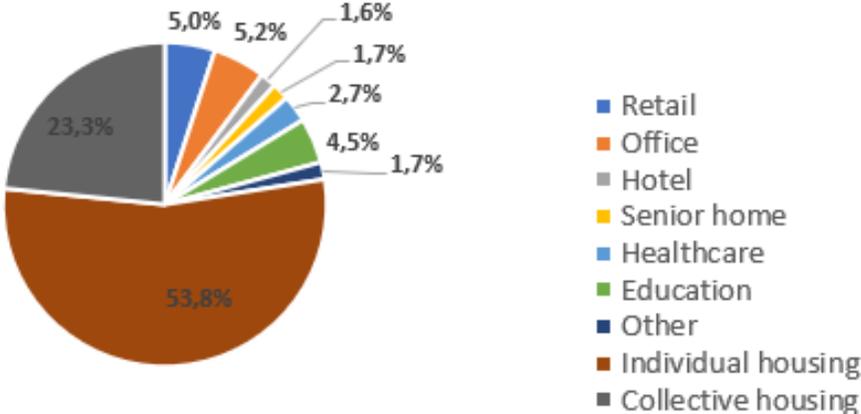


Figure 2: Breakdown of floor area in France. Source: ADEME (2014).

Figure 3 illustrates the main business segments that constitute the Real Estate sector.

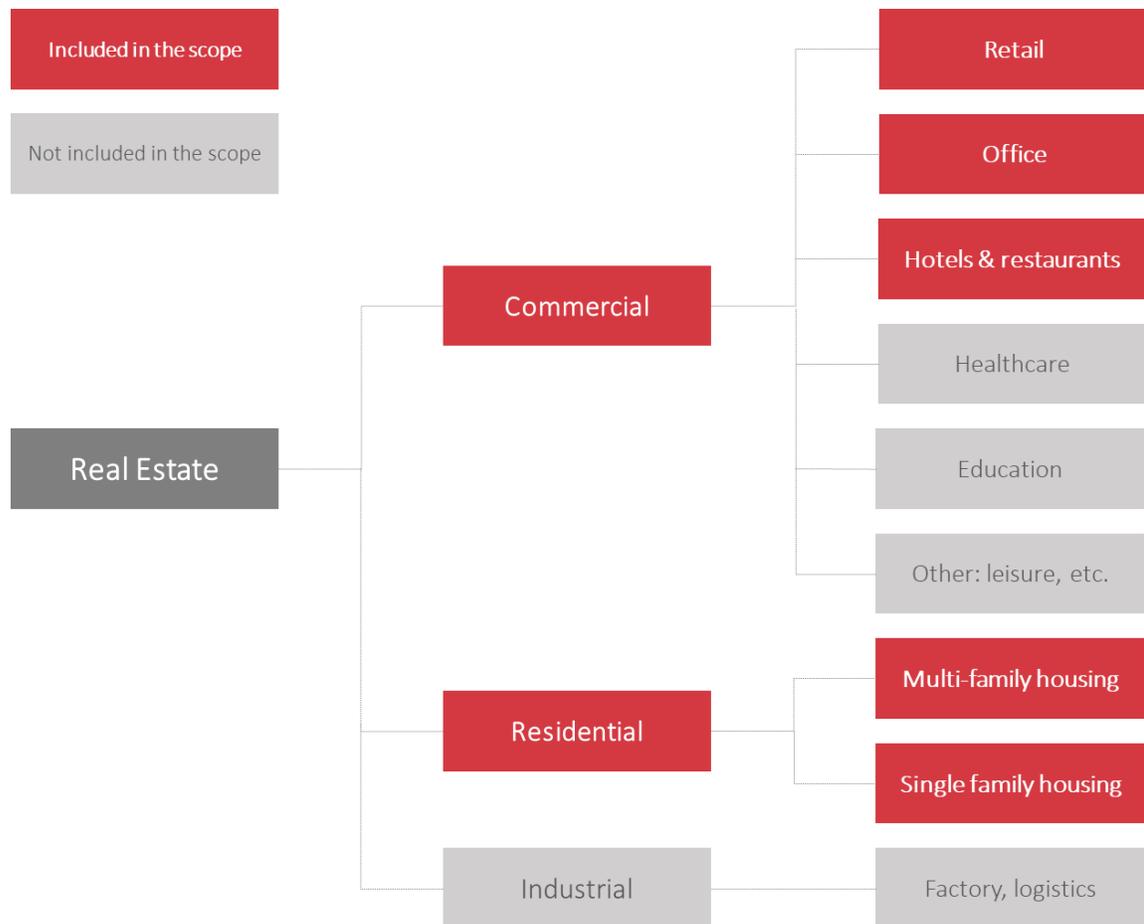


Figure 3: Business segments of the Real Estate sector.

Source: GRESB, RE Developer Reference Guide, 2017.

### Geographical scope:

The ACT methodology aims to assess companies on an international level, covering building stocks located in various regions. Those areas display specific characteristics (climate, urbanization model, data availability) and therefore may require to be assessed separately. The methodology thus considers the following geographical areas:

- Europe (E.U. 28 countries) ;
- North America (USA) ;
- South America (Brazil only) ;
- China ;
- India ;
- Russia ;
- ASEAN (ten countries of South East Asia with only global data including Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam);
- Africa (South Africa only).

Table 2 illustrates the main components of regulated and unregulated energy use components.

Regulated Energy use	Unregulated Energy use
Heating	Transportation (elevators...)
Cooling	IT equipment
Ventilation	Catering facilities
Interior lighting	Lab equipment
Hot water	...

Table 2: Components of regulated and unregulated energy use.

Source: ASHRAE Standard 90.1.

## 4. Boundaries

### Reporting Boundaries

The most significant emissions' sources of the Real Estate sector are related to buildings managed; and more specifically the energy consumption associated with the use phase, which represents in average the largest part of emissions for existing buildings. The spatial boundaries of the ACT methodology for the Real Estate sector thus focus on the carbon performance of the buildings managed, considered as assets of companies. Although GHG emissions related to buildings occupied by real estate companies (offices, warehouses, etc.), are relatively insignificant compared to managed buildings' emissions, they reflect the willingness of companies to tackle environmental issues within the industry. They should therefore also be considered within the reporting boundaries of the sector.

To sum up, quantitative indicators of ACT assessment consider:

- Emissions related to the use phase of the company's own buildings,
- Emissions related to the use phase of buildings managed by the company.

Regarding multi-let buildings managed, private parts areas as well as common parts areas are included in the scope of the assessment. Other components, such as transport of building users, are to be taken into consideration through qualitative indicators.

### Temporal boundaries – Building's life-cycle assessment LCA)

Emissions related to buildings are coming from different phases covered by the LCA as listed below:

- Emissions related to production, transformation and transport of materials,
- Emissions released during on-site operations (construction phase),
- Emissions caused by the use of the building (mostly energy consumption),
- Emissions due to potential renovation works, demolition and disposal of residual materials marking the end of the building's life-time.



Figure 4: Broad areas of a building's life cycle.

Source: BIS, 2010.

Theoretically, the assessment should take into account the entire temporality of the building through LCA and all materials forming the building, as far as possible. The ideal situation is to have a large national or

regional database of EPDs<sup>3</sup> covering the full life-cycle of construction products and equipment. In practice, today it is rarely the case, but the situation is evolving rapidly at least in developed countries, and it is possible to rely on generic or default values were industry specific ones are lacking

Regarding the In-use phase, both regulated and unregulated energy use components are included in the scope.

The five business segments selected in the scope are to be associated with specific benchmarks. The rest of the business segments could be compared with the sector average. Each benchmark covers the eight geographic areas (see “geographic scope”).

## Rationale

### Spatial boundaries

The emissions related to the use phase of a building represent the large part of total emissions in a building’s life-time. In average for an existing building in France, emissions related to the use phase may represent up to 93% of a building’s total emissions [4]. In this regard, ACT methodology focuses only on the use phase of buildings to compute quantitative indicators. The other parts of the LCA are either assessed through low-weight indicators (1.4 **Alignment of new buildings integrated (materials) reduction targets**) or taken into consideration through qualitative indicators (6. Supplier and 7. Client).

### Energy use

Companies are required to report both regulated and unregulated components of the energy use. For unregulated energy use, companies may have an influence on the energy use of tenants through engagement. Usually, fit outs such as elevators; which fall under unregulated energy use; are often paid for by the managing company. Also, regulated energy use is almost per definition based on estimates. With the proliferation of smart building meters in commercial real estate, more and more whole building data is becoming available. In some cases, the whole building energy consumption data is the standard format for data reporting, like in the USA with the government's mandated EPA's Energy Star Portfolio Manager Certification and Benchmarking Scheme.

### Common and private parts

An increasing number of real estate companies have started to report scope 3 of GHG emissions, which includes energy consumption of private parts of multi-led buildings. Companies began to require this information from tenants, or integrate an estimation in three calculations. Some companies use the “equity shared approach” in their GHG reporting and see private parts of multi-led buildings as Scope 2 GHG emissions. Therefore, the assessment methodology includes common and private parts within the boundaries.

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<sup>3</sup> Environmental Product Declarations, as defined in EN 15804 and EN 15978 standards (building sector LCA methodology)

## 5. Construction of the data

### 5.1. Data sources

In order to carry out a company level assessment, many data points need to be gathered which can be sourced from various locations. Principally, ACT relies on the voluntary provision of data by the participating companies.

Next to this however, external data sources might be consulted where this would streamline the process, ensure fairness, and provide additional value for verification and validation.

### 5.2. Company Data request

The data request will be presented to companies in a comprehensive data collection format.

### 5.3. Performance indicators

The performance indicators have been conceived following the main principles described in 2.

#### **Intensity metric – Floor area**

The carbon intensity requested to the company which is considered for some indicators (RE 1.1, RE 1.2, RE 1.3, RE 1.4, RE 1.5 and RE 1.6) shall be calculated based on the floor area (m<sup>2</sup>).

With the various types of metric systems per country or type of building, a correction factor is applied to match with CO<sub>2</sub> intensity's benchmark. The floor area considered is the whole building area excluding external, outdoor and parking areas.

As in the CSR reporting, companies are required to report data from their managed portfolio (i.e. present for at least one year). If data for some assets is unavailable, resulting in a lower coverage, a correction factor shall be applied to the scoring.

Table 3 illustrates the performance indicators used by the Real Estate (RE) companies ACT sector assessment

			Real Estate		
			Past	Present	Future
<b>1. Targets</b>	RE 1.6 Historic target ambition and company performance		RE 1.1 Alignment of own buildings reduction targets		
			RE 1.2 Alignment of buildings managed (use phase) reduction targets		
			RE 1.3 Alignment of new buildings integrated (use phase) reduction targets		
			RE 1.4 Alignment of new buildings integrated (materials) reduction targets		
			RE 1.5 Time Horizon of targets		
<b>2. Material Investment</b>	RE 2.1 Trend in past emissions for buildings managed		RE 2.2 Emissions lock-in		
			RE 2.3 Trend in future emissions for buildings managed		
<b>5. Management</b>	RE 5.1 Oversight of climate change issues		RE 5.3 Low carbon transition plan		
	RE 5.2 Climate change oversight capability				
	RE 5.4 Climate change management incentives		RE 5.5 Climate change scenario testing		
<b>6. Supplier</b>	RE 6.2 Activities to influence suppliers to reduce their GHG emissions		RE 6.1 Strategy to influence suppliers to reduce their GHG emissions		
<b>7. Client</b>	RE 7.2 Activities to influence consumer behaviour to reduce their GHG emissions		RE 7.1 Strategy to influence customer behaviour to reduce their GHG emissions		
<b>8. Policy engagement</b>	RE 8.1 Company policy on engagement with trade associations				
	RE 8.2 Trade associations supported do not have climate-negative activities or positions				
	RE 8.3 Position on significant climate policies				
<b>9. Business model</b>	RE 9.1 Integration of the low-carbon economy in current and future business model				

Table 3 indicator overview

Table 4 displays how the proposed indicators cover the different GHG emissions scopes identified in the “Scope” and “Boundaries” chapters above, in the consideration of the availability of sectoral benchmark for these scopes, as well as of company data availability.

		Scope of GHG emissions							
		Buildings managed				New buildings integrated			Own Buildings
RE	Indicators	Building users transports	Building Use	Work & logistics	Materials	Building Use	Work & logistics	Materials	Building Use
Sectoral benchmarks availability			✓			✓		✓	✓
1.1	Alignment of own buildings reduction targets								
1.2	Alignment of buildings managed (use phase) reduction targets								
1.3	Alignment of new buildings integrated (use phase) reduction targets								
1.4	Alignment of new buildings integrated (materials) reduction targets								
1.5	Time horizon of targets								
1.6	Historic target ambition and company performance								
2.1	Trend in past emissions for buildings managed (use phase)								
2.2	Emissions lock-in								
2.3	Trend in future emissions for buildings managed (use phase)								
5.1	Oversight of climate change issues								
5.2	Climate change oversight capability								
5.3	Low carbon transition plan								
5.4	Climate change management incentives								
5.5	Climate change scenario testing								
6.1	Strategy to influence suppliers to reduce their GHG emissions								
6.2	Activities to influence suppliers to reduce their GHG emissions								
7.1	Strategy to influence customer behaviour to reduce their GHG emissions								
7.2	Activities to influence consumer behaviour to reduce their GHG emissions								
8.1	Company policy on engagement with trade associations								
8.2	Trade associations supported do not have climate-negative activities or positions								
8.3	Position on significant climate policies								
3.1	Business model								

## 1. Target indicators (Weighting: 15%)

### RE 1.1 Alignment of owned buildings reduction targets (Weighting: 1%)

<b>Description &amp; Requirements</b>	RE 1.1 Alignment of owned buildings reduction targets
<i>Short description of indicator</i>	A measure of the alignment of the company's emissions reduction targets related to the use of the company's own buildings with their decarbonization pathway. The indicator will identify the gap between the company's targets and the decarbonization pathway as a percentage, which is expressed as the company's commitment gap.
<i>Data requirements</i>	<p>The questions comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"><li>- A1: Current internal targets set on carbon performance (kgeCO<sub>2</sub>/m<sup>2</sup>)</li><li>- A7: Breakdown of floor areas per business segment and country</li></ul>
<i>How the assessment will be done</i>	<p>The assessment is based on the difference between the company's target (T<sub>OB</sub>) and the company benchmark (CB<sub>OB</sub>) 5 years from the reporting year.</p> <p>The company target pathway (T<sub>OB</sub>) is the decarbonization over time, defined by the company's emission reduction target. To compute T, a linear line is drawn between the starting point of the assessment and the company's target endpoint.</p> <p>The company benchmark (CB<sub>OB</sub>) pathway is the 'company own buildings decarbonization pathway'. See section 6 for details on the computation of this pathway.</p> <p>The assessment will compare T<sub>OB</sub> to CB<sub>OB</sub>, by assessing the difference between these pathways 5 years after the reporting year. The pathways are expressed in kilograms of CO<sub>2</sub> per unit of square meter (intensity measure). Where necessary, targets will be normalized to this unit to enable the comparison. The result of the comparison is the commitment gap.</p>

To assign a score to this indicator, the size of the commitment gap will be compared to the maximum commitment gap, which is defined by the business as usual pathway (BAU<sub>OB</sub>). BAU<sub>OB</sub> is defined as an unchanging (horizontal) intensity pathway, whereby the emissions intensity is not reduced at all 5 years after the reporting year.

### Calculation of score

The score is a percentage of the maximum commitment gap. It is calculated by dividing the company's commitment gap by the maximum commitment gap (taking all values 5 years after the reporting year):

$$\text{Commitment gap [Own Buildings]} = \frac{T_{OB} - CB_{OB}}{BAU_{OB} - CB_{OB}}$$

$$\text{Score} = 1 - \text{Commitment gap}$$

The score assigned to the indicator is equal to 1 minus the commitment gap and is expressed as a percentage (1 = 100%). Therefore, if T<sub>OB</sub> – CB<sub>OB</sub> is equal to zero, and so the company's target is aligned with the sectoral benchmark, the maximum score is achieved.

The aggregation system of the various benchmarks (country, business segment) is based on the proportion of each segment/country represented in average square meter unit.

### **Rationale**

RE 1.1 Alignment of own buildings reduction targets

### *Rationale of the indicator*

#### **Relevance of the indicator:**

Emissions reduction targets related to the company's own buildings are included in the ACT RE assessment for the following reasons:

1. Targets are an indicator of corporate commitment to reduce emissions, and are a meaningful metric of the company's internal planning towards the transition.

2. Targets are one of the few metrics that can predict a company's long-term plans beyond that which can be projected in the short-term, satisfying ACT's need for indicators that can provide information on the long-term future of a company.
3. Although the company's own buildings are relatively negligible compared to buildings managed emissions, they have a symbolic value for the real estate firm and reflect the willingness of the management to develop sustainable building practices.

**Scoring rationale.**

Targets are quantitatively interpreted and directly compared to the low-carbon benchmarks for the sector, using the SDA benchmark, which is further explained in section 6.1.

Targets are compared to the benchmark directly, and the relative gap is calculated compared to the business as usual pathway. The gap method was chosen for its relative simplicity in interpretation and powerful message, which aligns with the UNEP's narrative of the global commitment gap of the UNFCCC Climate Agreements [7]. The simple percentage score also needs no further computation to become meaningful on its own, as well as be useable for aggregation in the performance score.

To ensure comparability of the scores and replicability of the measurement, targets are compared to the benchmark at a fixed point in time, similar to all companies. This is necessary, because the method interprets linear decarbonization pathways from the targets, while the decarbonization pathways are nonlinear. Therefore, the measurement gaps would vary over time if the time of measurement was not constant, and undesired precedent is set for reporting only targets with short-time horizons.

5 years after the reporting year was chosen as the reference for this measurement, as it is far enough in time to make a meaningful measurement of the company's future pathway, while close enough to be able to include the typical short to medium time scale of present-day company targets. It also aligns with the time horizon of the SEI metrics project that is being developed in parallel with ACT (more information at <http://seimetrics.org/>).

**RE 1.2 Alignment of buildings managed (use phase) reduction targets (Weighting: 7%).**

*Description & Requirements*

RE 1.2 Alignment of buildings managed (use phase) reduction targets

<i>Short description of indicator</i>	This indicator assesses the company's emission reduction targets in regard to emissions related to energy consumption, released during the use phase of buildings managed. The indicator will identify the gap between the company's target and the decarbonization pathway as a percentage, which is expressed as the company's commitment gap.
<i>Data requirements</i>	<p>The questions comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"> <li>- A1: Current internal targets set on carbon performance (kgeCO<sub>2</sub>/m<sup>2</sup>)</li> <li>- A7: Breakdown of floor areas per business segment and country</li> </ul>
<i>How the assessment will be done</i>	The assessment of this indicator follows the same general methodology of scoring indicator RE 1.1. Therefore, refer to the assessment of indicator RE 1.1 for more details.
<b><i>Rationale</i></b>	RE 1.2 Alignment of buildings managed (use phase) reduction targets
<i>Rationale of the indicator</i>	<p><b>Relevance of the indicator:</b></p> <p>Targets related to buildings managed are included in the ACT RE assessment for the following reasons:</p> <ol style="list-style-type: none"> <li>1. Targets are an indicator of corporate commitment to reduce emissions, and are a meaningful metric of the company's internal planning towards the transition.</li> <li>2. Targets are one of the few metrics that can predict a company's long-term plans beyond that which can be projected in the short-term, satisfying ACT's need for indicators that can provide information on the long-term future of a company.</li> <li>3. The use phase represents a large part of emissions in the building's LCA, that is up to 93% of total emissions in a building's lifetime, depending on several parameters, among them the climate, the energy efficiency of the building (envelope and energy systems) more or less linked to the age of the building, and the CO<sub>2</sub> content of energy sources [4].</li> </ol> <p><b>Scoring rationale.</b></p> <p>The scoring of this indicator follows the same general methodology of scoring indicator RE 1.1. Therefore, refer to the rationale of indicator RE 1.1 for more details.</p>

### RE 1.3 Alignment of new buildings integrated (use phase) reduction targets (Weighting: 3%).

<b>Description &amp; Requirements</b>	RE 1.3 Alignment of new buildings integrated (use phase) reduction targets
<i>Short description of indicator</i>	This indicator assesses the company's emissions reduction targets in regard to emissions related to energy consumption, released during the use phase of new buildings recently acquired. The indicator will identify the gap between the company's target and the decarbonization pathway as a percentage, which is expressed as the company's commitment gap.
<i>Data requirements</i>	The questions comprising the information request that are relevant to this indicator are: <ul style="list-style-type: none"><li>- A1: Current internal targets set on carbon performance (kgeCO<sub>2</sub>/m<sup>2</sup>)</li><li>- A7: Breakdown of floor areas per business segment and country</li></ul>
<i>How the assessment will be done</i>	The assessment of this indicator follows the same general methodology of scoring indicator RE 1.1. Therefore, refer to the assessment of indicator RE 1.1 for more details.
<b>Rationale</b>	RE 1.3 Alignment of new buildings integrated (use phase) reduction targets
<i>Rationale of the indicator</i>	<b>Relevance of the indicator:</b> Targets related to buildings managed are included in the ACT RE assessment for the following reasons: <ol style="list-style-type: none"><li>1. Targets are an indicator of corporate commitment to reduce emissions, and are a meaningful metric of the company's internal planning towards the transition.</li><li>2. Targets are one of the few metrics that can predict a company's long-term plans beyond that which can be projected in the short-term, satisfying ACT's need for indicators that can provide information on the long-term future of a company.</li><li>3. The use phase represents a large part of emissions in the building's LCA, depending mainly on the climate, envelope thermal insulation, bioclimatic design, choice of energy sources, share of renewable energy, equipment efficiency and CO<sub>2</sub> intensity of electricity. Therefore, this indicator dedicated to the use phase of buildings often captures a significant part of total scope of GHG emissions.</li></ol>

4. Real Estate firms have more information about recent buildings acquired in the property portfolio (materials, new regulations and standards). Those can be analyzed with a more accurate methodology and higher disclosure requirements.

**Scoring rationale.**

The scoring of this indicator follows the same general methodology of scoring indicator RE 1.1. Therefore, refer to the rationale of indicator RE 1.1 for more details.

**RE 1.4 Alignment of new buildings integrated (materials) reduction targets (Weighting: 1%).**

<i>Description &amp; Requirements</i>	RE 1.4 Alignment of new buildings integrated (materials) reduction targets
<i>Short description of indicator</i>	This indicator assesses the company's emissions reduction targets in regard to emissions related to materials of new buildings recently acquired. The indicator will identify the gap between the company's target and the decarbonization pathway as a percentage, which is expressed as the company's commitment gap.
<i>Data requirements</i>	The questions comprising the information request that are relevant to this indicator are: <ul style="list-style-type: none"><li>- A1: Current internal targets set on carbon performance (kgeCO<sub>2</sub>/m<sup>2</sup>)</li><li>- A7: Breakdown of floor areas per business segment and country</li></ul>
<i>How the assessment will be done</i>	The assessment of this indicator follows the same general methodology of scoring indicator RE 1.1. Therefore, refer to the assessment of indicator RE 1.1 for more details.

## ***Rationale***

RE 1.4 Alignment of new buildings integrated (materials) reduction targets

### *Rationale of the indicator*

#### **Relevance of the indicator:**

Targets related to buildings managed are included in the ACT RE assessment for the following reasons:

1. Targets are an indicator of corporate commitment to reduce emissions, and are a meaningful metric of the company's internal planning towards the transition.
2. Targets are one of the few metrics that can predict a company's long-term plans beyond that which can be projected in the short-term, satisfying ACT's need for indicators that can provide information on the long-term future of a company.
3. Materials represent a significant part of a new building's lifetime that is 45% to 75% of the total emissions [12]. Trying to reduce the impact of construction products and equipment, on their life cycle, or choosing low-carbon products, participates to the efforts towards the climate objectives set in international agreements
4. Real Estate firms have more information about recent buildings acquired in the property portfolio (materials, new regulations and standards). Those can be analyzed with a more accurate methodology and higher disclosure requirements

#### **Scoring rationale.**

The scoring of this indicator follows the same general methodology of scoring indicator RE 1.1. Therefore, refer to the rationale of indicator RE 1.1 for more details.

## RE 1.5 Time horizon of targets (Weighting: 2%)

<i>Description &amp; Requirements</i>	RE 1.5 Time horizons of targets
<i>Short description of indicator</i>	A measure of the time horizons of company targets for buildings managed. The ideal set of targets is forward looking enough to include a long-time horizon that includes the majority of a company's asset lifetimes, but also includes short-term targets that incentivize action in the present.
<i>Data requirements</i>	<p>The question comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"><li>- A1: Current internal targets set on carbon performance (kgeCO<sub>2</sub>/m<sup>2</sup>)</li></ul>
<i>How the assessment will be done</i>	<p>The analysis has two dimensions:</p> <ol style="list-style-type: none"><li>1. A comparison of: (a) the longest time horizon of the company's targets, and (b) the long-term point fixed by ACT assessment methodology.</li><li>2. The company has interval targets that ensure both short and long-term targets are in place to incentivize short-term action and communicate long-term commitments.</li></ol> <p><b>Dimension 1: Target endpoint.</b> The company's target endpoint (<math>T_e</math>) is compared to the long-term point (LT), which is fixed at 25 years after the reporting year. The company's target endpoint (<math>T_e</math>) is equal to the longest time horizon among the company's targets, minus the reporting year: <math>T_e = \text{Longest target time horizon} - \text{reporting year}</math></p> <p>The analysis compares <math>T_e</math> to LT. This analysis measures the horizon gap:</p> $\text{Horizon gap} = LT - T_e, \text{ with } LT = 25$ <p>The company's target endpoint is compared according the following scoring table:</p>

Horizon gap	Score
$LT - T_e < 0$	50%
$LT - T_e \leq 10$ (i.e. 40% of LT)	35%
$LT - T_e \leq 20$ (i.e. 60% of LT)	20%
$LT - T_e > 20$	0%

Although LT is defined as 25 years after the reporting year by default, in certain cases, depending on the specific asset of a company (e.g. high percentage of fossil capacity very close to retirement), LT should be reduced or increased accordingly.

**Dimension 2: Intermediate horizons:** All company targets and their endpoints are calculated and plotted. The ideal scoring company does not have intervals between target endpoints larger than 5 years from the reporting year.

Measurements are done in five-year intervals between the reporting year and LT.

The company's targets are compared according the following scoring table:

Intermediate target gaps	Score
No gaps of more than 5 years up until LT	50%

No gaps of more than 5 years up until 60% of LT	35%
No gaps of more than 5 years up until 40% of LT	20%
There are gaps of more than 5 years after 40% of LT	0%

*For all calculations:*

- If the company reports 'year of target establishment' in the data request, then the calculations may be redone using this as the baseline instead of the reporting year. The company can attain up to 80% of the maximum score with this alternate calculation. The baseline that results in the higher score will be used for the final score.
- Targets that do not cover > 95%<sup>4</sup> of generation emissions are not preferred in the calculations. If only such targets are available, then the score will be adjusted downwards equal to the % coverage that is missing.

**Aggregate score: Dimension 1: 50%, Dimension 2: 50%.**

### ***Rationale***

RE 1.5 Time horizons of targets

### *Rationale of the indicator*

#### **Relevance of the indicator:**

The time horizon of targets is included in the ACT RE assessment for the following reasons:

1. The target endpoint is an indicator of how forward looking the company's transition strategy is.
2. The very long expected lifetime of buildings means that real estate companies 'commit' a large amount of carbon emissions into the future at acquisition or renovation of the building stocks, which requires targets that have time horizons which align with this reality.

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<sup>4</sup> This threshold is in line with the ACT methodology such the Auto manufacturing methodology.

3. Aside from communicating long-term commitments, short-term action needs to be incentivized. This is why short time intervals between targets are needed.

**Scoring rationale.**

The score of this indicator is tied to how the target timeline compares to the lifetimes of the company's managed buildings. The company has a 'horizon gap' if their targets do not include a significant part of their assets (buildings). It is however recognized that some products may have lifetimes that exceed beyond meaningful target endpoints.

**RE 1.6 Historic Target Ambition and Company Performance (Weighting: 1%)**

***Description & Requirements***

RE 1.6 Historic Target Ambition and Company Performance

***Short description of indicator***

A measure of the company's historic target achievements and current progress towards active emission reduction targets of the company. The ambition of the target is qualitatively assessed and is not included in the performance indicators.

***Data requirements***

The questions comprising the information request that are relevant to this indicator are:

- A2: Past internal targets set on carbon performance (kgeCO<sub>2</sub>/m<sup>2</sup>)
- A3: Average carbon intensity of company's own building in the past 5 years

***How the assessment will be done***

For the performance score, this will assess on two dimensions, whereby companies achieve the maximum score if:

**Dimension 1:** The company achieved all previous emission reduction targets with a target year in the past.

**Dimension 2:** The company is currently on track to meet an existing emission reduction target, whereby the ratio between the remaining time period and the level remaining to target achievement (Progress Ratio *p*) is not lower than 0.5:

$$p = \frac{1 - \% \text{ time}}{1 - \% \text{ complete}} \geq 0.5$$

The highest score is attained if  $p$  is 1 or higher. A percentage score is assigned for any value between 0.5 and 1.

**Aggregate score: Dimension 1: 25%, Dimension 2: 75%.**

*For all calculations:*

- Companies who do not have targets in the past but only with target years in the future are receiving a score of 0 on dimension 1, but are assessed on dimension 2.
- Weightings applied to targets that cover only the performance of company's own buildings are lower than those applied to targets covering the performance of managed buildings.
- If the company has multiple targets in different scopes that can be assessed according to the above criteria, then the score will be an average score based on the progress ratios of all targets assessed.

The performance score does not assess the ambition level of previous targets, and therefore dimension 1 only has a low weight in the final performance score. This information is also qualitatively assessed in the assessment narrative, which will have another look at the following dimensions:

1. Achievement level: To what degree has the company achieved its previously set emission reduction targets.
2. Progress level: To what degree is the company on track to meet its currently active emission reduction targets?
3. Ambition level: What level of ambition do the previously achieved emission reduction targets represent?

***Rationale***

RE 1.6 Historic Target Ambition and Company Performance

*Rationale of the indicator*

**Relevance of the indicator:**

The historic target ambition and company performance is included in the ACT RE assessment for the following reasons:

- The ACT assessment looks only to the past to the extent where it can inform on the future. This indicator is future-relevant by providing information on the organizational capability to set and meet emission reduction targets. Dimension 1 of this indicator adds credibility to any company claim to commit to a science-based reduction pathway.
- Indicators 1.1, 1.2, 1.3, 1.4 and 1.5 look at targets in a vacuum. Dimension 2 of this indicator adds value to the assessment of comparison to the company's performance with respect to their targets in the reporting year.

### **Scoring rationale.**

Previous target achievement is not straightforward to interpret quantitatively. Therefore, the performance score makes no judgement of previous target ambition, and leaves it to the assessment narrative for a meaningful judgement on the ambition level of past targets.

- Dimension 1 of the performance score will penalize companies who have not met previous targets in the past 5 years, as this means the company has lower credibility when setting ambitious science-based targets.
- The threshold 0.5 was chosen as it allows companies some flexibility regarding the implementation of the target, but it does have the ability to flag companies who are not on track towards achievement. When  $p$  is lower than 0.5, the company needs to achieve more than twice the reduction per unit of time than the target originally envisioned.

## 2. Material Investment (Weighting: 35%)

### RE 2.1 Trend in past emissions intensity for buildings managed (Weighting: 8%)

<b>Description &amp; Requirements</b>	RE 2.1 Trend in past emissions intensity for buildings managed
<b>Short description of indicator</b>	A measure of the alignment of the company's recent emissions intensity for buildings managed with that of their decarbonization pathway. The indicator will compare the gradient of this trend over a 5-year period to the reporting year (reporting year minus 5 years) with the decarbonization pathway trend over a 5-year period after the reporting year.
<b>Data requirements</b>	<p>The questions comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"><li>- A8: Average carbon intensity of building managed in the past 5 years</li><li>- A7: Breakdown of floor areas per business segment and country</li></ul>
<b>How the assessment will be done</b>	<p>The assessment is based on the difference between the company's action (<math>A_{BM-5y}</math>) and the company benchmark (<math>CB_{BM-5y}</math>) in the reporting year developing from 5 years before.</p> <p>The company action pathway (<math>A_{BM-5y}</math>) focuses on emissions of managed buildings released during use phase.</p> <p>The company benchmark (<math>CB_{BM-5y}</math>) pathway is the 'Buildings managed specific decarbonization pathway'. See section 6 for details on the computation of this pathway.</p> <p>The assessment will compare <math>A_{BM-5y}</math> to <math>CB_{BM-5y}</math>, by examining the difference between these pathways in the reporting year. The result of the comparison is the action gap.</p> <p><b>Calculation of score</b></p> <p>To assign a score to this indicator, the size of the action gap will be compared to the maximum action gap, which is defined by the business as usual pathway (<math>BAU_{BM}</math>). <math>BAU_{BM}</math> is defined as an unchanging (horizontal) intensity pathway, whereby the emissions intensity is not reduced at all over the 5 years period leading to the reporting year.</p>

$$\text{Buildings managed emissions action gap} = \frac{A_{BM} - CB_{BM}}{BAU_{BM} - CB_{BM}}$$

$$\text{Score} = 1 - \text{Buildings managed emissions action gap}$$

The score assigned to the indicator is equal to 1 minus the action gap and is expressed as a percentage (1 = 100%). Therefore, if  $A_{BM} - CB_{BM}$  is equal to zero, and so the company's target is aligned with the sectoral benchmark, the maximum score is achieved.

## ***Rationale***

RE 2.1 Trend in past emissions for buildings managed

### *Rationale of the indicator*

#### **Relevance of the indicator**

Trend in past emissions for buildings managed is included in the ACT assessment for the following reasons:

1. Recent emissions intensity performance indicates the company's progression towards, or away from, the future emissions intensity necessary for the sector to decarbonize in-line with a low-carbon scenario.
2. In the real estate sector, emissions from the use of assets managed (i.e. buildings managed) far outweigh Scope 1+2 emissions.

#### **Scoring rationale**

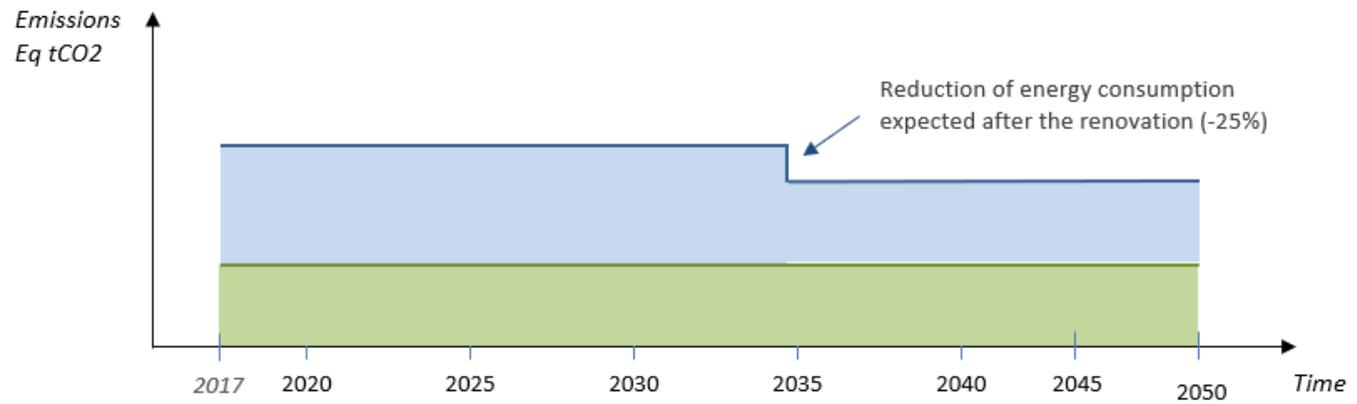
This indicator is where the principal 'action gap' between the company's actions and the benchmark is assessed.

To ensure comparability of the scores and replicability of the measurement, buildings managed emissions related to use phase are compared to the benchmark at a fixed point in time, similar to all companies. This is necessary, because the method interprets linear trend lines from company data, while the decarbonization pathways from the benchmark are nonlinear. Therefore, the measurement gaps would vary over time if the time of measurement was not constant.

As the reporting year is the most recent year of data, this is the base-year chosen for measurement of the score.

## RE 2.2 Emissions lock-in (Weighting: 12%)

<i>Description &amp; Requirements</i>	RE 2.2 Emissions lock-in
<i>Short description of indicator</i>	<p>A measure of the company's cumulative emissions from the reporting year up until 2050 from the current properties' portfolio. The planned renovations which are expected to reduce energy consumptions are considered. The indicator will compare this to the emissions budget entailed by the company's generation intensity decarbonization pathway and projected generation trends in the sector at the country/regional level.</p>
<i>Data requirements</i>	<p>The questions comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"><li>- A8: Average carbon intensity of buildings managed in the past 5 years</li></ul>
<i>How the assessment will be done</i>	<p>The locked-emissions</p> <p>The analysis is based on the ratio between the company's managed buildings' emissions from the reporting year [<math>L_G(t)</math>] to 2050, and the emissions budget entailed by the company's carbon budget [<math>B_G(t)</math>] over the same period of time. For each type of building, the locked-in emissions are based on the current emissions released until the next planned renovation. After the renovation, the locked-in emissions are based on the expected reduction of energy consumption = current emissions – emissions saving expected related to the renovation. If there is no expected saving, the reduction in emissions is set by default at 25% of the current emissions. If no renovation is planned, the locked-in emissions are based on the emissions of reporting year. The emissions lock-in are integrals (see following calculations).</p> <p>As an example, company A manages retail building and residential buildings. For its retail portfolio, the company plans a renovation in 2035 which will reduce total emissions of 25%. No renovation is planned for residential buildings. The company's locked-in emissions are presented in the following chart:</p>



— Total emissions of retail buildings (= *intensity\*floor area*)

— Total cumulative emissions of retail and residential buildings

$$LG(t) = \text{[Green Box]} + \text{[Blue Box]}$$

*in 2017*

$L_G(t)$  is calculated as the total cumulative emissions implied by the lifetimes of buildings managed in the property portfolio.

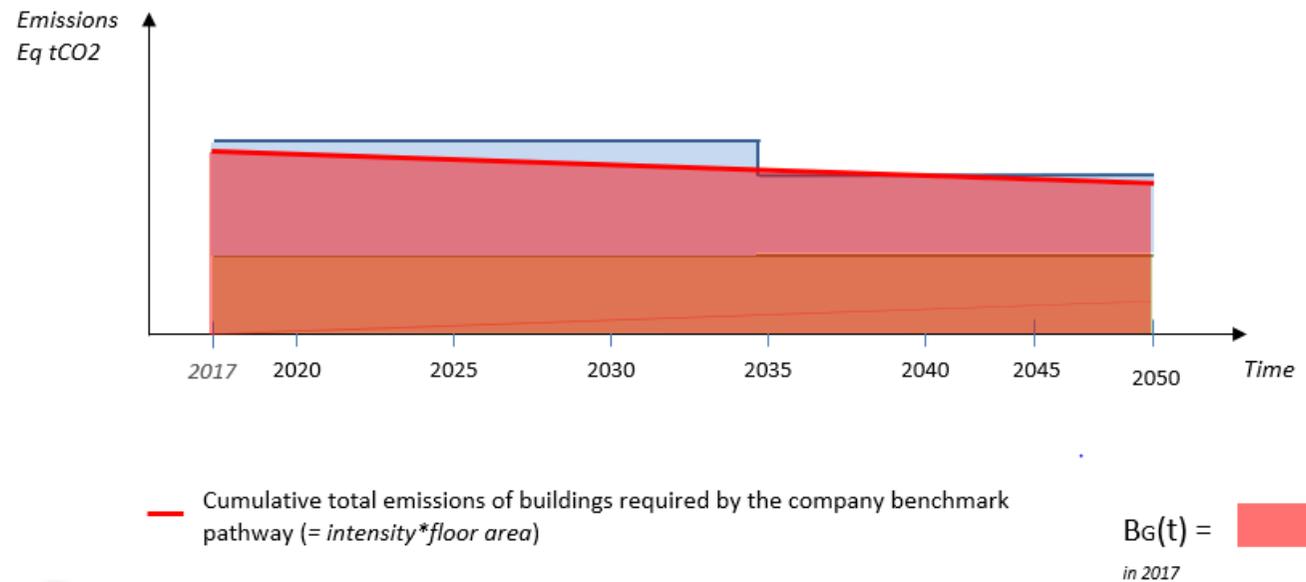
$L_G(t)$  is calculated as the company's locked-in carbon commitments, up until the chosen time period  $t$ , which is derived by taking the area under the company's future locked-in emissions curve. This curve in turn is derived from the company's intensity pathway, multiplying with floor area emission intensity  $F_G$ :

$$L_G(t) = \int_{\text{the reporting year}}^t F_G * CA_G$$

$B_G(t)$  is calculated as the company's carbon budget up until time  $t$ , which is derived by taking the area under the absolute emissions reduction curve. This curve in turn is derived from the company benchmark pathway ( $CB_G$ ) by multiplying with floor area emission intensity  $F_G$ :

$$B_G(t) = \int_{\text{the reporting year}}^t F_G * CB_G$$

Carbon budget of company A:



Depending on the data availability, the computation of these areas may not be as straightforward as the equations present and will be done by approximation, but the principles will hold.

The locked-in ratio ( $r_{LB}$ ) is calculated:

$$r_{LB}(t) = \frac{L_G(t)}{B_G(t)}$$

#### Calculation of score

If  $r_{LB}$  is 1 or lower, then the company stays within its carbon budget, and will be assigned the maximum score (100%). If  $r_{LB}$  is 1.5 or higher, then the company strongly exceeds its carbon budget, and will be assigned the minimum score (0%). If  $r_{LB}$  is between 1 and 1.5, then the company will be assigned a score of  $1.5 - r_{LB}$  divided by 50%.

#### *Rationale*

RE 2.2 Emissions lock-in

#### *Rationale of the indicator*

#### Relevance of the indicator

Locked-in emissions is included in the ACT RE assessment for the following reasons:

1. Absolute greenhouse gas emissions over time is the most relevant measure of emissions performance for assessing a company's contribution to global warming. While indicator RE 4.3 has a short-term measurement point on reporting year plus 5 years, the concept of Locked-in emissions allows a judgement to be made about the company's outlook in farther time periods.
2. Analyzing a company's locked-in emissions alongside science-based budgets also introduces the means to scrutinize the potential cost of inaction, including the probability of stranded assets.
3. Examining absolute emissions, along with recent and short-term emissions intensity trends, forms part of a holistic view of company emissions performance in the past, present, and future.

#### Scoring rationale

Unlike the ‘gap’ and ‘trend’ comparisons done in all other quantitative indicators, this indicator compares two areas: that of the carbon budget until t and the locked-in emissions until t. It is expected that companies exceed their budget when it is in the short-term future, but will not when it is in the long-term future. However, any short-term exceedance will have to be compensated for in later time periods. This is called carbon budget displacement, which further makes the company’s *actual decarbonization pathway* steeper than the original benchmark. There is a dimension of risk from inaction here.

When the company exceeds its full carbon budget up until 2050, it will not be able to displace enough carbon from farther time periods to nearer, and will be faced with stranded assets when the current lifetime estimates are held up. This is a major problem, and this situation will certainly result in a zero score.

When companies are closer to their carbon budget than others, they will be less flexible in their future strategy as there is more pressure to add renewable capacity whenever a fossil fuel asset is decommissioned. There is also less room for refurbishment to extend the lifetimes of existing assets as this carries the risk of exceeding the carbon budget. Therefore, there is rationale for intermediate scoring levels that magnify this level of risk due of future flexibility in the future.

### RE 2.3 Trend in future emissions intensity for buildings managed (Weighting: 15%)

**Description & Requirements**

RE 2.3 Trend in future emissions intensity for buildings managed

**Short description of indicator**

A measure of the alignment of the company’s projected generation emissions intensity of buildings managed with their decarbonization pathway. The indicator will identify the gap in 5 years after the reporting year between the company’s performance and the decarbonization pathway as a percentage, which is expressed as the company’s ‘action gap’.

**Data requirements**

The questions comprising the information request that are relevant to this indicator are:

- A7: Breakdown of floor areas per business segment and country
- A8: Average carbon intensity of buildings managed in the past 5 years

*How the assessment will be done*

The assessment is based on the difference between the company's action pathway ( $A_{BM}$ ) and the company benchmark ( $CB_{BM}$ ) developing from the reporting year to 5 years after.

The company action pathway ( $A_{BM}$ ) is the emissions intensity of company's existing building stock over time, assuming constant scope of property portfolio.

The company benchmark ( $CB_{BM}$ ) pathway is the 'company building managed specific decarbonization pathway'. See section 6.1 for details on the computation of this pathway.

The assessment will compare  $A_{BM}$  to  $CB_{BM}$ , by examining the difference between these pathways in 5 years after the reporting year. The pathways are expressed in kilograms of  $CO_2$  per square meter (intensity measure). The result of the comparison is the action gap.

#### **Calculation of score**

To assign a score to this indicator, the size of the action gap will be compared to the maximum action gap, which is defined by the business as usual pathway ( $BAU_{BM}$ ).  $BAU_{BM}$  is defined as an unchanging (horizontal) intensity pathway, whereby the emissions intensity is not reduced at all over a period after the reporting year.

$$\text{Future emissions action gap} = \frac{A_{BM} - CB_{BM}}{BAU_{BM} - CB_{BM}}$$

$$\text{Score} = 1 - \text{Future emissions action gap}$$

The score assigned to the indicator is equal to 1 minus the action gap and is expressed as a percentage (1 = 100%). Therefore, if  $A_{BM} - CB_{BM}$  is equal to zero, and so the company's target is aligned with the sectoral benchmark, the maximum score is achieved.

***Rationale***

RE 2.3 Trend in future emissions for buildings managed

### *Rationale of the indicator*

#### **Relevance of the indicator**

Trend in future emissions intensity is included in the ACT RE assessment for the following reasons:

1. Recent emissions intensity performance indicates the company's progression towards, or away from, the future emissions intensity necessary for the sector to decarbonize in-line with a low-carbon scenario.
2. This indicator is the most valuable in terms of the information it provides on the company's actual action towards decarbonization.
3. This particular measure, along with recent emissions intensity and absolute emissions, forms part of a holistic view of company emissions performance in the past, present, and future.

#### **Scoring rationale**

The scoring rationale follows the same narrative as indicator RE 4.1, so refer to the rationale of this indicator to understand the choices made.

## 5. Management indicators (Weighting: 10%)

### RE 5.1 Oversight of climate change issues (Weighting: 3%)

<b>Description &amp; Requirements</b>	RE 5.1 Oversight of climate change issues
<i>Short description of indicator</i>	The company discloses that responsibility for climate change within the company lies at the highest level of decision making within the company structure.
<i>Data requirements</i>	The question comprising the information request that are relevant to this indicator are: <ul style="list-style-type: none"> <li>- A5: Environmental policy and details regarding governance</li> </ul>
<i>How the assessment will be done</i>	<p>The benchmark case is that climate change is managed within the highest decision-making structure within the company. The company situation will be compared to the benchmark case, if it is similar then points will be awarded.</p> <p>The position at which climate change is managed within the company structure will be determined from the company data submission and accompanying evidence.</p>

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
<i>What is the position of the employee/ committee with highest responsibility for climate change?</i>	Position of individual(s)/ committee with highest responsibility for climate change	No one in charge of climate change issues	Manager /officer	Senior Manager/ Officer	Senior Manager/Officer closely related to decision-making structure within the company	Board or individual/sub-set of the board or other committee appointed by the board	100%

**Rationale** RE 5.1 Oversight of climate change issues

*Rationale of the indicator*

Successful change within companies, such as the transition to a low-carbon economy, requires strategic oversight and buy-in from the highest levels of decision-making within the company. For the building sector, a change in strategy and potentially business model will be required and this cannot be achieved at lower levels within an organization. Evidence of how climate change is addressed within the top decision-making structures is a proxy for how seriously the company takes climate change, and how well integrated it is at a strategic level. High-level ownership also increases the likelihood of effective action to address low-carbon transition.

**RE 5.2 Climate change oversight capability (Weighting: 3%)**

*Description & Requirements*

RE 5.2 Climate change oversight capability

*Short description of indicator*

Company board or executive management has expertise on the science and economics of climate change, including an understanding of policy, technology and consumer drivers which can disrupt current business.

*Data requirements*

The question comprising the information request that are relevant to this indicator are:

- A5: Environmental policy and details regarding governance

*How the assessment will be done*

The presence of expertise on relevant topics to climate change and low carbon transition within the individual or committee with overall responsibility for it within the company will be assessed. The presence of expertise is the condition that must be fulfilled for points to be awarded in the scoring.

The assessor will determine if Company has expertise as evidenced through a named expert biography outlining capabilities. The assessment is binary: expertise is evident or not. A cross check will be performed against 3.1 on the highest responsibility for climate change, the expertise should exist at the level identified or the relationship between the structures/experts identified should also be evident.

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
<i>Does this employee/committee have a proven expertise regarding climate change topics</i>	The presence of expertise on relevant topics regarding climate change and low carbon transition within the individual or committee with overall climate change responsibility	Expertise is not evident from assessor's analysis	Expertise is evident from assessor's analysis but the relationship between the structures/experts identified is not evident	Expertise is evident from assessor's analysis and the relationship between the structures/experts identified is evident	Expertise is evident from assessor's analysis and the relationship between the structures/experts identified is evident. Expertise is closely related to decision-making	Expertise is evident from assessor's analysis	100%

**Rationale**

RE 5.2 Climate change oversight capability

*Rationale of the indicator*

Effective management of low-carbon transition requires specific expertise related to climate change and its impacts, and their likely direct and indirect effects on the business. Presence of this capability within or closely related to the decision-making bodies that will implement low-carbon transition indicates both company commitment to that transition and also increases the chances of success.

Even if companies are managing climate change at board or equivalent level, a lack of expertise could be a barrier to successful management of low-carbon transition.

**RE 5.3 Low-carbon transition plan (Weighting: 2%)**

**Description & Requirements**

RE 5.3 Low carbon transition plan

*Short description of indicator*

The company has a plan on how to transition the company to a business model compatible with a low-carbon economy.

*Data requirements*

The question comprising the information request that are relevant to this indicator are:

- A5: Environmental policy and details regarding governance

*How the assessment will be done*

The assessor will evaluate the description and evidence of the low carbon transition plan for the presence of best practice elements and consistency with the other reported management indicators. The company description and evidence will be compared to the maturity matrix developed to guide the scoring and a greater number of points will be allocated for elements indicating a higher level of maturity.

Best practice elements identified to date include:

- Plan includes financial projections
- Plan should include cost estimates or other assessment of financial viability as part of its preparation
- Description of the major changes to the business is comprehensive, consistent, aligned with other indicators
- Quantitative estimations of how the business will change in the future are included
- Costs associated with the plan (e.g. write-downs, site remediation, contract penalties, regulatory costs) are included
- Consideration of potential “shocks” or stressors (sudden adverse changes) has been made
- Relevant region-specific considerations are included
- Plan’s measure of success is SMART - contains targets or commitments with timescales to implement them, is time-constrained or the actions anticipated are time-constrained
- Plan’s measure of success is quantitative
- Description of relevant testing/analysis that influenced the transition plan is included
- Plan is consistent with reporting against other ACT indicators
- Scope – should cover entire business, and is specific to that business
- Should cover the short, medium and long term. From now or near future <5 years, until at least 2035 and preferably beyond (2050)

- Contains details of actions the company realistically expects to implement (and these actions are relevant and realistic)
- Approved at the strategic level within the organization
- Contains discussion of the potential impacts of a low-carbon transition on the current business
- The company has a publicly-acknowledged 2°C (or beyond) science-based target (SBT).
- Maximum points will be awarded if all of these elements are demonstrated.

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
<i>What is the highest-level approval of low carbon transition plan?</i>	Level of approval within the organization	Not known	Operational level (CSR level)	Upper management level	Board/strategic level	Matches highest level of responsibility as previously reported	20%
<i>How the success of the plan is measured?</i>	Measure of success	No measure of success	Measure of success is mainly qualitative	SMART KPI: specific, measurable, acceptable, realistic, time bound.	Measure of success is SMART. Measure of success contains both qualitative and quantitative targets.	Measure of success is quantitative	20%
<i>Does the plan comprise financial content? If it does, what type of content?</i>	Financial content in plan	No financial content	Financial projections, cost estimates or other estimates of financial viability are described but not quantified	Financial projections, cost estimates or other estimates of financial viability are laid out OR short-term actions to start implementing plan are quantified in more detail	Quantitative estimations of how the business will change in the future are included Costs associated with the plan (e.g. write-downs, site remediation, contract penalties, regulatory costs) are included	Description of the major changes to the business is comprehensive, consistent, aligned with other indicators	8%

<i>To what extent business future considerations are integrated in the plan?</i>	Future considerations	Implications to future business noted but not discussed properly	Contains actions the company expects to implement to make the transition a reality without any details	Contains discussion certain current company elements that need to be changed to make the transition a reality	Contains discussion of the potential portfolio of a future, low-carbon ready company	Contains one or more elaborate outlines of how the far-future company could look like in terms of physical assets and business model	8%
<i>To what extent short term considerations and remedial actions are integrated in the plan?</i>	Current considerations and plans	Short-term considerations and remedial actions can be discussed but are not integrated in the plan	List of short-term considerations and remedial actions integrated in the plan	Contains discussion of the potential impacts of a low-carbon transition on the current business Relevant region-specific considerations are included	Contains details of actions the company realistically expects to implement (and these actions are relevant and realistic)	Consideration of potential short-term “shocks” or stressors (sudden adverse changes) has been made	16%
<i>What is the scope of the plan?</i>	Transition plan scope, consistency, analysis	No clear scope to the plan, no consistency among sections and no analysis presented	The scope covers the entire business.	The scope covers the entire business. Plan is consistent with reporting against other ACT indicators Contains a description of relevant testing/ analysis	The scope covers the entire business and is specific to it. Plan is consistent with reporting against other ACT indicators. Contains a description of relevant testing/ analysis	Transition covers entire business and is specific to it, with proper scoping, consistency and proper analysis	20%
<i>What is the time horizon of the plan?</i>	Transition timescale	Covers only short-term (< 3 years)	Covers only medium term (2020)	Should cover the short, medium and long term. From now or near future < 5 years, until at least 2025 and preferably beyond (2035)	Covers the short, medium and long term. From now until at least 2035	Covers the short, medium and long term. From now and beyond (2050)	8%

**Rationale**

RE 5.3 Low carbon transition plan

*Rationale of the indicator*

The Real estate sector will require substantial changes to their business to align to a low-carbon economy, over the short, medium and long term, whether it is voluntarily following a strategy to do so or is forced to change by regulations and structural changes to the market. It is better for the success of its business and of its transition that these changes occur in a planned and controlled manner.

**RE 5.4 Climate change management incentives (Weighting: 1%)**

**Description & Requirements**

RE 5.4 Climate change management incentives

*Short description of indicator*

The Board’s Compensation Committee has included metrics for the reduction of GHG emissions in the annual and/or long-term compensation plans of senior executives; the Company provides monetary incentives for the management of climate change issues as defined by a series of relevant indicators.

*Data requirements*

The question comprising the information request that are relevant to this indicator are:

- A6: Management incentives

*How the assessment will be done*

The assessor will verify if the company has compensation incentives set for senior executive compensation and/or bonuses, that directly and routinely rewards specific, measurable reductions of tons of carbon emitted by the company in the preceding year and/or to the future attainment of emissions reduction targets, or other metric related to the company’s low carbon transition plan.

Question	Subdimension	Basic	Standard	Advanced	Next practice	2 <sup>1</sup> aligned	Subscore
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<i>Who is entitled to benefit?</i>	Who is entitled to benefit?	Any other answer		Executive	Senior executive	Board chairman - Board/Executive board - Director on board - Corporate executive team - Chief Executive Officer (CEO) - Chief Operating Officer (COO) - Chief Financial Officer (CFO) - All employees	33%
<i>What is the type of incentives (non-monetary/monetary)?</i>	Type of incentives	Non-monetary	Recognition (non-monetary)	Other non-monetary reward (AJ, Place here if comment is empty or insufficient)	Monetary reward (AJ, if comment is empty or insufficient)	Monetary reward and other non-monetary reward (AJ)	33%
<i>What are the targets related to climate change incentives?</i>	Incentivized performance indicator	No targets incentivized	Behavior change related indicator or other specification (AJ)	Efficiency project, Efficiency target, Environmental criteria included in purchases, Supply chain engagement, or other specification (AJ)		Emissions reduction project, Emissions reduction target, Energy reduction project, Energy reduction target, or other specification (AJ)	33%

**Rationale**

RE 5.4 Climate change management incentives

*Rationale of the indicator*

Executive compensation should be aligned with overall business strategy and priorities. As well as commitments to action the company should ensure that incentives, especially at the executive level, are in place to reward progress towards low-carbon transition. This will improve the likelihood of successful low carbon transition.

Monetary incentives at the executive level are an indication of commitment to successful implementation of a strategy for low carbon transition.

**RE 5.5 Climate change scenario testing (Weighting: 1%)**

<i>Description &amp; Requirements</i>	RE 5.5 Climate change scenario testing
<i>Short description of indicator</i>	Testing or analysis relevant to determining the impact of transition to a low-carbon economy on the current and projected business model and/or business strategy has been completed, with the results reported to the board or c-suite, the business strategy revised where necessary, and the results publicly reported.
<i>Data requirements</i>	<p>The question comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"> <li>- Scenario testing</li> </ul>
<i>How the assessment will be done</i>	<p>The analyst evaluates the description and evidence of the low-carbon economy scenario testing for the presence of best-practice elements and consistency with the other reported management indicators. The company description and evidence are compared to the maturity matrix developed to guide the scoring and a greater number of points are allocated for elements indicating a higher level of maturity.</p> <p>Best-practice elements to be identified in the test/analysis include:</p> <ul style="list-style-type: none"> <li>- entire coverage of the company’s boundaries</li> <li>- timescale from present to long-term (2035 - 2050)</li> <li>- translation of results into value-at-risk or other financial terms</li> <li>- multivariate: a range of different changes in conditions are considered together</li> <li>- changes in conditions that are specific to a 2° decarbonization climate scenario</li> <li>- Climate change conditions are combined with other likely future changes in operating conditions over the timescale chosen.</li> </ul>

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
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<i>What is the scope of the scenario testing?</i>	Boundary	Large element <sup>5</sup> not included	Large element included	Small element not included	Small element included	Covers entire boundary of the company	35%
<i>What is the time horizon of the scenario testing?</i>	Timescale	From present to future	From present to 2020	From present to 2025	From present to 2035	From present to 2050	20%
<i>Are the results in qualitative/ quantitative/ financial terms?</i>	Results	Expressed in qualitative terms	Expressed in qualitative terms	Expressed in financial terms	Expressed in financial terms and results are translated into value-at-risk	Expressed as value-at-risk	10%
<i>What are the type of changing conditions considered?</i>	Conditions considered	Considers no particular changing conditions	Considers a narrow range of different changes in conditions.	Considers a range of changing conditions together (multivariate)	Considers changing climate conditions in combination with changes in operating conditions	Considers changing conditions specific for a 2-degree decarbonization scenario	35%

## **Rationale**

RE 5.5 Climate change scenario testing

### *Rationale of the indicator*

Changes predicted to occur due to climate change could have a number of consequences for the Real Estate sector, including increased costs, a dramatically changed operating environment and major disruptions to the business. There are a variety of ways of analyzing the potential impacts of climate-related changes on the business, whether these are slow and gradual developments or one-off “shocks”. Investors are increasingly calling for techniques such as use of an internal price on carbon, scenario analysis and stress testing to be implemented to enable companies to calculate the value-at-risk that such changes could pose to the business. As this practice is emergent at this time there is currently no comprehensive survey or guidance on specific techniques or tools recommended for the sector. The ACT methodology thus provides a broad definition of types of testing and analysis which can be relevant to this information requirement, to identify both current and best practices and consider them in the analysis.

Scenario stress testing is an important management tool for preparing for low-carbon transition. For businesses likely to be strongly affected by climate change impacts (both direct and indirect), it has even greater importance.

<sup>5</sup> Large elements are defined as business segments that generate more than 30% of the company’s total revenues.



6. Supplier engagement indicators (Weighting: 10%)

RE 6.1 Strategy to influence suppliers to reduce their GHG emissions (Weighting: 5%)

**Description & Requirements** RE 6.1 Strategy to influence suppliers to reduce their GHG emissions

**Short description of indicator** This indicator assesses the strategic policy and the process which are formalized and implemented by the company in order to engage its suppliers.

**Data requirements** The question comprising the information request that are relevant to this indicator are:

- A11: List of environmental/CSR contract clauses in purchasing

**How the assessment will be done**

The assessment will assign a maturity score based on the company’s formalized strategy with their suppliers, expressed in a maturity matrix.

A company that is placed in the ‘aligned’ category will receive the maximum score. Companies who are at lower levels will receive a partial score, with 0 points awarded for having no engagement at all.

This maturity matrix is indicative but does not show all possible options that can result in a particular score. Companies responses will be scrutinized by the assessor and then placed on the level in the matrix where the assessor deems it most appropriate.

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
To what extent GHG emissions reduction issues are integrated in engagement with suppliers?	Consideration of reduction targets	No consideration	CSR clause included in engagements with suppliers. Means-driven commitments included in contracts	CSR clause with GHG emissions reduction included in engagements with suppliers. Results-driven commitments in contracts	CSR clause with quantified GHG emissions reduction included in engagements with suppliers. Results-driven commitments in contracts. Regular reporting	CSR clause with GHG emissions reduction included as priority in engagements with suppliers. Results-driven commitment in contracts. Regular reporting.	20%

<i>What action levers are used by the company to encourage suppliers to develop low carbon offer?</i>	Use of action levers	No action levers used	Passive approach (suppliers may offer low-carbon product but no specific requirements from the company)	Use of one action lever (awareness campaign, compensation, purchasing rule, etc.)	Use of several action levers (awareness campaign, compensation, purchasing rule, etc.)	Use of several action levers (awareness campaign, compensation, purchasing rule, etc.). Regular audits of the supplier by the purchaser or a representative	30%
<i>What is the scope of the action levers used?</i>	Scope	No strategy applied to any suppliers	Strategy applied to few large suppliers	Strategy applied to most large suppliers	Strategy applied to all large suppliers and few small suppliers	Strategy applied to all of suppliers	20%
<i>To what extent carbon issues are integrated in the selection process of suppliers?</i>	Suppliers selection process	No selection of suppliers based on environmental criteria No change in suppliers' base	Selection of suppliers based on at least one environmental criteria No change in suppliers' base	No change in suppliers' base Selection of suppliers with low carbon alternatives	No change in suppliers' base Selection of suppliers offering low-carbon alternatives	Engaging suppliers over low carbon alternatives	30%

**Rationale**

RE 6.1 Strategy to influence suppliers to reduce their GHG emissions

*Rationale of the indicator*

**Relevance of the indicator:**

Supplier engagement is included in the ACT RE assessment for the following reasons:

1. As each part of the building LCA (materials, management, etc.) has a significant impact in terms of GHG emissions, decarbonization of the whole supply chain is also key to reach ambitious decarbonization goals in the real estate segment.
2. Engaging suppliers through contract clauses and sales incentives is necessary to take them on board.

**Scoring the indicator**

Because of data availability and complexity, a direct measure of the outcome of such engagement is not very feasible at this time. It is often challenging to quantify the emissions reduction potential and outcome of collaborative activities with the supply chain. Therefore, the approach of a maturity matrix allows the analyst to consider multiple dimensions of supplier engagement and assess them together towards a single score for Supplier Engagement.

### RE 6.2 Activities to influence suppliers to reduce their GHG emissions (Weighting: 5%)

**Description & Requirements** RE 6.2 Activities to influence suppliers to reduce their GHG emissions

**Short description of indicator** This indicator assesses the initiatives and the partnerships launched by the company in order to engage its suppliers.

**Data requirements** The questions comprising the information request that are relevant to this indicator are:

- A12: List of initiatives implemented to influence suppliers to reduce their GHG emissions

*How the assessment will be done*

Question	Subdimension	Basic	Standard	Advanced	Next practice	2 <sup>1</sup> aligned	Subscore
How the company encourage suppliers to reduce their GHG emissions?	Suppliers GHG emissions	No activity	Company requires suppliers to sign a code of conduct (or similar) and/or to provide data regarding their environmental performance (for	Company assists suppliers to reduce their GHG emissions Company monitors GHG emissions along its value chain Provision of	Company partners with large suppliers to define common GHG emissions reduction plan Provision of documents and tools Multi-party working	Company contributes in GHG emissions reduction along its value chain through close partnerships with suppliers	60%

			audited suppliers). Company requires means-driven commitment from its suppliers.	documents and tools by the lessor	group with annual meeting at least		
<i>Does the company develop a low-carbon demand?</i>	Low-carbon offer of suppliers	No green purchase	No green purchase	Company purchases low-carbon equipment and green energy to reduce its use phase emissions.	Company purchases low-carbon equipment and green energy to reduce its use phase emissions. Company partners with suppliers to develop low-carbon equipment.	Company purchases low-carbon equipment and green energy to reduce its use phase emissions. Company partners with suppliers to develop low-carbon equipment.	40%

**Rationale**

RE 6.2 Activities to influence suppliers to reduce their GHG emissions

*Rationale of the indicator*

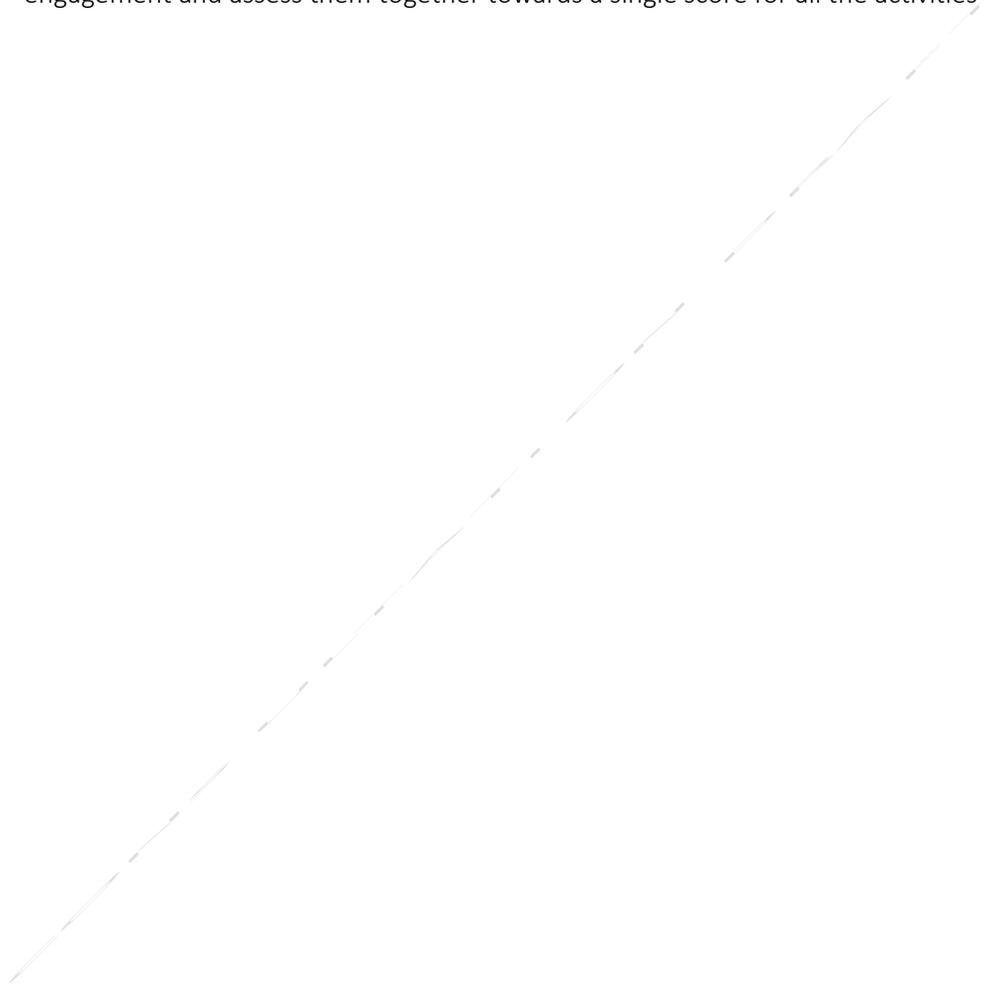
**Relevance of the indicator**

Activities to influence suppliers are included in the ACT RE assessment for the following reasons:

1. As each part of the building LCA (materials, management, etc.) has a significant impact in terms of GHG emission decarbonization of the whole supply chain is also key to reach ambitious decarbonization goals in the real estate segment.
2. Beyond the supplier selection process, real estate companies have the capacity to influence suppliers through the development of low-carbon buildings and products demand. If companies develop green purchase volume, suppliers would be encouraged to adapt.

**Scoring the indicator**

Because of data availability and complexity, a direct measure of the outcome of such engagement is not very feasible at this time. It is often challenging to quantify the emission reduction potential and outcome of collaborative activities with the supply chain. Therefore, the approach of a maturity matrix allows the assessor to consider multiple dimensions of supplier engagement and assess them together towards a single score for all the activities related to Supplier Engagement.



## 7. Clients engagement indicators (Weighting: 15%)

### RE 7.1 Strategy to influence customers to reduce their GHG emissions (Weighting: 7,5%)

**Description & Requirements** RE 7.1 Strategy to influence customers to reduce their GHG emission

**Short description of indicator** This indicator assesses the level of engagement that the company has with its tenants, based on an assessment of the client policy formalized and implemented by the company.

**Data requirements** The questions comprising the information request that are relevant to this indicator are:

- A13: Client policy

**How the assessment will be done**

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
<i>To what extent GHG emissions reduction issues are integrated in engagement with clients?</i>	Consideration of reduction targets	No strategy	GHG emissions reduction included in engagement with tenants Means commitment	Quantified GHG emissions reduction included in engagement with tenants	Quantified GHG emissions reduction included in engagement with tenants	Quantified GHG emissions reduction included as priority in engagements with tenants	40%
<i>What action levers are used by the company to encourage clients to buy low carbon products?</i>	Influence on tenants	Company only delivers buildings that meet regulation requirements	Passive approach (offers buildings that go beyond regulation but no incentive for tenants to choose energy efficient buildings rather than standard ones)	Use of one action lever (awareness campaign, compensation, purchasing rule, etc.) Provision of documents and tools by the lessor	Use of several action levers (awareness campaign, compensation, purchasing rule, etc.) Provision of documents and tools Multi-party working group with annual meeting at least	Use of several action levers (awareness campaign, compensation, purchasing rule, etc.) Contribution to shift demand towards low-carbon buildings	40%

What is the scope of the action levers used?	Scope	No tenants in the scope		Only large tenants	Majority of tenants	All tenants	20%
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**Rationale**

RE 7.1 Strategy to influence customers to reduce their GHG emission

*Rationale of the indicator*

**Relevance of the indicator**

Strategy to influence customers are included in the ACT RE assessment for the following reasons:

1. As each part of the building LCA (materials, management, etc.) has a significant impact in terms of GHG emission, decarbonization of the whole supply chain is key to reach ambitious decarbonization goals in the real estate segment. Building occupants and building managers have also a key role to play in order to achieve the 2DS.
2. Companies who wish to develop low carbon buildings or more sustainable buildings need to be able to market them, and convince their clients to adopt sustainable practices for their new/renovated buildings.
3. Integration of buildings into their environments is one of the main challenges when designing them. During the use phase, real estate companies have also the ability to influence these environments. For instance, negotiations with public authorities may lead to better connect shopping centers or offices with public transportation, allowing customers to have other options than private cars.
4. Beyond the supply chain, real estate companies interact with many stakeholders who effectively use the buildings (occupants, visitors, security staff, etc.). In this regard, companies should convince and encourage them through a comprehensive and formalized policy to adopt sustainable practices in order to optimize the energy consumption of the buildings.

**Scoring the indicator**

Because of data availability and complexity, a direct measure of the outcome of such engagement is not very feasible at this time. It is often challenging to quantify the emission reduction potential and outcome of collaborative activities with the supply

chain. Therefore, the approach of a maturity matrix allows the assessor to consider multiple dimensions of supplier engagement and assess them together towards a single score for all the activities related to Client Engagement.

**RE 7.2 Activities to influence customers to reduce their GHG emissions (Weighting: 7,5%)**

**Description & Requirements**

RE 7.2 Activities to influence customers to reduce their GHG emissions

**Short description of indicator**

This indicator assesses the level of engagement that the company has with its clients, based on an assessment of previous initiatives that show whether or not the company engages with suppliers in various ways.

**Data requirements**

The questions comprising the information request that are relevant to this indicator are:

- A14: List of initiatives implemented to influence client behavior to reduce their GHG emissions

**How the assessment will be done**

Question	Subdimension	Basic	Standard	Advanced	Next practice	2' aligned	Subscore
How the company encourage clients to reduce their GHG emissions?	Tenants GHG emissions	No engagement	Company promotes buildings with lower carbon footprint but no data reported. Company defines means-driven commitment.	Company assists clients to reduce their GHG emissions. Provision of documents and tools by the lessor.	Company partners with large tenants to define common GHG emissions reduction plan. Provision of documents and tools by the lessor. Multi-party working group with at least annual meetings.	Company contributes in GHG emissions reduction along its value chain through close partnerships with clients	20%

What actions levers are used by the company to encourage buildings users to reduce their GHG emissions?	Users GHG emissions	No action.	Passive approach (company implement action in response of specific request of tenants/users)	Company influence building users through awareness campaigns.	Company integrates actions in buildings' construction/renovation (electric vehicles parking, bicycle parking, etc.)	Use of several actions and levers during the whole life time of the building (construction, renovation, management)	80%
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**Rationale**

RE 7.2 Activities to influence customers to reduce their GHG emissions

*Rationale of the indicator*

**Relevance of the indicator**

Activities to influence customers are included in the ACT RE assessment for the following reasons:

1. As each part of the building LCA (materials, management, etc.) has a significant impact in terms of GHG emission, decarbonization of the whole supply chain is key to reach ambitious decarbonization goals in the real estate segment. Building occupants and building managers have also a key role to play in order to achieve the 2DS.
2. Companies who wish to develop low carbon buildings or more sustainable buildings need to be able to market them, and convince their clients to adopt sustainable practices for their new/renovated buildings.
3. Integration of buildings into their environments is one of the main challenges when designing them. During the use phase, real estate companies also have the ability to influence these environments. For instance, negotiations with public authorities may lead to better connect shopping centers or offices with public transportation, allowing customers to have other options than private cars.
4. Beyond the supply chain, real estate companies interact with many stakeholders who effectively use the buildings (occupants, visitors, security staff, etc.). In this regard, companies should convince and encourage them through a comprehensive and formalized policy to adopt sustainable practices in order to optimize the energy consumption of the buildings.

### Scoring the indicator

Because of data availability and complexity, a direct measure of the outcome of such engagement is not very feasible at this time. It is often challenging to quantify the emission reduction potential and outcome of collaborative activities with the supply chain. Therefore, the approach of a maturity matrix allows the assessor to consider multiple dimensions of supplier engagement and assess them together towards a single score for all the activities related to Client Engagement.



## 8. Policy engagement indicators (Weighting: 5%)

### RE 8.1 Company policy on engagement with trade associations (Weighting: 2%)

<i>Description &amp; Requirements</i>	RE 8.1 Company policy on engagement with trade associations
<i>Short description of indicator</i>	The company has a policy on what action to take when industry organizations to which it belongs are found to be opposing “climate-friendly” policies.
<i>Data requirements</i>	The questions comprising the information request that are relevant to this indicator are: <ul style="list-style-type: none"><li>- A10: Company policy on engagement with trade associations</li></ul>
<i>How the assessment will be done</i>	<p>The assessor will evaluate the description and evidence of the policy on trade associations and climate change for the presence of best practice elements and consistency with the other reported management indicators. The company description and evidence will be compared to the maturity matrix developed to guide the scoring and a greater number of points will be allocated for elements indicating a higher level of maturity.</p> <p>Best practice elements to be identified in the test/analysis include:</p> <ul style="list-style-type: none"><li>- A publicly available policy is in place</li><li>- The scope of the policy covers the entire company and its activities, and all group memberships and associations</li><li>- The policy sets out what action is to be taken in the case of inconsistencies</li><li>- Action includes option to terminate membership of the association</li><li>- Action includes option of publicly opposing or actively countering the association position</li><li>- Responsibility for oversight of the policy lies at top level of the organization</li><li>- There is a process to monitor and review trade association positions</li></ul>

Question	Subdimension	Basic	Standard	Advanced	Next practice	2 <sup>+</sup> aligned	Subscore
<i>What is the scope covered by the engagement policy? Is the policy publicly available?</i>	Transparency and scope	Does not cover the entire company or all group memberships. Is not publicly available.	Does not cover the entire company or all group memberships. Is publicly available.	Covers the entire company and its activities, and all group memberships and associations, but not publicly available		Covers the entire company and its activities, and all group memberships and associations. Public policy is publicly available	40%
<i>Does the company have a review process of trade associations?</i>	Oversight	No process to review trade associations positions	A process to monitor and review trade association positions exists but is not necessarily implemented	A process to monitor and review trade association positions exists and is well implemented	A process to monitor and review trade association positions exists and is well implemented at a high level of the organization	A process to monitor and review trade associations positions exists. Responsibility for oversight of the policy lies at top level of the organization	40%
<i>Does the plan have an action plan regarding engagement with trade associations?</i>	Action plan	No mention of this element		Sets out what action is to be taken in case of inconsistencies	Option to terminate membership of the association	Option of publicly opposing or actively countering the association position	20%

**Rationale**

RE 8.1 Company policy on engagement with trade associations

*Rationale of the indicator*

Trade associations are a key instrument by which companies can indirectly influence policy on climate. Thus, when trade associations take positions, which are negative for climate, companies need to take action to ensure that this negative influence is countered or minimized.

This indicator is consistent with the ACT philosophy, ACT framework and ACT guidelines and common to the other sectoral methodologies.

**RE 8.2 Trade associations supported do not have climate-negative activities or positions (Weighting: 1%)**

<b>Description &amp; Requirements</b>	RE 8.2 Trade associations supported do not have climate-negative activities or positions
<i>Short description of indicator</i>	The company is not on the board or providing funding beyond membership of any trade associations that have climate-negative activities or positions. It should also be considered if the company is supporting trade associations with climate-positive activities and/or positions.
<i>Data requirements</i>	The questions comprising the information request that are relevant to this indicator are: <ul style="list-style-type: none"> <li>- A12: Company policy on engagement with trade associations</li> </ul>
<i>How the assessment will be done</i>	The list of trade associations declared in the CDP data and other external source entries relating to the company (e.g. RepRisk database), is assessed against a list of associations that have climate-negative activities or positions. The results are compared to any policy described in 5.1.  If the company is part of trade associations that have climate-positive activities and/or positions, this should be considered for the analysis.

Question	Subdimension	Basic	Standard	Advanced	Next practice	2 <sup>1</sup> aligned	Subscore
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Does the company support trade associations that have climate negative activities/positions?	Membership/funding	Company is on the board or provides funding beyond membership to trade associations that have climate-negative activities or positions.		The company is not on the board or providing funding beyond membership of any trade associations that have climate-negative activities or positions. Company can be member.		Company is not a member of any trade associations that have climate negative activities or positions	100%
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**Rationale**

RE 8.2 Trade associations supported do not have climate-negative activities or positions

*Rationale of the indicator*

See also the module rationale.

Trade associations are a key instrument by which companies can indirectly influence policy on climate. Thus, participating in trade associations which actively lobby against climate-positive legislation is a negative indicator and likely to obstruct low-carbon transition. However, membership in association that supports climate positive policies should also be considered in the analysis.

**RE 8.3 Position on significant climate policies (Weighting: 2%)**

**Description & Requirements**

RE 8.3 Position on significant climate policies

*Short description of indicator*

The company is not opposed to any significant climate relevant policy and/or supports climate friendly policies.

*Data requirements*

The questions comprising the information request that are relevant to this indicator are:

- A9: Position of the company on significant climate policies (public statements, etc.)

*How the assessment will be done*

The assessor will evaluate the description and evidence on company position on relevant climate policies for the presence of best practice elements, negative indicators and consistency with the other reported management indicators. The company description and evidence will be compared to the maturity matrix developed to guide the scoring and a greater number of points will be allocated for elements indicating a higher level of maturity.

Maturity matrix contents could include (decreasing maturity)

1. Publicly supports relevant significant climate policies
2. No reports of any opposition to climate policy
3. Reported indirect opposition to climate policy (e.g. via trade association)
4. Reported direct opposition to climate policy (third-party claims are found)
5. Company publicizes direct opposition to climate policy (direct statement issues or given by a company representative in e.g. speech or interview)

Question	Subdimension	Basic	Standard	Advanced	Next practice	2 <sup>+</sup> aligned	Subscore
<i>What is the position of the company on significant climate policies?</i>	Climate policy support	Reported direct opposition to climate policy can be found (third-party claims are found)	No reported direct opposition to climate policy	No reported direct opposition to climate policy, but indirect may exist.	No reports of any opposition to climate policy	Publicly supports relevant significant climate policies	100%

**Rationale**

RE 8.3 Position on significant climate policies

*Rationale of the indicator*

Private and public stakeholders of the building sectors have been developing initiatives about sustainable building practices that contribute to the transition to a low-carbon economy. Companies should not oppose effective and well-designed regulation in these areas, but should support it. Assessing the position of the company regarding the evolution of the context is thus key to understand the corporate vision in these matters.

## 9. Business model indicators (Weighting: 10%)

### RE 9.1 Integration of the low-carbon economy in current and future business models (Weighting: 10%)

<i>Description &amp; Requirements</i>	RE 9.1 Integration of the low-carbon economy in current and future business models
<i>Short description of indicator</i>	<p>The company is actively developing business models for a low-carbon future by demonstrating its application of low-carbon business model pathways. The innovative business models that have been identified as being strategic for the company's low-carbon transition are:</p> <ul style="list-style-type: none"><li>- Provide local energy supply system</li><li>- Optimize and rent additional building spaces</li><li>- Provide mobility services</li></ul>
<i>Data requirements</i>	<p>The questions comprising the information request that are relevant to this indicator are:</p> <ul style="list-style-type: none"><li>- A15: List and turnover of activities in new businesses (list TBD) related to low carbon buildings</li><li>- A16: Current position and action plan of the company towards the identified low-carbon business models</li></ul>
<i>How the assessment will be done</i>	<p>The analysis is based on the company's degree of activity in one of the three future business model areas used to benchmark. The analyst evaluates the implementation of the future business model pathways through a maturity matrix and the highest level achieved determines the current level of the company.</p> <p>The three business model categories, comprising subcategories (non-exhaustive list) are the following ones:</p> <ol style="list-style-type: none"><li>1. Provide local energy supply system<ol style="list-style-type: none"><li>a. Provide renewable energy to tenants</li><li>b. Provide renewable energy and grid services (peak-shaving, ...) to district and grid operators</li><li>c. ...</li></ol></li></ol>

2. Optimize and rent additional building spaces
  - a. Rent of unused spaces at specific schedule (on the week-end for offices) or on a temporary basis (exhibitions)
  - b. Rent of green spaces dedicated to urban agriculture (shared garden)
  - c. ...
3. Provide mobility services
  - a. Service of vehicle sharing (car-pooling platform, bicycle-sharing systems, maintenance, ...)
  - b. Service of electricity recharge
  - c. ...

In order for companies to align with a low-carbon future and meet the future mobility needs, it is expected that they pursue at least one of these future business model pathways and integrate them in their strategic plans. The analyst evaluates the description and evidence of the company's degree of activity in one of the future business model areas for the presence of best practice elements and consistency with the other reported management indicators. The company description and evidence are compared to the maturity matrix developed to guide the scoring and a greater number of points are allocated for elements indicating a higher level of maturity.

The minimum requirement for points to be awarded is that some level of exploration of one or more of these relevant business areas has started. This could include participation in collaborations, pilot projects, or research funding.

Best-practice elements to be identified in the test/analysis include:

- the company has developed a mature business model that integrates one or many of the above elements
- the business activity is profitable
- the business activity is of a substantial size
- the company is planning to expand the business activity
- expansion will occur on a defined timescale

Maximum points are awarded if all of these elements are demonstrated

## ***Rationale***

RE 9.1 Integration of the low-carbon economy in current and future business models

*Rationale of the indicator*

In addition to developing sustainable building practices, a company may transition its business model to other areas to remain profitable in a low-carbon economy. The company’s future business model should enable it to decouple financial results from GHG emissions, in order to meet the constraints of low-carbon transition while continuing to generate value. The business model shifts identified do not conflict with the changes that are implied by decarbonizing the company’s conception and construction of buildings.

This indicator aims to identify both relevant current business activities, and those still at a burgeoning stage. It is recognized that transition to a low carbon economy, with associated change in business models, will take place over a number of years. The assessment will thus seek to identify and reward projects at an early stage as well as more mature business activities, although the latter (i.e. substantially sized, profitable, and/or expanding) business activities will be better rewarded.

The maturity matrix is provided below:

		<b>Basic</b>	<b>Advanced</b>	<b>2° aligned</b>	
<b>Associated score</b>		0%	50%	100%	<b>Weight of the indicator in business model score</b>
9.1	<b>Profitability of business model</b>	Non- estimated or in a very early stage of development (research or conception stage)	Mature business model but non- profitable or in a development stage (prototype / demonstration or test)	Mature and profitable business model	25%
9.2	<b>Size of business model</b>	Non- estimated	Limited size of business for the company (few FTE or time dedicated, small turnover, few revenues expected, etc.)	Substantial size of market for the company (significant number or FTE or dedicated hours, great turnover, great anticipated profitability, etc.)	25%

9.3	<b>Growth potential of business model</b>	Non- estimated or exploration of the business model interrupted	Scheduling next development steps	Scheduling the expansion of the target or size of the business model	25%
9.4	<b>Deployment schedule of business model</b>	Non- scheduled	Deployment scheduled with a 2 years horizon or less	Deployment scheduled with a 2 years horizon or more	25%

## 6. Assessment

### 6.1. Sectoral Benchmark

#### Description of the benchmark

The fundamental target to achieve for all organizations is to contribute to not exceeding a threshold of 2° global warming compared to pre-industrial temperatures. This target has long been widely accepted as a credible threshold for achieving a reasonable likelihood of avoiding climate instability, while a 1.5°C rise has been agreed upon as an aspirational target.

Every company shall be benchmarked according to globally and/or nationally acceptable and credible benchmarks that align with spatial boundary of the methodology. If the methodology is only applied to a local country or state, the associated benchmarks shall still be compatible with the IEA low-carbon scenario (2DS) for the geographic zone.

#### Geographical areas coverage

The geographical zones are defined as a large world zone containing similar characteristics. Thus, some countries can be considered as geographical zones.

The external sources and available data used (*IEA ETP 2017*, n.d.) (International Energy Agency, 2013) for the construction of the benchmark cover the following areas:

- Europe;
- USA<sup>6</sup>;
- Brazil;
- China;
- India;
- Russia;
- ASEAN (ten countries of Southeast Asia with only global data including Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam);
- South Africa.

#### Reference pathways

A reference pathway defines the carbon intensity (kgCO<sub>2</sub>/m<sup>2</sup>) pathway from a given geographical area and/or country, as well as by building type and typology. The reference pathway considers all the energy

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<sup>6</sup> Only USA is considered in North America because Canada is not covered by IEA ETP 2017. Mexico is covered by IEA ETP 2017 but is not considered in this ACT methodology.

consumption from all the end-uses (space heating, space cooling, lightning, water heating, appliances and miscellaneous and cooking).

The reference pathway classification is defined considering the five input data parameters:

- Sector: Construction<sup>7</sup> or Real-Estate
- Building type: Residential or Services
- Building typology:
  - Individual housing or multi-family housing (residential building type)
  - Office, Retail or Hotel (Services building type)
- Geographical area: group of countries or relevant country in terms of CO<sub>2</sub> Emissions.
- Country level: country pathway (e.g. for EU-28) or State pathway for relevant countries (e.g. for USA, but it is not developed in this first version).

The generic reference pathway designation is composed as follows:

Pathway\_name = "Sector"\_"Building type"\_"Building typology"\_"Geographical zone"\_"Country"

*Example:*

Name of the pathway for offices in Germany = Real-Estate\_Services\_Office\_Europe\_Germany

### **Company Benchmark**

The company benchmark is a custom benchmark based in the 2°C scenario from the IEA, and its assets. A company benchmark is built following two steps:

- The company must calculate the different reference pathways for each building typology and country, on its portfolio.
- Then, the company benchmark is built as a weighted (buildings' floor area) sum of one or a combination of several reference pathways, considering current values.

*Example:*

A company has two office buildings with 1000 m<sup>2</sup> and 2000 m<sup>2</sup> of floor area respectively in France and Germany.

To determine the company benchmark two reference pathways are needed:

Real-Estate\_Services\_Office\_Europe\_France and Real-Estate\_Services\_Office\_Europe\_Germany.

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<sup>7</sup> For construction methodology, see ACT – Building Sector Methodology – Part I - Construction

$$\text{Company benchmark} = \frac{\text{Floor\_area\_office\_France}}{\text{Total\_company\_floor\_area}} * \text{Real\_Estate\_Services\_Office\_Europe\_France} + \frac{\text{Floor\_area\_office\_Germany}}{\text{Total\_company\_floor\_area}} * \text{Real\_Estate\_Services\_Office\_Europe\_Germany}$$

The following data is needed for the calculation of reference pathways:

- New and renovated buildings flows
- Acquisition or disposal of assets

Repair, replacement and end-of-life items are excluded.

### Available reference pathways

To date, 154 reference pathways are available:

- Geographical areas: Europe, USA, China, India, Brazil, Russia, ASEAN and South Africa
- Countries: E.U. 28 countries (as they are in 2018)
- Building types: Residential and Services
- Building typology: Individual housing, Multi-family housing, Office, Retail and Hotel (**Reference pathways for the different building typologies are only available at country level**)

Since the ACT methodology for Real-Estate sub-sector is meant to be used in any part of the world, the assessment report shall mention when data is unavailable for an area and which “proxy” has been used, with justification, according to the following table:

Description of the area with missing data compared to another documented area	Proxy
Country level data not available	<ol style="list-style-type: none"> <li>1. If this zone is relatively similar (in terms of GDP/capita, type of energy and industry infrastructure, main features of the building stock...) to another one already documented, consider the same data,</li> <li>2. If this zone is relatively similar to another one, but differs by climatic conditions, use the same data where applying specific climatic coefficients to in-use energy consumption,</li> <li>3. If this zone is included in a larger zone that is already characterized, then consider the data of the larger zone,</li> </ol>

## 6.2. Quantitative benchmarks used for the indicators

The calculation methodology is divided into two scopes:

- Scope 1 – Building direct emissions
- Scope 2 – Building indirect emissions due to electricity consumption

### Scope 1 – Building direct emissions

IEA ETP 2017 gives the direct CO<sub>2</sub> emissions of the building stock in each geographical zone in MtCO<sub>2</sub> from 2014 up to 2060, distinguishing Residential and Services buildings, including demography and related built area growth. The timescale chosen for the ACT methodology was 2014-2050.

From these values and the geographical building floor area(s) drawn from another IEA document (International Energy Agency, 2013) , with a five-year step, we can calculate the **Scope 1 geographical zone Carbon intensity**.

To determine direct CO<sub>2</sub> emissions at country level, the zone building type pathway is multiplied by the ratio of country building typology Energy intensity (EI).

Current Energy Intensity (EI) factors<sup>8</sup> used come from the European buildings database (*EU building database*, 2018) . Energy Intensity is used to allocate GHG emissions intensity per country and building types and that is a proxy with associated limitations.

### Scope 2 – Building indirect emissions due to electricity consumption

As electricity is the main source of indirect emissions in most countries, commercial heat is not considered. This may cause some distortion in some countries where heat networks are widespread (Nordic countries). Data from building type electric consumption by geographical zone can be retrieved from the IEA ETP 2017 data.

The **Zone electricity carbon intensity** is calculated with the help of Zone building type areas (Transition to Sustainable Buildings, IEA 2013) and the CO<sub>2</sub> emissions of the Zone electricity mix (IEA ETP 2017 data).

The Scope 2 emissions at country level are calculated by applying the same two EI ratios and the country electricity mix emissions to the zone building electricity intensity.

#### Country electric mix emissions (year):

The electric country mix emissions pathway is calculated by applying the same ratio of electricity decarbonization to the country current emissions, as in its geographical zone (data from IEA ETP 2017). Country current emissions (Only Europe countries available) come from the scientific document ("Moro and Lonza, 2018").

Details of this calculation methodology is given in Annex 1. The final carbon pathway is calculated by doing the sum of scope 1 and 2.

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<sup>8</sup> - Current values correspond to 2014 and 2015 data.

**List of sources:**

- EU building database, 2018, <https://ec.europa.eu/energy/en/eu-buildings-database>.
- IEA ETP 2017, n.d.
- International Energy Agency (Ed.), 2013. Transition to sustainable buildings: strategies and opportunities to 2050. IEA Publ, Paris.
- Moro, A., Lonza, L., 2018. Electricity carbon intensity in European Member States: Impacts on GHG emissions of electric vehicles. *Transp. Res. Part Transp. Environ.* 64, 5–14.  
<https://doi.org/10.1016/j.trd.2017.07.012>

### 6.3. Weightings

The quantitatively scored modules (Targets, Material investment) carry 50% of the final weight, and the qualitatively scored modules (Management, Policy engagement, Supplier engagement, Client, Business model) carry 50%. The indicators within the modules also carry their own weighting.

RE	Module	Indicator	Module weight	Indicator weight
1.1	Targets	Alignment of own buildings reduction targets	15%	1,0%
1.2		Alignment of buildings managed (use phase) reduction targets		7,0%
1.3		Alignment of new buildings integrated (use phase) reduction targets		3,0%
1.4		Alignment of new buildings integrated (materials) reduction targets		1,0%
1.5		Time horizon of targets		2,0%
1.6		Historic target ambition and company performance		1,0%
2.1	Material Investment	Trend in past emissions for buildings managed (use phase)	35%	8,0%
2.2		Emissions lock-in		12,0%
2.3		Trend in future emissions for buildings managed (use phase)		15,0%
5.1	Management	Oversight of climate change issues	10%	3,0%
5.2		Climate change oversight capability		3,0%
5.3		Low carbon transition plan		2,0%
5.4		Climate change management incentives		1,0%
5.5		Climate change scenario testing		1,0%
6.1	Supplier	Strategy to influence suppliers to reduce their GHG emissions	10%	5,0%
6.2		Activities to influence suppliers to reduce their GHG emissions		5,0%
7.1	Client	Strategy to influence customer behavior to reduce their GHG emissions	15%	7,5%
7.2		Activities to influence consumer behavior to reduce their GHG emissions		7,5%
8.1	Policy engagement	Company policy on engagement with trade associations	5%	1,0%
8.2		Trade associations supported do not have climate-negative activities or positions		2,0%
8.3		Position on significant climate policies		2,0%
9.1	Business model	Integration of the low-carbon economy in current and future business model	10%	10,0%
Overall			100%	100%

## Rationale for weightings

The selection of weights for both the modules and the individual indicators was guided by a set of principles (see the ACT framework document for more information). These principles helped define the value of the indicators.

Principle	Explanation
Value of information	The value of the information that an indicator gives about a company's outlook for the low-carbon transition is the primary principle for the selection of the weights.
Impact of variation	A high impact of variation in an indicator means that not performing in such an indicator has a large impact on the success of a low-carbon transition, and this makes it more relevant for the assessment.
Future orientation	Indicators that measure the future, or a proxy for the future, are more relevant for the ACT assessment than past & present indicators, which serve only to inform the likelihood and credibility of the transition.
Data quality sensitivity	Indicators that are highly sensitive to expected data quality variations are not recommended for a high weight compared to other indicators, unless there is no other way to measure a particular dimension of the transition.

## Targets 15%

The targets module has a relatively large weight of 15%. Most of it is placed on the alignment of *reduction targets of buildings managed* with 7%, compared to 4% for *new building integrated* in the property portfolio (1.3 and 1.4). As for new buildings integrated, an indicator of 3% weight measures the targets related to the *use phase* and another one of 1% considers the targets related to *materials*. This breakdown is similar to the shares of the emissions related to materials and energy use as the result of the life cycle analysis of a new building. 1% scores are attributed to the *alignment of reduction targets of company's owned buildings* and to the *previous achievement* indicator, which measures the company's past credentials on target setting and achievement. It is not very important by the principles outlined above, but nonetheless can provide contextual information on the company's experience to meet ambitious targets. Finally, *the time horizon of targets* has a weight of 2%. It is a proxy of how forward-looking the company is, which is very long-term oriented.

### Material Investment 35%

This module carries by far the largest weight out of all the modules. This is the primary module that assesses the development of the company's generation assets, and how these existing assets impact the likelihood of a low-carbon transition. Over the short-term, the company's current generation portfolio & confirmed planned assets are used to generate an estimate of the company's *trend in future emissions intensity*. As this is a direct measurement of the decarbonization pathway, with a high impact of variation, and which looks to the future, it receives a very strong weighting of 15%.

The *emissions lock-in* indicator uses the same information, but tries to measure the amount of carbon emissions that the company has already committed from its individual carbon budget. This means it is also very future oriented, and also receives a strong weight of 12%. Finally, *the trend in past emissions intensity* is an indication of the 'adjustment' that the company has to make to place itself on a low-carbon pathway. It principally adds information about what kind of changes the company needs to undergo in order to become 2°C-aligned, and therefore receives a medium weight of 8%.

### Intangible investment 0%

The R&D in climate change mitigation technologies indicator is focused around the company's intangible investments or financial costs into climate change mitigation technologies. Given the lower amount of environmentally related R&D undertaken by Real Estate companies and the fact that relevant R&D technologies usually derive from other sectors, this indicator and thus the module is not relevant.

### Sold Product Performance 0%

The buildings managed by the real estate company are considered as assets, not sold products. This module is therefore not relevant.

### Management 10%

Management is a multi-faceted module that makes up 10% of the score, because it incorporates many different smaller indicators that together paint a picture of the company's management and strategic approach to the low-carbon transition. The majority of this weight is placed on the *oversight of climate change issues* and *the climate change oversight capability*, which are weighted 3% each. These two indicators measure the ability of the company to integrate sustainability to its strategy and to embraces the main challenges related to low-carbon transition. Besides, according to the principle of future orientation, the transition plan provides more information on how this company will specifically deal with the transition, and has a weight of 2%.

The other two indicators have a low weight of 1%, as they are contextual indicators whose outcome can strengthen or undermine the company's ability to carry out the transition plan and meet ambitious science-based targets.

### Supplier engagement 10%

In order to reduce emissions from the whole lifetime of the buildings, it is imperative that real estate companies involve their supply chains. Nonetheless, it is not an indicator that is easy to measure, and relies heavily on data quality to make a proper analysis. Therefore, this indicator has a medium weight of 10%. This indicator focuses on the global strategy and general activities that a real estate company has in place with respect to its engagement with suppliers.

#### Client 15%

The client engagement indicator is focused around the company's efforts to reduce the emissions generated after the buildings have been delivered and to influence customer practices towards low-carbon consumption and circular economy practices. As with the influence on suppliers, it is not an indicator that is easy to measure, and relies heavily on data quality to make a proper analysis. This indicator therefore focuses on the global strategy and general activities that a real estate company has in place on their engagement with its customers.

#### Policy Engagement 5%

In line with the rationale for the management indicators of low weight, the policy engagement indicators are also contextual aspects which tell a narrative about the company's stance on climate change and how the company expresses it in their engagement with policy makers and trade associations. The total weight for this module is therefore medium at 5%. The *company policy on engagement with trade associations*, and the *company's position on relevant climate policy* make up the bulk of this, with 2% each. Finally, 1% is allocated to *positions of the company's trade associations that do not have climate-negative activities* as this is a very specific question and concern a minority of companies.

#### Business model 10%

The *integration of a low-carbon economy in current and future business model* is a composite indicator that captures many elements and aspects that cannot otherwise be captured in any of the other modules. It includes those aspects that are relevant to the transition but are not directly a part of the primary generation activities. It is future oriented by asking the companies on its narrative on certain future directions that the sector can/has to take to enable the transition.

## 6.4.Data request

Table 6 introduce the list of information which will be requested to companies through a questionnaire, as well as the corresponding indicators.

Number	Data requested to the company	Indicator relevance
A1	Current internal targets set on carbon performance (kgeCO2/m2)	RE 1.1, RE 1.2, RE 1.3, RE 1.4, RE 1.5
A2	Past internal targets set on carbon performance (kgeCO2/m2)	RE 1.6
A3	Average carbon intensity of company's own building in the past 5 years	RE 1.6
A4	R&D detailed expenses	RE 3.1
A5	Environmental policy and details regarding governance	RE 5.1, RE 5.2, RE 5.3
A6	Management incentives	RE 5.4
A7	Breakdown of floor areas per business segment and country	RE 1.1, RE 1.2, RE 1.3, RE 1.4, RE 1.5, RE 1.6, RE 2.1, RE 2.2, RE 2.3
A8	Average carbon intensity of buildings managed in the past 5 years	RE 1.6, RE 2.1, RE 2.2
A9	Position of the company on significant climate policies (public statements, etc.)	RE 8.2
A10	Company policy on engagement with trade associations	RE 8.1
A11	List of environmental/CSR contract clauses in purchasing	RE 6.1
A12	List of initiatives implemented to influence suppliers to reduce their GHG emissions	RE 6.2
A13	Client Policy	RE 7.1
A14	List of initiatives implemented to influence client behavior to reduce their GHG emissions	RE 7.2
A15	List and turnover of activities in new businesses (list TBD) related to low carbon buildings	RE 9

## 7. Rating

The ACT rating combines quantitative and qualitative information on a company's past, present and projected future to reveal its alignment with the low-carbon transition.

The ACT rating consists of three elements:

- A Performance Rating, represented as a number from 1 up to 20
- An Assessment Rating, represented as a letter from A down to E
- A Trend Rating, represented as +, improving trend; -, worsening trend; or =, stable trend

The highest available ACT rating is  20 A +	A <b>performance rating</b> of <b>20</b> : the company received high scores in its assessment against the methodology indicators.
	An <b>assessment rating</b> of <b>A</b> : the information reported by the company and available from public sources was consistent and showed that the company is well aligned to transition to the low-carbon economy
	A <b>trend rating</b> of <b>+</b> : the information provided shows the company will be better placed to transition to the low-carbon economy in future.

Each responding company in the ACT pilot project received not only an ACT rating but a commentary on their performance across the three aspects of the rating. This gave a nuanced picture of the company's strengths and weaknesses. Detailed information on the ACT rating is available in the ACT Framework document.

### 7.1. Performance scoring

Performance scoring shall be performed in compliance with the Framework. However, sold product performance module has a zero weighting since this module is not relevant when it comes to the Real Estate sector. No other additional sector-specific issue that impact the analysis scoring for the companies of the sector has been identified to date

### 7.2. Narrative scoring

Performance scoring shall be performed in compliance with the ACT Framework. No sector-specific issue that impact the analysis scoring for the companies of the sector has been identified to date.

### 7.3. Trend scoring

Scoring shall be performed in compliance with the ACT Framework. To apply the trend scoring methodology presented in the Framework, the analyst should identify the trends from the existing data infrastructure based on the data points and/or indicators that can indicate the future direction of change within the company.

The table below includes an overview of which indicators/data points could possibly have valuable information about future directions for the RE sector.

*Table 2 Relevant performance indicators for trends identification for the RE sector*

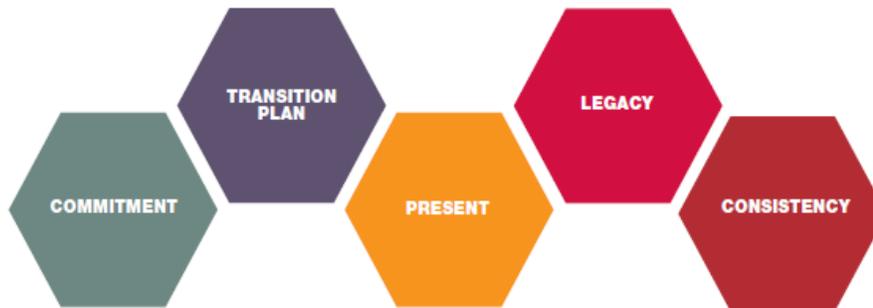
Module	Indicator
Targets	RE 1.1 Alignment of own buildings reduction targets
	RE 1.2 Alignment of buildings managed (use phase) reduction targets
	RE 1.3 Alignment of new buildings integrated (use phase) reduction targets)
	RE 1.4 Alignment of new buildings integrated (materials) reduction targets
	RE 1.5 Time horizon of targets
Material Investment	RE 2.1 Trend in past emissions for buildings managed (use phase)
	RE 2.3 Trend in future emissions for buildings managed
Management	RE 5.4 Low-carbon transition plan
	RE 5.5 Climate Change Scenario testing

## 8. Aligned state

The table below presents the response of a low-carbon aligned company of the sector to the 5 questions of ACT:

The company discloses a transition plan that details operation steps to achieve their objectives.

A trend is evident of lowering emissions intensity of managed buildings and developing renovation projects. The company achieved this decrease through deliberate operational decisions.



The company has science-based targets on every dimension of the building: materials, use phase and renovation. These objectives are aligned with a relevant time horizon which reflects the lifetime of a building.

The company is currently investing in R&D project related to low-carbon technologies and deploying a strategy to increase the use of low-carbon technologies.

The company's targets, transition plan, present action and past legacy show a consistent willingness to achieve the goals of low-carbon transition. The company publicly supports more stringent standards and emissions disclosure

## 9. Sources

- [1] Roadmap for transition towards low-GHG and resilient buildings, GABC, 2016.
- [2] Transition to Sustainable Buildings, IEA, 2013.
- [3] “Sectoral Decarbonization Approach (SDA): A method for setting corporate emission reduction targets in line with climate science,” Science Based Targets Initiative, 2015.
- [4] Base Carbone, ADEME.
- [6] A common EU framework of core sustainability indicators for office and residential buildings, European Commission, 2017.
- [7] UNEP, “Emissions Gap Report,” 2015
- [8] OECD, “Environmental Mitigation Technologies Search Strategy, Modules 4 and 5.” Mar-2015.
- [9] OECD, “Environmental Mitigation Technologies Search Strategy.” Mar-2015.
- [10] Energy Technology Perspective, IEA, 2017.
- [11] BIS, “Estimating the amount of CO2 emissions that the construction industry can influence”. 2010.
- [12] French Ministries of Ecological Transition and of Territorial Cohesion, E+C- methodology, experiment, label and observatory. <http://www.batiment-energiecarbone.fr/>

## 10. Glossary

## APPENDIX 1: Details of the development of “In-use” benchmarks and pathways for managed buildings (direct and indirect emissions)

### Scope 1 – Building direct emissions

IEA ETP 2017 gives the direct CO<sub>2</sub> emissions of the building stock in each geographical zone in MtCO<sub>2</sub> from 2014 up to 2060, distinguishing Residential and Services buildings, including demography and related built area growth. The timescale chosen for the ACT methodology was 2014-2050.

From these values and the geographical building floor area(s) drawn from another IEA document (International Energy Agency, 2013), with a five-year step, we can calculate the **Scope 1 geographical zone Carbon intensity**. The calculation is done using the following formula:

$$Zone_{building\ type\ pathway}(year) = \frac{Direct_{CO_2\ emissions}(year)}{Zone\ Surface\ (year)} \left( \frac{kgCo_2eq}{m^2} \right) \quad (1)$$

To determine direct CO<sub>2</sub> emissions at country level, the zone building type pathway is multiplied by the ratio of country building typology EI, as follows:

$$\frac{EI\ country\ building\ typology}{EI\ zone\ building\ type} (2) \quad Country\ building\ typology\ pathway\ (year) = Zone\ buildings\ type\ pathway\ (year) *$$

$$Ratio\ of\ country\ building\ typology\ energy\ intensity = \frac{Average\ Energy\ Intensity\ of\ country\ building\ typology}{Average\ Energy\ Intensity\ of\ zone\ building\ type} (3)$$

Current Energy Intensity factors<sup>9</sup> (EI) used come from the European buildings database (*EU building database*, 2018). Energy Intensity is used to allocate GHG emissions intensity per country and building types and that it is a proxy with associated limitations.

The Energy Intensity (EI) values are considered as constants in the “Country building typology pathway” construction.

$$Example: \frac{German\ Individual\ housing\ EI}{Europe\ Residential\ EI}$$

Some data related to the “Average Energy Intensity of country building typology” are not available. In these cases, the value used matches the average energy intensity of all available countries building typology in the considered zone (i.e.  $\frac{\sum EI_{country\ building\ typology}}{Number\ of\ countries}$ , if country in zone).

### Scope 2 – Building indirect emissions due to electricity consumption

Scope 2 emissions are related to electricity consumption. As electricity is the main source of indirect emissions in most countries, commercial heat is not considered. Data from building type electric consumption by geographical zone can be retrieved from the IEA ETP 2017 data.

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<sup>9</sup> - Current values correspond to 2014 and 2015 data.

The **Zone electricity carbon intensity** is calculated as follows:

$$\frac{\text{Zone building type electricity carbon intensity (year)} = \text{Zone building type electric consumption (year)} \times \text{Zone Electric mix emissions (year)}}{\text{Zone Building type surface (year)}} \text{ (kgCO}_2\text{/m}^2\text{)} \quad (4)$$

With,

- *Zone building type electric consumption (year)* : Data gathered from IEA ETP 2017 (IEA ETP 2017, n.d.).
- *Zone electric mix emissions (year)* : Data gathered from IEA ETP 2017 at zone level (IEA ETP 2017, n.d.)
- *Zone Building type surface*: Data from Transition to Sustainable Buildings, IEA 2013 (International Energy Agency, 2013)

The Scope 2 emissions at country level are calculated by applying the same two ratios as in formula **Erreur ! Source du renvoi introuvable.** and the country electricity mix emissions to the zone building electricity intensity.

$$\text{Country building typology pathway SCOPE 2(year)} = \text{Zone buildings electric intensity(year)} \left[ \frac{\text{kWh}}{\text{m}^2} \right] \times \frac{\text{EI country building typology}}{\text{EI zone building type}} \times \text{Country Electric mix emissions (year)} \text{ [kgCO}_2\text{/m}^2\text{]} \quad (5)$$

With,

$$\text{Zone building type electric intensity (year)} = \frac{\text{Zone building type electric consumption (year)}}{\text{Zone Building type surface (year)}} \text{ [kWh/m}^2\text{]}$$

Ratio of country building typology energy intensity = see formula (3)

#### **Country electric mix emissions (year):**

The electric country mix emissions pathway is calculated by applying the same ratio of electricity decarbonization to the country current emissions, as in its geographical zone (data from IEA ETP 2017). Country current emissions (Only Europe countries available) come from the scientific document ("Moro and Lonza, 2018"). The data in this article is given in kgCO<sub>2</sub>/kWh electricity.

The final carbon pathway is calculated by doing the sum of scope 1 and 2.

#### **List of sources:**

- EU building database, 2018, <https://ec.europa.eu/energy/en/eu-buildings-database>.
- IEA ETP 2017, n.d.
- International Energy Agency (Ed.), 2013. Transition to sustainable buildings: strategies and opportunities to 2050. IEA Publ, Paris.

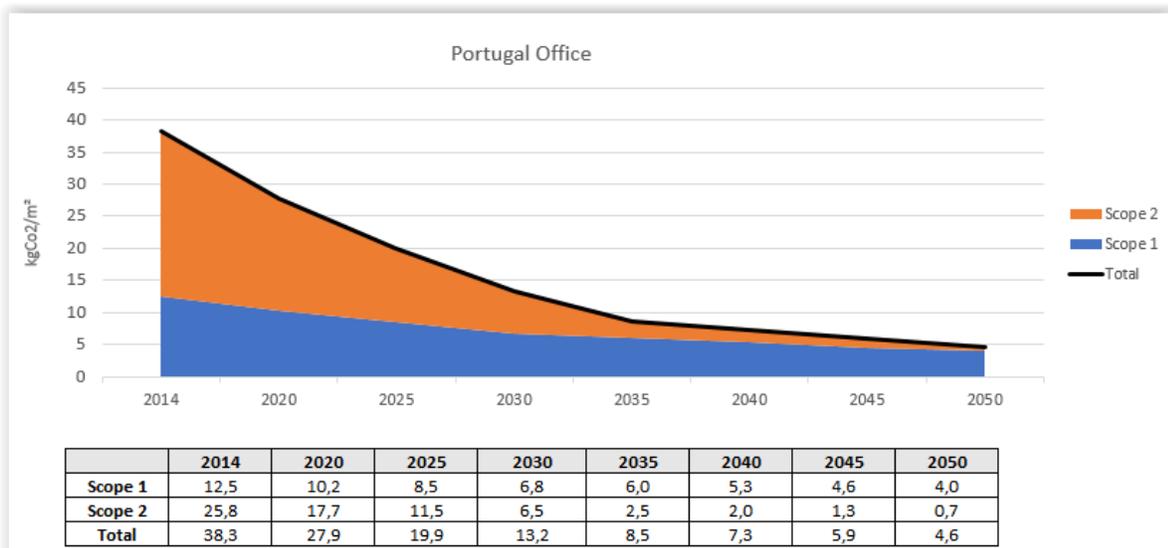
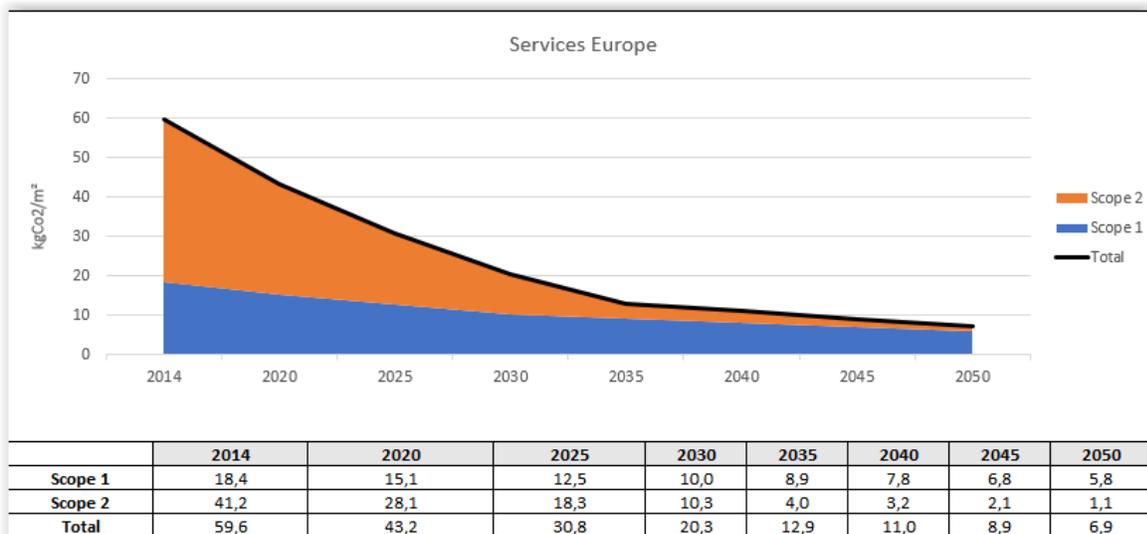
- Moro, A., Lonza, L., 2018. Electricity carbon intensity in European Member States: Impacts on GHG emissions of electric vehicles. *Transp. Res. Part Transp. Environ.* 64, 5–14. <https://doi.org/10.1016/j.trd.2017.07.012>

## APPENDIX 2: Example of “In-Use” pathways for managed buildings, including all end-uses

Context:

building type	typology	Geographical zone	country
Services	Office	Europe	Portugal

Graphs :



APPENDIX 3: Document version history

Version	Date of change	Location of change	Description of change
1.2	October 2022		Correction of inconsistencies on indicator names and weightings
1.1	February 2020		Initial publication
1.0	June 2019		Road test version