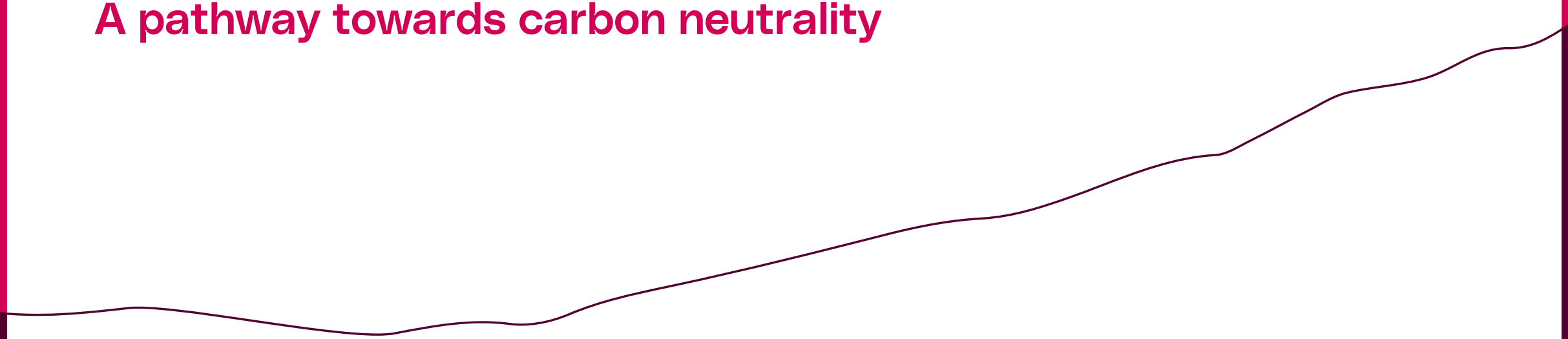
Open mind
Greater value

Sierra Sonae

Evolving within climate boundaries

A pathway towards carbon neutrality



Created in 2022, updated March 2025

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CARBON NEUTRALITY

as the pathway to tackle climate change and keep within climate boundaries

In the face of the urgency to act upon environmental challenges,

we have committed to tackle climate change by going carbon neutral in 2040.

We aim to future-proof our business and our assets against future climate impacts and build back the resilience of the Earth system.
To this end we are addressing the source of the problem. We have validated our Near-Term and Long-Term goals per Science Based Target initiative (SBTi), following the Corporate Net Zero Standard, to guide our continuous ambitious performance, while keeping within climate boundaries.

Why?

Future-proof the lived environment

Our climate action will be transversal to our direct and indirect emissions. We will reduce **operational carbon** emissions from our owned and co-owned buildings, the **embodied** carbon of new developments and expansions as well as **emissions from our value chain.**

BUILDINGS WILL BE VULNERABLE TO CLIMATE CHANGE

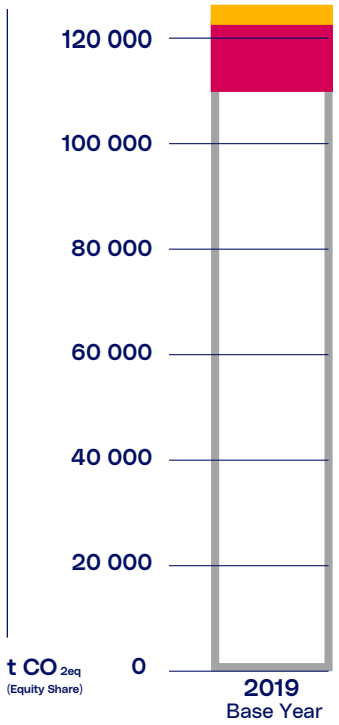
Climate change and its consequences, like increasing temperatures and extreme weather events, will impact both the structure and the indoors of buildings

About one third of global GHG emissions come from buildings

According to the IPCC, in 2019, the GHG emissions of the building sector reached 12 tCO_{2eq}, corresponding to about 21% of GHG emissions in that year. When considering only CO_{2eq} emissions the contribution of the building sector increases to 31% of CO_{2eq} emissions in 2019.

What to address? Our carbon footprint

Carbon Footprint



Emission Source

Scope 1
- Fleet fuel
- Natural gas for boilers and cogeneration plant
- Fugitive emissions from HVAC equipment (GHG)

Scope 2
- Electricity
- District cooling and heating

Scope 3

1. Purchased goods and services
2. Capital goods
3. Fuel and energy related activities
4. Upstream transportation & distribution
6. Business travel
7. Employee commuting
11. Use of sold products
12. End-of-life treatment of sold products
13. Downstream leased assets

(most relevant categories/source)

Organisational Boundaries

SONAE SIERRA

OFFICES

INVESTMENT PROPERTIES

NEW DEVELOPMENTS & EXPANSIONS

Our carbon footprint

Our commitment takes 2019 as the base year and encompasses all Sonae Sierra GHG emissions. Our carbon inventory for this year followed the GHG Protocol, and includes our **corporate emissions**, our **investment properties** emissions, and emissions from our **new developments and expansions**.

Since 2006 our carbon inventory followed the operational control approach for our Operations.

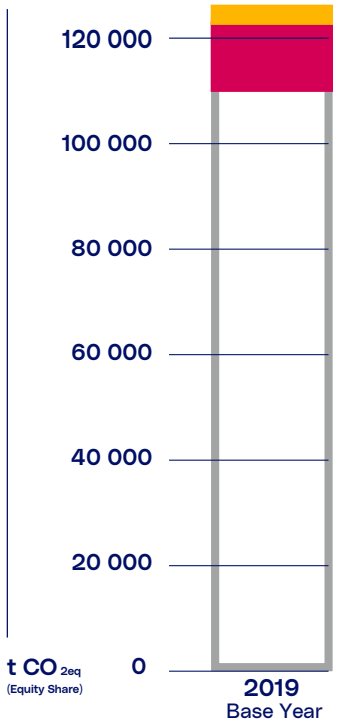
Subsequently, we developed our Science Based Targets (SBT) in line with an **equity share** approach (EQS), therefore accounting for GHG emissions according to our share of equity in the operation of the activities (e.g. building operations, offices).

Moreover, due to the dynamics of our business we are tracking our carbon performance, for scopes 1 and 2, based on **emissions intensity targets, considering our emissions per m²** of GLA (Gross Lettable Area).

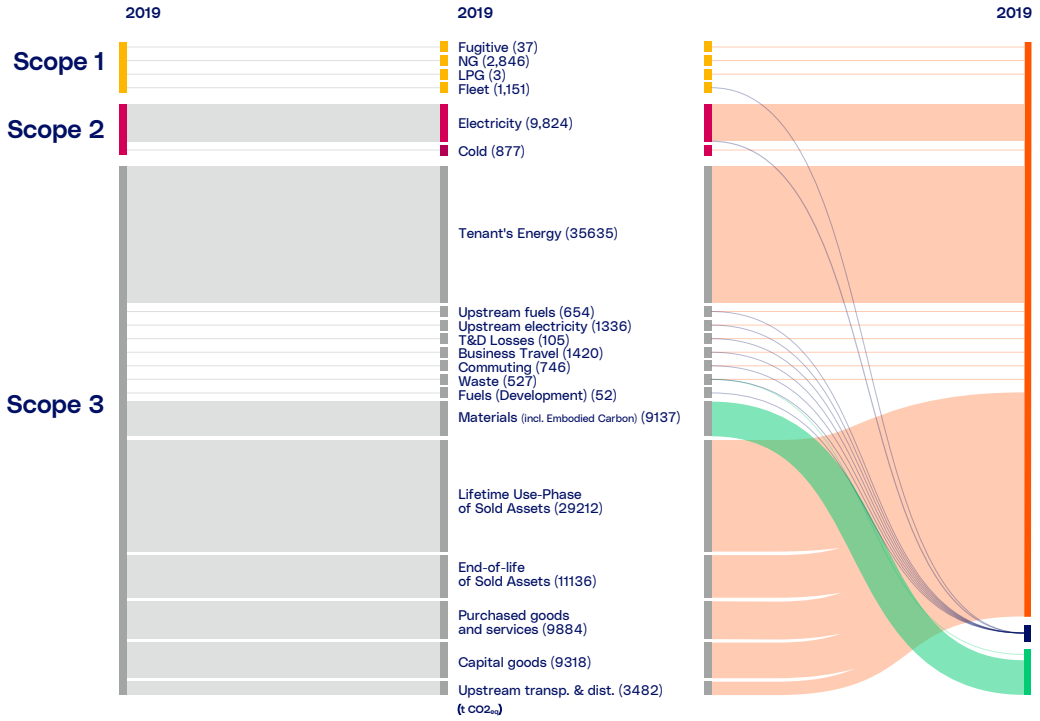
Sonae Sierra also measures the emissions from visitor trips to and from our investment properties (shopping centres) as an optional report: in 2019, it accounts for 121 688 tCO_{2eq}.

What to address? Our business emissions

Carbon Footprint



Emission Source



Organisational Boundaries

INVESTMENT PROPERTIES

As part of the Investment Properties, our operating assets are the main source of our carbon footprint mostly due to **indirect value chain emissions** from our tenants' energy consumption.

CORPORATE EMISSIONS/OFFICES

Corporate emissions comprise the emissions arising from our offices, including direct emissions from our **fleet**, indirect emissions from the **electricity** generation as well as emissions resulting from **employees commuting and business travel.**

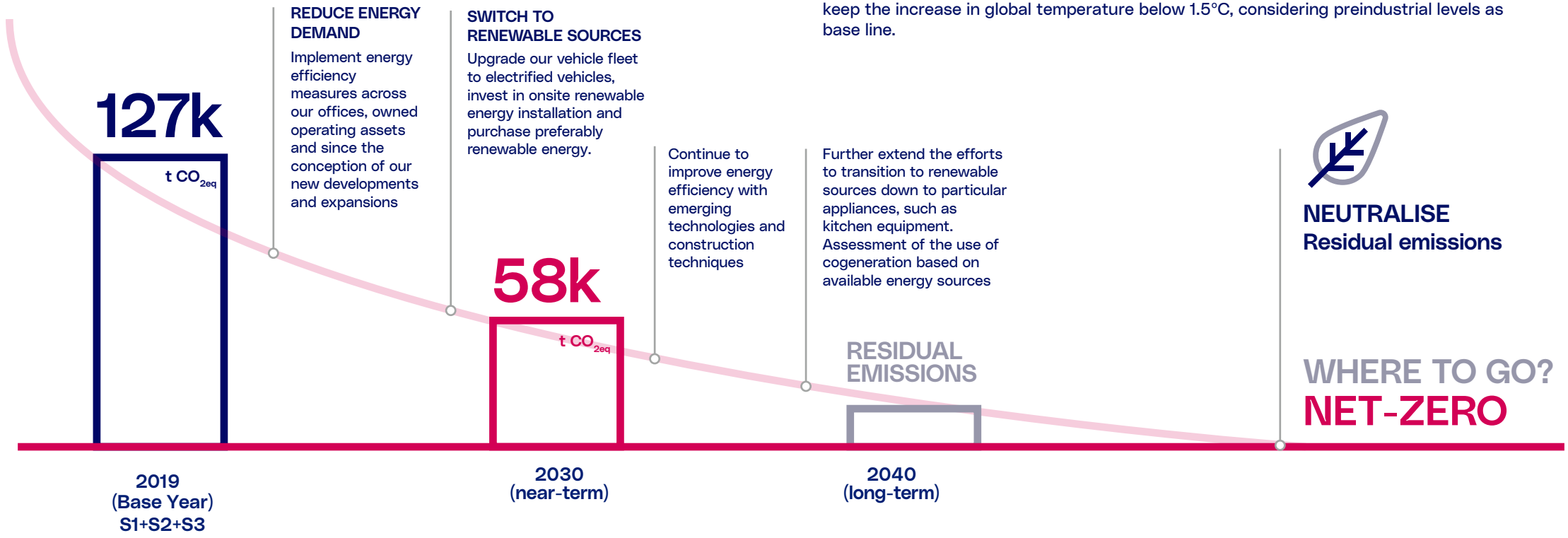
DEVELOPMENTS & EXPANSIONS

The **embodied carbon** of the new developments and expansions on pipeline until 2030 represents a significant part of our carbon inventory. As a result, these emissions were included in the carbon footprint submitted for SBT base year.

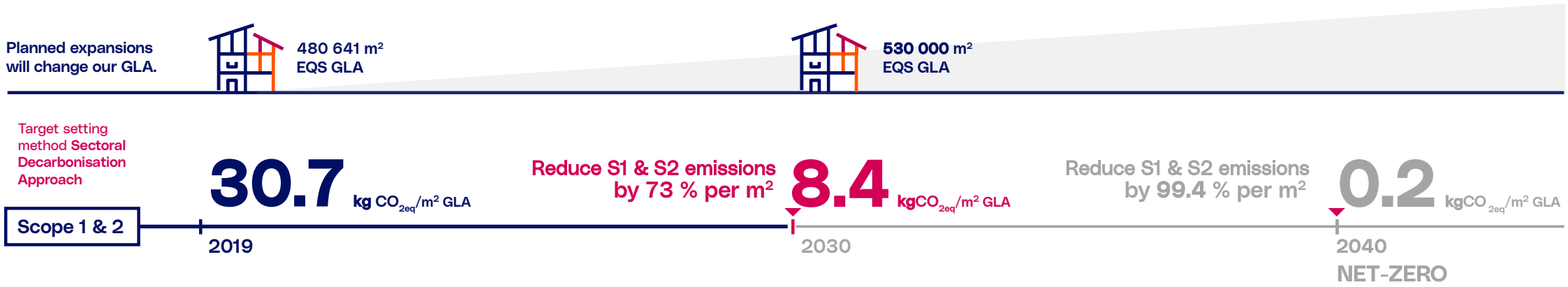
Pathway towards carbon neutrality

We are committed to become carbon neutral by 2040

We have validated our Near-Term and Long-Term goals per Science Based Target initiative (SBTi), following the Corporate Net Zero Standard, to consistently reduce our corporate emissions, in line with the goals from the Paris Agreement. Our business ambition is to keep the increase in global temperature below 1.5°C, considering preindustrial levels as base line.



Scope 1 & 2



OFFICE FLEET

ENERGY USE

BOILERS & COGENERATION

Our business is evolving, and our portfolio will be changing

To fulfil our goal to diversify our business without loosing track of our carbon performance, we are committing to an intensity target, for our scope 1 and 2 emissions. Making sure, no matter how we decide to diversify our business, the goal to keep within planetary boundaries and firmly address climate change is not forsaken. As a result, Sonae Sierra commits to reach net-zero GHG emissions across the value chain by 2040, and specifically reduce scope 1 and scope 2 GHG emissions by 73% per square metre GLA, by 2030 and by 99.4% by 2040, from a 2019 base year.

Scope 3

Target setting method **Absolute Contraction Approach**

Scope 3

113k t CO_{2eq} — 2019

Reduce S3 emissions by 46.2 %

54k t CO_{2eq} — 2030

Reduce S3 emissions by 99.6 %

0.4k t CO_{2eq} — 2040 NET-ZERO

RESIDUAL EMISSIONS

	2019	2030
TENANTS' ENERGY CONSUMPTION	35 635 t CO_{2eq}	19 243 t CO_{2eq}
BUSINESS TRAVEL	1 419 t CO_{2eq}	767 t CO_{2eq}
COMMUTING	746 t CO_{2eq}	403 t CO_{2eq}
WASTE TREATMENT	526 t CO_{2eq}	284 t CO_{2eq}
PURCHASED GOODS AND SERVICES	9 884 t CO_{2eq}	5 337 t CO_{2eq}
CAPITAL GOODS	9 318 t CO_{2eq}	5 032 t CO_{2eq}

TENANT ENERGY:

- Fully implement green leases in our portfolio, to enhance the synergies between owner and tenant in energy efficiencies
- Assess electrification of cooking activities of our tenants
- Engage tenants for procuring green electricity for their operations

BUSINESS TRAVEL AND COMMUTING:

- Progressing with a fleet electrification programme
- De-incentivize business travel by providing the necessary tools to do remote work meetings
- Remote Working policy
- Promote awareness on low carbon travel to employee

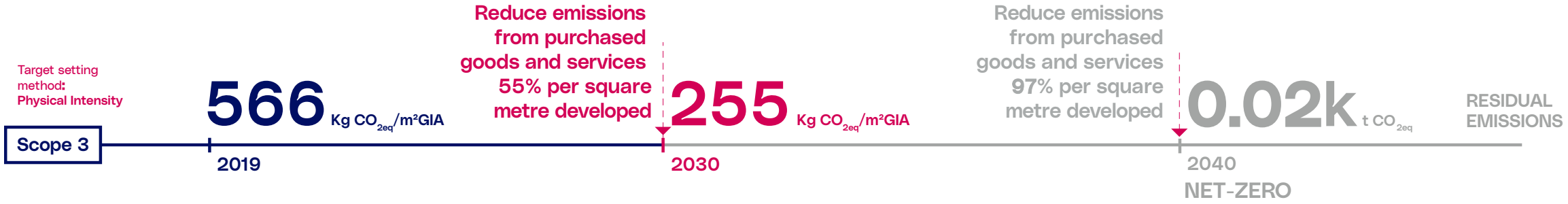
WASTE:

- **Achieve a minimum of recycling rate of 80% in owned operating assets by 2030**
- Engage tenants for improving the waste recycling rates

GENERAL:

- Increase the availability of electric vehicle charging in our buildings
- Enhance the green mobility by increasing bicycle usage and other soft means of transport
- Ensure our green procurement policy is compliant across all suppliers

Scope 3: Development



PURCHASED GOODS AND SERVICES /MATERIALS
(Incl. Embodied Carbon)

WASTE TREATMENT

FUELS

Embodied carbon

Optimisation of materials use in new developments and buildings expansions by optimising buildings size, use and selecting more sustainable materials

DEVELOPMENT, EXPANSIONS PROJECTS:

- Optimise the building materials – by reducing the material's global warming potential (in ton CO_{2eq} by volume or weight of product), as part of a Whole-Building Life Cycle Assessment (LCA) at design, construction and as-built phases.
- Achieve ISO 14001 (Environmental Management Systems) & 45001 (Safety & Health Management Systems) certifications for new building and expansion projects
- Achieve Green Building certifications (BREEAM NC or LEED BD+C or DGNB) for new building and expansion projects
- Achieve an overall recycling rate of 85% on all construction projects (including refurbishments and expansions)

Operational carbon

Our buildings

Our buildings will respond differently to the implement measures. Acknowledging the diversity of performance along our portfolio we have assessed our asset's long term performance and established Net-Zero targets.

OPERATIONAL CARBON

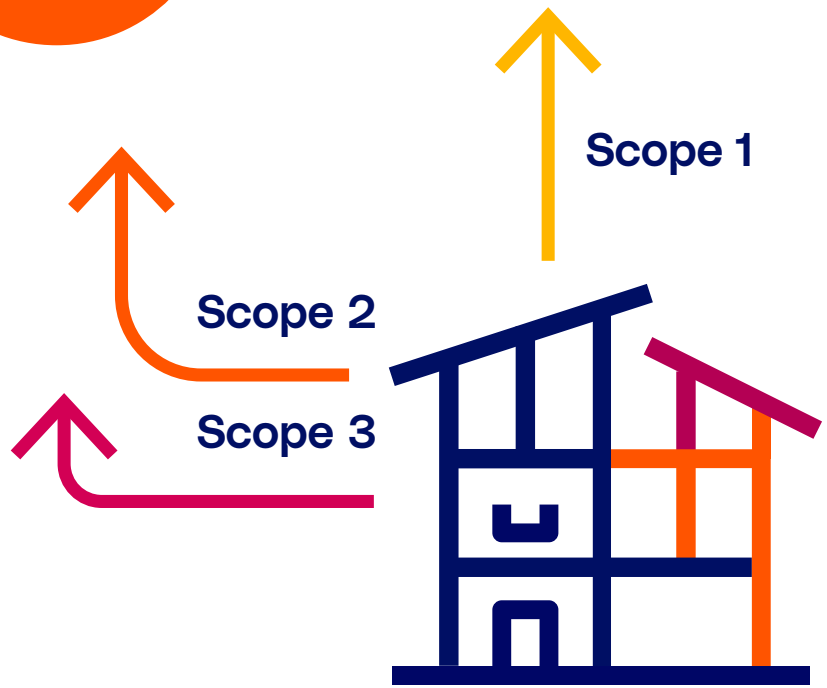
Carbon dioxide and other greenhouse gas emissions associated with the use of energy during buildings' operation. Emissions arising from the use of other equipment like HVAC systems, which might have fugitive emissions, are also considered.

Tackling energy demand

Value chain

Tenants' engagement

We will keep promoting the implementation of best practices among our tenants, namely regarding energy efficiency, green electricity, and waste management. The introduction of provisions related to these matters in green leases, requiring the regular report on the associated KPIs, will help us keep track of our assets' performance and the implementation of precise improvement measures in collaboration with our tenants.



Investment properties

Energy retrofit

Energy specialized audits are being done to confirm estimated savings as well as the energy efficiency measures put those estimations in practice.
Building on the energy efficiency measures implemented over time, through our Bright programme, these audits will be repeated in 6 to 9 years, to evaluate the potential savings which can be further achieved through new emerging technologies, and technologies which CAPEX is currently high, but expected to decrease considerably over time.

Tackling Embodied Carbon

Life Cycle Assessment

Considering the building's and its materials whole life cycle

New developments will be assessed through LCA tools as recommended in green building certifications like BREEAM and LEED, enabling the identification of environmental impacts as well as improvement opportunities. The carbon emissions intensity of new projects will be reduced through this holistic assessment and targeting improvement opportunities.

EMBODIED CARBON

Carbon emissions associated with materials and construction processes throughout the whole lifecycle of a building or infrastructure. Embodied carbon therefore includes material extraction, transport to manufacturer, manufacturing, transport to site, construction, use phase (e.g. concrete carbonation but excluding operational carbon), maintenance, repair, replacement, refurbishment, deconstruction, transport to end of life facilities, processing and disposal.

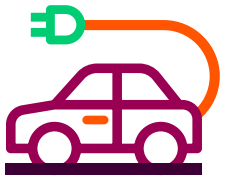
Source: WGBC, Bringing embodied carbon upfront, September 2019

How? New developments, building expansions and refurbishments

Optimisation of building materials
Embodied carbon emissions will be reduced through the optimisation of building materials. To make the best use of available materials, both through designing for optimised building size and durability, together with procuring preferably low embodied products, as locally produced as possible, will enable reductions in material's global warming potential. These optimisations will be considered for the materials representing the most significant emissions, including concrete, steel, aluminium, brickwork, glass, insulation materials, plastics for window framing or piping, as well as wood or wood derived products and materials.

Environmental management systems The implementation of environmental management system, during the construction phase of new developments, will strengthen the assessment and monitorisation of environmental impacts, and support the implementation of best practices, including addressing other components of our development and expansion carbon footprint, namely the energy and waste management.

Renewable energy

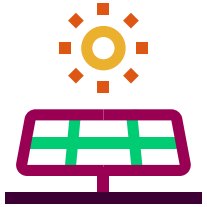


Mobility

Electrifying our fleet, increasing our buildings power capacity and installing electric vehicles charging points will help us tackle direct and indirect emissions

Purchasing renewable energy

Purchasing renewable energy helps financing renewable energy projects, simultaneously contributing for the consistent development of these projects and guarantee that the source of the acquired energy is renewable



Onsite renewables

Installing onsite photovoltaic energy will enable local energy generation, reducing the acquisition and consumption of grid electricity, and increasing the proportion electricity generated by renewable energy sources

Mobility

Value chain

Visitors' trips

The carbon footprint of our visitors' mobility is one the main factors contributing to our carbon emissions (including the optional report). Thus, in order to promote the transition of our visitors' mobility to decarbonised alternatives, we will install electric vehicles charging points. Where necessary, we will increase our buildings power capacity to enable this transition.

Corporate emissions

Electrifying the fleet

To further contribute to reduce the emissions associated with mobility, we will electrify the vehicle fleet belonging to our company, reducing scope 1 direct GHG emissions.

Business travel

We are committed to transition to lower emissions carbon transport modes by prioritising train travelling and car travelling over plane travelling.

Employee commuting

We will raise awareness among our employees to promote low carbon emissions transport options.

Purchasing renewable energy

Acquiring preferably renewable energy will help orienting financial flows towards renewable energy projects. Through instruments like Power Purchasing Agreements (PPA) we will simultaneously ensure that our energy is decarbonised, thus reducing our indirect emissions, and finance the transition to renewable energy through long-term contracts.

> "Cogeneration integrates energy systems by optimally linking electricity, gas and heat networks and ensuring their most efficient use at local level. This avoids energy waste, fosters a more flexible energy system and provides energy where and when needed. By offsetting efficiency losses in transmission, distribution and generation, cogeneration becomes particularly important to cost-effectively integrate substantial amounts of renewable energy such as biogas or hydrogen within the economy."
>
> Source: COGEN Europe

Onsite renewables

Invest in onsite renewables

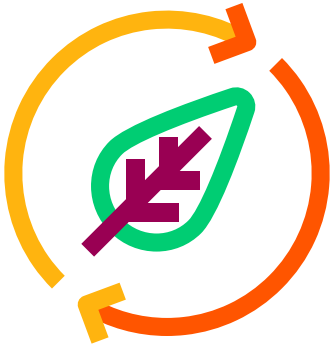
Making the most out of our assets, we will use available and appropriate superficial area for the installation of photovoltaic panels. Increasing onsite renewable energy production will reduce the purchase of grid electricity, hence reducing carbon emissions.

Change of the cogeneration systems

Cogeneration enables the simultaneous production of electricity and heat. To change natural gas as an energy source, to a more renewable energy source like biogas or hydrogen will be crucial to reduce GHG emissions.

Nevertheless, effective reductions will have to be attained. Therefore, the use of cogeneration will be carefully assessed along with effectively available energy sources to ensure that the emission reduction targets are met. In the case that available energy sources do not guarantee the necessary emission reductions, the deactivation of the cogeneration system and its replacement by other cooling and heating technologies will be considered.

Renewable energy



Transition to renewable sources

Neutralisation strategy

Possible ways

Carbon Dioxide Removals

CDR are approaches to permanently remove carbon from the atmosphere, including direct air capture (DAC) coupled with durable storage, soil carbon sequestration, biomass carbon removal and storage and afforestation/ reforestation.

Nature-based solutions

are actions to protect, conserve, restore, sustainably use and manage natural or modified ecosystems, while providing human well-being, ecosystem services, resilience and biodiversity benefits.

Contractual instruments

Carbon removals can be acquired using contractual instruments such as carbon removal credits. To be considered as a neutralisation measure these credits need to comply with quality, social and environmental criteria. Most of all these credits have to ensure carbon storage permanence for a timeframe commensurate with the duration of the effects of unabated emissions.

Neutralisation strategy

A work in progress

Under the Net-Zero SBTi Standard, emissions neutralisation is only possible after overall emissions have been brought to residual level, when compared to the base year. Therefore, our neutralisation strategy will not come to live before 2040.

Reaching 2040, Sonae Sierra will have scope 1 fugitive emissions to neutralise, as well as indirect emissions resulting from our supply chain.
Direct emissions will require direct removals (within organisational boundaries) for instance through carbon removal technologies, nature-based solutions or contractual instruments like carbon credits.

For indirect emissions it must be demonstrated that unabated indirect emissions are uniquely neutralised, that is to say, that a uniquely identified unit of carbon removal exclusively neutralises the impact of another uniquely identified source of emissions.

EXAMPLE
DIRECT AIR CAPTURE

CARBON DIOXIDE REMOVALS

Neutralisation: measures that companies take to remove carbon from the atmosphere and permanently store it, in order to counterbalance the impact of emissions that remain unabated.

Source: SBTi standards

NATURE BASED SOLUTIONS

CARBON REMOVAL CREDITS

Open mind
Greater value

Sierra Sonae

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