

SESSION 2: ENVIRONMENTAL SUSTAINABILITY

Useful definitions

- **Environmental sustainability:** Environmental sustainability means conserving and protecting the environment indefinitely. This means that our economic or social activity does not compromise natural resources.
- **Natural greenhouse effect:** Life on Earth exists thanks to the combination of three factors: the correct distance from the Sun, the chemical composition of the atmosphere and the presence of the water cycle. Specifically, the atmosphere ensures that our planet has a suitable climate for life thanks to the so-called natural greenhouse effect.
- **Anthropic greenhouse effect:** the climate warming that we have been witnessing for about 150 years is anomalous because it is caused by man and his activities. With the industrial revolution, man suddenly emitted millions of tons of carbon dioxide and other greenhouse gases into the atmosphere, and as a consequence doubled the amount of CO₂ present in the atmosphere compared to the minimum amounts of the last 700,000 years.
- **Impact of global warming:** Arctic sea ice has decreased by an average of 12.85% per decade, while coastal tidal records show a sea level rise of 3.3 millimeters per year since 1870. The decade 2009-2019 was the hottest ever recorded and 2020 the second hottest year on record, slightly below the maximum limit set in 2016. Fire seasons have gotten longer and more intense, as happened in Australia in 2019 and from 1990 to today. Each year, extreme weather events have increased, such as cyclones and floods, which also occur at atypical times of the year compared to the past and are increasingly overwhelming.
- **Energy transition:** change from an energy system based on fossil fuels to one of low emissions or without carbon emissions, based on renewable sources.
- **Smart Grid:** intelligent electrical distribution network. Bidirectional networks, capable of transmitting electricity in both directions, are defined as intelligent.
- **Energy efficiency:** The concept of energy efficiency refers to the ability to obtain the best results in any activity using the least possible amount of energy resources. It allows us to reduce the consumption of any type of energy and with it the possible environmental impacts associated with it. This is applicable from the generation of said energy to its final consumption.

- **Greenhouse gases (GHG):** like carbon dioxide and methane, they trap heat in the atmosphere, causing the greenhouse effect that leads to global warming of the planet.
- **Carbon dioxide (CO₂):** is emitted through the burning of fossil fuels (coal, natural gas and oil), chemical reactions (such as for the manufacture of cement) and the decomposition of biological material. All free carbon dioxide is removed from the atmosphere (or 'sequestered') when it is taken up by plants as part of the biological carbon cycling process.
- **Methane:** Methane (CH₄) is another type of greenhouse gas, emitted during the production and transportation of coal, natural gas, and oil. Other sources of methane emissions are livestock and other agricultural practices and also come from the decomposition of organic waste that occurs in municipal waste dumps.
- **Nitrous Oxide:** Nitrous oxide (NO₂) is released into the atmosphere by bacteria found in the soil. Agricultural activities, the use of industrial industrial fertilizers, the combustion of livestock waste, and the treatment of wastewater, contribute to the release of a greater volume of NO₂ in the layers of the atmosphere.
- **Fluorinated Gases:** The presence of fluorinated gases, such as Hydrofluorocarbons (HFC), Perfluorocarbons (PFC), Sulfur Hexafluoride (SF₆) and Nitrogen Trifluoride (NF₃) are greenhouse gases with a very negative climate impact, which are broadcast in various industrial productions
- **water steam:** water steam remains the most abundant GHG in the atmosphere, as clouds are an important part of the earth's greenhouse effect. Unlike the other greenhouse gases discussed, the clouds that reflect the sun's rays also have a cooling influence, but the influence of the other GHGs in the atmosphere can cause an increase in air temperature and the formation of clouds. .
- **Atmospheric concentration:** The concentration of a given gas in a given space is the amount (volume) of that gas that exists in the air at that place. When industries produce large amounts of greenhouse gas, the concentration in the atmosphere increases. The atmospheric concentration of greenhouse gas is measured in parts per million (ppm), parts per billion, and parts per trillion.
- **Carbon footprint** is the trace of greenhouse gas (GHG) left by not only business activities but also human activities. This environmental indicator measures both direct and indirect emissions of compounds such as methane (CH₄), nitrogen oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆) and, above all, , of the most abundant and that has contributed the most to global warming since 1990: carbon dioxide (CO₂).

- **Scope 1 emissions** are direct emissions produced by the burning of fuels by the issuer, these include the combustion of fuels in the facilities, such as boilers and other fixed installations, and also the fuel consumption of vehicles owned by the organization.
- **Scope 2 emissions** are indirect emissions generated by the electricity consumed and purchased by the issuer.
- **Scope 3 emissions** are indirect emissions that are produced by the activity of the issuer but are owned and controlled by an agent other than the issuer. These are the indirect emissions that occur in the organization's value chain, such as: Products and services purchased, Business trips, Employee travel, Waste disposal, Use of products sold, Transport and distribution (upstream and downstream), Investments, leased assets and franchises.
- **Climate neutrality** or also known as carbon neutrality, consists of achieving net carbon dioxide emissions equal to or less than zero, balancing the amount of greenhouse gases released into the atmosphere with the same amount that is removed by other means. , which leaves a balance of zero. Therefore, we can also define climate neutrality as the process of measuring, reducing and offsetting greenhouse gas emissions.
- **Calculation of the carbon footprint:** The calculation of the carbon footprint allows companies to know the point in which a company is, from there, to establish emission reduction plans, knowing the carbon footprint helps to identify opportunities cost savings and better understanding of consumption.
- **Reduction of emissions:** Once the carbon footprint of the entity, product or event is diagnosed, the next step is to reduce it. The key to the decarbonisation of the planet is to reduce emissions as much as possible and demonstrate commitment on the part of companies.
- **Offsetting emissions:** Offsetting is the last step on the road to decarbonization. First, it is necessary to implement reduction measures and, when it can no longer be adjusted, compensation for emissions that could not be avoided comes into play. The compensation of CO2 emissions consists of the voluntary contribution of an economic amount, proportional to the tons of CO2 generated, for a project that specifically pursues:
 - Capture an amount of tons of CO2 equivalent to that generated in our activity, through the implementation of a carbon sink project for reforestation.
 - Avoid the emission of an amount of tons of CO2 equivalent to that generated in our activity through an energy saving or efficiency project, replacement of fossil fuels with renewable energies, waste treatment or avoided deforestation.

- **Linear Economy:** The traditional linear economy is based on the concept of extracting, producing, consuming and throwing away. This way of production is clearly very expensive and generates waste throughout the useful life of each resource.
- **Circular economy:** The circular economy is the new way of designing, producing and creating value that benefits companies, society and the environment by keeping resources within the economy for as long as possible. Beyond recycling, the circular economy is regenerative by design and aims to change business models to recover the resources of the entire value chain at all times.
- **Circular business models:** The circular business models or what they call the 7 Rs: redesign, reject, reduce, reuse, repair, recycle and recover.
- **Biological cycle:** In the biological cycle, biological nutrients are products designed to return to the biological cycle. For example, the packaging can be redesigned as a biological nutrient that is capable of biodegrading and returning to the soil. These nutrients and energy are used in waterfalls in the same way as in natural ecosystems. Natural ecosystems do not produce waste because the by-products of one process become inputs for other processes. These nutrients add value to the soil after digestion. This factor is essential for the future of food and raw materials that need fertile soils.
- **Technological cycle:** In the technological cycle, technological nutrients are materials and products that are designed to be reincorporated into the technological cycle. This new approach involves a new economic model that facilitates these changes.
- **Sustainable mobility plan to work:** there are already companies that, driven by their sustainability department, are committed to raising awareness among their employees so that they choose to move in a sustainable way and implement internal measures. Many do not even focus on it as one more policy of their sustainability strategy, but as part of their brand identity. Beyond how they go to their offices, these companies have managed to orchestrate a work method that favors responsible teleworking, the use of shared vehicles and continuous working hours.
- **Biodiversity** is the variability of living organisms from any source, including, but not limited to, terrestrial and marine ecosystems and other aquatic systems, and the ecological complexes of which they are a part; It encompasses diversity within species, between species, and of ecosystems.
- **Natural capital:** The term natural capital refers to natural resources such as plants, minerals, animals, air or oil from the biosphere seen as means of producing ecosystem goods and services: oxygen production, natural water purification, erosion prevention , pollination and recreational services themselves. Natural capital constitutes a way of estimating the value of an ecosystem, an alternative to the more traditional view

according to which nature and non-human life constitute passive natural resources without their own production. Thus, natural capital is equated with productive capital.