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Description of the Environmental Impact Indicators under evaluation in the SUPREME Sustainability Survey

Consult this table for some detail on the meaning of the 16 indicators you are asked to rank in the survey. For further details please refer to Bruno Vicenzi (bv@epma.com).

<i>Environmental impact indicator</i>	Unit	DESCRIPTION
<i>Climate change</i>	<i>kg CO₂ eq</i>	Greenhouse gas emissions affects the way the atmosphere releases or absorbs sunlight. It can damage human health and ecosystems by causing climate change potentials. This indicator calculates the contribution of the system under study to climate change, with an equivalent of CO ₂ emissions.
<i>Ozone depletion</i>	<i>kg CFC11 eq</i>	This indicator reveals the impact of emissions of substances in the air that can endanger the ozone layer. It is expressed in Chlorofluorocarbon 11 equivalent.
<i>Ionizing radiation, HH</i>	<i>kBq U-235 eq</i>	This indicator measures the probability of damaging the health of the human population resulting from the release of radioactive substances in the environment. It calculates human exposure efficiency relative to U235.
<i>Photochemical ozone formation, HH</i>	<i>kg NMVOC eq</i>	This phenomenon occurs when nitrogen oxides (NO _x), carbon monoxide (CO) and volatile organic compounds (VOCs), react in the atmosphere in the presence of sunlight to form tropospheric ozone. It is also known as photochemical smog and can cause severe respiratory problems.



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<i>Particulate Matter - Respiratory inorganics</i>	<i>disease inc.</i>	Quantification of the impact of premature death or disability that particulates/respiratory inorganics have on the population, in comparison to PM2.5. It includes the assessment of primary (PM10 and PM2.5) and secondary PM (incl. creation of secondary PM due to SO _x , NO _x and NH ₃ emissions) and CO.
<i>Non-cancer human health effects</i>	<i>CTUh</i>	This indicator measures the probability of causing damages to the human population without causing cancers, resulting from toxic substances emissions in the environment. Unit = Comparative Toxic Unit for humans (CTUh)
<i>Cancer human health effects</i>	<i>CTUh</i>	This indicator measures the probability of causing cancers to the human population resulting from toxic substances emissions in the environment. Unit = Comparative Toxic Unit for humans (CTUh)
<i>Acidification terrestrial and freshwater</i>	<i>mol H⁺ eq</i>	Phenomenon resulting of the emission of acid substances in the air, in soils and in water causing a rise of the acidity of waters and soils, with for example acid rains.
<i>Eutrophication freshwater</i>	<i>kg P eq</i>	The emission of substances rich in nutrients (N, P, ...) can cause asphyxia of freshwaters (rivers, lacs...) due to the proliferation of algae too well nourished. This phenomenon is called eutrophication. This indicator calculates the fraction of nutrients reaching freshwater end compartment. Each input and output flows of the system under study are characterized in Phosphorous (P) equivalent for the calculation of this indicator.
<i>Eutrophication marine</i>	<i>kg N eq</i>	The emission of substances rich in nutrients (N, P, ...) can cause asphyxia of marine waters (coastlines, gulfs, bays...) due to the proliferation of algae too well nourished. This phenomenon is called marine eutrophication. This indicator calculates the fraction of nutrients reaching marine end compartment and is expressed in Nitrogen equivalent.



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<i>Eutrophication terrestrial</i>	<i>mol N eq</i>	The emission of substances rich in nutrients (N, P, ...) can cause the loss of low-growing plants due to the proliferation of fast-growing plants too well-nourished and blocking access to sunlight. This phenomenon is also called eutrophication for terrestrial areas. It is expressed in Nitrogen equivalent.
<i>Ecotoxicity freshwater</i>	<i>CTUe</i>	This indicator measures the emission of toxic substances in the environment and its likelihood to damage fauna and flora specific to freshwater.
<i>Land use</i>	<i>Pt</i>	Some activities can need the use of a land previously used for something else or not used. This environmental impact explores the damage caused to soil quality by the occupation and the transformation of a land for the new activity.
<i>Water scarcity</i>	<i>m³ depriv.</i>	This indicator reveals the impact of water use that can endanger the resource and its quality and is related to local scarcity of water.
<i>Resource use, energy carriers</i>	<i>MJ</i>	This indicator measures the need of energy carriers' resources for the system or process. Energy uses such as electricity, petrol, natural gas, coal etc... are taken into consideration for the calculation of this indicator.
<i>Resource use, mineral and metals</i>	<i>kg Sb eq</i>	This indicator measures the need of mineral, and metals resources of the system or process studied in regard with available limited reserves, in antimony equivalent.