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COP 25 Conference in Chile: Time for action

The world is facing today and will face in the near future, amazing challenges related to accelerated changes driven by social, technological and environmental causes. In this regard, the COP 25 Conference to be hosted in December this year in Santiago de Chile will be a great opportunity to discuss these issues, because as we all know, the world is undergoing a transformation process towards sustainable development implementation.

In particular, climate change is, without any doubt, one of the most important environmental challenges of our time. The gradual and steady increase of anthropogenic emissions such as greenhouse gases, and their accumulation in the atmosphere for centuries, acting in concert with natural climate cycles, has become a contribution to the increases in Earth's temperature that are projected to threaten the flooding of coastal cities, agricultural production and water supplies, among many other adverse conditions. For this reason, it is fundamental to design new strategies to mitigate their effects. These strategies, which may enable a more sustainable world which fosters the ethical and moral commitment to guarantee the quality of life on our planet to subsequent generations, represent a clear opportunity to boost competitiveness on a global scale.

The United Nations Framework Convention on Climate Change (UNFCCC) is the international associated response to climate change mitigation, which sets out the basic responsibilities of 196 States (or Parties), including the European Union, to give a common response to the climate change issue; this is the Conference of the Parties (COP), the decision-making body of the Convention. The COP must therefore encourage concrete climate action, ensuring the integration of the academic and industrial sectors, as well as state and local governments, also involving community vision. COP 25 is known as the "Time for Action" COP. This means concrete measures to avoid or limit global warming expansion focused on the following main topics: Antarctica, oceans, biodiversity, forests, adaptation, cities, renewable energies, circular economy and electromobility. Let me discuss my vision for some of these relevant points of the COP 25 Conference.

Renewable energies are one of the main drivers to limiting global warming. Specific targets and projects focusing on solar, wind, biomass, geothermal and ocean energy all over the world are changing the global picture regarding the energy matrix and its decarbonization processes. In particular, as an example, the Chilean mining industry is establishing new concepts for the implementation of "green" copper production based on desalinated water and solar energy consumption. A great example in this regard is the construction and operation of the largest Latin-American solar photovoltaic and thermo-solar plant, named Complex Atacama 1, with an installed photovoltaic power of 100 MW and a thermo-solar power of 110 MW, which in full operation will avoid the emission of 864,000 tonnes of carbon dioxide per year. The implementation of such initiatives is a step in the right direction towards the objective of sustainable development and climate change mitigation and is a relevant example of Latin America's concrete actions regarding these topics.

The passage from a linear take-produce-consume-discard material flow system to a circular and regenerative model could play a central role in paving the way for a transition to a more sustainable economic system that uses resources in a more efficient way, reducing the overall generation of wastes and facilitating the recovery of unavoidable wastes as the source of resources for the production of new products. In fact, a new circular paradigm is gaining momentum and is being propelled through the growing popularity of various, and often complementary, new economic models and initiatives to facilitate less resource-intensive lifestyles. One could understand that a fundamental principle of the circular economy is to use waste as raw material for products development, dramatically reducing both waste generation and the utilization of virgin raw materials. As an example, sustainable and circular use of biomass takes into account implementing novel biomass biorefinery processes first focusing on high-value-added products and marketable chemicals extraction, followed by biomaterials development and finally including the bioenergetic use of the residual biomass. In fact, "zero-waste biorefineries" may become a key concept in the future associated with sustainable development and global warming limitation, in at least in parts of some Latin American countries, including industrial sectors such as wood manufactured products, pulp and paper, and agroindustry as well as fishing and aquaculture. The opportunity here is to establish local (residual) biomass management strategies, also involving small enterprises and rural areas, to move to a more sophisticated and sustainable socio-economic model, to reduce fossil resources dependence and increase application of knowledge-based biological resources management, promoting the sustainable supply of goods and services in all economic sectors.

Mobility in cities is without any doubt a major source of local atmospheric pollutants as well as greenhouse gases, and to limit these emissions, it is necessary to plan urban areas prioritizing public transport use as well as non-motorized systems such as bicycle transport routes. The implementation of "smart" concepts and technologies in cities is also a main

driver to improve citizens' quality of life, simultaneously promoting sustainable ideas. In this sense, waste transport projects including smart and optimized routes in the cities and to the waste treatment plants, frequencies and real time movement monitoring are promoting a major effect on greenhouse gas emissions and global warming mitigation. In addition, the implementation of novel electric waste transport truck fleets will also have an impact in the same desired direction. So, it is important that practitioners have the vision to include topics like routes optimization and electromobility in the waste management sector when talking about smart cities.

Given all the aforementioned issues, we really hope that the COP 25 Conference to be hosted in Santiago de Chile will be the right platform to take strong action regarding global warming mitigation and sustainable development implementation.

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