Qu. 1.15: To reach a carbon-neutral value chain in the entire process of network operators, there is need to embed circularity in their core business processes. An innovative approach needs to be adopted about the circularity of materials and the eco-design, applying extensively the concepts of resources management, recycling, refurbish, life extension and the LCA methodologies. What experience can be reported about the decision processes for asset management based on circularity? What results can we report?

Faced with the scale of environmental challenges, RTE has been preparing since 2017 to integrate eco-design into its Environmental Management System (EMS). The aim is to strengthen the consideration of the environment from the design of its projects, policies or purchases in a complete life cycle vision. The priority is to reduce greenhouse gas emissions and the volume of materials extracted.

RTE is therefore carrying out various generic Life Cycle Analyses (LCAs) to assess the environmental footprint of the structural elements of tomorrow's network in order to improve decision-making and identify eco-design options.

Between 2020 and 2022, 4 generic LCAs have been carried out: overhead vs. underground links, onshore transformer substations, offshore transformer substations and underwater electric links. They must be completed by HVDC technologies and projects.

These studies, and in particular the most recent one on onshore transformer substations, have, for example, made it possible to evaluate the interest of adding a reference (of lower power) to the power transformer framework market, with a very good level of energy efficiency, a lighter material balance, and a reduction in the cost of acquisition in parallel. It also allowed to compare the environmental impacts of different transformer substation technologies (Air-Insulated Substation (AIS), Gas Insulated Switchgear (GIS) with SF_6 or alternative …).

Another field of work, within the framework of this approach, concerns the increasingly systematic integration of new environmental requirements in RTE's contracts and projects.

At least ten framework contracts and large-scale projects have been concerned since 2018, with, for example, the RINGO project (stationary storage), the Celtic interconnection between France and Ireland, the underground cable contracts, overhead works, substation works, measuring transformers, substation equipment, industrial and relay buildings, etc.

The requirements can be made mandatory through specifications or taken as criteria for better performance. They depend on the context of each market or project (depending on the maturity of the suppliers or their number within the panel), the potential environmental impacts or the purchase schedule and costs for RTE. In particular, we are increasingly requesting a "Raw Materials Passport" (materials balance, recycled/recyclable content, origin of metal extraction), an ISO 14025-compliant LCA document, and a carbon balance for construction contracts. The use of a maximum of recycled/secondary materials upstream can also be requested.

The internal price of carbon is also used to value alternatives with lower GHG impacts, by following price trajectories of the reference ton of CO_2.