CERP3 Decarbonization Procurement family 06

Vacuum and Low temperature

Current Situation in Procurement family 06 – Vacuum and Low temperature

- Most components are metal, and the systems are often many kilometres long.
- The lifecycle compressors is typically 4-5 years plus a further 4-5 years if they are maintained correctly. Other equipment can have a lifetime of up to 50 years.
- These systems are not close to the accelerators, so the components are not typically ionised by radiation.

The embodied carbon emissions of Vacuum and Low Temperature components can be significantly reduced by using recycled materials



Incorporate TCO into the commercial evaluation for all upcoming tenders to account for energy consumption



Source: Kaeser Compressors

Vacuum pumps use several hundred litres of lubricating oil, some of this is ionised by radiation depending its location creating hazardous waste streams



Source: Assembly Mag – CERN Vacuum Pumps

Expand the use of predictive maintenance where possible, to minimise unnecessary effort and reduce emissions from maintenance visits



Where CERN have long standing relationships with certain suppliers time can be invested in supplier engagement around Environmental Responsibility



For Environmentally Responsible Procurement actions that rely on supplier collaboration CERN should prioritize working with engaged suppliers



IPT-PI-SQ/Jan 2024