STENA Refrigerator Recycling

Background

The Refrigerator Recycling project is proposed by STENA Technoworld.
This company has several treatment sites for the recycling of cools in both Sweden and Germany with an annual average of 2 million treated units. The project takes relevance in the fact that cooling appliances play a big part of society's food handling and medtech use; however, when they reach the end of their lifecycle they still possess a high value. To retain the highest possible benefit, several considerations must be taken when handling and recycling the units. For instance, removal of all hazardous waste, such as climate damaging gases, cooling agents and compressor oil must be done, before separating plastics, insulation and metals from each other. Currently the pre-treatment required for this process has opportunity areas in terms of sustainability in social, environmental and economic ways. Therefore, an improvement proposal which addresses this sustainability issue and optimize the process is required.

Tasks

1. Develop a literature review which includes current state-of-the art regarding e-waste management.
2. Observation and Mapping of As-Is Stena's refrigerator recycling process through a modelling methodology. (i.e. IDEF0, VSM, Simulation software, etc.)
3. Analyze the recovered data, and generate solutions to different sustainability gaps in the process through a set of improvement proposals. The proposed scenarios should address environmental, social and economic aspects.

Goal

- Formally connect and deliver the results of the tasks above by using justified scientific approaches and methods. Formalize and synthetize results and learning outcomes.
- Approach current challenges though To-Be proposals with alternative scenarios of suggested improvements. (The usage of a Cost/Improvement graph or similar technique is suggested)
- Obtain industrial validation and feedback of suggested improvements regarding limitations, constraints and opportunities in their implementation.
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Conduction

- Two students are required for this project During January to May 2019.
- Students must be enrolled in the Industry Project course (PPU171).
- Some expenses for reaching company sites will be covered.

Information

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