

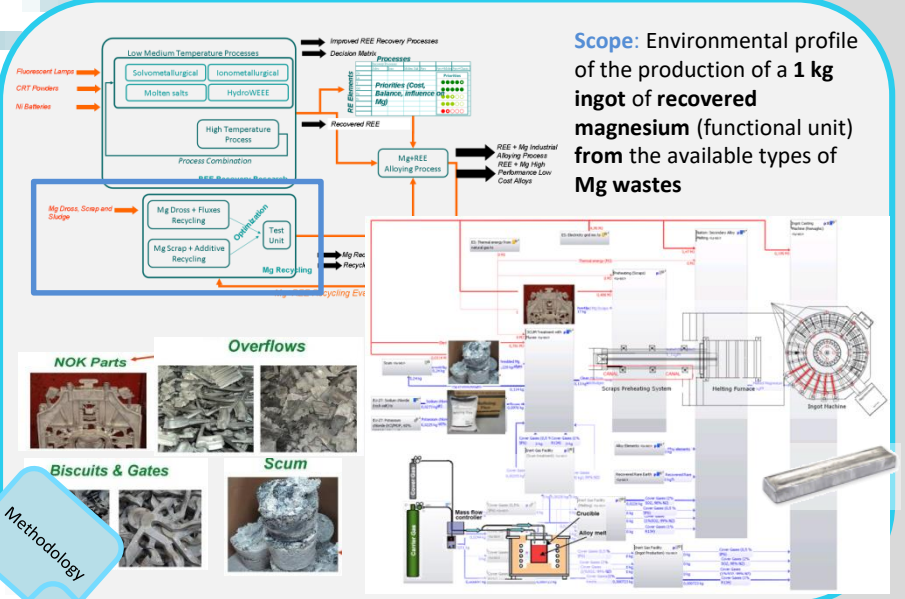
REMAGHC Project Objective:

The aim of the REMAGHC project is to contribute to Europe's **rare-earth** recovery and **magnesium** recycling technologies, improving the efficiencies of these processes and advancing the technology readiness levels (TRL) for a new generation of industrial processes that will produce new **low cost** competitive **alloys** for a wide variety of sectors (transport, energy and biomedical industries) across Europe's manufacturing value chain.

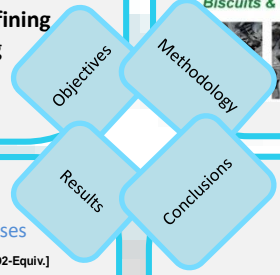
Specific Task Objective:

Support in the development of a new efficient **recovery process** from **magnesium** dross, sludges and scraps (available **Mg wastes** in Grupo Antolin Magnesium facilities) to produce new low cost Mg + REE alloys.

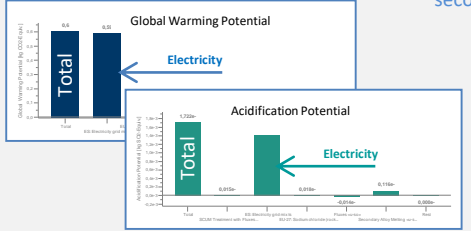
Scenario analysis. Implemented to assess how the **results** of the LCA vary if the model is set up in different ways (effects of **changes** within Remaghic Mg recovery **process**), attending to the following subjects: **composition** of refining **salts** in the Mg recovery process, **proportion** of use for both available Mg **wastes** as source of **raw material**, selection of different **cover gases** to protect the melted magnesium, etc



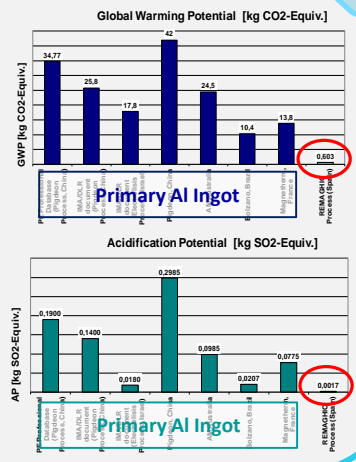
Scope: Environmental profile of the production of a **1 kg ingot of recovered magnesium** (functional unit) from the available types of **Mg wastes**



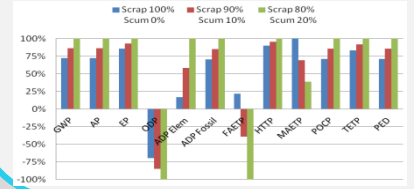
Identification of the more polluting stages in the recovery system



Environmental Impact: REMAGHC secondary Mg v.s. Primary Mg processes



Decision making: Support for the development of the Mg recovery system



✓ The **main contribution** to the environmental impact is caused by the **electricity consumption**. The demand of electric energy is mainly due to the **melting process**.

✓ The higher amount of energy needed for the production of primary Mg ingot in comparison to the energy demanded in the Remaghic process, makes the **Remaghic proposal** a very **interesting option** from an **environmentally** speaking which has to be reinforced with the technical and economical results.

✓ Environmental impacts of different technical options have been analyzed and taken into account for **decision making** during the project progress and the **definition** of the **recovery process**, including the **selection** of the most proper **methods** and **facilities**.

✓ The **most promising waste stream** of Mg recovery was based on the employment of **magnesium scraps Type 1** (rejected parts, biscuits & gates, overflows), discarding the use of dross & sludges (scraps type 6A).