

Master Thesis - “Sustainability assessment of defense aircraft engine RM12” (30 credits/20 weeks – 1-2 student)

Project Background

Sustainability is a growing concern for the aerospace industry today, like in the whole world. GKN Aerospace wants to evaluate all our products from a sustainability perspective (environmental, social and economic). The Trollhättan site have a long history of developing the RM12 engine on the defense business line. The RM12 engine has been tested in flight using 100% biofuel with great results. But currently kerosene is used at the engine testing operations at Trollhättan site. Now GKN sees the need to identify the sustainability hotspots of the engine, to make sure that future engines are as sustainable as possible. Prior to the current war in Ukraine all defence businesses were considered unsustainable in society, but this has recently been questioned. More people today are considering defence product as a means to sustainability.

Assignment Description

The thesis work will focus on:

- Sustainability Impact Assessment of the different components
- Identifying sustainability hotspots of the RM12 engine
- Life-cycle assessment of selected component(s) (cradle to gate – use phase will not be included)
- Comparative study of using biofuel compared to kerosene in engine testing in test cells at Trollhättan
- Discussing the need for defence products from a sustainability perspective
- Identification of opportunities to make the RM12 more sustainable



The thesis work will be supported by appropriate material, product and process engineers, as well as sustainability specialists.

Qualifications

- Master in mechanical engineering, material engineering, industrial engineering or similar
- Interest in sustainability
- Previous experience of life cycle assessment is recommended
- The student(s) should be capable of taking initiatives on their own
- GKN would prefer if the student(s) can perform most of the work on site at the Global Technology Centre organization in Trollhättan, Sweden

Apply by

Send your resume and cover letter to Johanna Nylander, johanna.nylander@gknaerospace.com and Pauline Leonard, pauline.leonard@gknaerospace.com.

Last date for application: 2022-11-15. Interviews will be held continuously and the position could be filled prior to the last application date.