

# Master thesis

## *Digital production planning and concept of a 40t electric drive construction kit.*



*Bildquelle: Shutterstock*

### **Initial situation:**

In the research project "LiVePLuS", the chair "Production Engineering of E-Mobility Components" (PEM) at RWTH Aachen University is working on the development of an economically viable electric drivetrain for heavy goods vehicles. To this end, a modular construction kit with battery and overhead current collector (pantograph) is being designed. With the help of this modular system, tractor units and other heavy trucks are to be electrified depending on the application by configuring the powertrain on the basis of the respective customer requirements. By supplying power with an overhead contact line, the capacity of the battery can be designed to be comparatively low.

You can find out more about the goals and status of the project here:  
<https://www.pem.rwth-aachen.de/cms/PEM/Forschung/Projekte/~iewvz/LiVePLuS/>

### **Your task:**

The objective is to further develop the existing concept of a variable production line for electric heavy-duty vehicles. To do this, you will first familiarize yourself with the topics of electric drives, truck production, and production planning. You will then develop various production scenarios and derive an investment cost analysis. Followed by this, the existing 2D layout for assembly is to be updated with input from the previous analysis. Finally, a reasoning on accelerating startup and initial improvement of quality after startup for electric drive systems is to be included.

### **The requirements:**

- Studies in mechanical engineering, industrial engineering mechanical engineering or comparable
- Structured way of working
- Good knowledge of PowerPoint, Word and Excel

### **Our offer:**

- Fast processing
- Delimited tasks and flexible processing
- Professional supervision and insight into industry and practice
- Independent execution with consultation via Microsoft Teams

### **Interested?**

Please send a current transcript of grades as well as a resume to the e-mail address listed below.

### **Your contact at PEM:**

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