**Thesis Approach**

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**Research Thema 1**

International Case Studies on Current Status of Electric Vehicle Battery Recycling: Examples from China, the United States and Germany

**Research Objectives**

- Analyse the current situation and development trend of electric vehicle battery recycling in China, the United States and Germany through scientific literatures review. (Government policy/Recycling technologies)

- Compare the similarities and differences between the three countries in terms of battery recycling policies, market mechanisms, and technology applications.

- Explore the role of these differences and similarities on battery recycling efficiency, environmental impact and economic benefits.

**Case Study**

Famous Automobile Manufacturers / Battery Manufacturers.

Compare and analyse the two business models to uncover valuable patterns and relationships.

**Research time line**

Literature search + review: two months

Business case search + analysis: two/three months

Production of analytical charts + article summary: one/two months

**Research Thema 2**

AI approaches with EV battery recycling

**Research Objectives**

Applications of Big Data and AI in the Battery Recycling Industry:

1. Battery Life Prediction: Determine the destination of batteries (secondary utilization or disassembly) based on their service life, thus optimizing transportation costs.
2. Location of Abandoned Vehicles and Batteries: Ensure the timely recycling of discarded batteries, preventing land pollution and contributing to environmental protection.
3. Intelligent Disassembly and Quality Control: For the recycled materials, quality monitoring is carried out through big data and advanced testing equipment to ensure that the purity and performance of the materials meet the standards for reuse. The quality stability of the recycled materials has been significantly improved, providing a reliable guarantee for the subsequent reuse of the materials.
4. Battery Classification and Optimization of Material Recycling: Improve the accuracy and efficiency of classifying batteries of different models and states, reducing the errors in manual classification.

**Research time line**

Literature search + review: two months

Business case search + analysis: two/three months

Production of analytical charts + article summary: one/two months