

# Reconstruction of Finnish reserve market merit order curves

Interim Report

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# 1 Changes in the project scope and objectives

Feasible objectives mentioned in the project plan were related to examining bid curve static components, underlying variables and changes over time. All of these questions have been researched and initial hypotheses have been formed. Problem scoping is finalized and the main objective is chosen to be predicting mFRR capacity merit order curve. The objective of this project was streamlined to exclude energy markets to ensure we make meaningful contributions in capacity markets and to avoid scope creep.

# 2 Project status

Project has advanced mainly as stated in initial project plan. However some changes to objectives have been made, mainly related to the scoping of the model. Finished and unfinished tasks with their related descriptions are found below:

**Literature review** Literature review has advanced well but the original time for completion has been extended. This has been evident since the original plan did not take into account that we have to research the chosen model, which has been the focus of literature review at the moment. We have found several papers researching merit order predictions models in contexts such as day-ahead spot price and mFRR trading volume prediction. The choice in methodology in our project will be motivated by the supporting literature.

**Scoping** Scoping is finished and one main objective has been decided, a prediction model for mFRR capacity merit order curve. Any possible other objectives are seen secondary at the moment and are considered only after main objective is reached.

**Model** Modelling has started but is still under construction, as initially planned. All required data for the model has been retrieved. Data retrieval and choosing modeling tools has been more laborous than anticipated.

**Project management** Project management has been sufficient for the project to proceed. No big setbacks caused by management have been faced.

Initial plan with finished tasks in green and unfinished tasks in red are is shown in table below.

	Week											
	March				April					May		
Phase	10	11	12	13	14	15	16	17	18	19	20	21
Project plan												
Literature review												
Data retrieval												
Problem scoping												
Formulating model												
Interim report												
Model testing												
Final report												

### 3 Risks

This section contains an updated risk management plan, with new risk parameters and impacts as the project has furthered along. We have had several meeting within the group and with the client, which have reduced the likelihood of certain risks such as poor cohesion in the group as a steady workflow and responsibilities within the group have been established. The project goals were further specified through our meetings with the client company lowering the risk of project scope creep. We also introduce a new risk that was rose out that the backend work related to the project could be too intense meaning a lot of time and effort has gone and could continue to go towards setting up data pipelines and choosing software when the client especially is mostly interested in the methodology developed. The updated list of risks along with their respective parameters and mitigation actions are presented below in table 1.

<b>Risk</b>	<b>Likelihood</b>	<b>Effect</b>	<b>Impact</b>	<b>Mitigation</b>
Group dynamics, uneven workload	Low	Poor cohesion within group causing missed deadlines	High	Continuous and open communication within the group
Hytrade personnel drops out	Low	No support for project development	Medium	Continuous discussion with Hytrade
Project topic too ambitious	Low	Time wasted on too complex tasks	High	Clear, stated, and realistic project goals
Data is inaccurate	Medium	Created model is not suitable and possibly useless	High	Data validation before model building
Project goal becomes redundant	Low	Goal of project already solved	Medium	Researching existing solutions
Time runs out	Low	Projects goals are not met	Medium	Sticking to schedule
Too much time spend on backend	Low	Not enough time spend on methodological research	Medium	Focus on researching methods and trying different models

Table 1: Updated risk assessment