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**Analysis and optimization to provide decision support in Elbas**

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## Background and objective

Increased proportions of renewables in the energy mix results in more uncertainties concerning production capacities the day ahead of production. As a consequence, the intraday market, Elbas, experiences increased trading volumes.

The purpose of this study is to develop an optimization model as a tool for decision support when bidding in Elbas. The model provides information about the optimal timing to place a bid, and the optimal volume to be traded at a specific price.

Each hour of production is regarded as a unique product that is to be traded. Optimal timing of trade to obtain a maximized profit can take place at any time from the spot market closes, until one hour prior to production. The timeline below illustrates the time of events.



A stochastic price model is developed to predict Elbas prices, based on historical data and correlation to spot prices. The data set is plotted as a timeseries below.
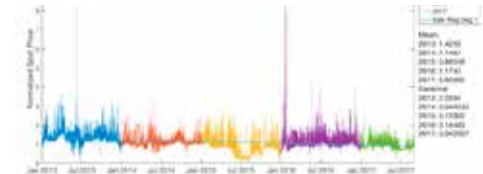


The contingency plan below is an example of how decision support can take place in a simplified modelling context. The green and black lines illustrate two possible price paths up until a specific production hour. The numbers 1 and 0 indicate whether to bid or not at time t.