## Title: Electricity market design and bidding strategy

## Abstract:

In the first day, we will focus on the "market design" problem. This includes the market principles, pricing schemes, and how to write the market-clearing problem as an optimization model (primal, dual, and optimality conditions). We will then show how an equivalent equilibrium model exists, proving the existence of desirable economic properties. We will discuss various energy markets in Europe, US, etc, and argue their differences.

In the second day, we will discuss the "bidding strategy" problem from stakeholders' perspective. We will particularly focus on selling flexibility services to the transmission system operators (TSOs), resulting in an optimization problem under uncertainty. We will discuss a real-world application and explore how to optimally solve the resulting bidding optimization problem.