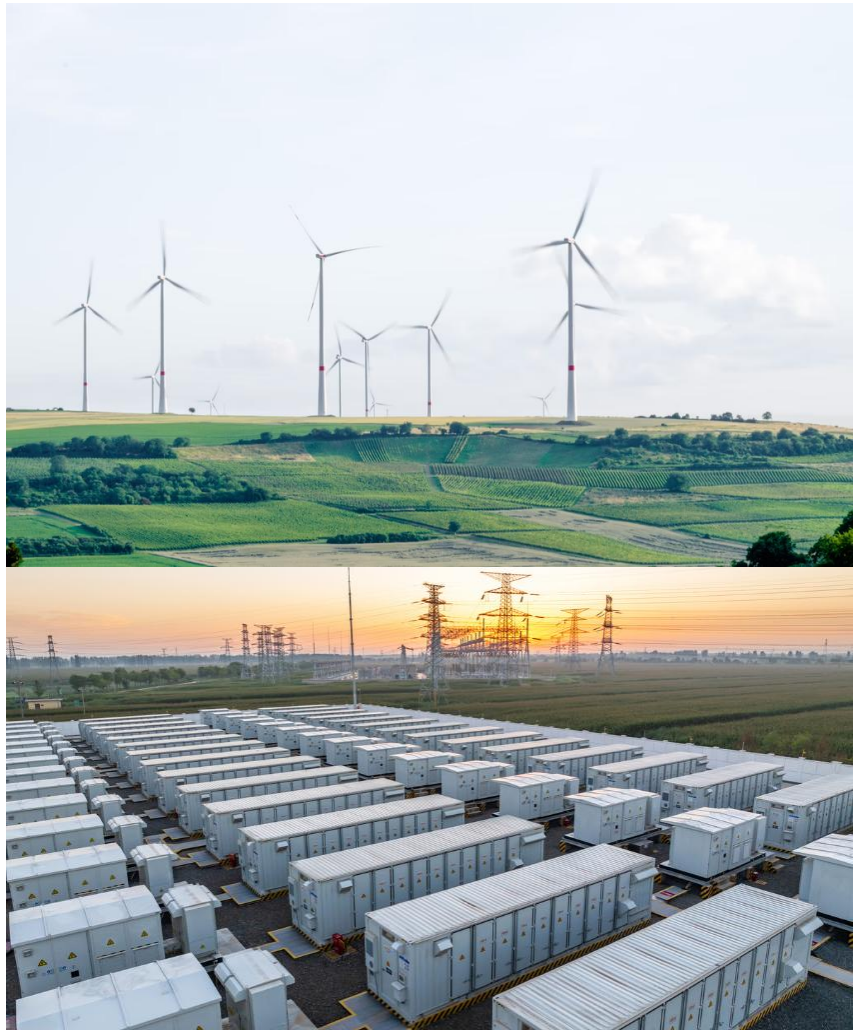
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AI-Driven Risk Management for Wind Farms with BESS

Risk-aware operation in sequential day-ahead and intraday electricity markets



Wenxiu Feng
Researcher in Energy Market Optimization
Ravenwits

AEE WIND OPS 2026

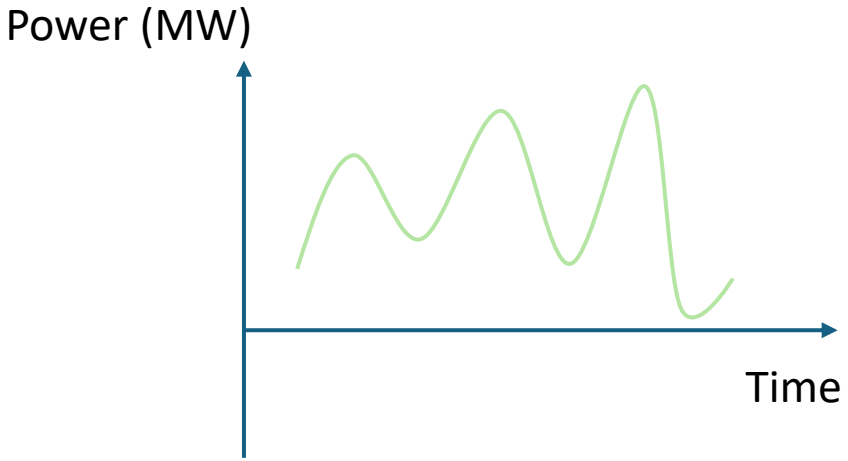
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Why Wind Farm Operation Is Uncertain ?

① Resource-side:

Intermittent wind production

Forecast Error

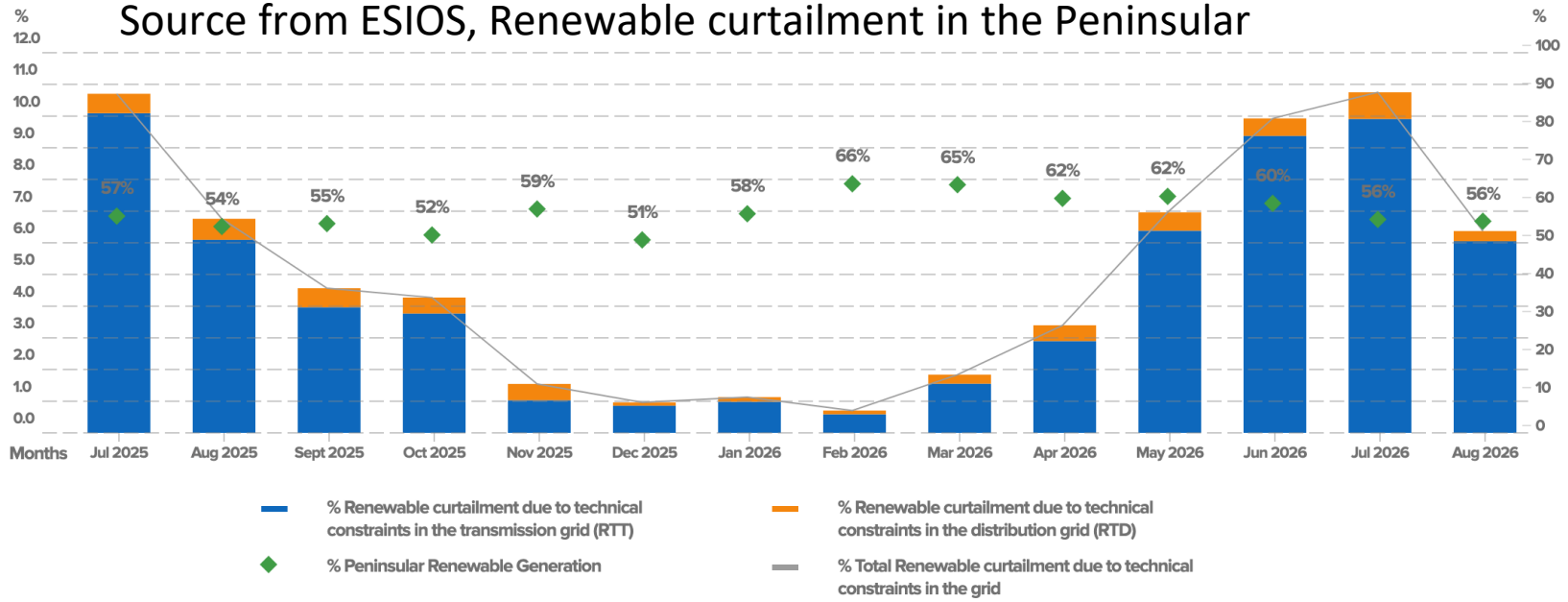


② System-side:

Grid congestion

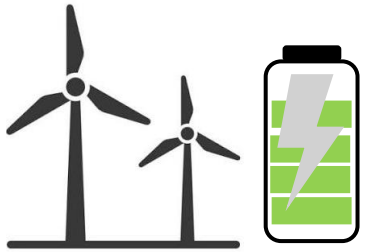
Curtailment

Source from ESIOS, Renewable curtailment in the Peninsular

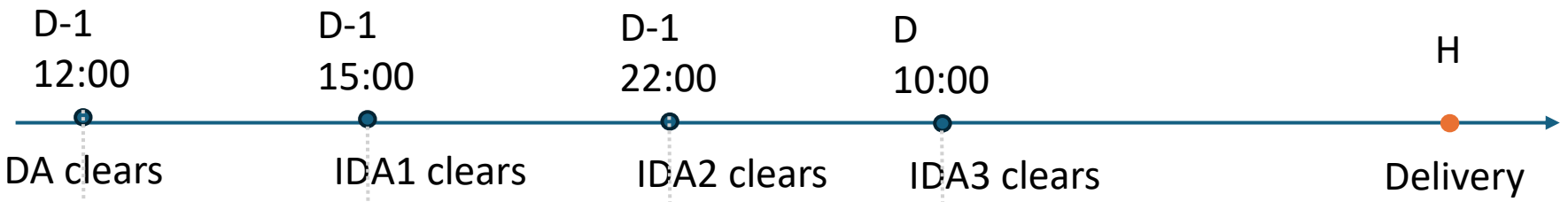


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Wind farm + BESS: From Passive Generation to Flexible Operation



Trade sequentially in day-ahead and auction intraday market



Market Trading Timeframe

Challenges:
Uncertainties from wind production and market price
Sequential market decision
BESS operational constraints

initial position

IDA1 adjust position

IDA2 adjust position

IDA3 adjust position

Deterministic rolling optimization

Stochastic rolling optimization

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AI-Driven Risk-Aware Operating Framework

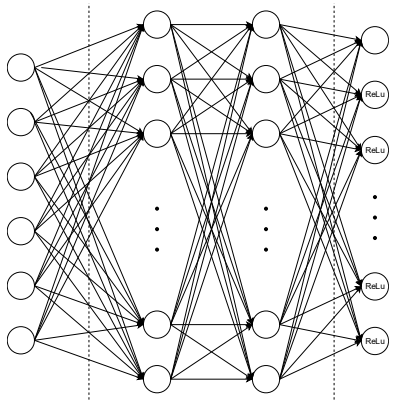
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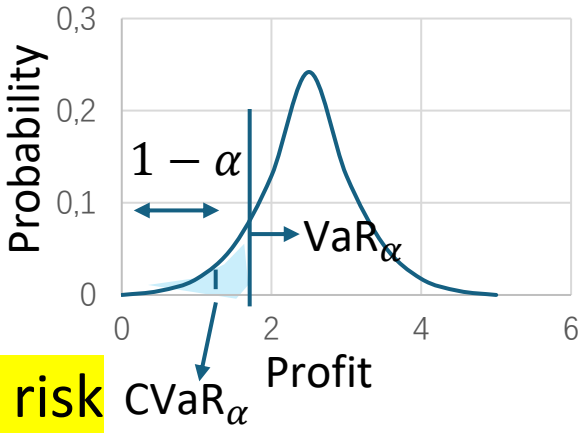
Step1: Input Data

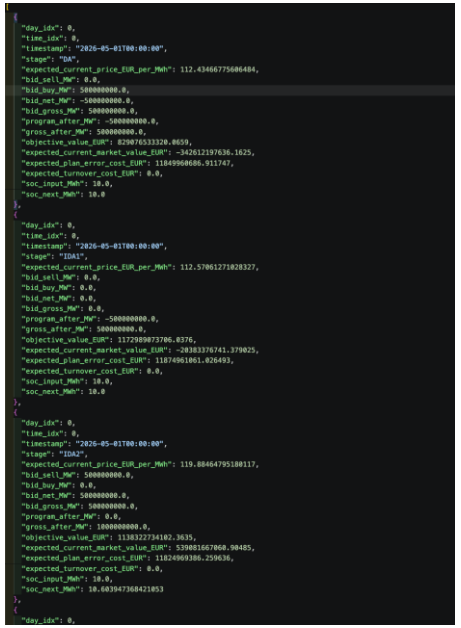
(Price Forecast, Renewable Forecast, BMS BESS parameters)

Step2: Simulate and Optimize via Wind+BESS Optimizer

Step3: Retrieve results



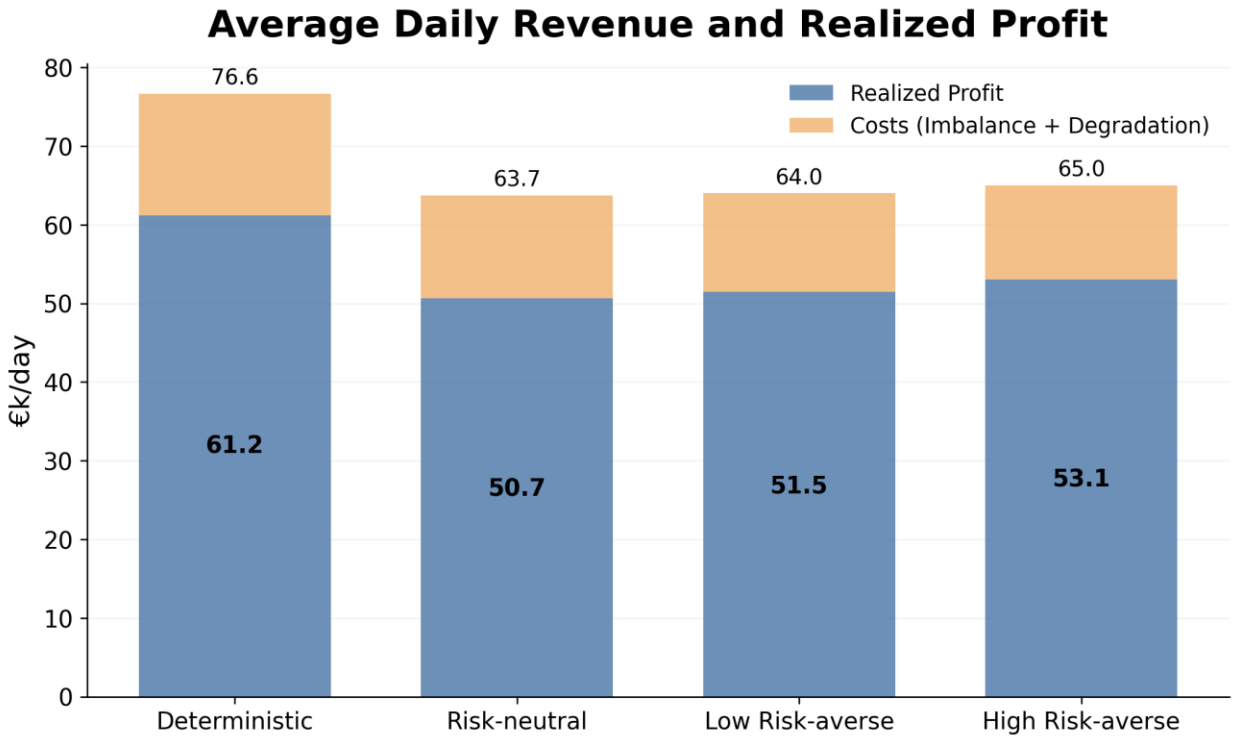


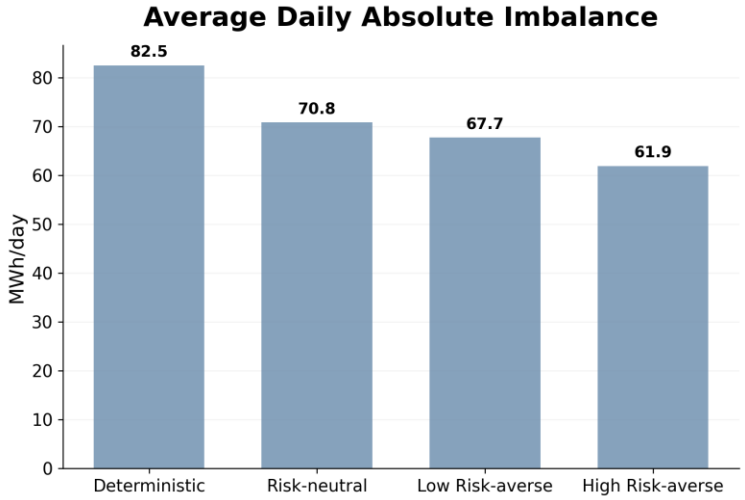


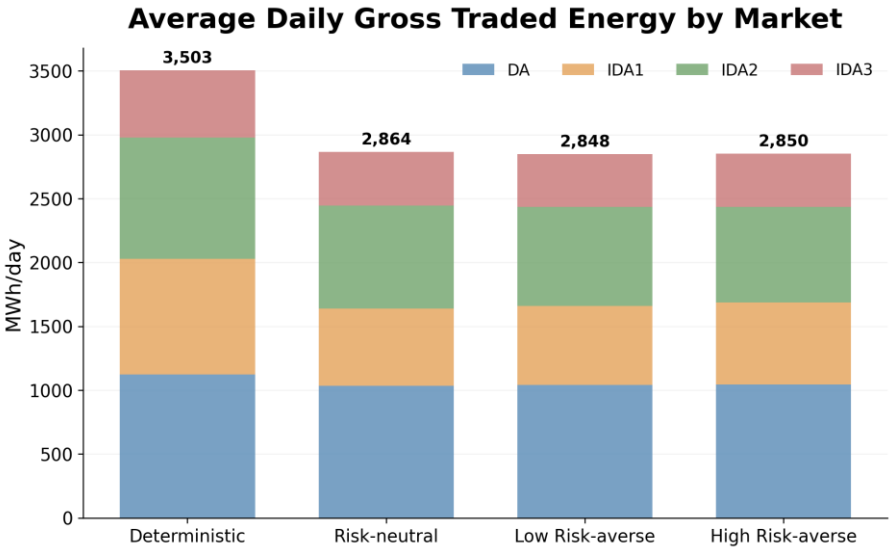
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Project Spotlight

Ravenwits







Proprietary trading

Profit

Imbalances

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Thank You!

Q & A

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