

Techno-economic assessment of P2G as an alternative to electricity grid expansion to increase PV installation in south-east Austria

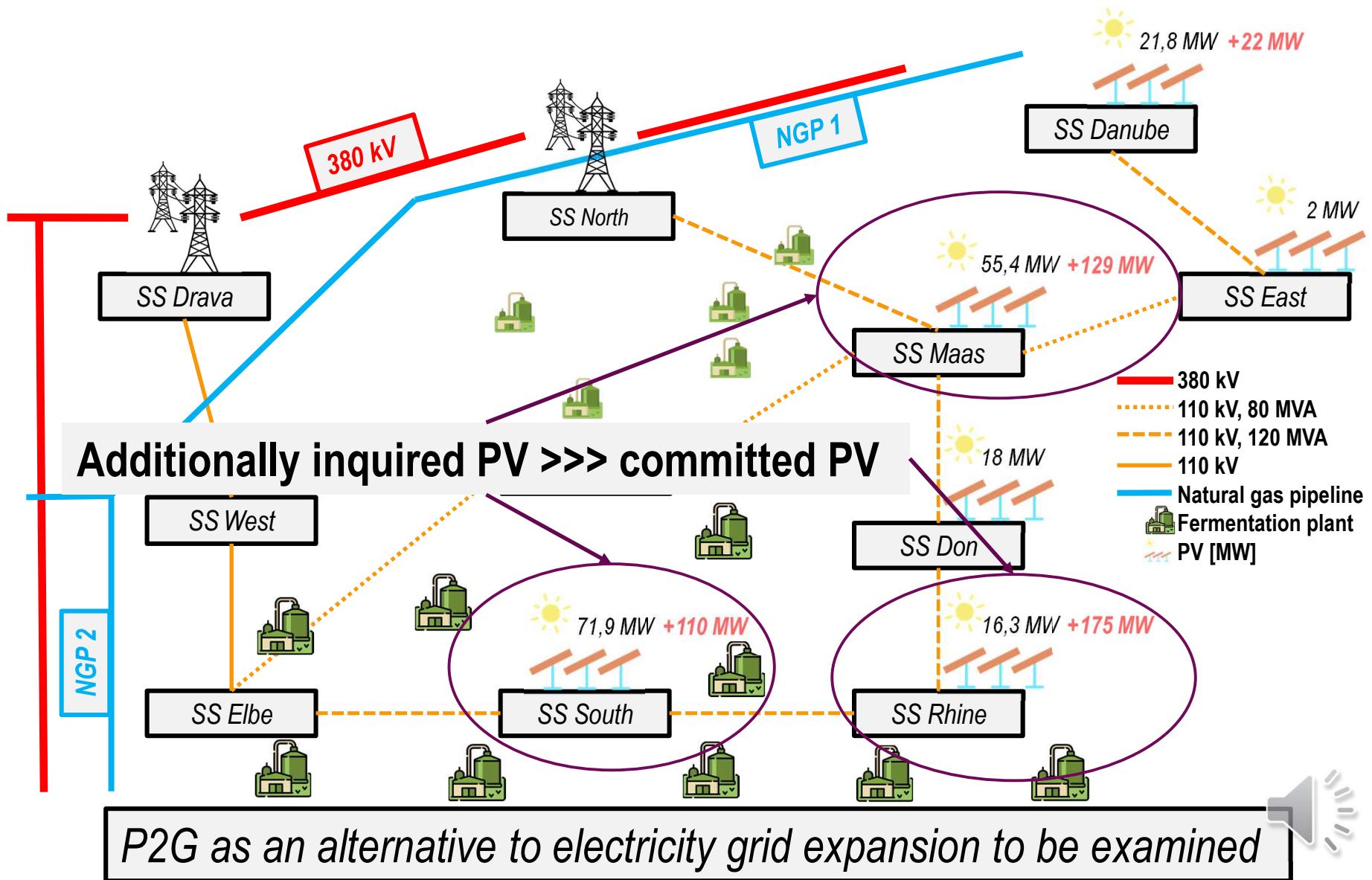


Presented by:

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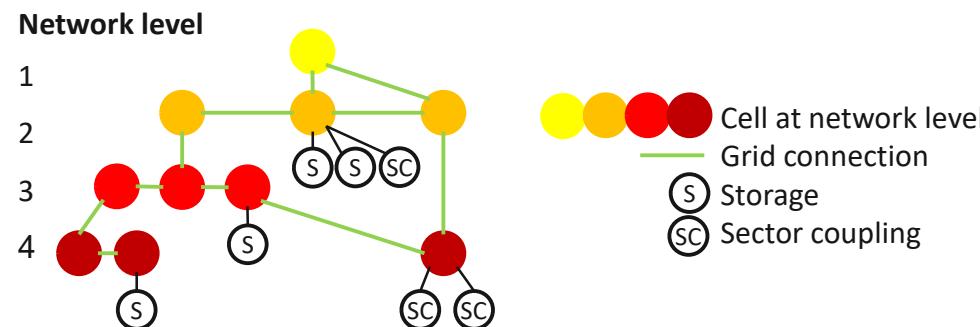
Research problem



Multi energy system simulation tool HyFlow

Self-developed multi energy system simulation tool implementing:

- Energy carriers: electricity, natural gas & district heating
- Energy storages and sector-coupling options with distinctive operation characteristic

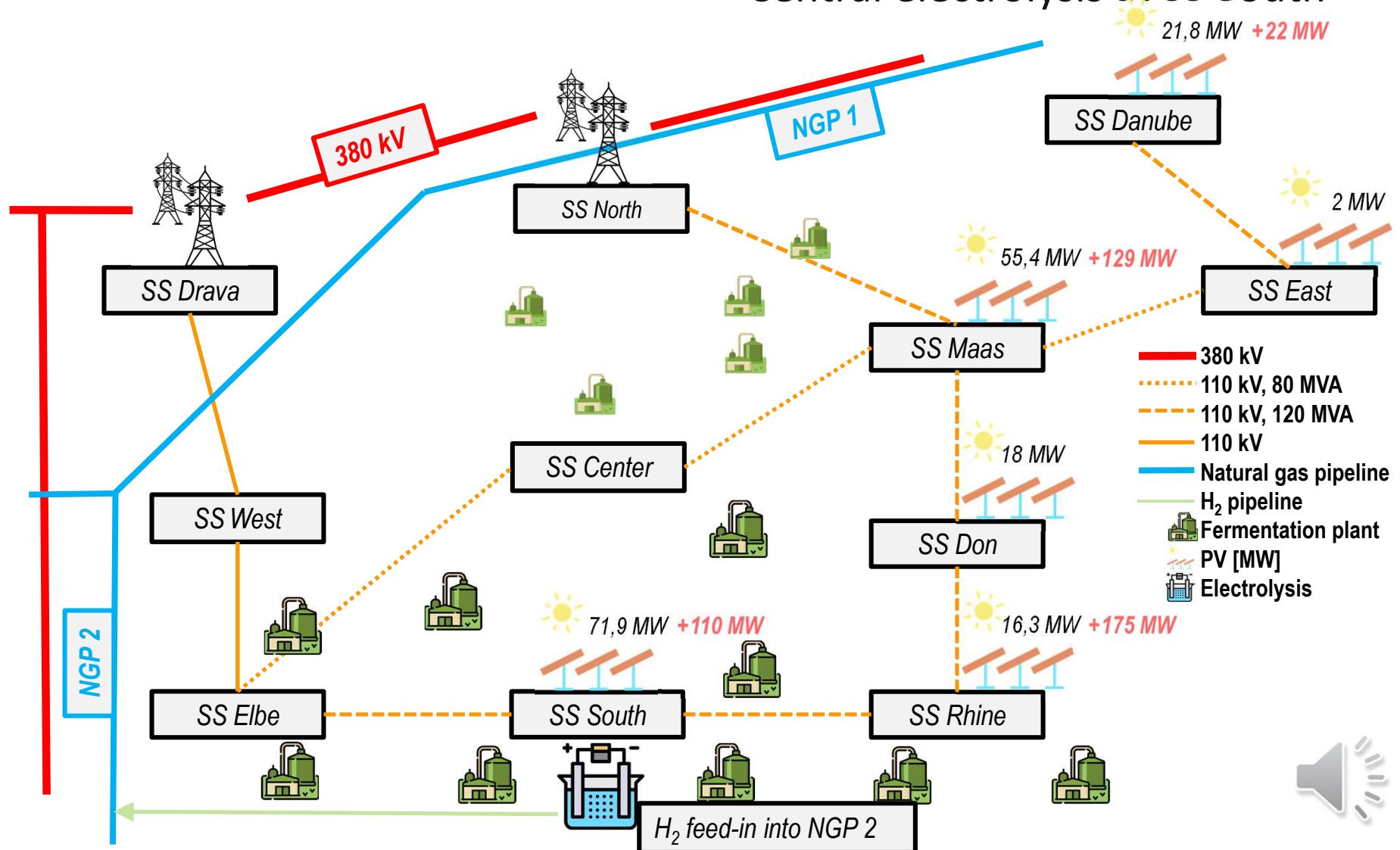


- Load-flow calculations to determine energy flows between cells.

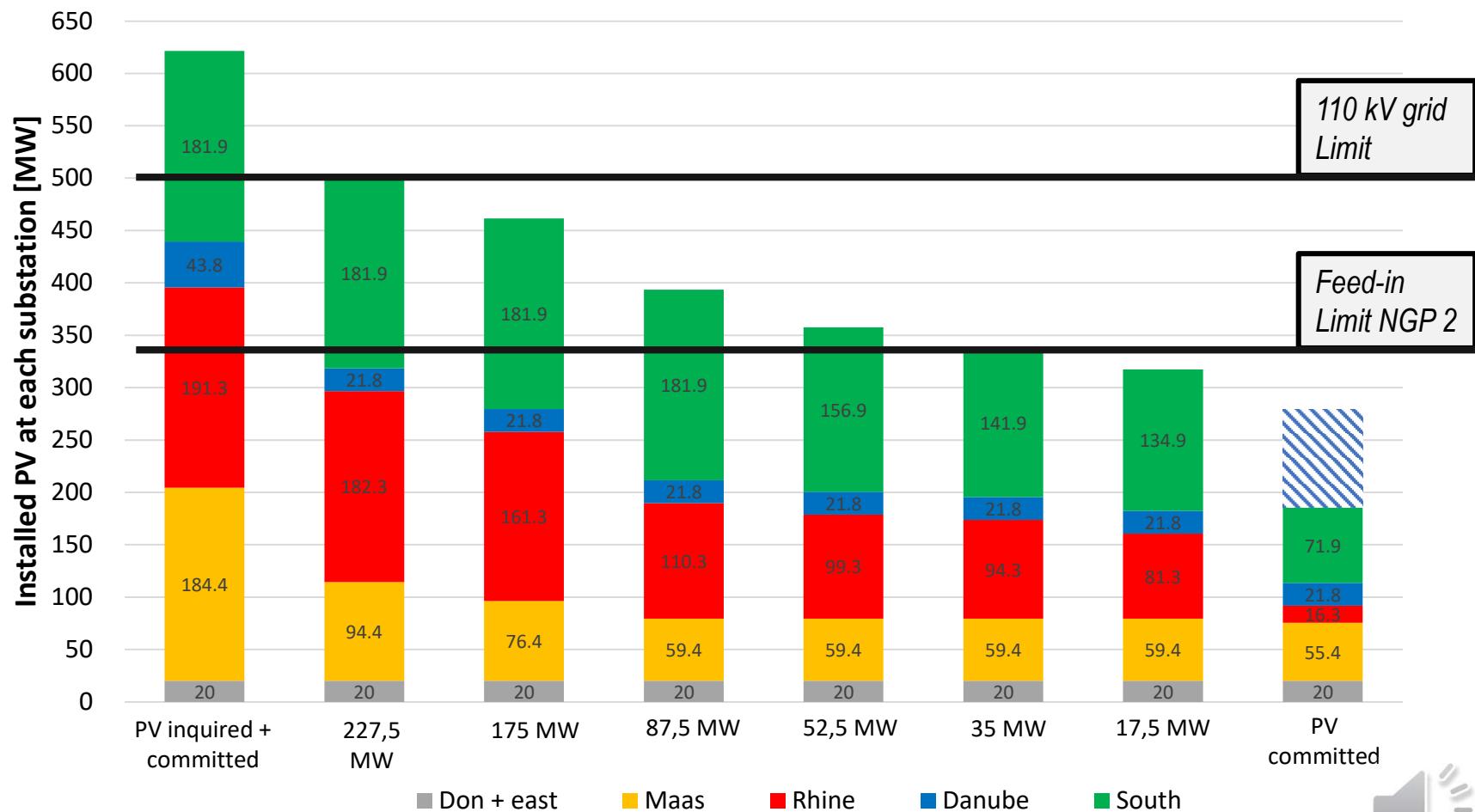


Scenario 1

Central electrolysis at SS South

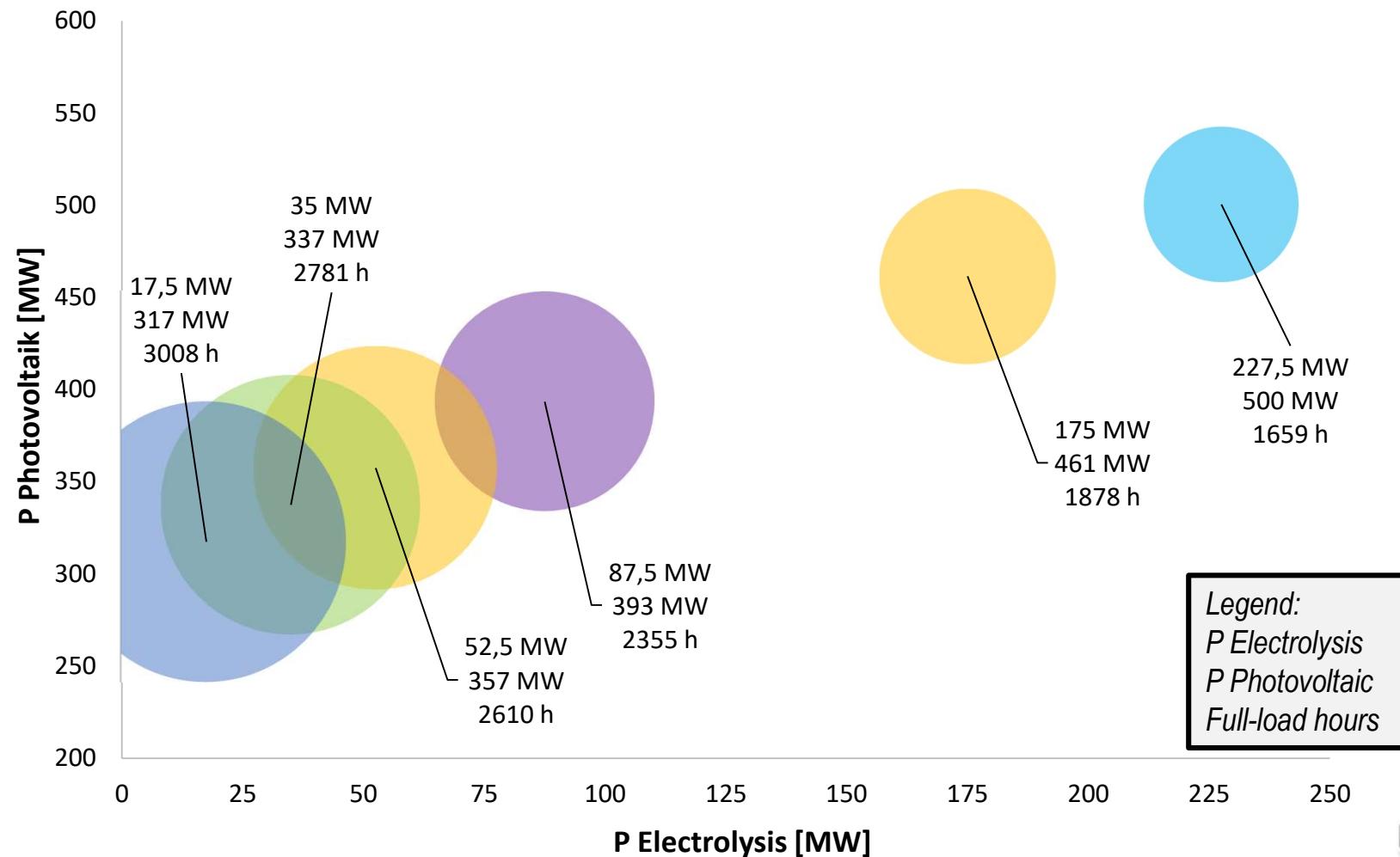


Scenario 1 - Results



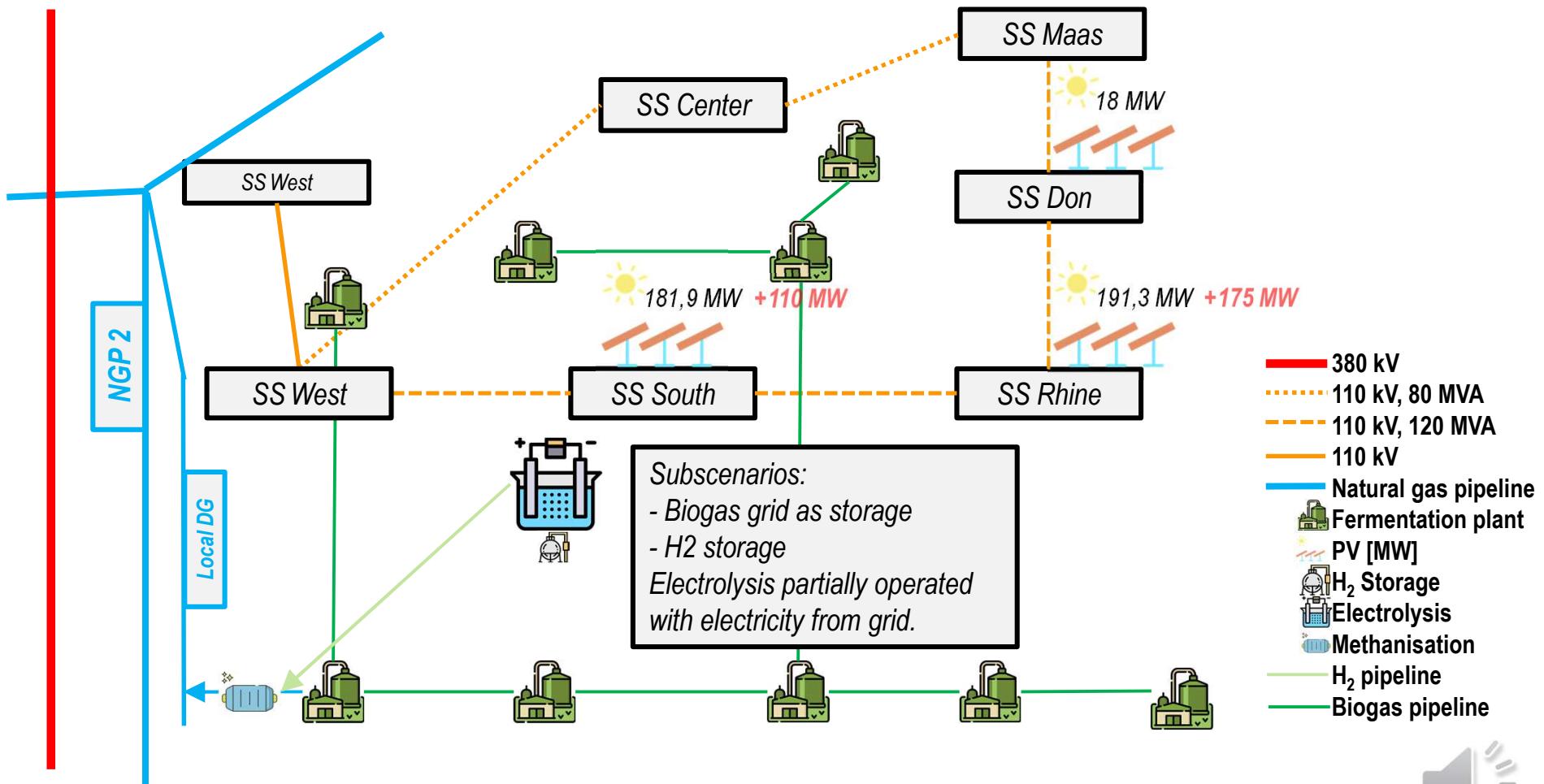
Scenario 1 - results

Installable PV vs. electrolysis power

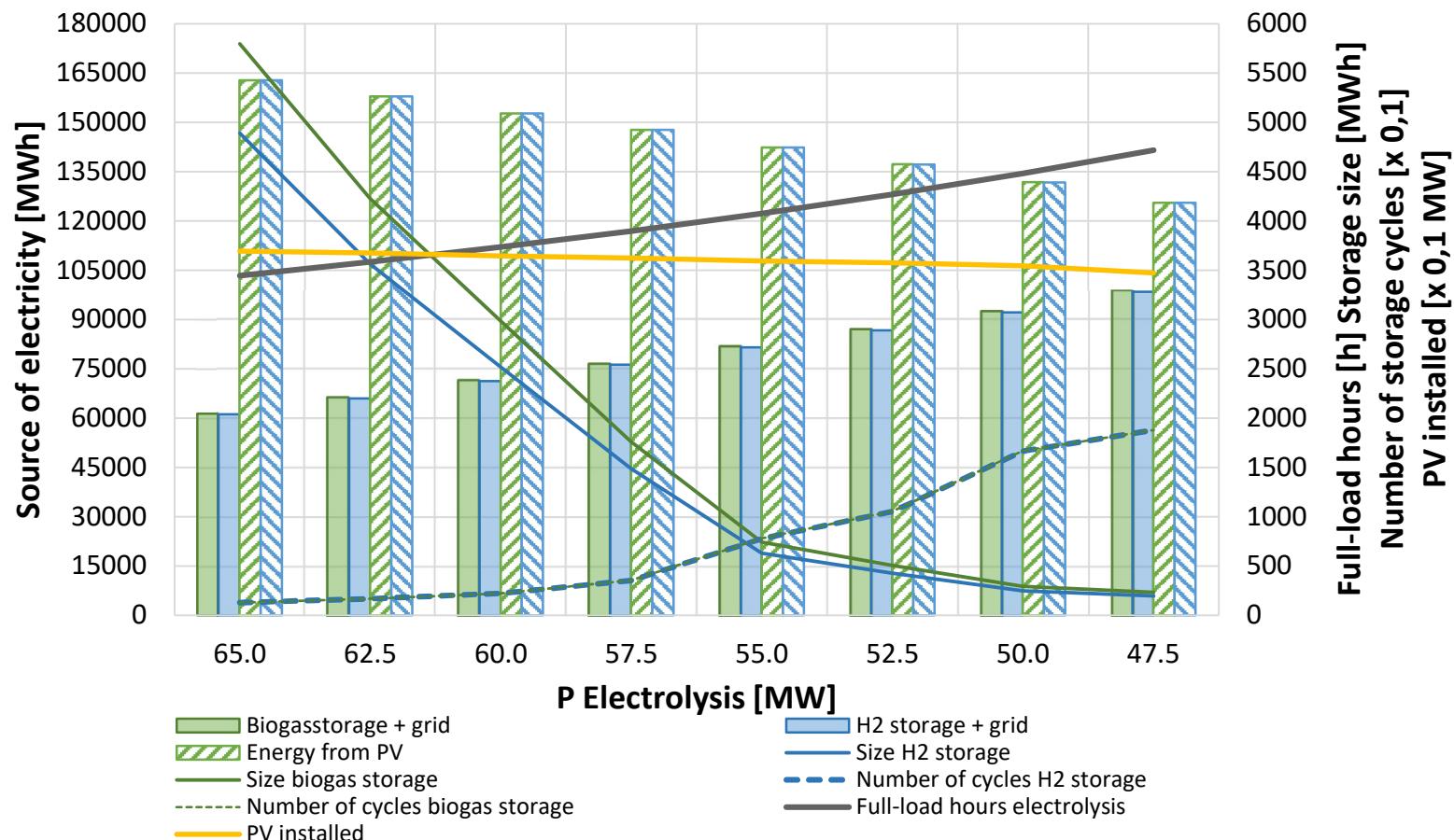


Scenario 2

Central electrolysis at SS South + methanisation + decentralised biogas feed-in

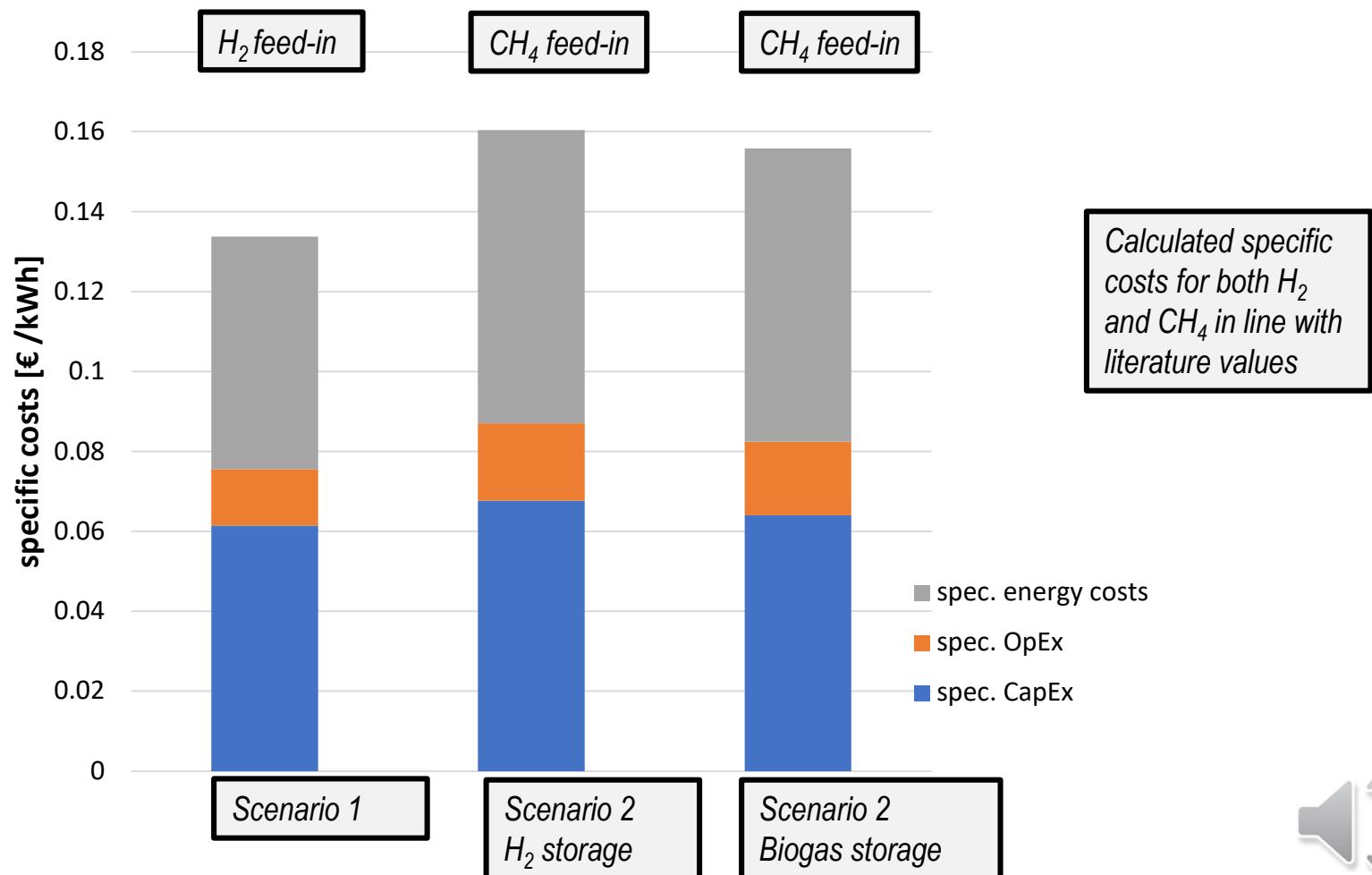


Scenario 2 – results



Economic comparison of scenarios

specific costs 52,5 MW electrolysis, year 2025



Conclusion

- Usage of P2G allows for increased PV Installation
- Production costs in line with literature



Thank you for
your attention!



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