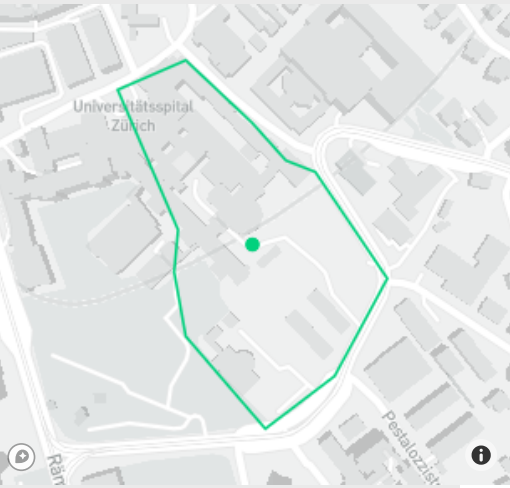




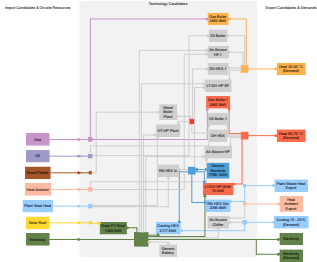
Optimal design and operation of scenario: PBD City Scale Exec



Optimal solution 1  
766 k CHF  
1'062.3 Tons

O<sub>2</sub>-eq  
Green Premiums (GP)  
CHF/Ton

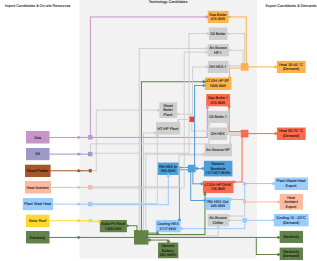
This solution represents the energy system with the **minimum Costs** and has a Total Annualized Life-cycle Cost of 766 k CHF and Total Annual Emissions of 1'062.3 Tons CO<sub>2</sub>-eq. The Annualized Green Premiums are 0 CHF/Ton CO<sub>2</sub>-eq.



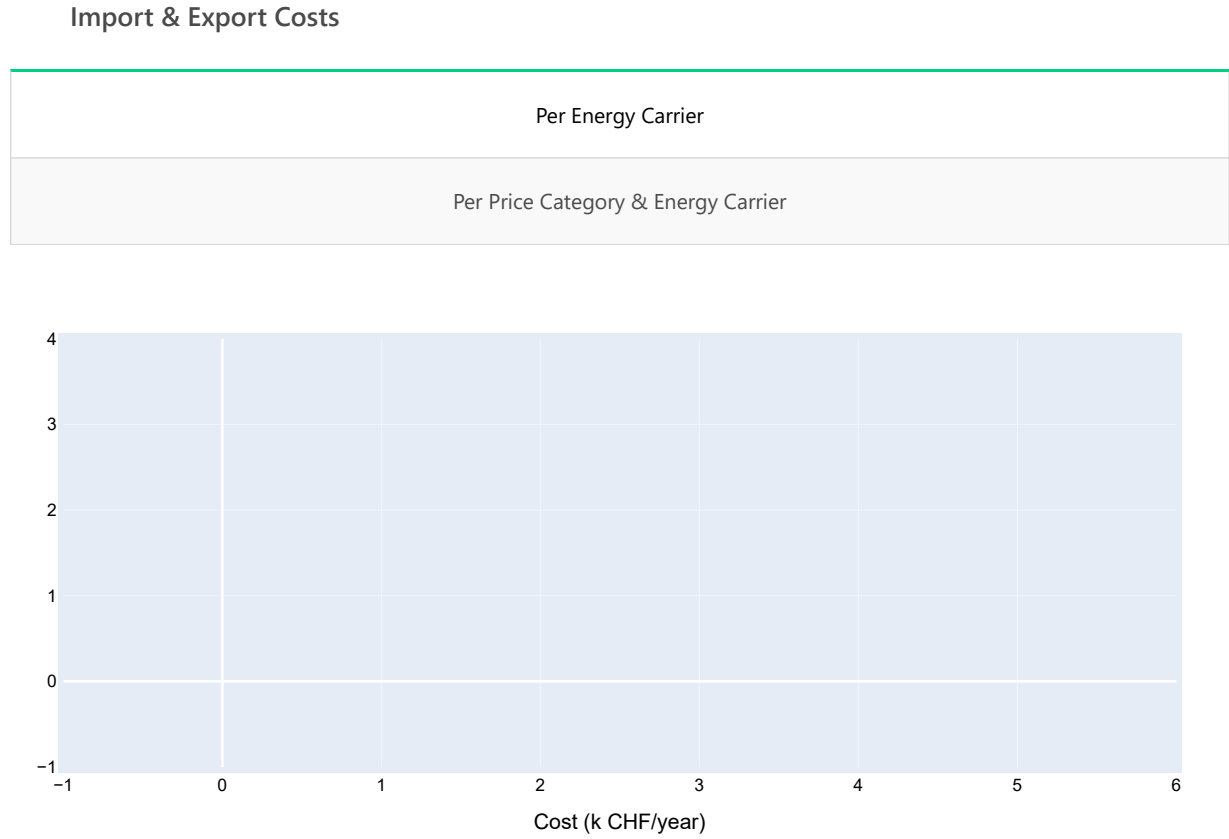
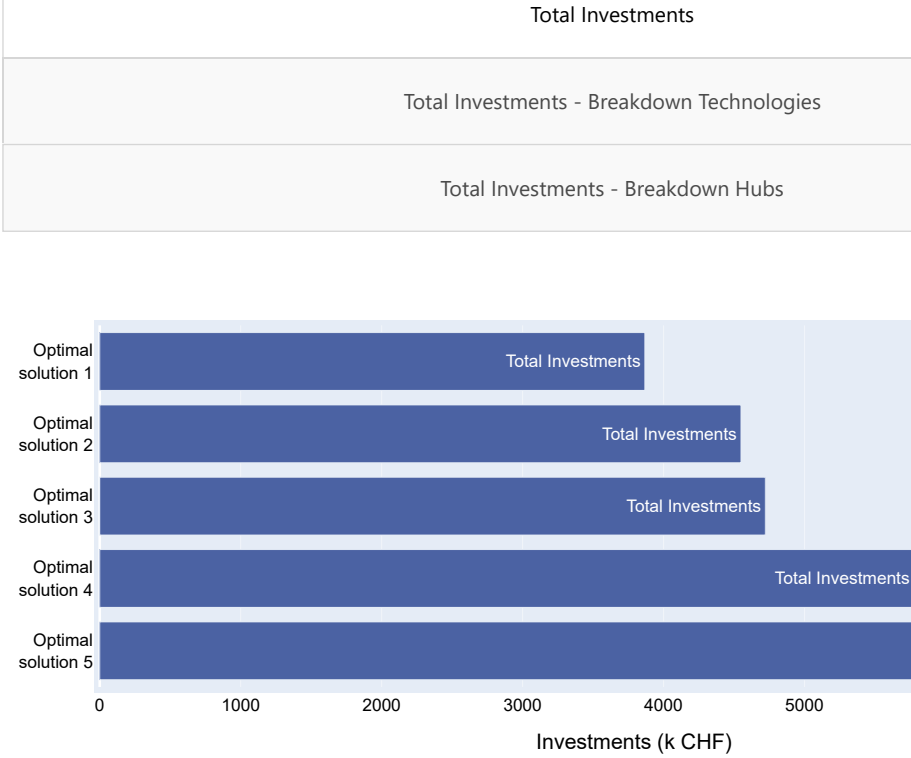
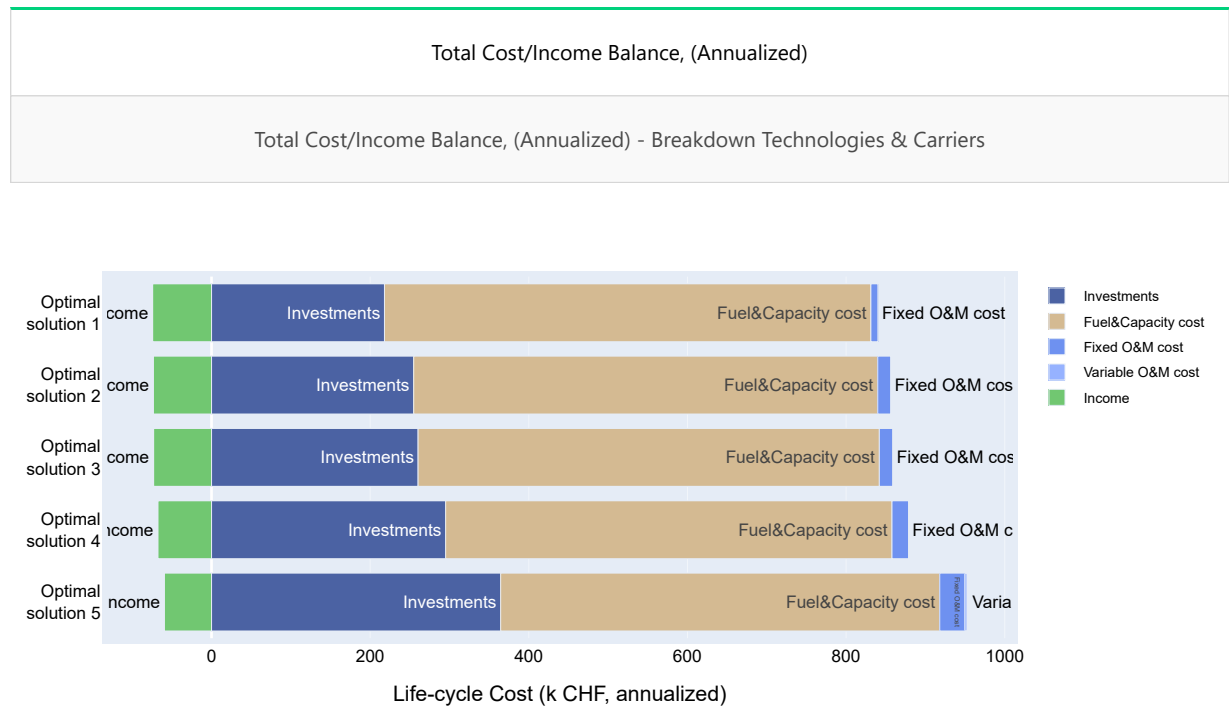
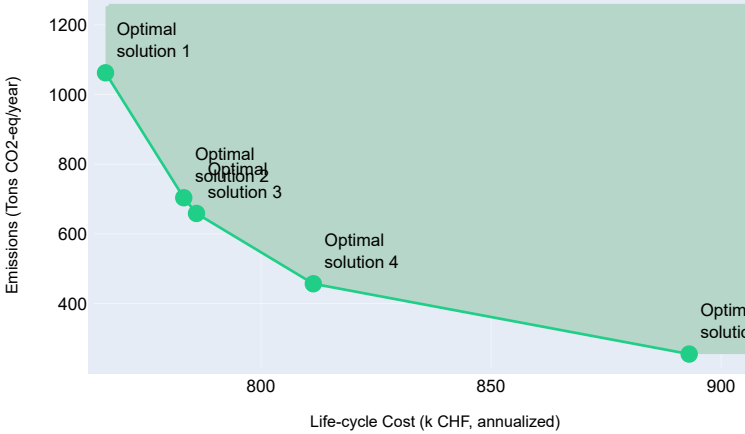
Optimal solution 5  
893 k CHF  
254.8 Tons

CO<sub>2</sub>-eq  
Green Premiums (GP)  
CHF/Ton

This solution represents the energy system with the **minimum Emissions** and has a Total annualized Life-cycle Cost of 893 k CHF and Total Annual Emissions of 254.8 Tons CO<sub>2</sub>-eq. The Annualized Green Premiums are 157 CHF/Ton CO<sub>2</sub>-eq.



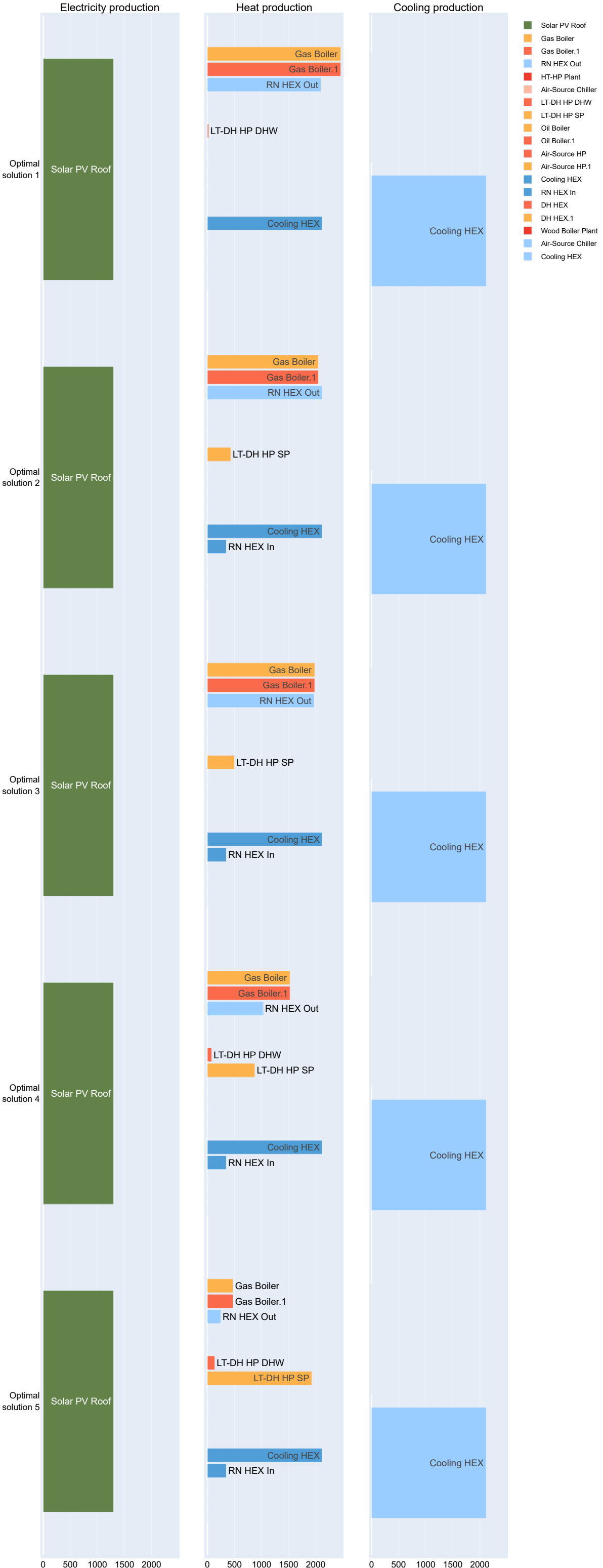
Pareto front - Life-cycle Cost vs Emissions



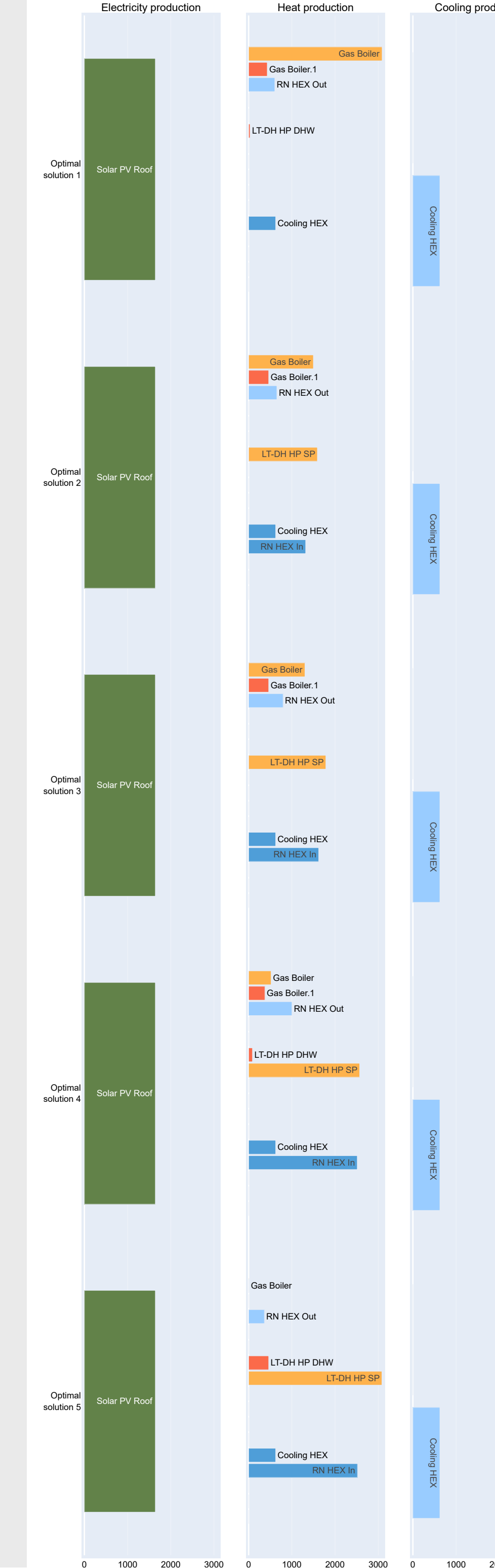
Optimal Design

Optimal Operation

Capacities of Conversion Technologies



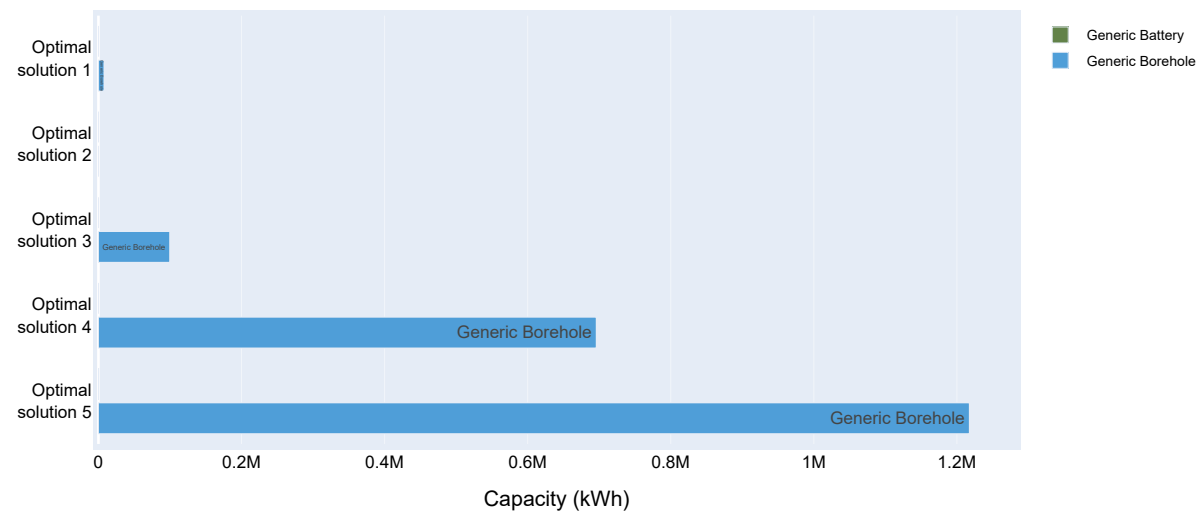
Annual Production of Conversion Technologies



Capacity (kW)

Capacities of Storage Technologies

Capacities of EV Batteries

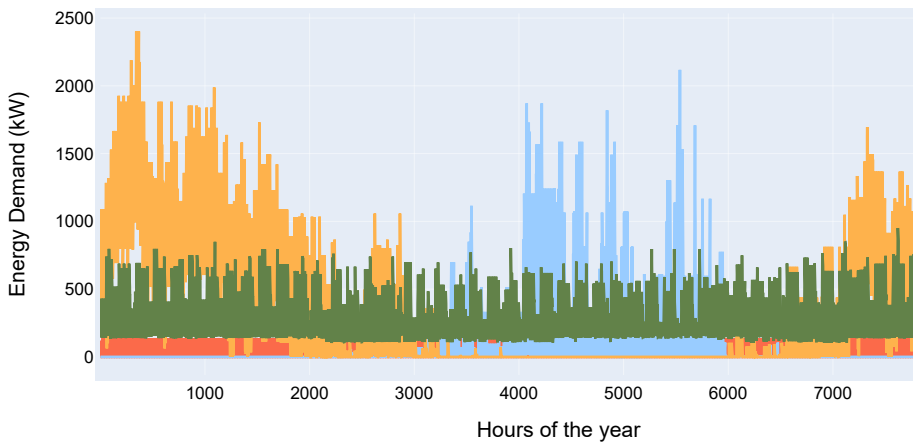


Annual Production (MWh/year)

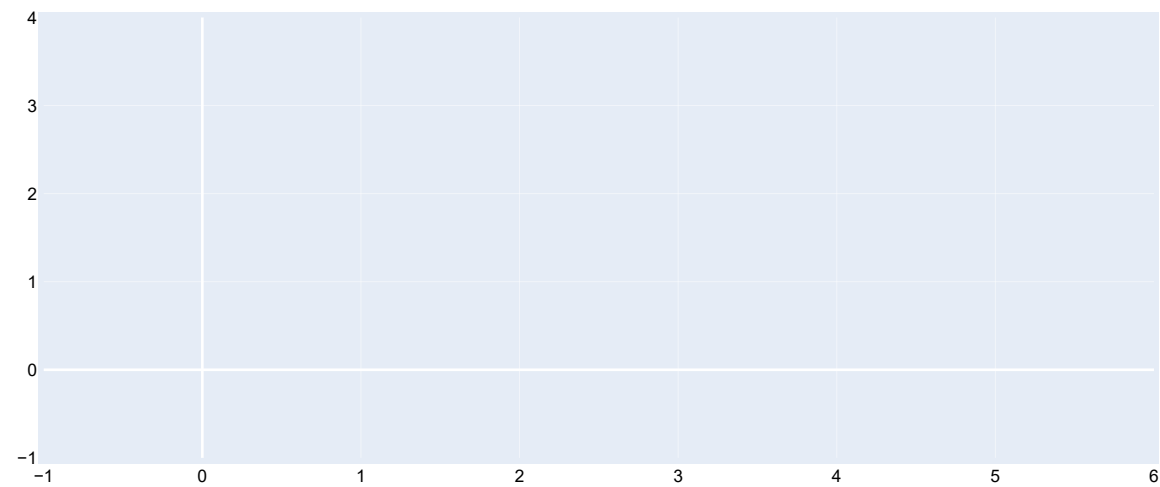
Hourly demand (AI Clustered)

Load Duration Curve (AI Clustered)

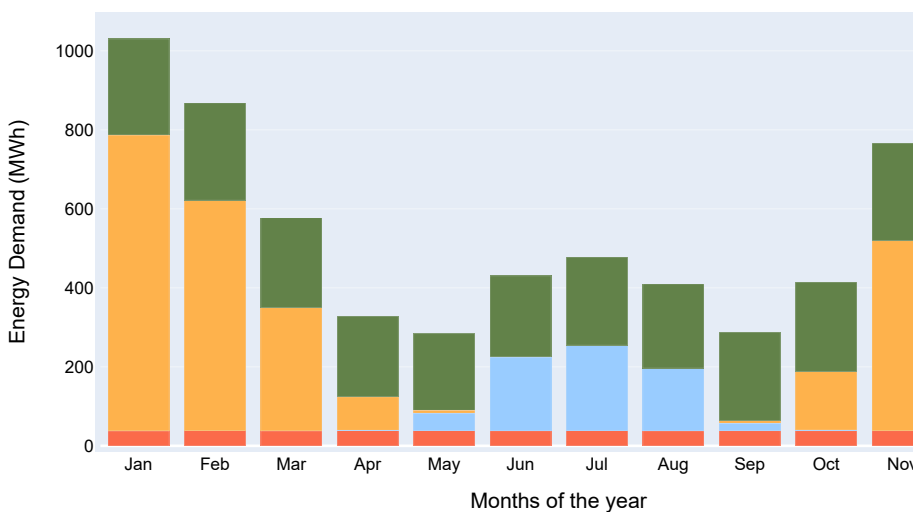
Load Duration Curve (Original vs AI Clustered)



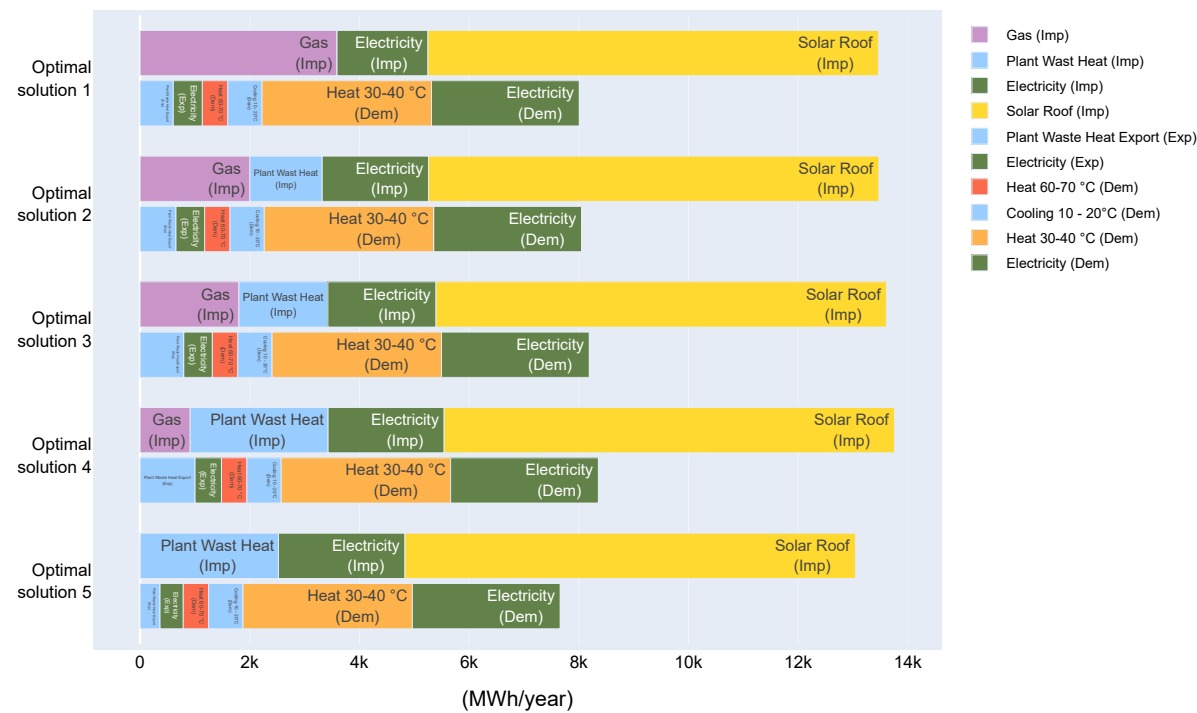
Capacities of Networks



Monthly Demand (AI Clustered)



Annual Imports vs Exports &amp; Demand



Annual Energy Imports (CO2 based vs CO2 free)

