



Saisonale Speicheroptionen in der Szenariomodellierung

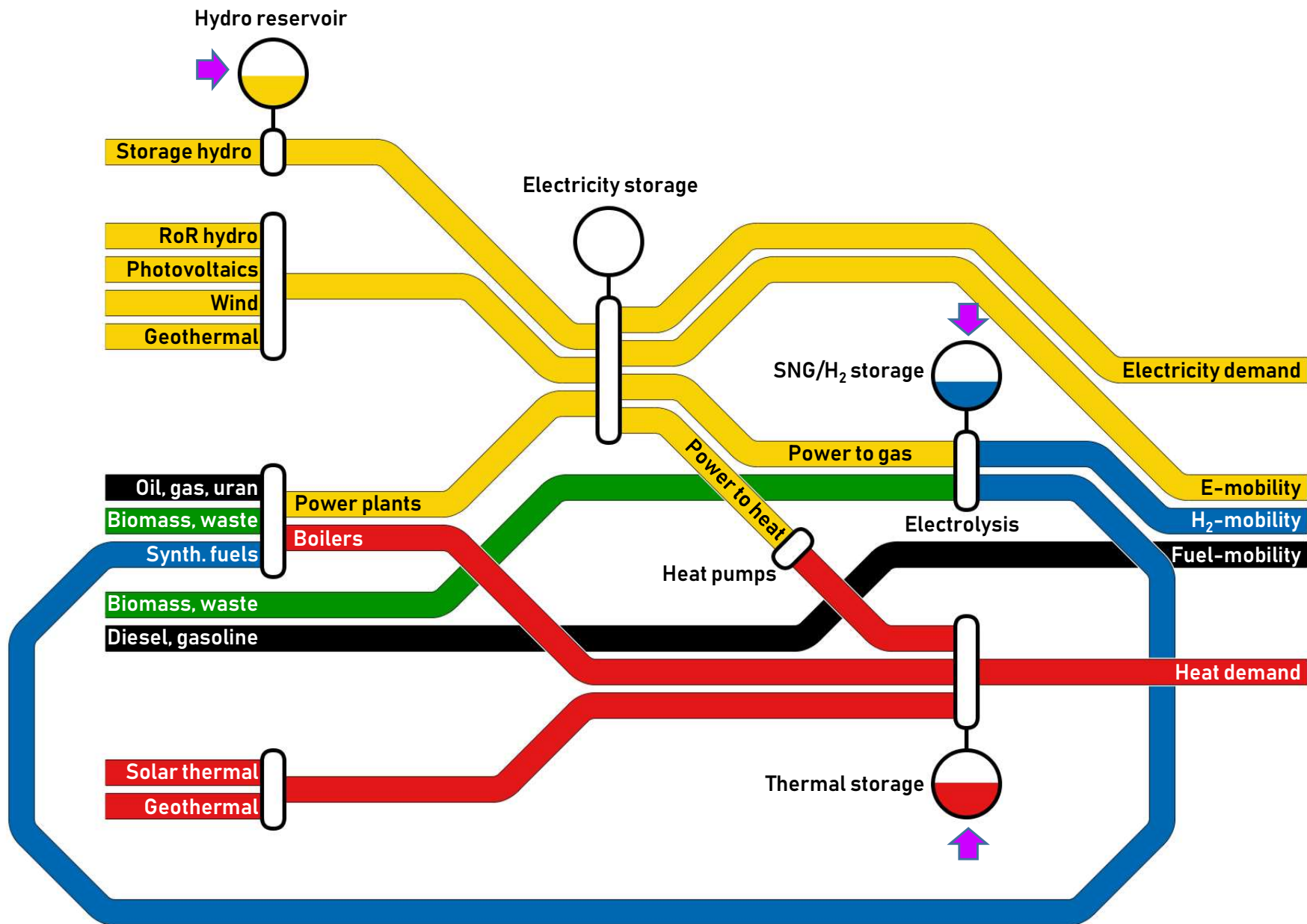
Gianfranco Guidati, ETH Zürich



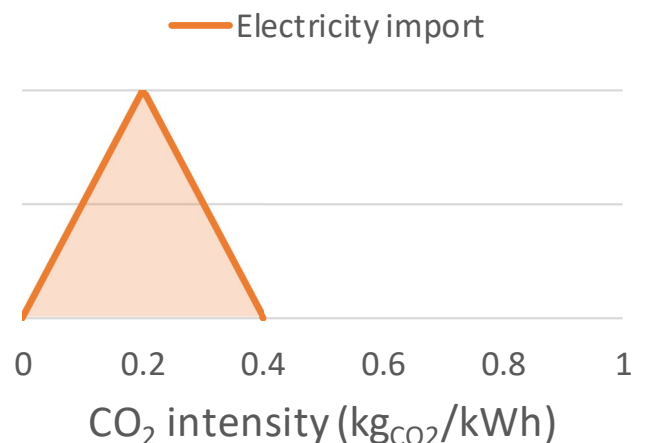
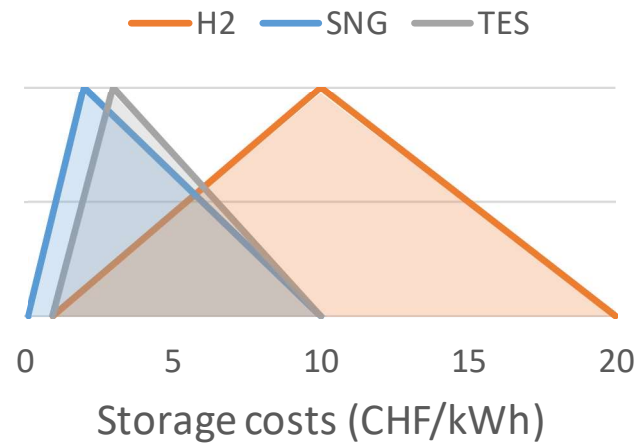
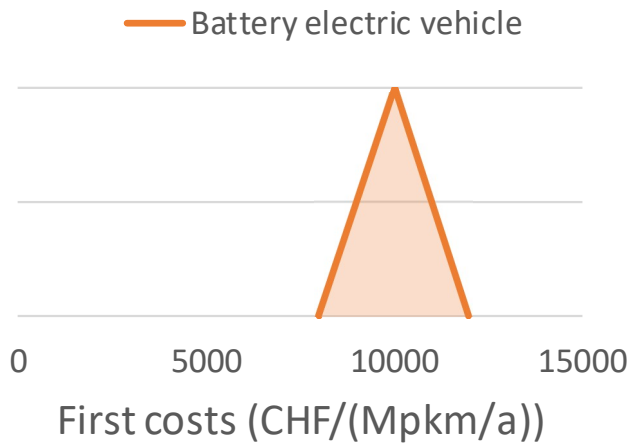
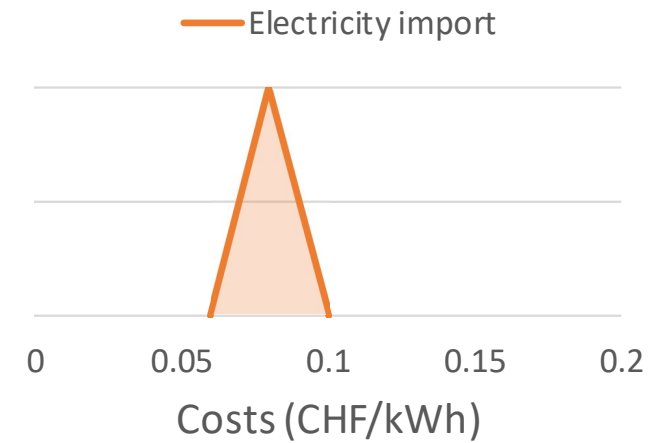
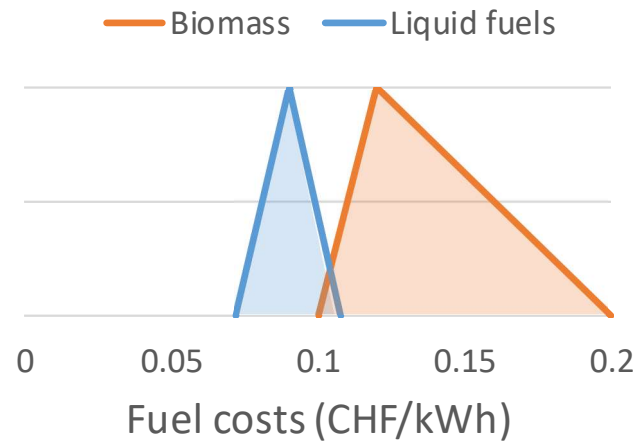
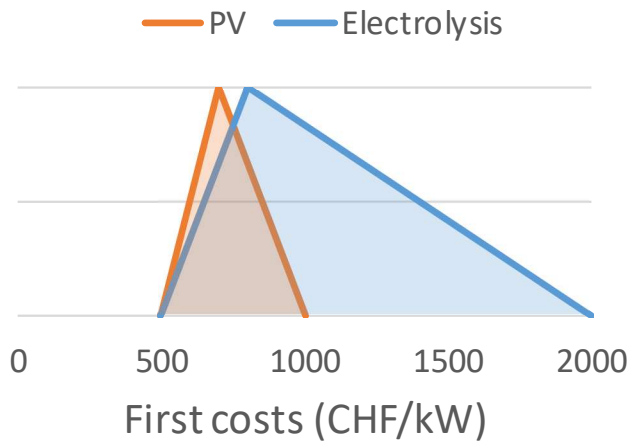
Schweizerische Eidgenossenschaft
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Swiss Confederation

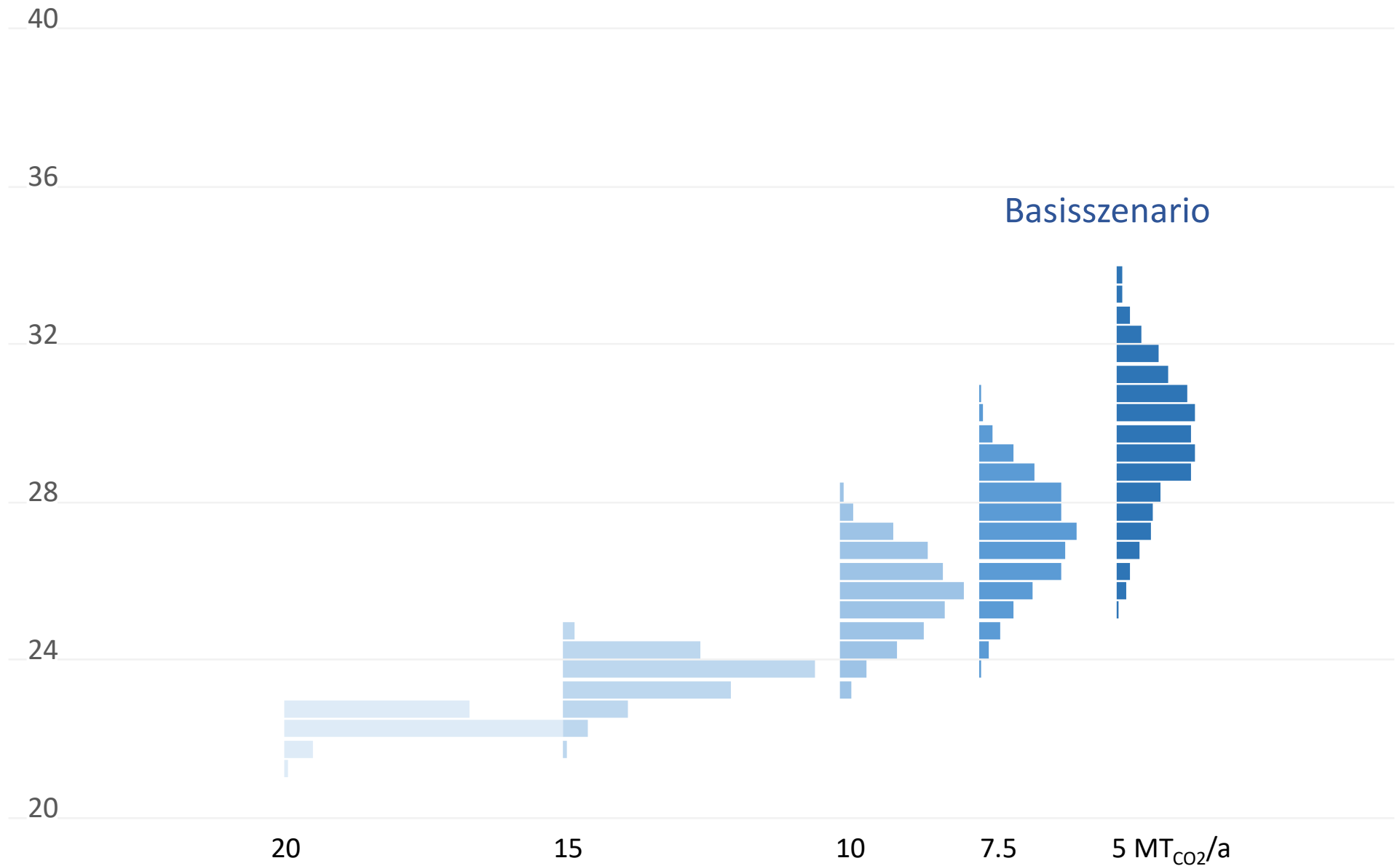
Innosuisse – Swiss Innovation Agency



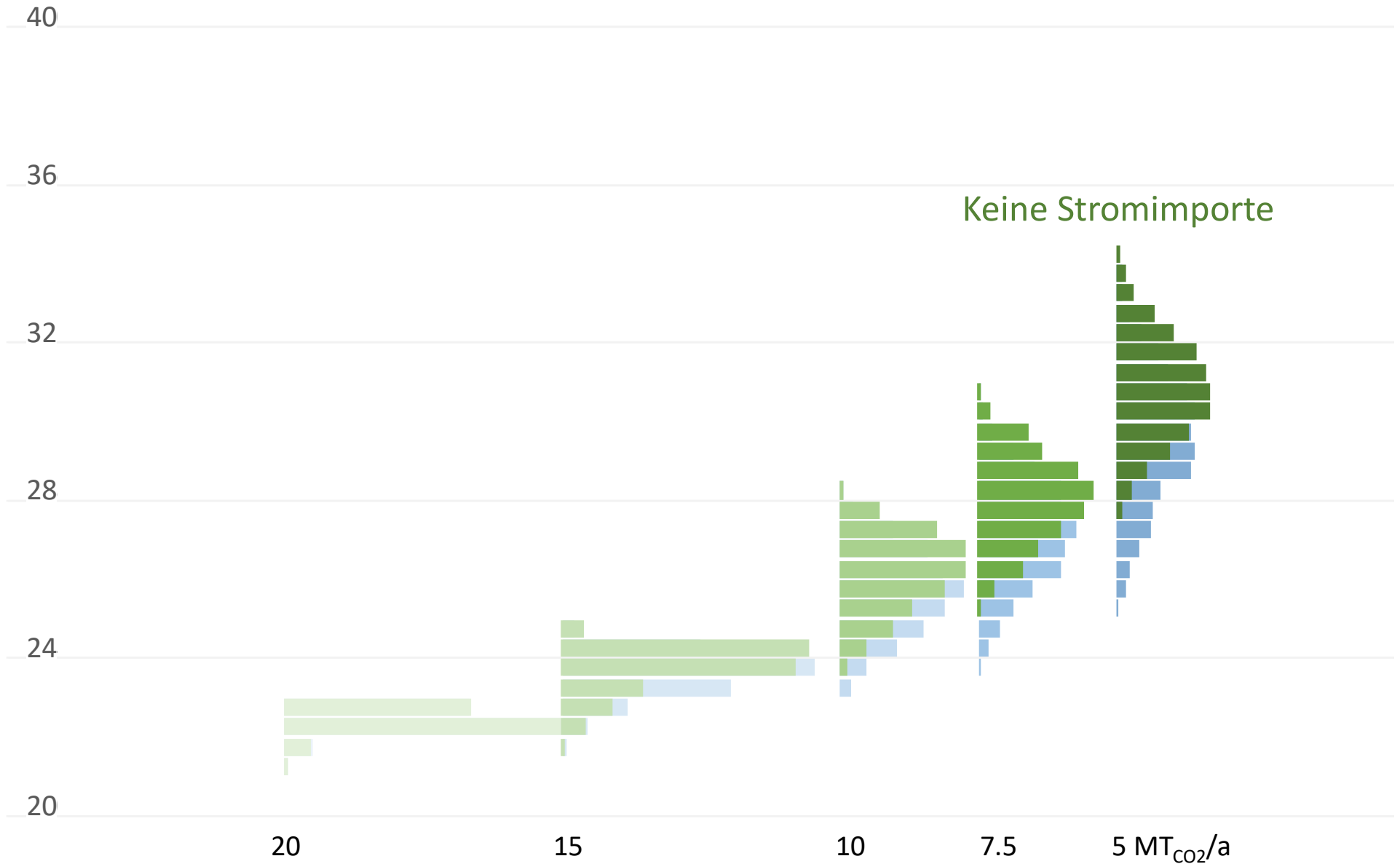
Variation der Kostenannahmen



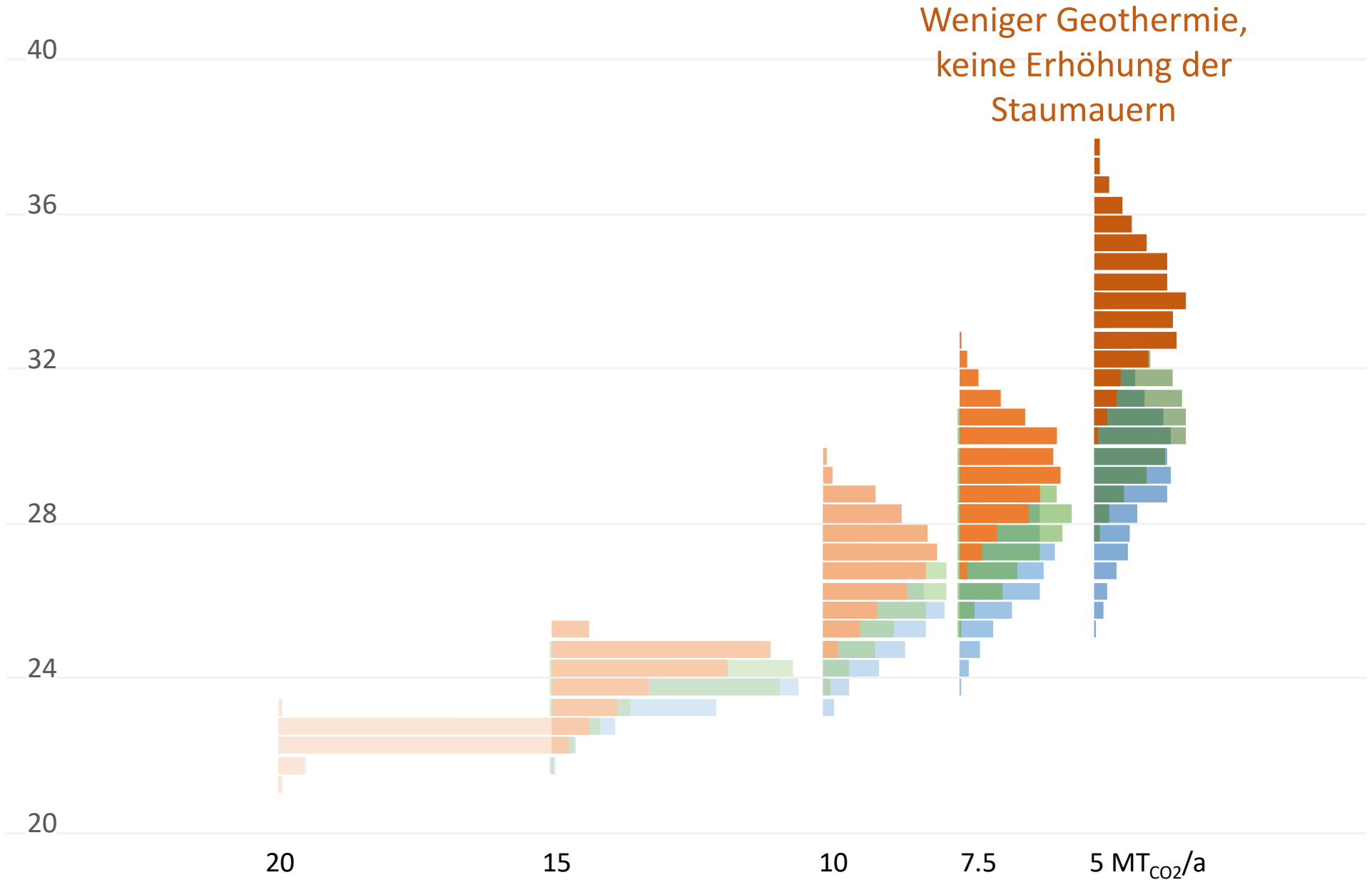
Jährliche Systemkosten (bCHF/a)



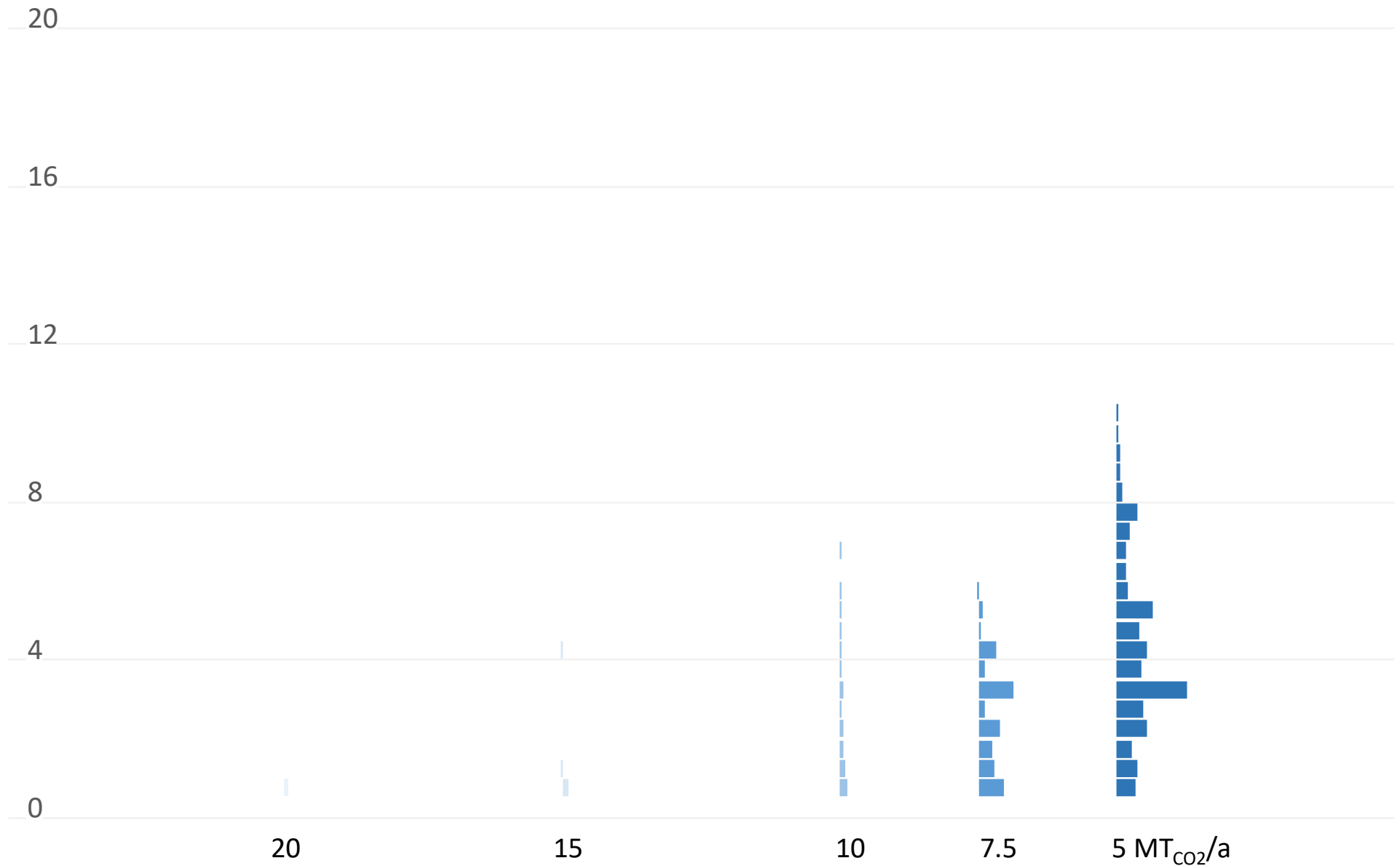
Jährliche Systemkosten (bCHF/a)



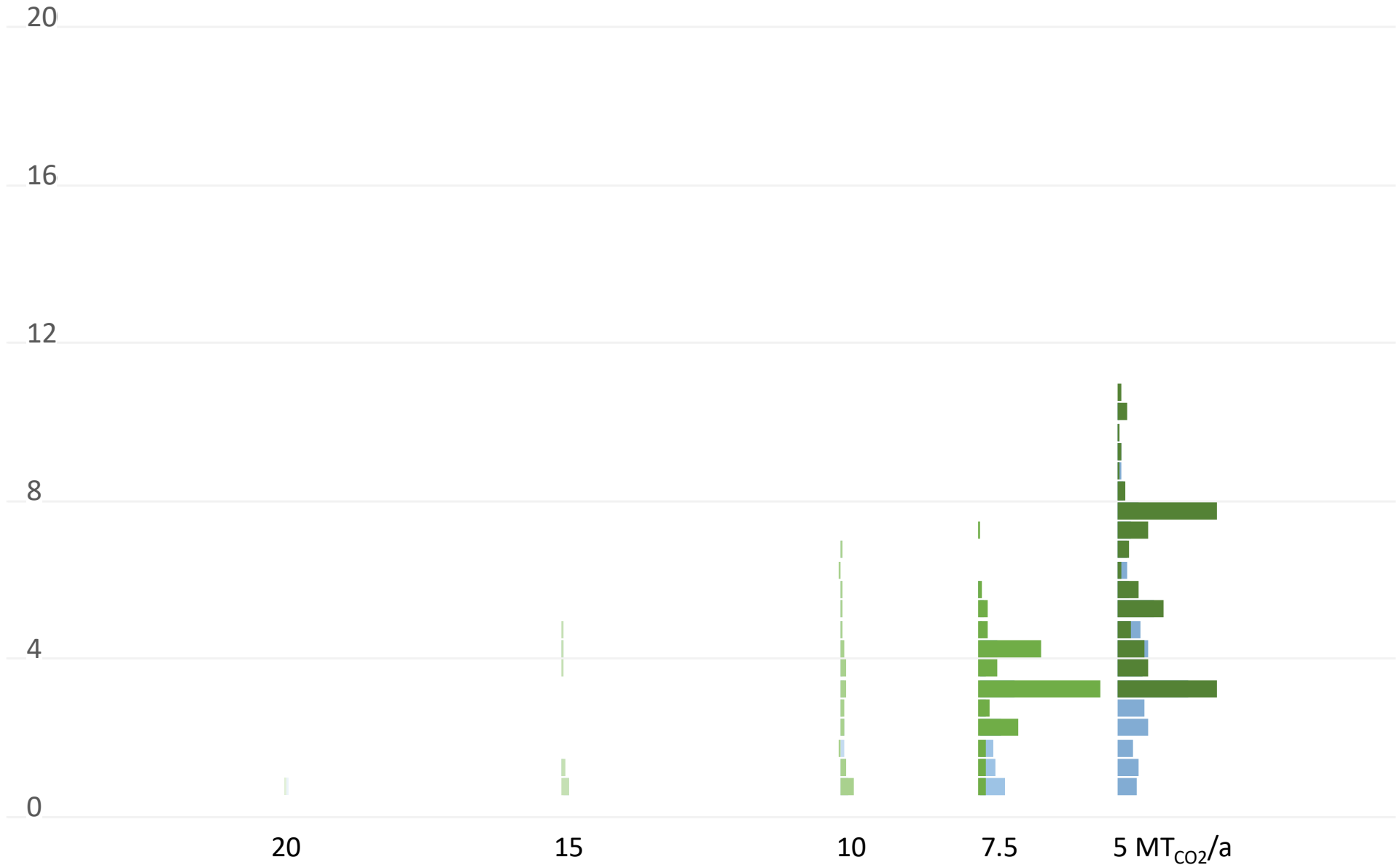
Jährliche Systemkosten (bCHF/a)



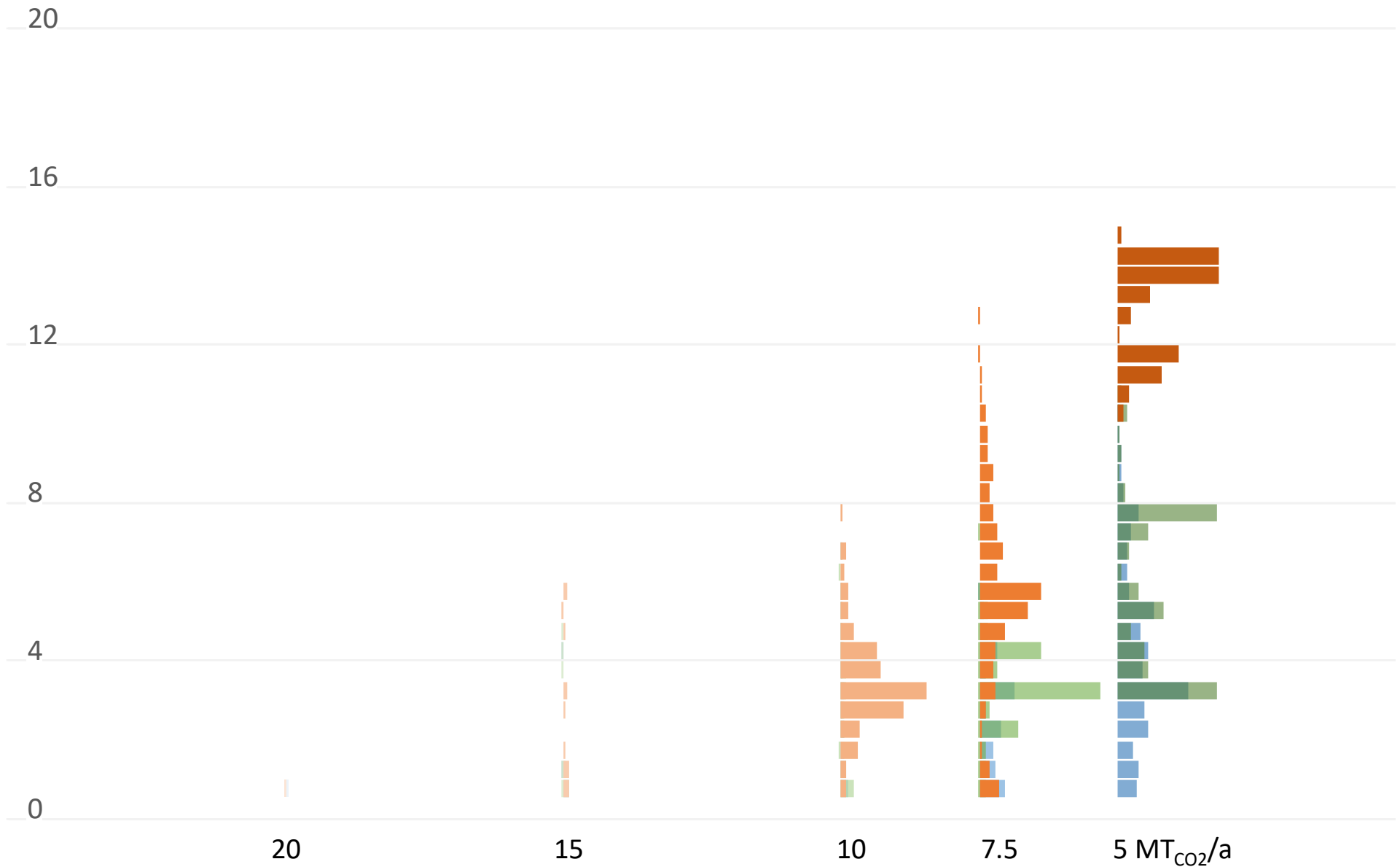
Saisonale Speicherkapazität (TWh)



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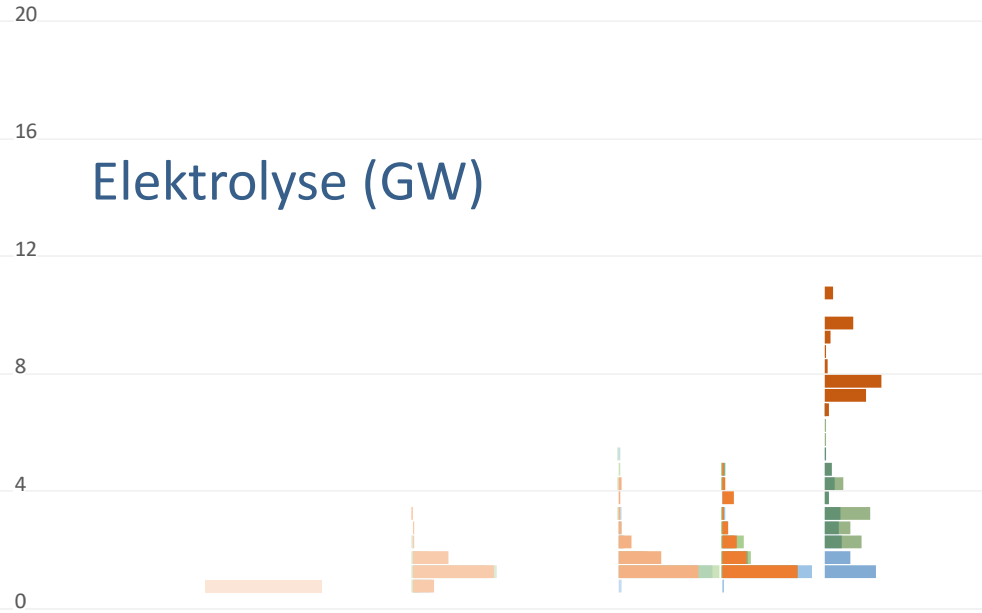
Saisonale Speicherkapazität (TWh)



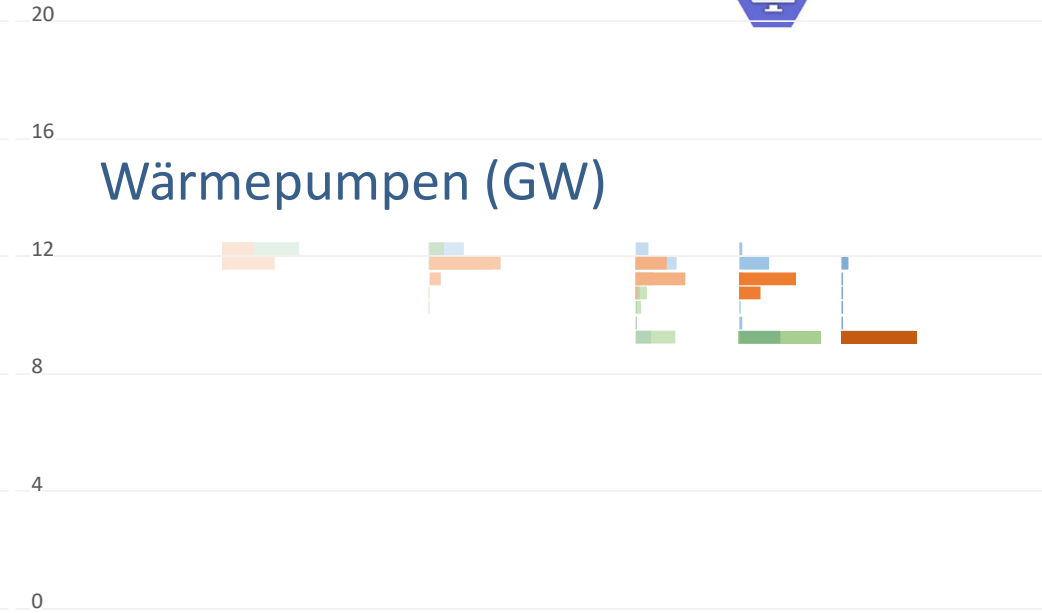
Weitere Technologien



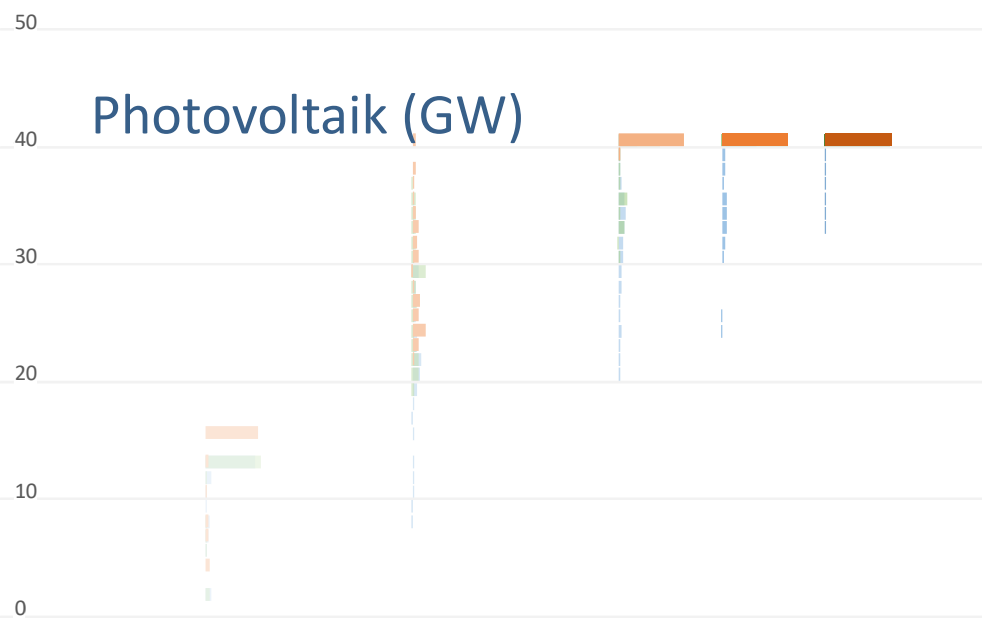
Elektrolyse (GW)



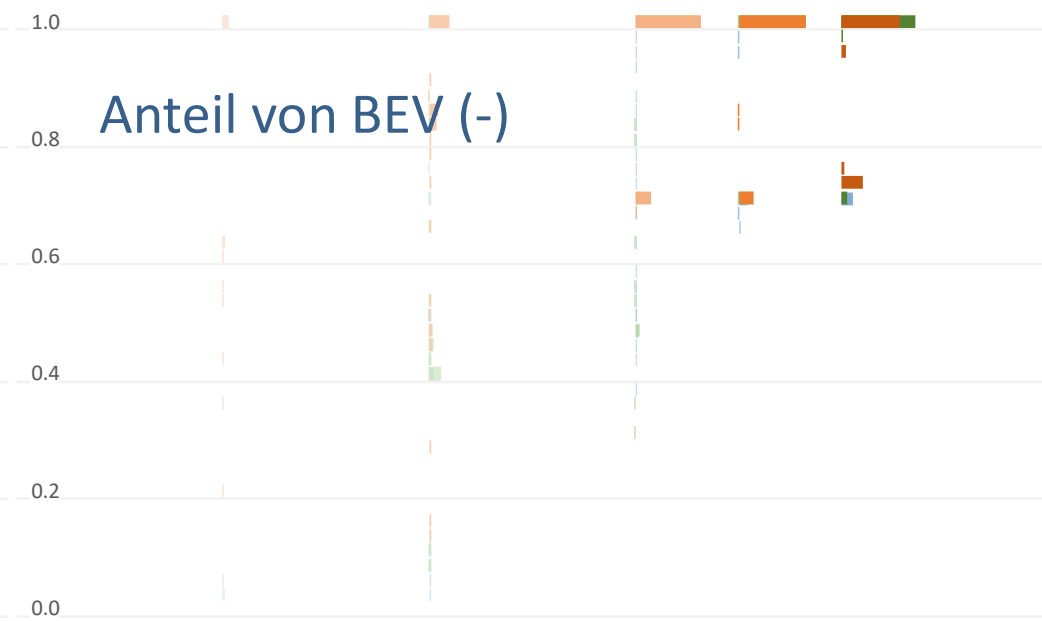
Wärmepumpen (GW)



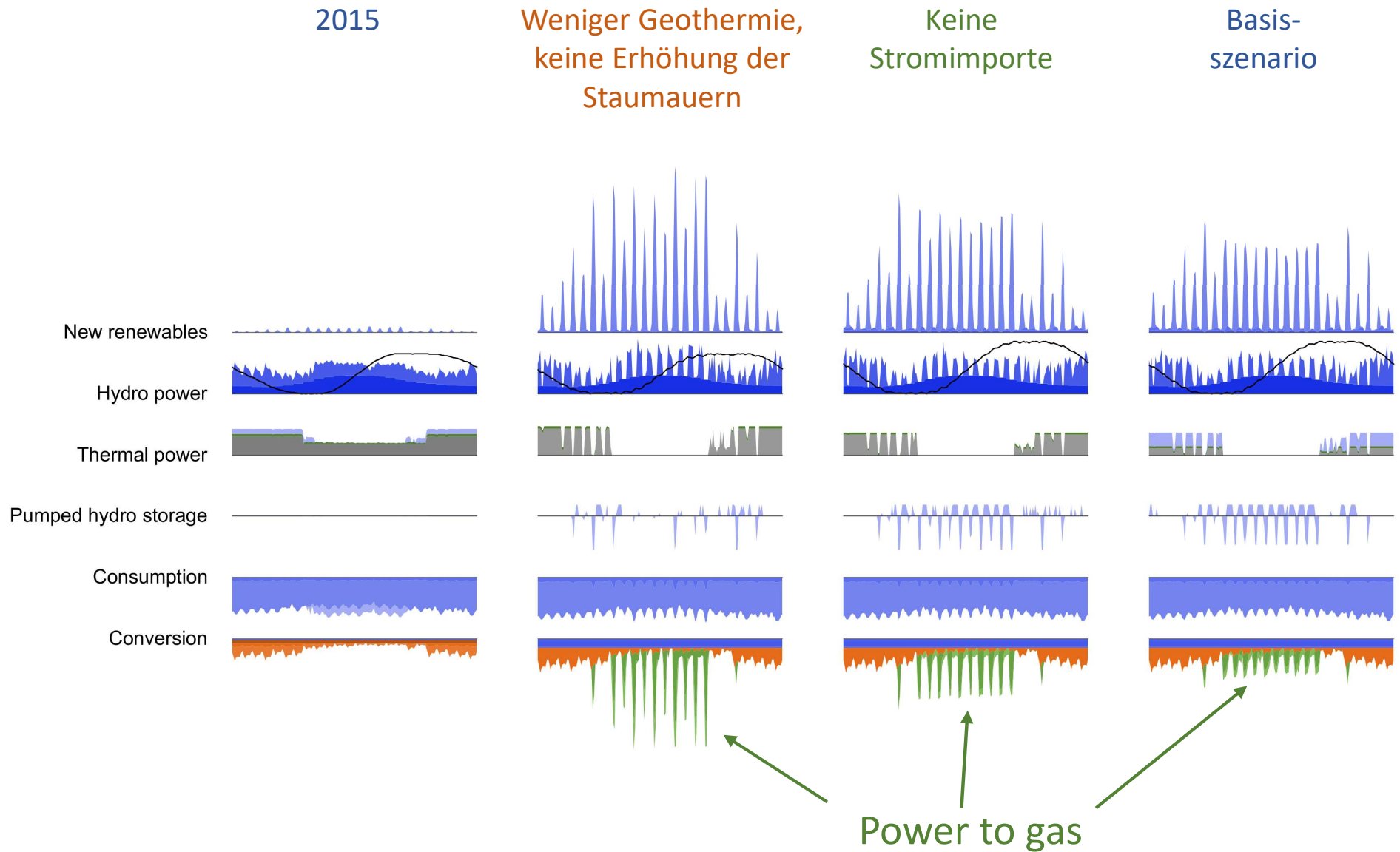
Photovoltaik (GW)



Anteil von BEV (-)



Stromerzeugung und –verbrauch (5 MT_{CO2}/a)



Gaserzeugung und -verbrauch (5 MT_{CO2}/a)



2015

Weniger Geothermie,
keine Erhöhung der
Staumauern

Keine
Stromimporte

Basis-
szenario

Methan

Import



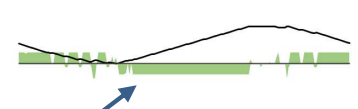
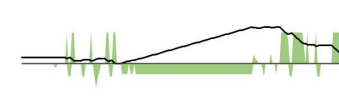
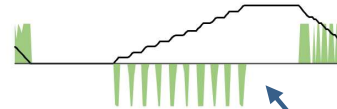
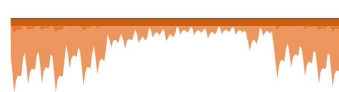
Synthesis (gasification, electrolysis)



SNG storage



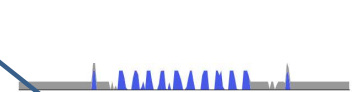
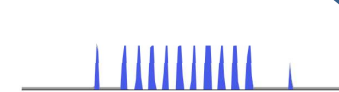
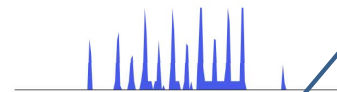
Consumption



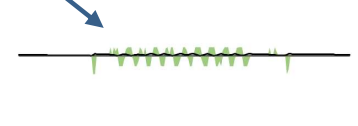
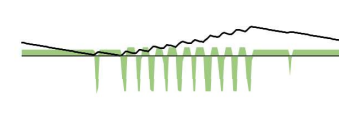
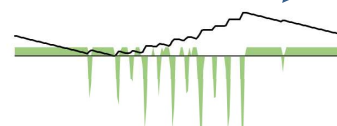
Bedeutung saisonaler Speicher
abhängig von anderen Parametern

Wasserstoff

Synthesis (gasification, electrolysis)



Hydrogen storage



Consumption



Zusammenfassung



- Es gibt keinen Überschussstrom
 - Direkter Stromverbrauch
 - Umwandlung (Power-to-X) und Speicherung
 - Abregelung
- Stochastischer Ansatz ergibt Wahrscheinlichkeiten, dass bestimmte Technologien Teil sind eines optimalen Mix
 - PV, Wärmepumpen und Elektromobilität sind dabei
 - Saisonale Speicher hängen ab von anderen Parametern
- Vor allem die Importe von Strom (oder erneuerbaren Treibstoffen) haben einen starken Einfluss



Vielen Dank für Ihre Aufmerksamkeit!

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