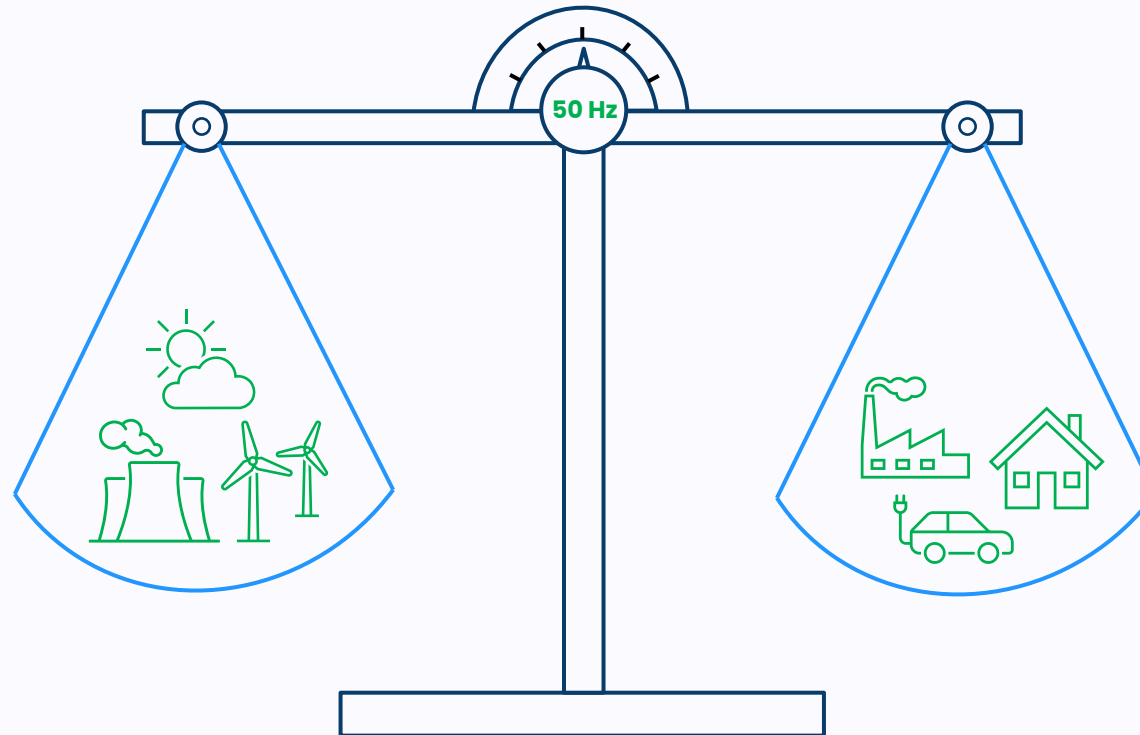


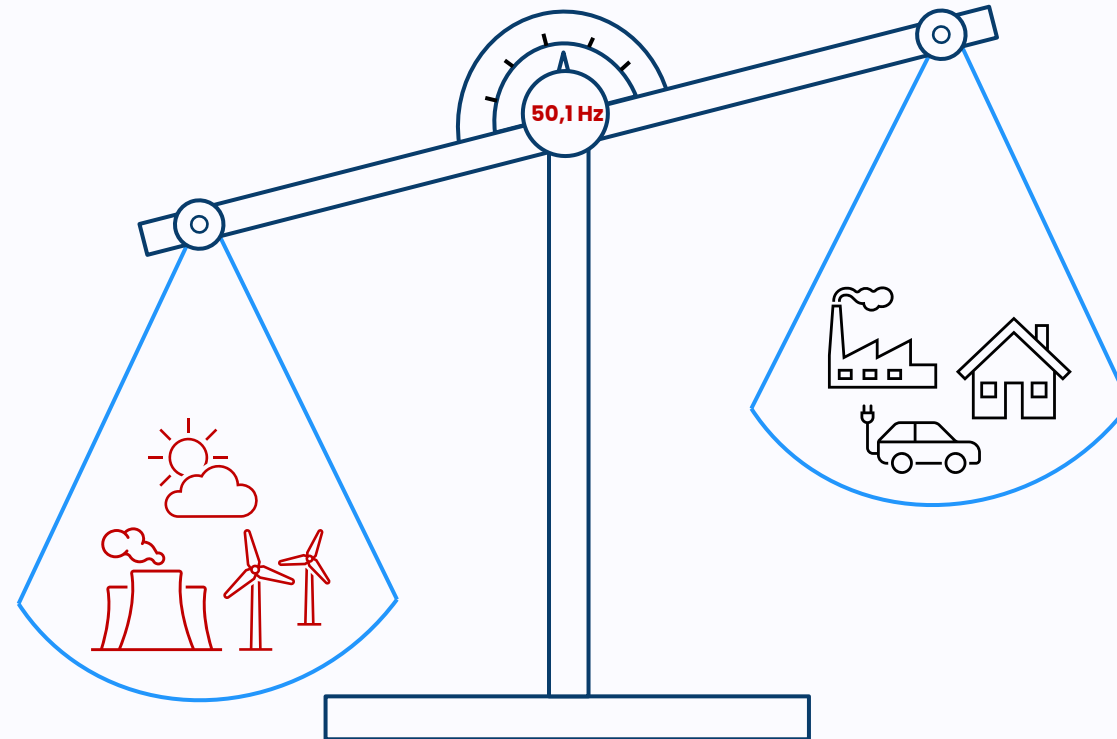
Zwischen Dunkelflaut und Hellbrise

Mit Vorhersagemodellen
unser Stromnetz stabilisieren

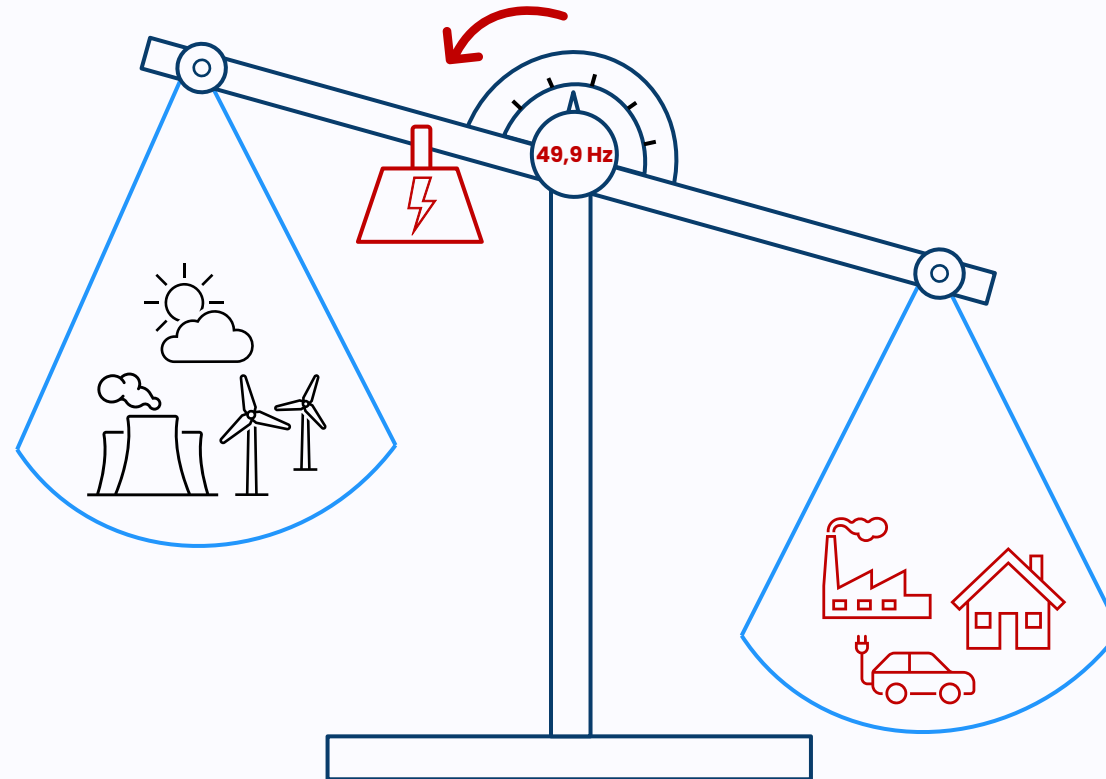
Netzfrequenz: 50 Hertz



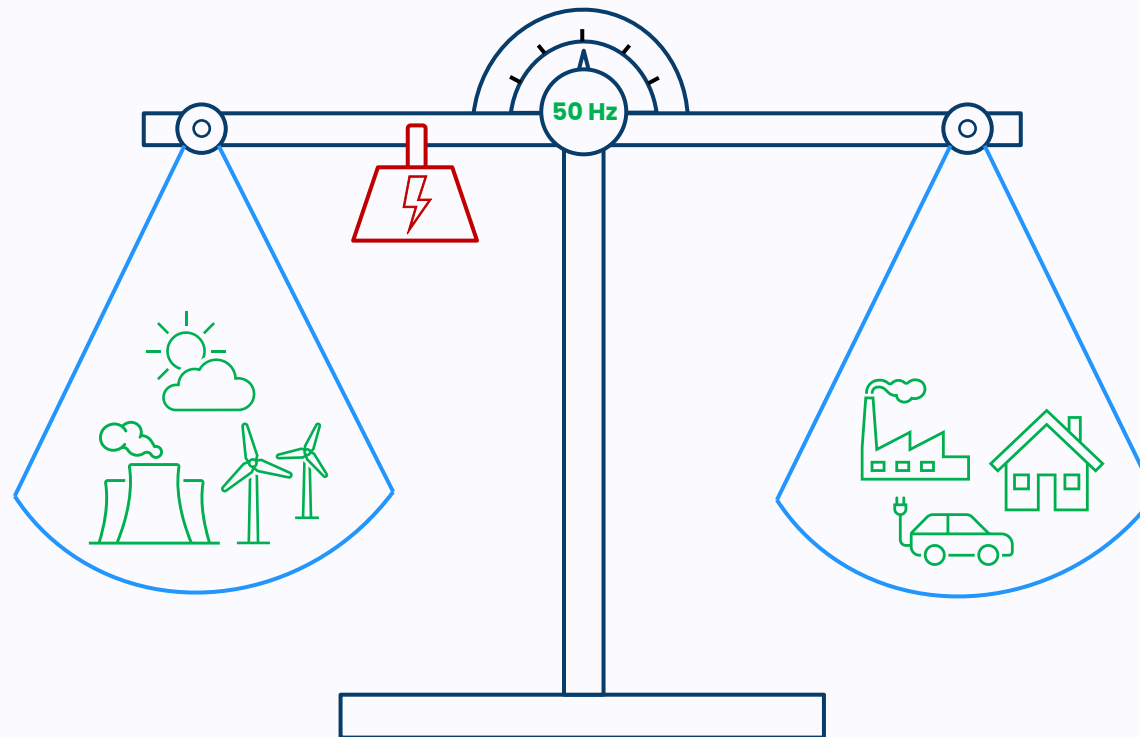
Frequenz zu hoch



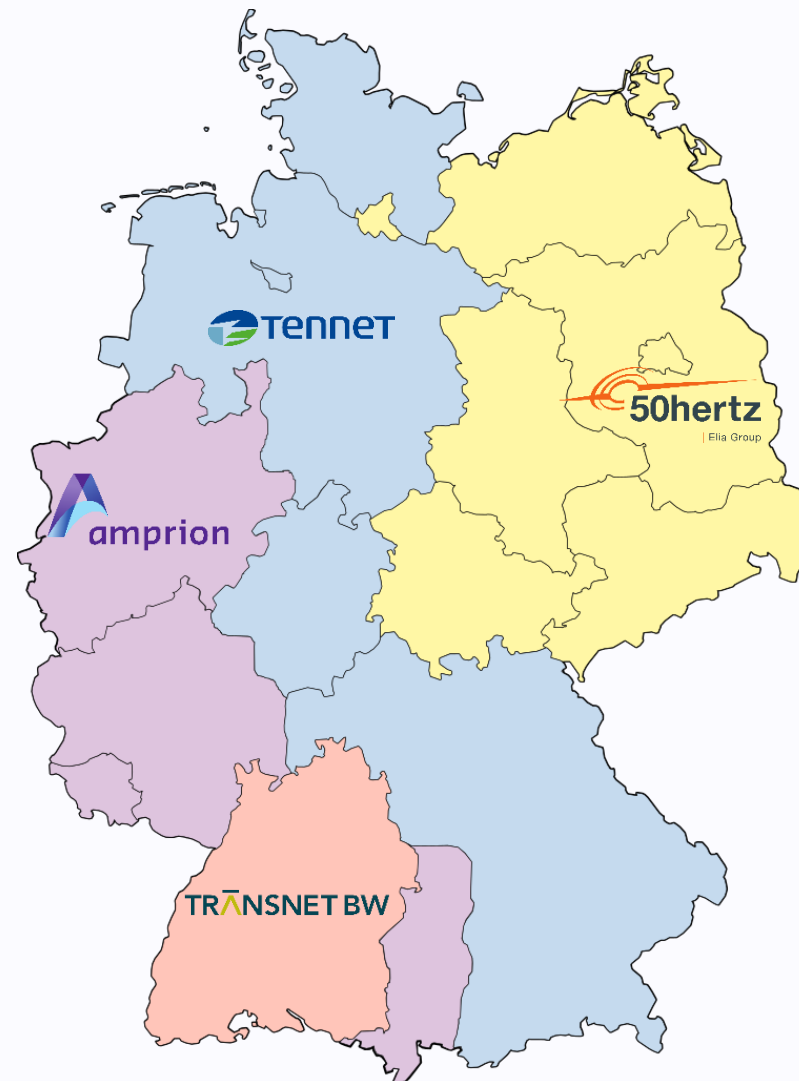
Frequenz zu niedrig



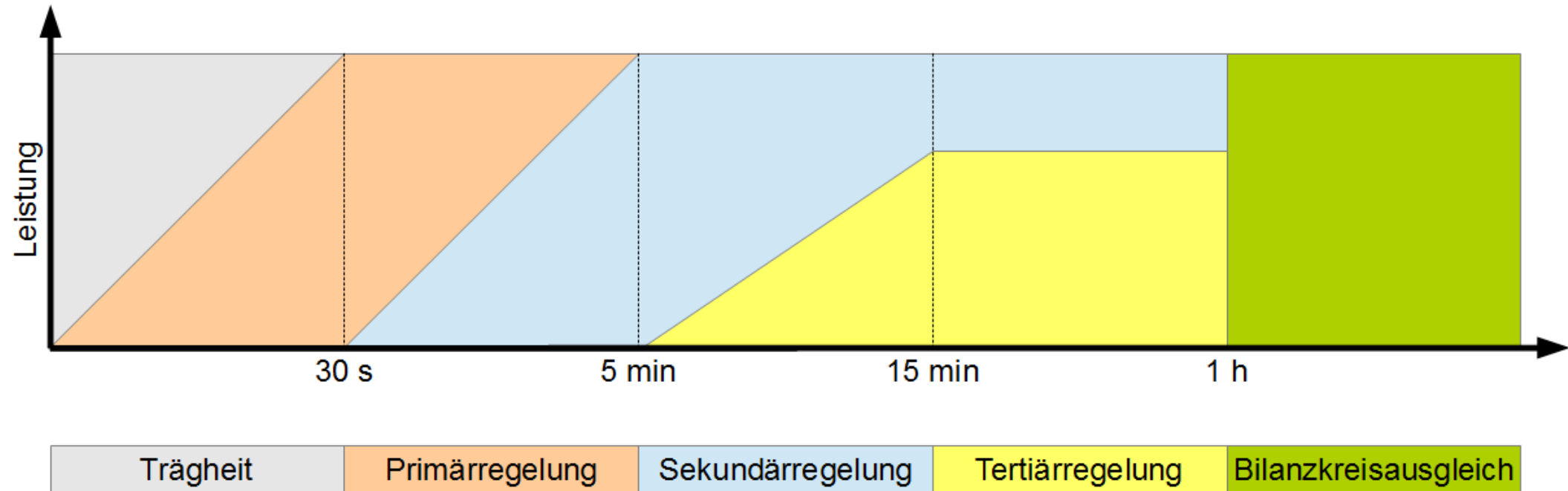
Regelleistung



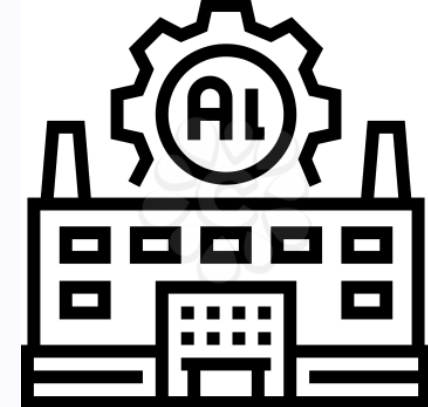
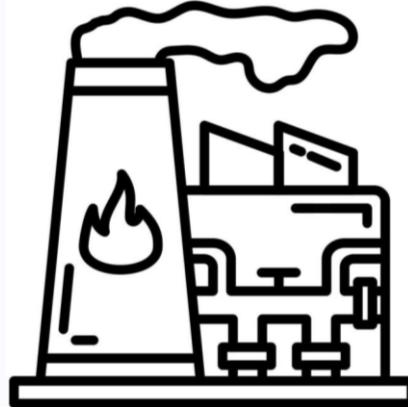
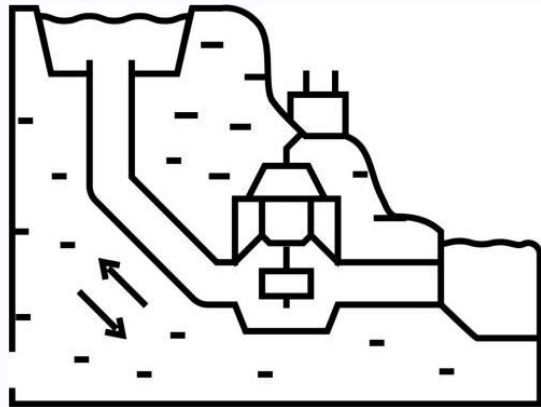
Übertragungsnetzbetreiber & Regelzonen



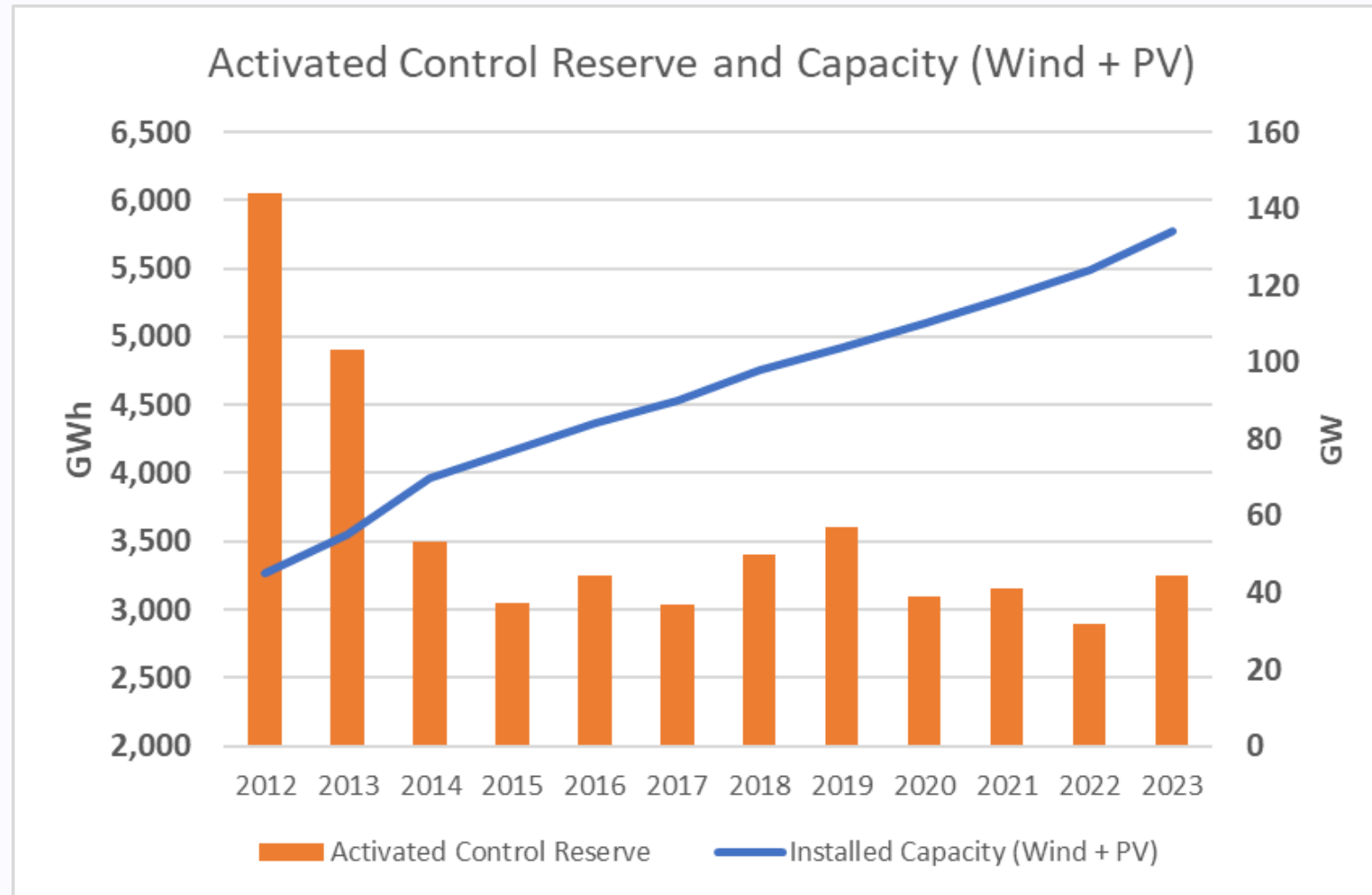
Arten von Regelleistung



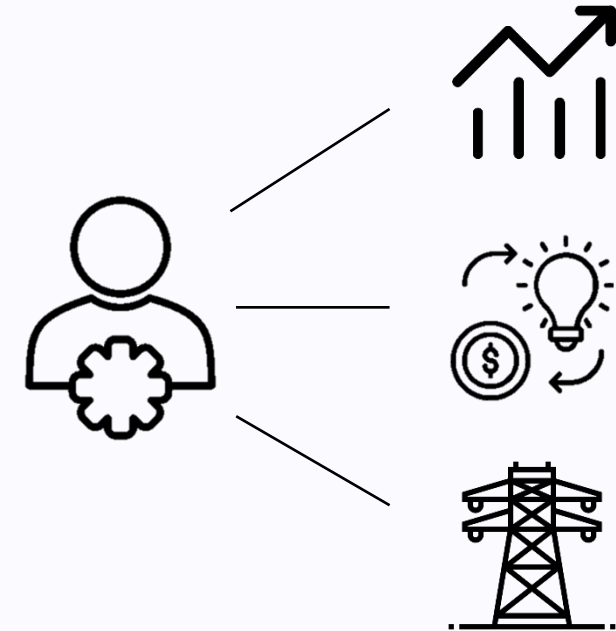
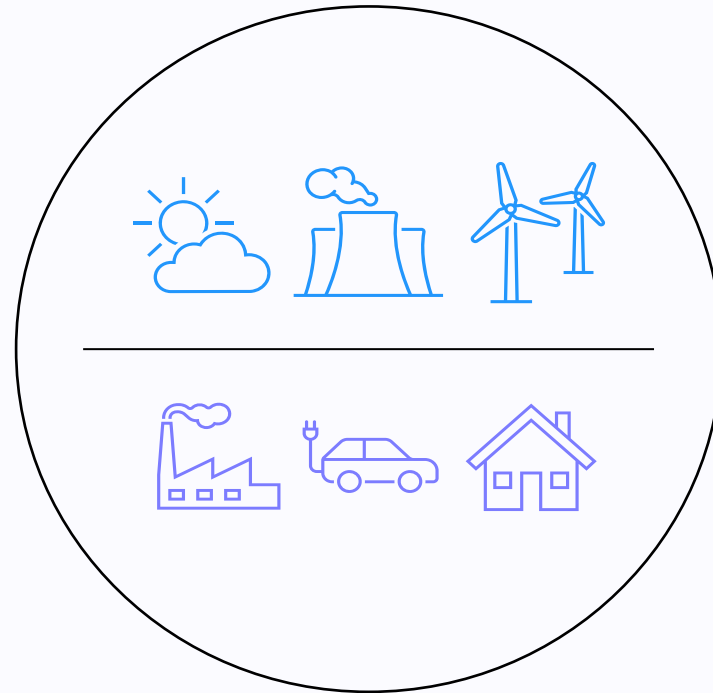
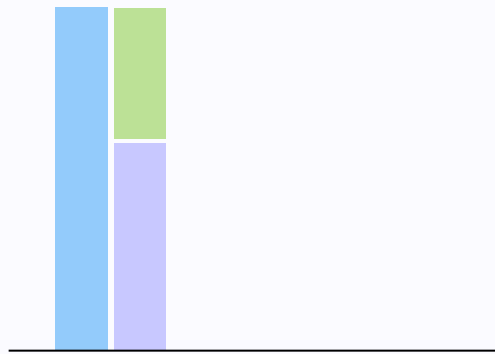
Beispiele von Regelleistung





Entwicklung Renewables




Bilanzkreis

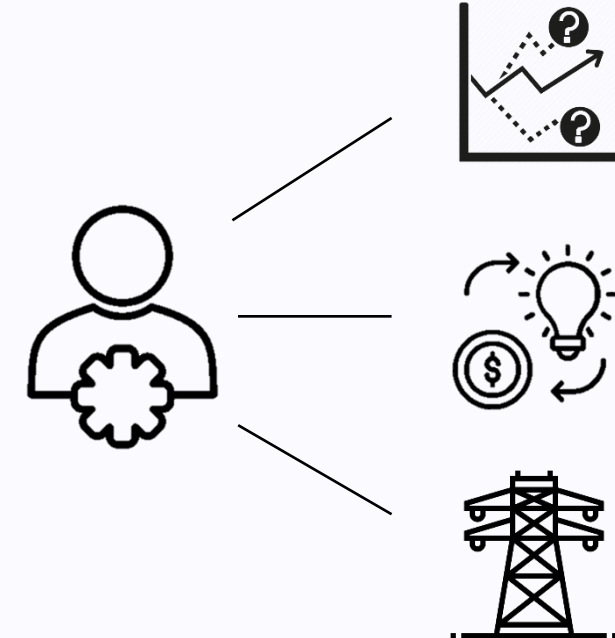
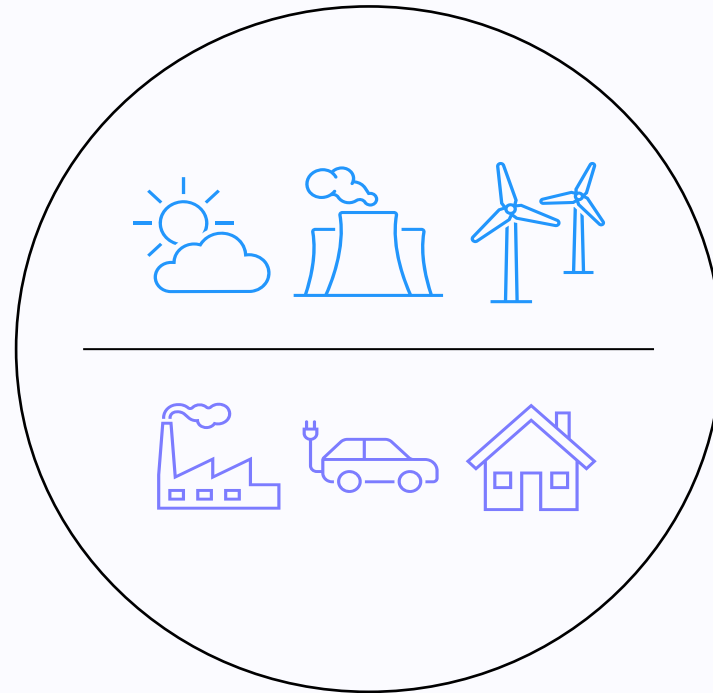
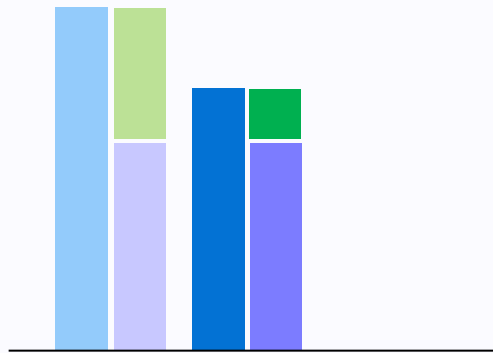


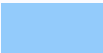

 Prognose **Produktion**



 Prognose **Verbrauch**

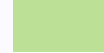

 Prognose **Einspeisung**

Bilanzkreis

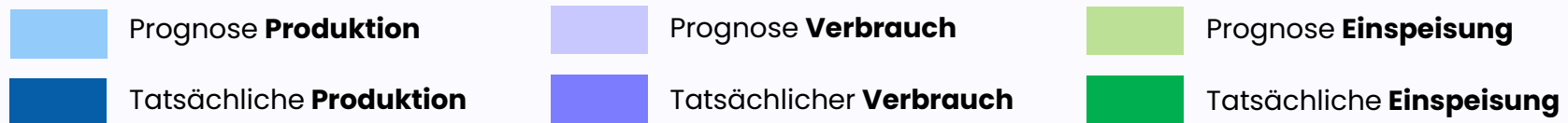
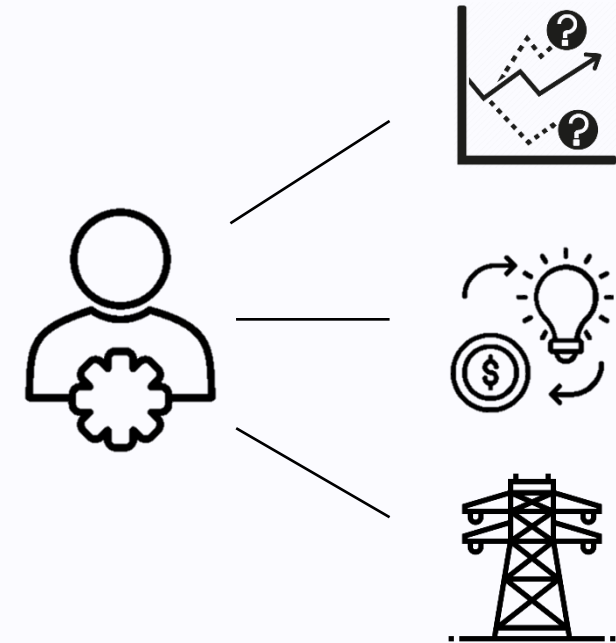
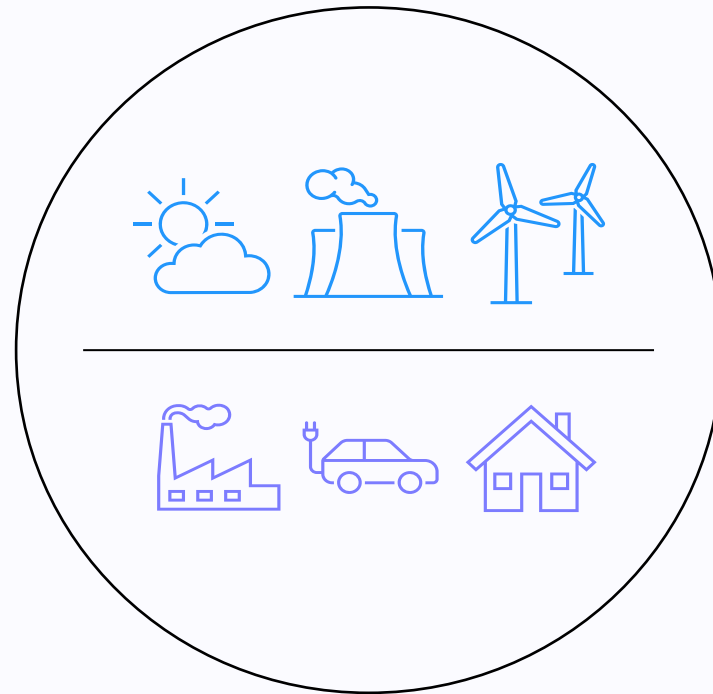
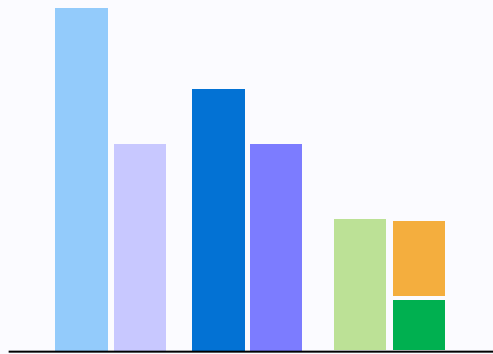


 Prognose **Produktion**
 Tatsächliche **Produktion**

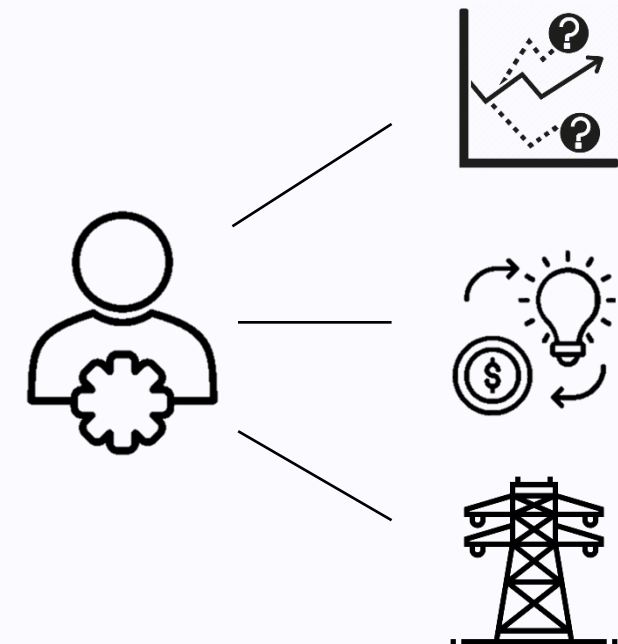
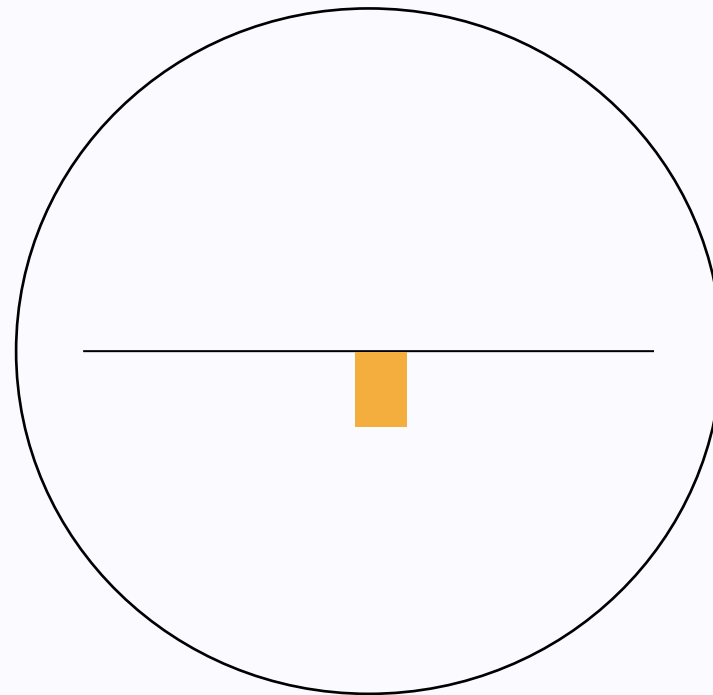
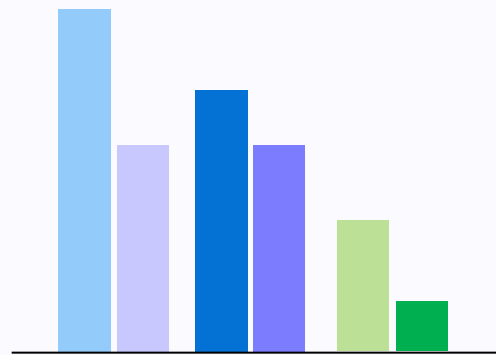
 Prognose **Verbrauch**
 Tatsächlicher **Verbrauch**

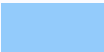





 Prognose **Einspeisung**
 Tatsächliche **Einspeisung**

Bilanzkreis





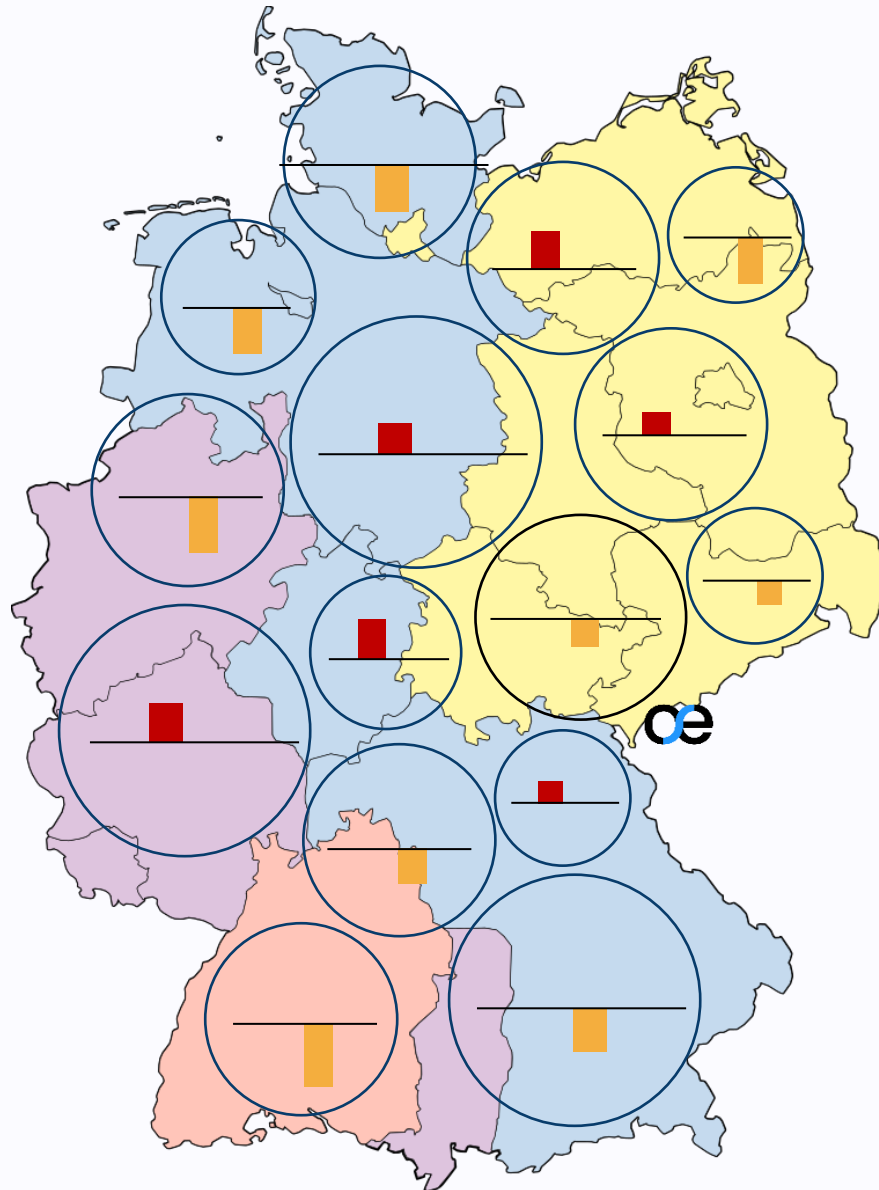
Bilanzkreis im Defizit



- | | | |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|  Prognose Produktion |  Prognose Verbrauch |  Prognose Einspeisung |
|  Tatsächliche Produktion |  Tatsächlicher Verbrauch |  Tatsächliche Einspeisung |

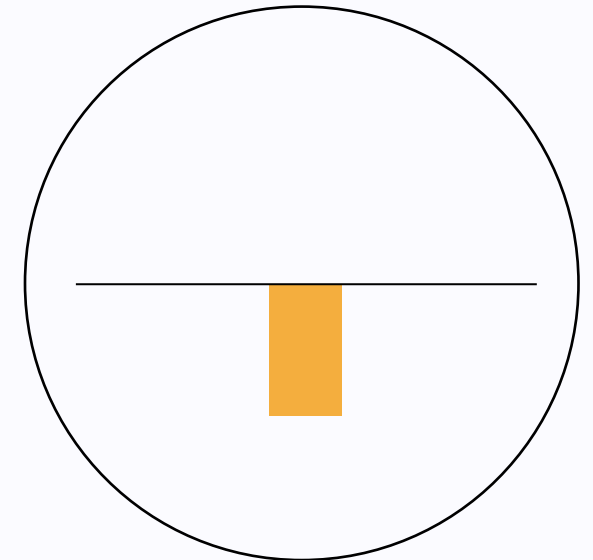
Bilanzkreise

-  Defizit
-  Überschuss

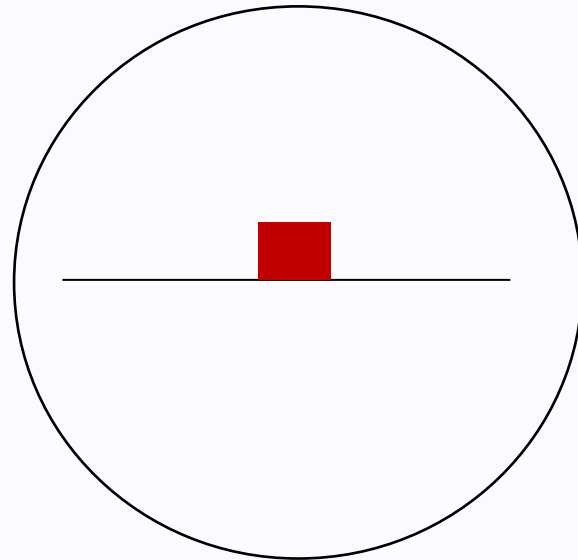
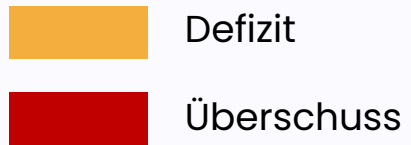


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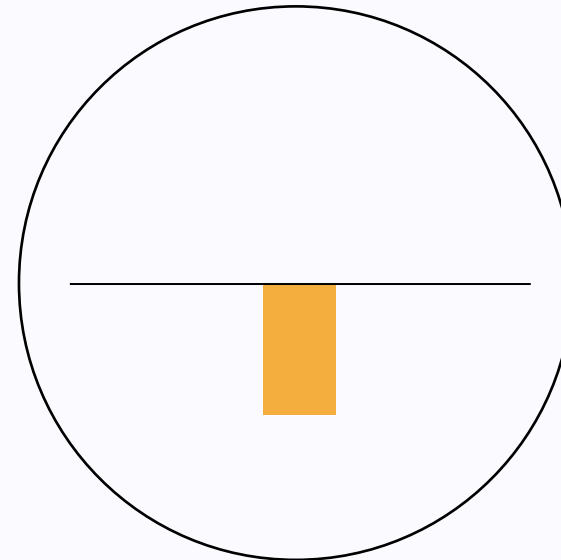
Saldo



Vorhersage des Saldos

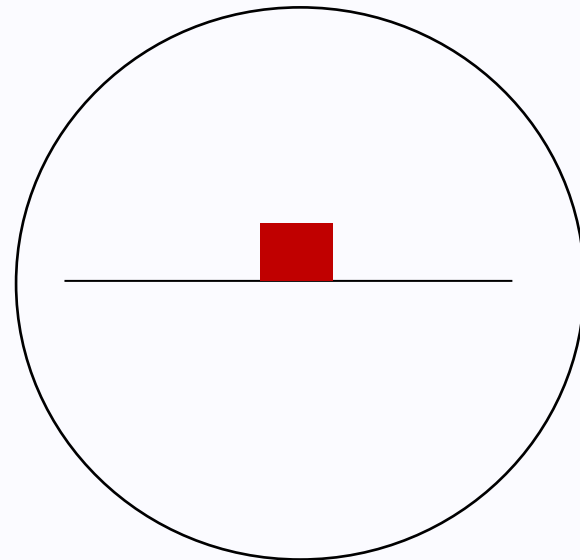
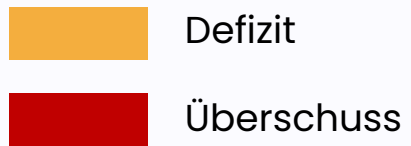


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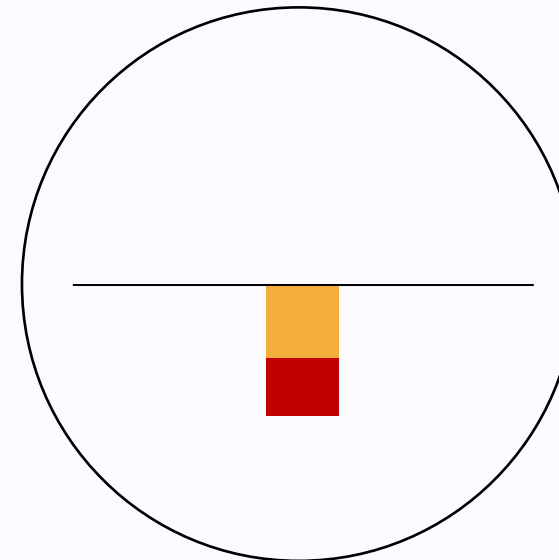


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Reduktion des Saldos

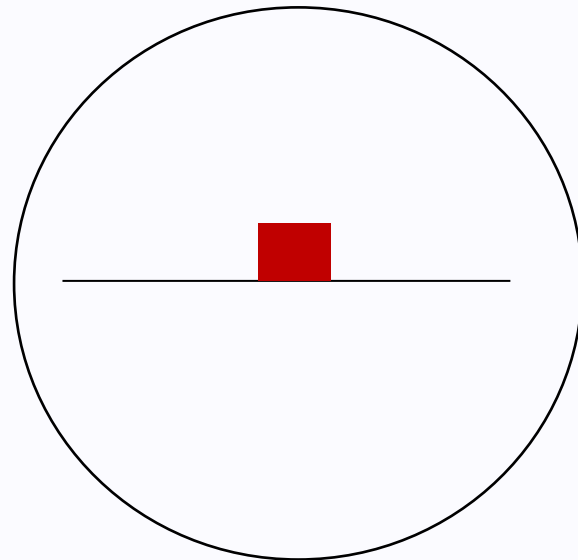
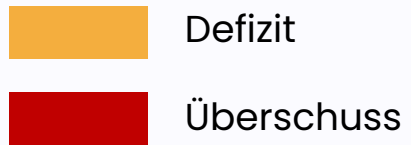


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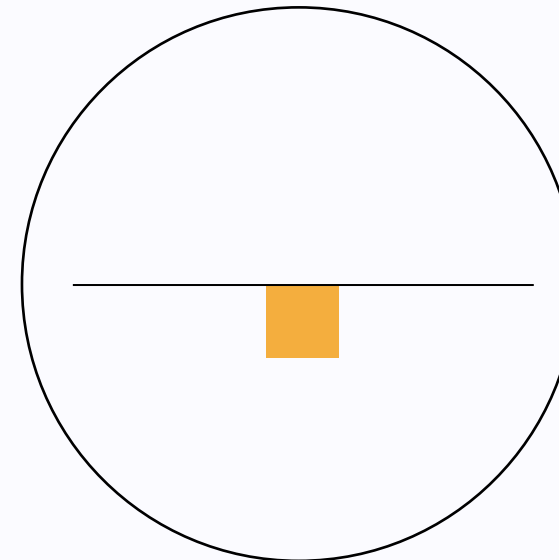


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Reduktion des Saldos



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Verwendete Daten

- Wochen- und Feiertage
- Bewölkung
- Temperatur
- Einspeiseprognosen Solar & Windenergie
 - Inklusive Veränderung zu vorherigen Werten
- Preise
 - Day-Ahead
 - Intraday
 - Regelenergie
- Handelspositionen

Gesellschaftlicher Beitrag

- Vorzeitiges Erkennen von Defiziten (Überschüssen)
- Einkauf der benötigten Energie Stunden im Voraus
- Langfristig regelbare Kraftwerke können reagieren
 - Häufig günstig und emissionsarm
- Zum Lieferzeitpunkt wird weniger Regelenergie benötigt
- Größenordnung: einige GWh pro Tag
- Gaskraftwerk kann ausgeschaltet bleiben
- Einsparung von Kosten und CO₂

Connect with me!



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