



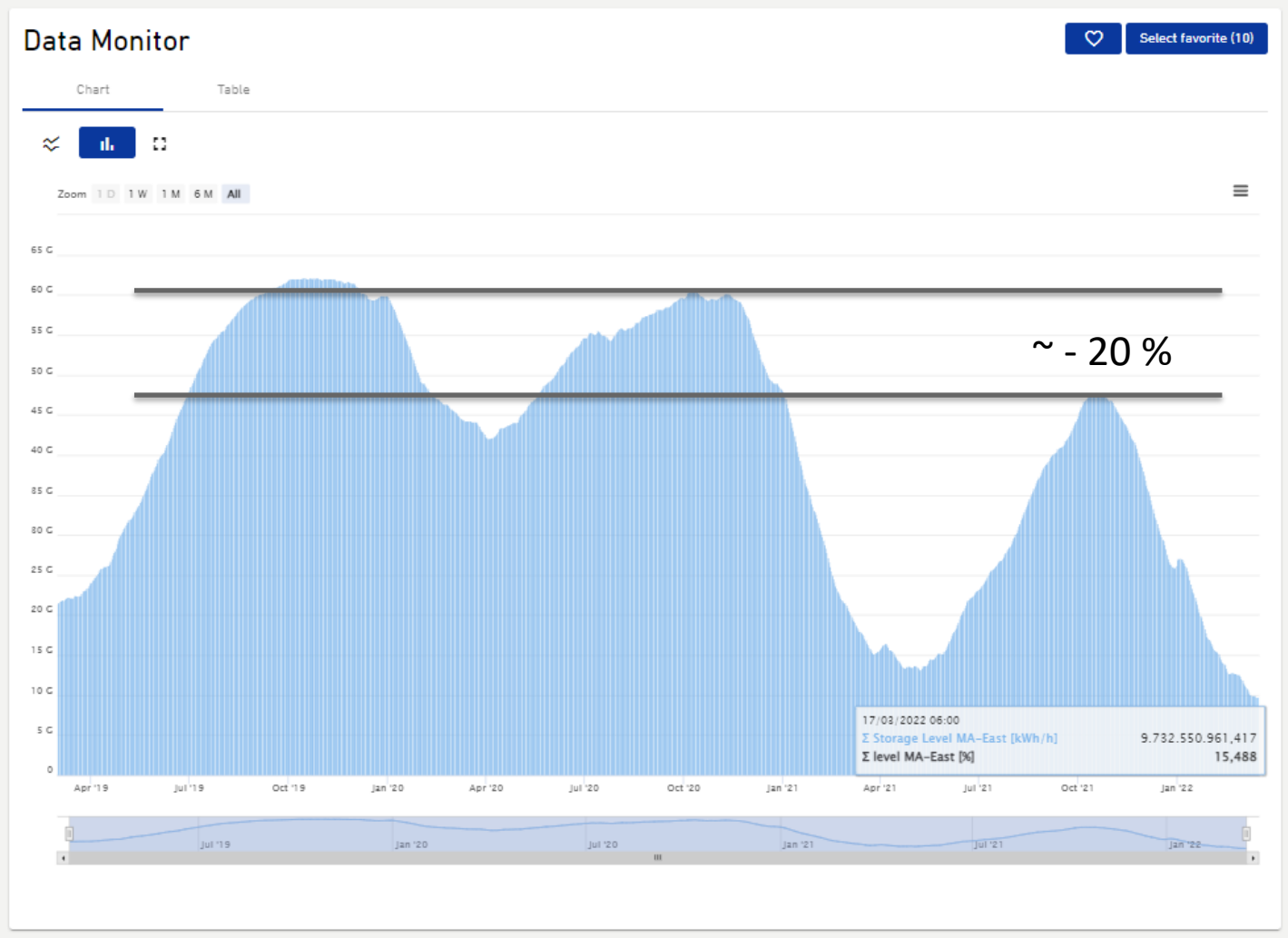
Austrian Gas Grid Management AG

Supply situation for the winter period 22/23



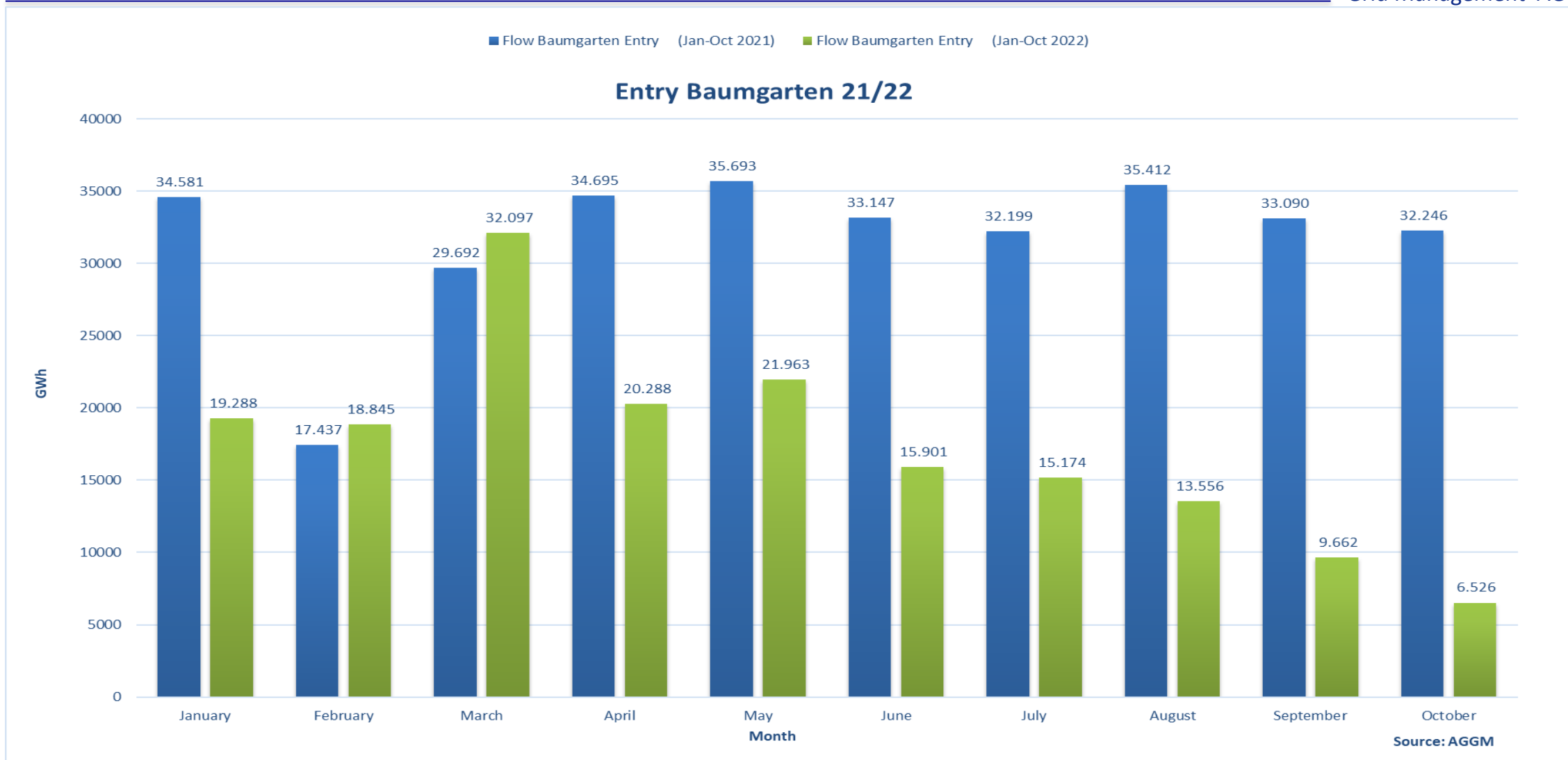
Joint Information Day
Vienna, November 24, 2022

Low storage levels already 2021/22

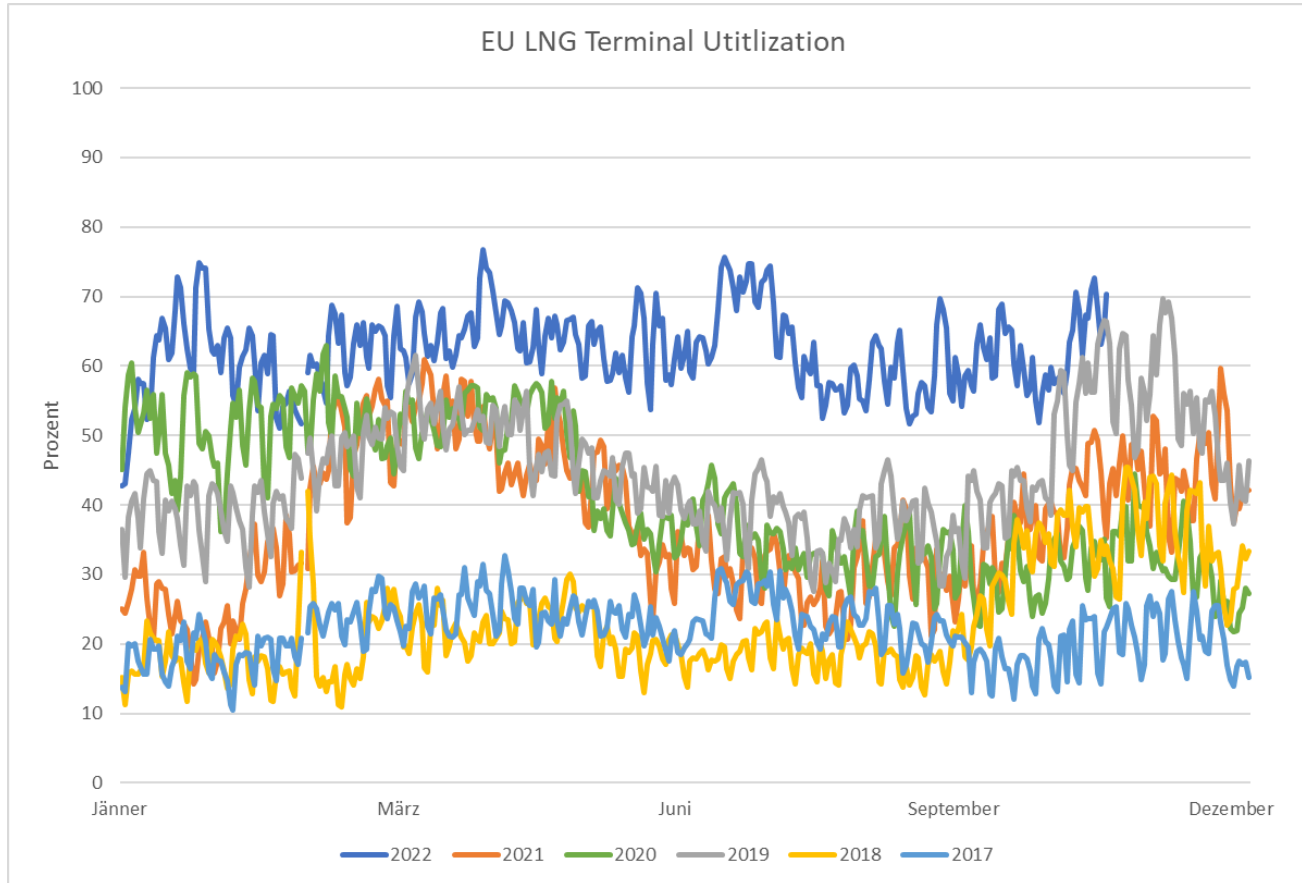


Source: AGGM-Plattform
<https://platform.aggm.at/portal/visualisation/ts-publication> ;
timeseries: Σ Storage Level MA-East [kWh] ; Σ level MA-East [%]

Significant reduction of gas flows



Reaction to reduced gas flows from Russia

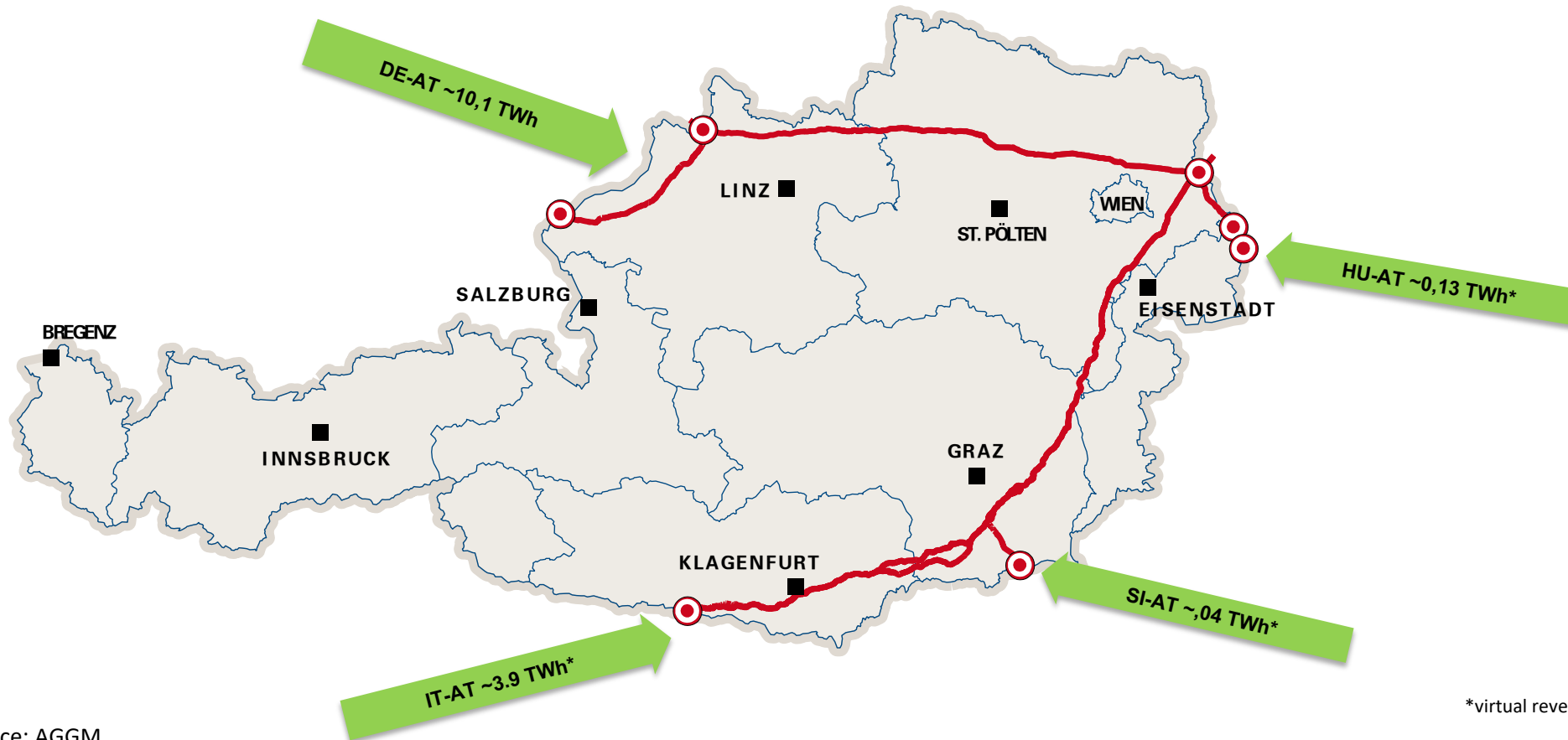


Source: AISI, 15.11.2022

- ▶ LNG plus Norwegian, Algerian, Azerbaijani pipeline imports compensate for Russian supply shortfall
- ▶ Stricter Monitoring of SoS-supply-standard
- ▶ Incentives to build up storage inventories for industry
- ▶ Ensuring the availability of unused storage capacity
- ▶ Legally mandated procurement of gas
 - ▶ 20 TWh Austrian strategic gas reserves procured by ASGM (100 % subsidiary of AGGM)
- ▶ ...

Significant changes of gasflows towards Austria (1)

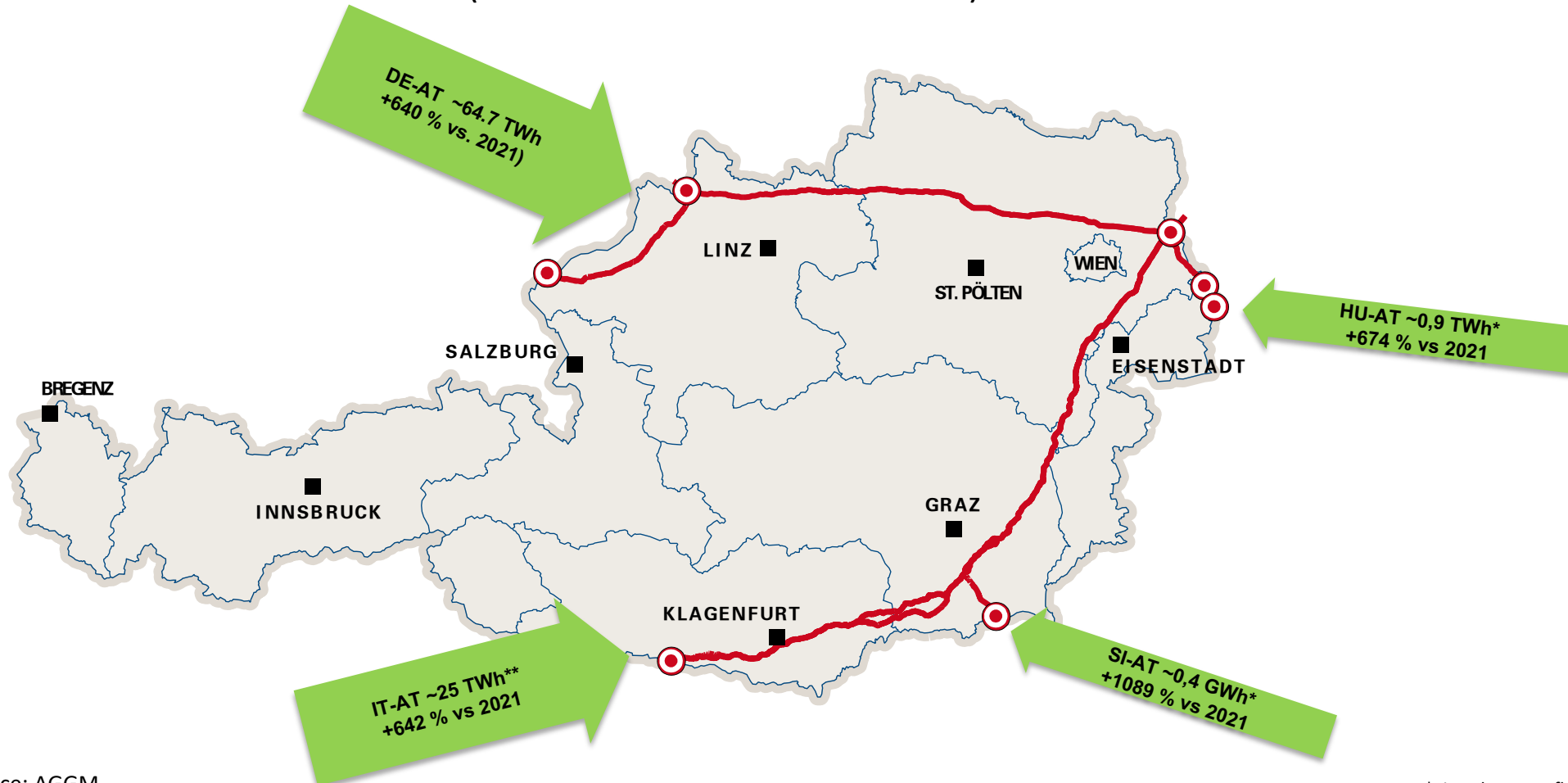
► Entry Allocations Market Area East (March – October 2021)



Source: AGGM

Significant changes of gasflows towards Austria (2)

▶ Entry Allocations Market Area East (March – October 2022 vs 2021)

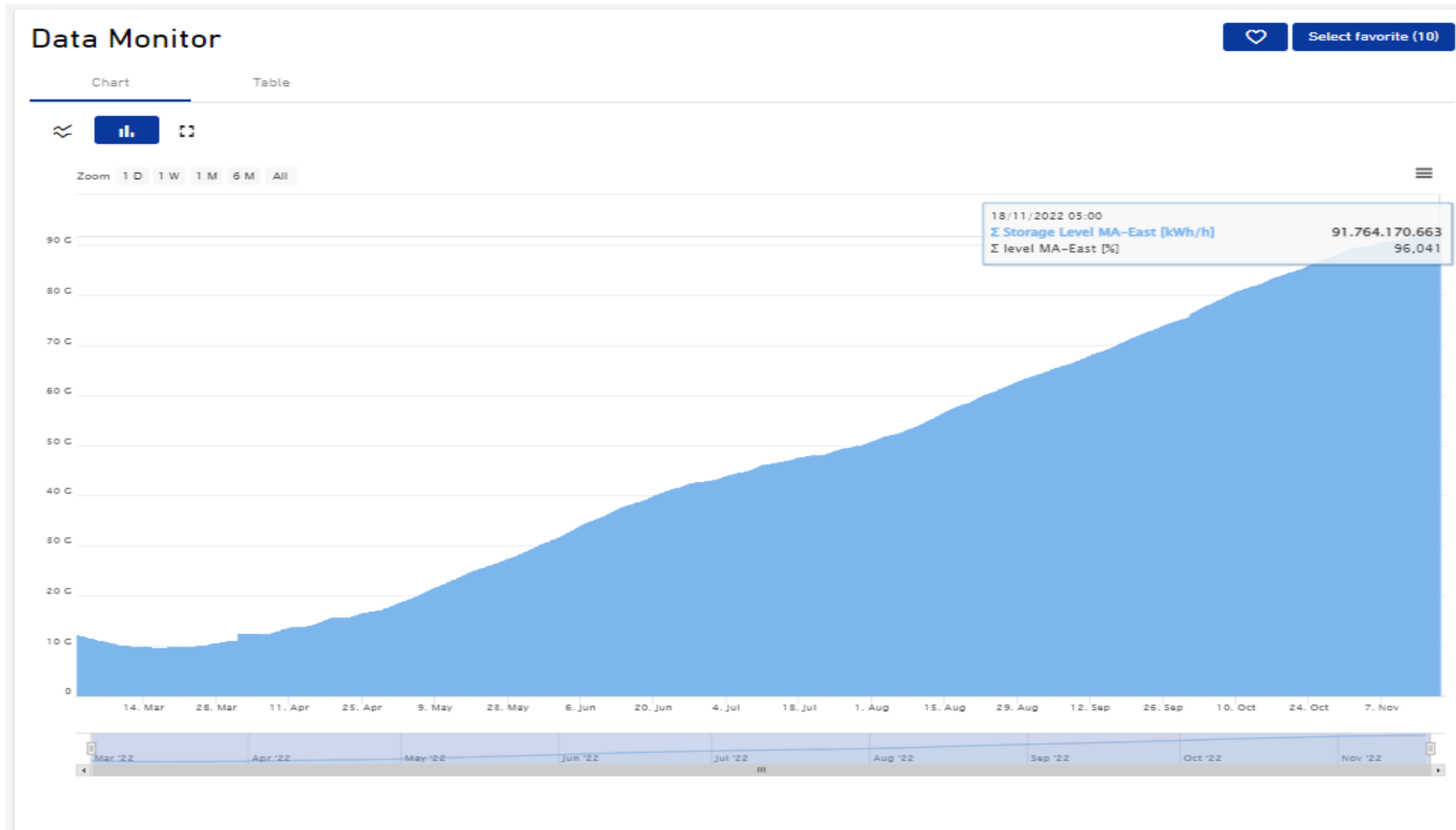


Source: AGGM

*virtual reverse flow only
**mostly virtual reverse flow

Gas market is prepared for the winter 22/23

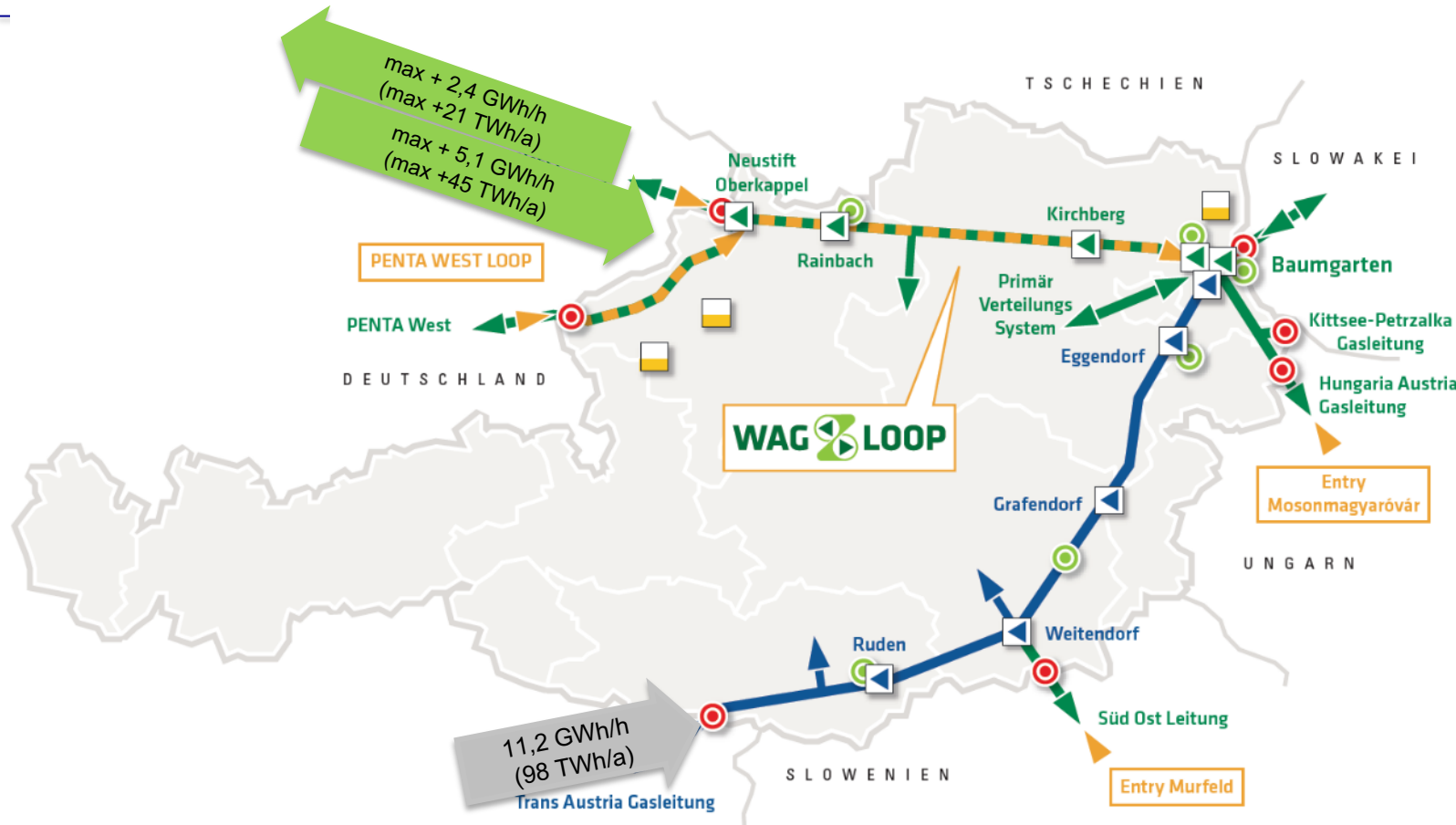
AGGM Austrian Gas
Grid Management AG



- ▶ High storage levels
- ▶ High usage of LNG-facilities
- ▶ New LNG-facilities are coming online
- ▶ ...
- ▶ Major risks remain

Source: AGGM-Platform
<https://platform.aggm.at/portal/visualisation/ts-publication> ;
timeseries: Σ Storage Level MA-East [kWh] ; Σ level MA-East [%]

Diversification of sources needs ...



- ▶ Realisation of
 - ▶ additional transport capacities
 - ▶ additional LNG-Terminals
- ▶ Integration of renewable gases (Biomethane and Hydrogen) into the energy system*
 - ▶ The gas grid is ready to transport both

*Potentials for the contribution of renewable energy in Austria can be found in the Study **ONE100**: <https://www.aggm.at/en/energy-transition/one100>

Urgent call to all decision-makers...

AGGM Austrian Gas
Grid Management AG

GIVE PEACE A CHANCE!



Austrian Gas Grid Management AG

The New Austrian Balancing Regime - an Initial Review



Joint Information Day
Vienna, November 24, 2022

- ▶ Objectives & Challenges during New Market Model Implementation
- ▶ Market Area Status Information
- ▶ Calorific Value Reconstruction Simulation
- ▶ Initial Review Conclusions



Processes

- ▶ Harmonize existing processes ✓
 - ▶ Integration into one central EDM-System “AGIMOS”
 - ▶ i.e., balance responsible party (BRP) registration, adding a balance group member, etc.
- ▶ Coordinate and implement new processes ✓
 - ▶ Integrated market area balancing
 - ▶ Integrated market area status provision
 - ▶ Balance group status provision
 - ▶ BRP registration in market area west
 - ▶ (end consumer) supplier registration
 - ▶ Registered areas for distribution system operators
 - ▶ etc.

IT-Development & Testing

- ▶ Complete IT development and test phases on time ✓
 - ▶ Internal tests
 - ▶ Testing with market participants

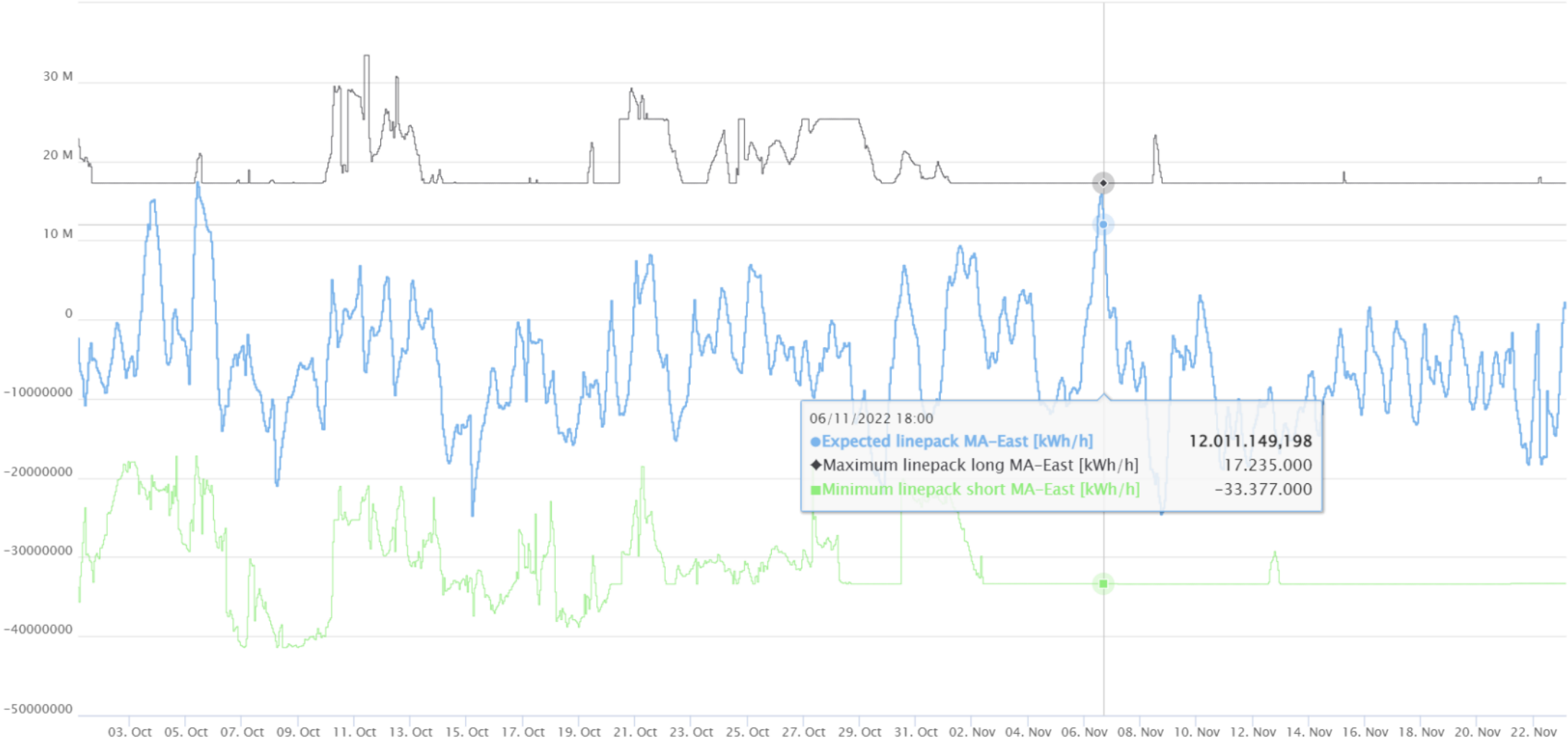
Migration

- ▶ Coordinate and complete data migration with system operators on time ✓
 - ▶ Data migration of 83 suppliers, 21 balance responsible parties in the market area west and 21 distribution system operators
- ▶ Support transition registration for 72 BRPs ✓
 - ▶ provision of AGCS information, contract signing, communication with system operators
 - ▶ Support of a 2-week transition period for late security deposits

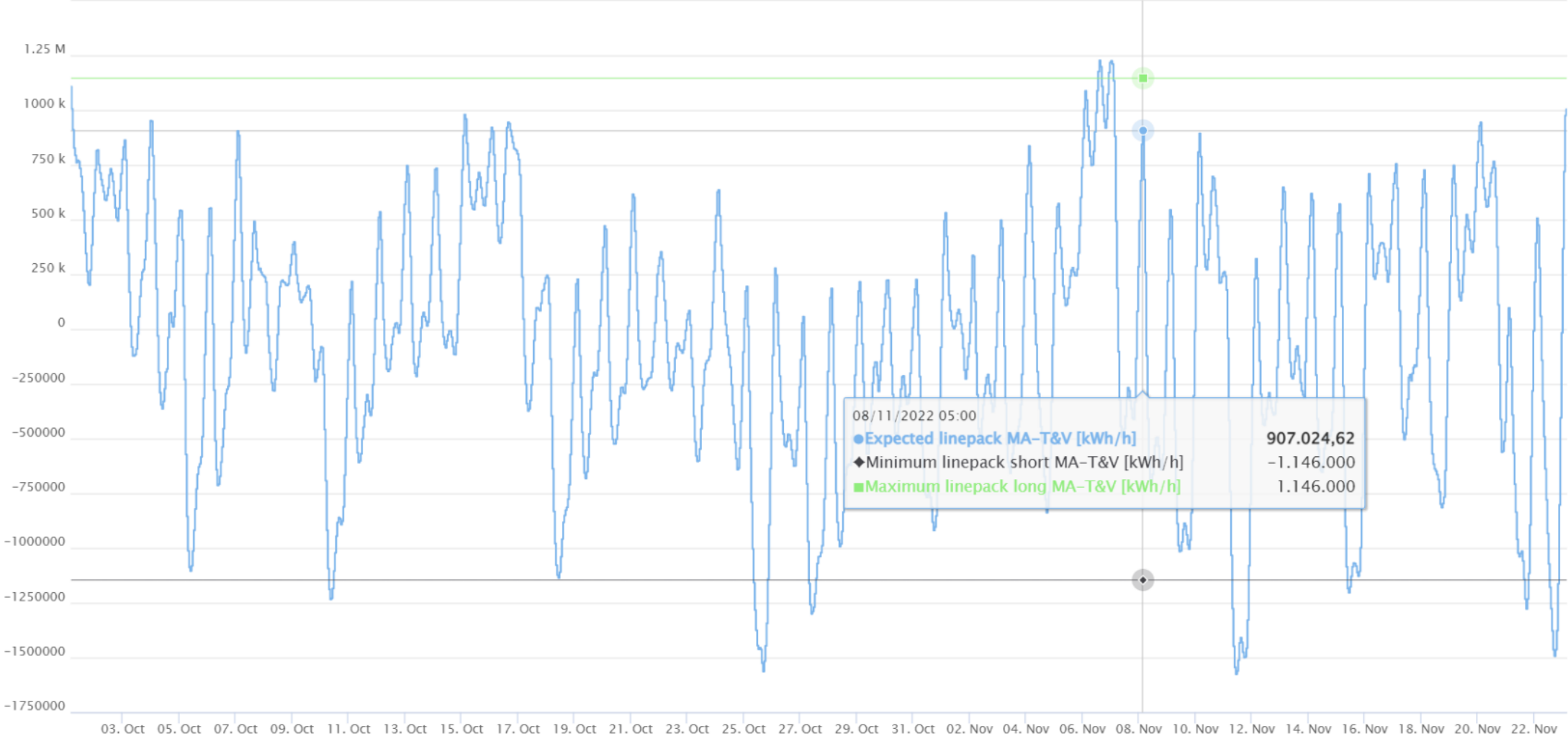
System Launch

- ▶ Support market participants and AGGM platform users ✓
 - ▶ User guides
 - ▶ Q&As
- ▶ Keep downtimes as short as possible ✓
- ▶ Provide master data of market participants to system operators correct and on time ✓
- ▶ Submit new messages (in particular the balance group status) on time and without errors ✓
 - ▶ Quality issues to be discussed...

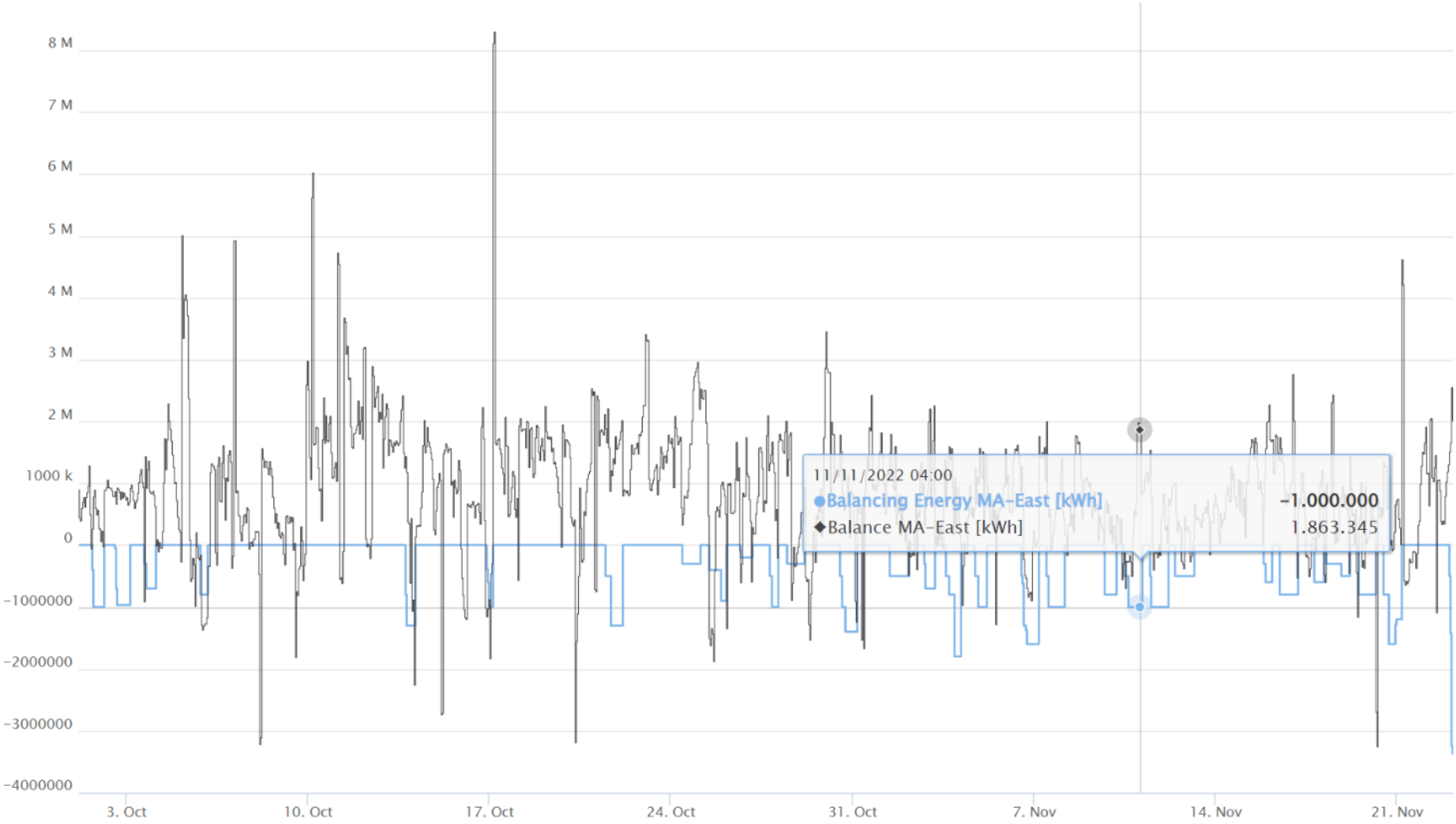
Market Area Integrated Linepack Usage in Market Area East



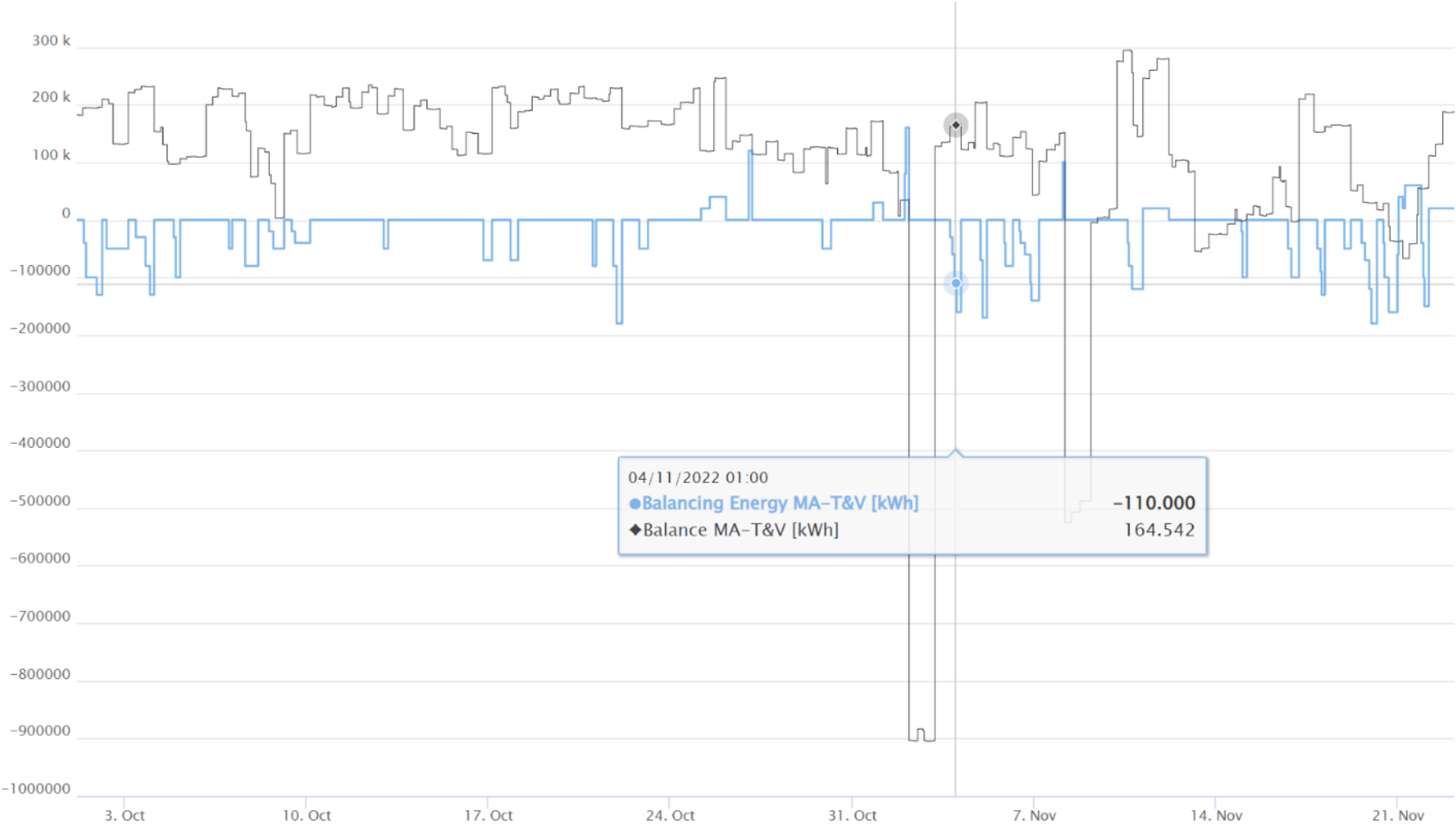
Market Area Integrated Linepack Usage in Market Area West



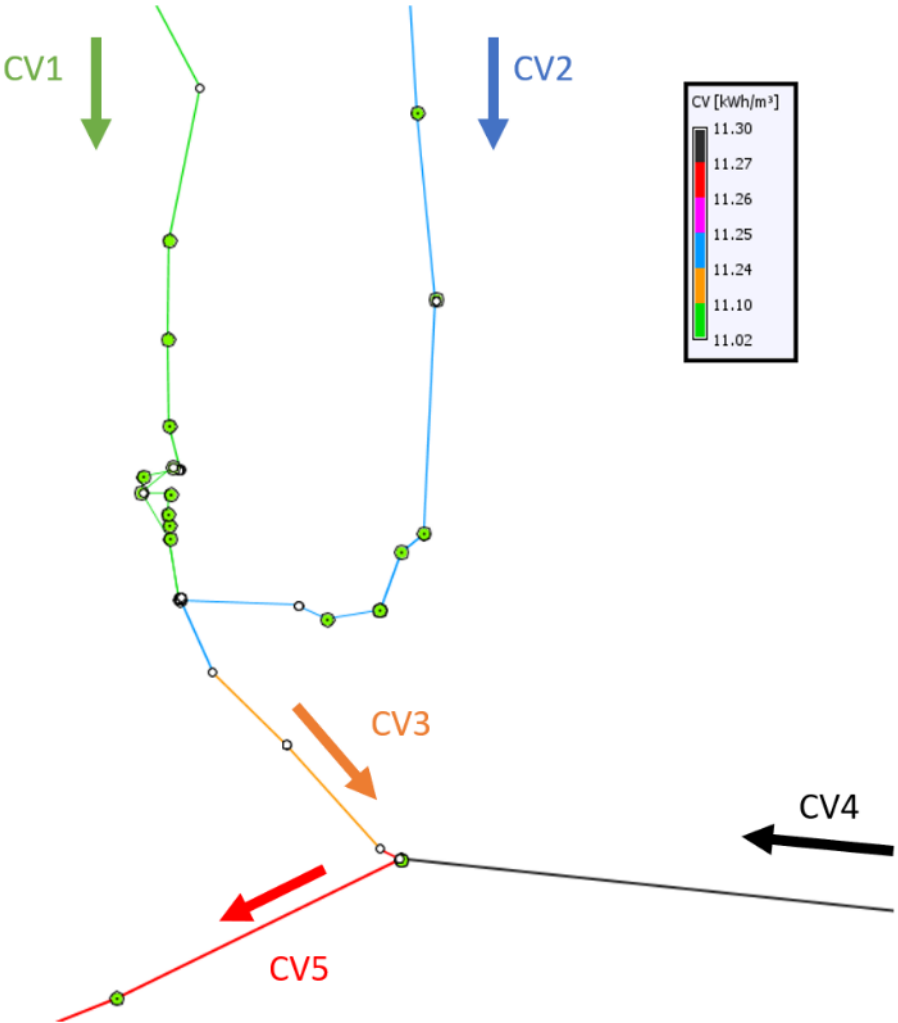
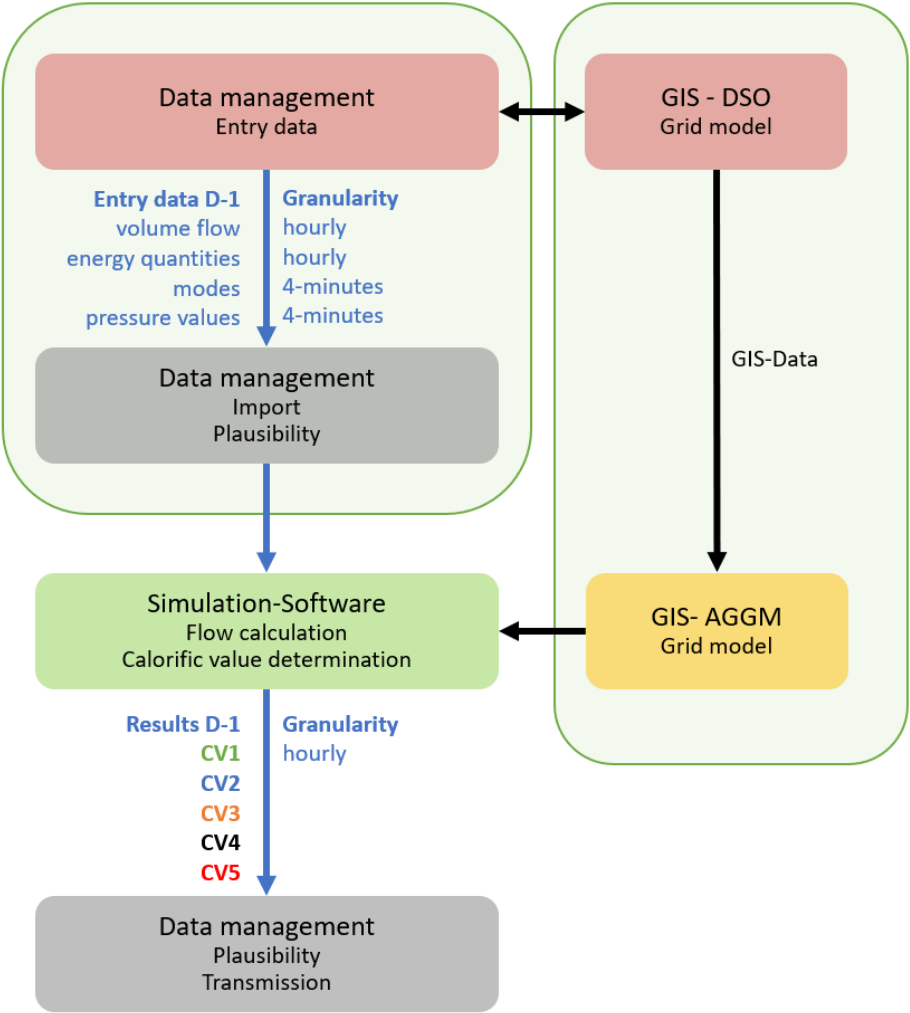
Market Area Integrated Balancing Energy Procurement in MA East



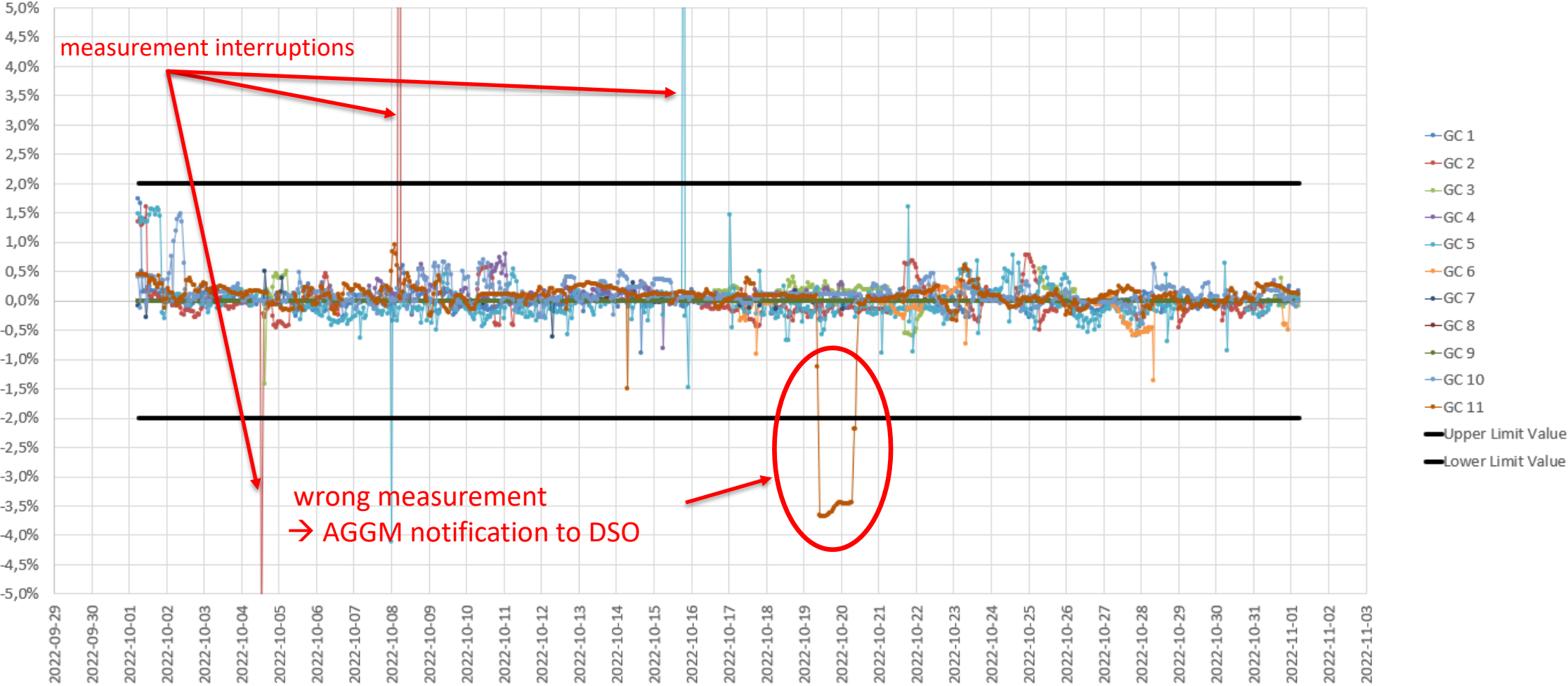
Market Area Integrated Balancing Energy Procurement in MA West



Calorific Value Reconstruction Simulation Process – grid example



Deviation between simulation results and gas chromatography measurements



- ▶ Successful start of the new market model processes with high attention on market communication
- ▶ Constant oversupply of Market Area East since October 1st
 - ▶ (Almost) only balancing energy sells
 - ▶ Probably not caused by the new market model
- ▶ Numerous violations of the 4% limit of the (cumulated) hourly imbalances set per balancing group
 - ▶ One day in MA East and two days in MA West with necessary **buy and sell** balancing energy purchases
 - ▶ Respective within-day obligations to be settled
- ▶ Load profile metered end consumer forecasts for within-day balancing status still to be improved
 - ▶ Improvement expected after receiving final data for the 1st clearing of the balancing entity (AGCS and A&B)
- ▶ Adaption of standard load profiles due to expected decrease in end consumer demand under revision
- ▶ Successful start of the calorific value reconstruction simulation in the level 1 distribution grid
 - ▶ Determination of calorific values for distribution grids as of October 1st, 2022
 - ▶ Determination of calorific values for individual end consumers as of January 1st, 2024



Austrian Gas Grid Management AG

Hydrogen for the future Austrian energy system



Joint Information Day
Vienna, November 24, 2022

project „H₂ readiness“:

main target: H₂ roadmap for Austria

Integrated long term planning 2022 (iLTP 2022)

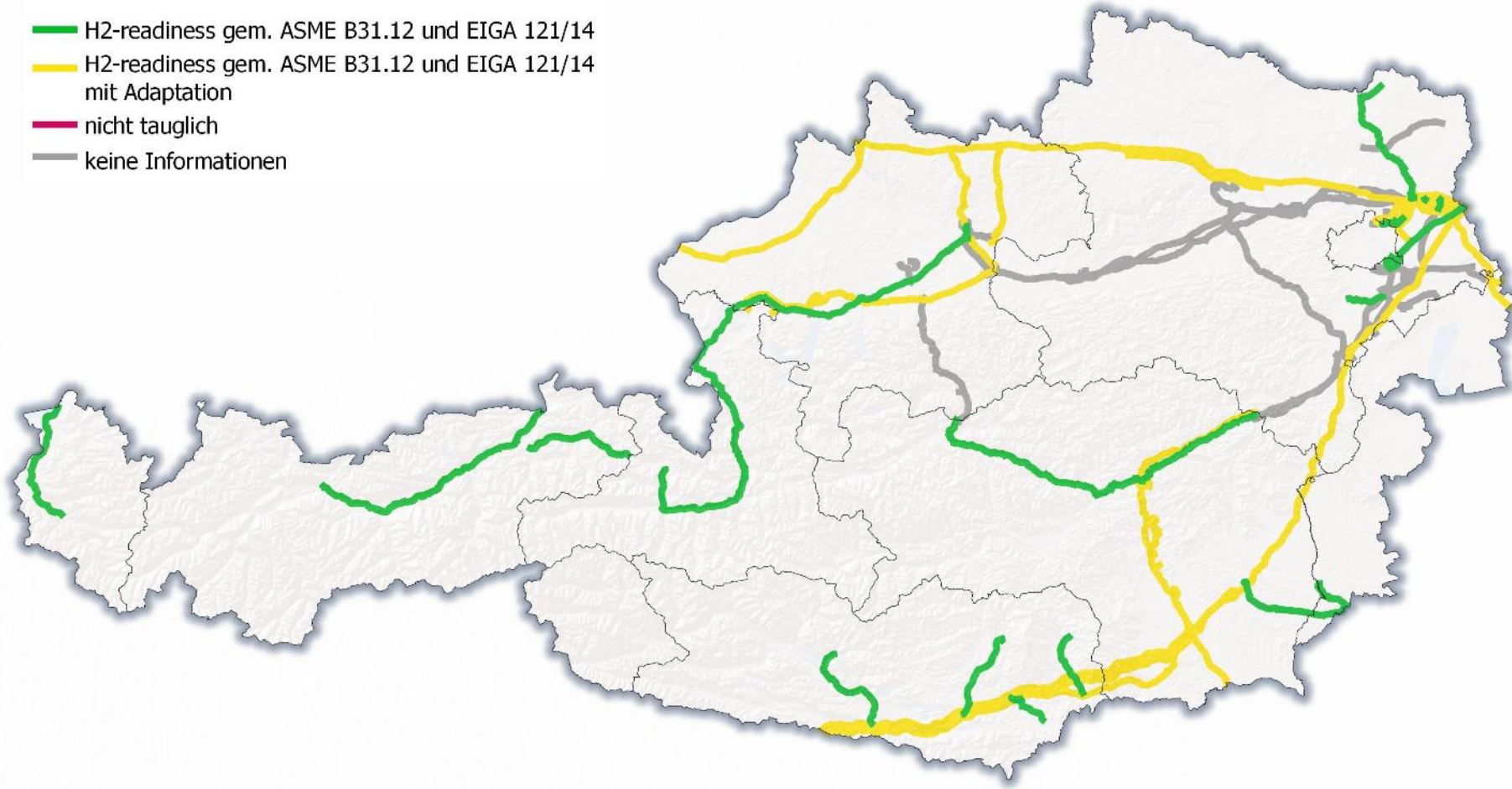
Specific H₂ pipeline projekt on the basis of capacity expansion applications

- ▶ Pre-project phase: ONE100: H₂ transportation network is necessary in Austria
- ▶ Project members: AGGM + all transmission system operators and all distribution system operators
- ▶ Project start: 11/2000
- ▶ Project end: 12/2022

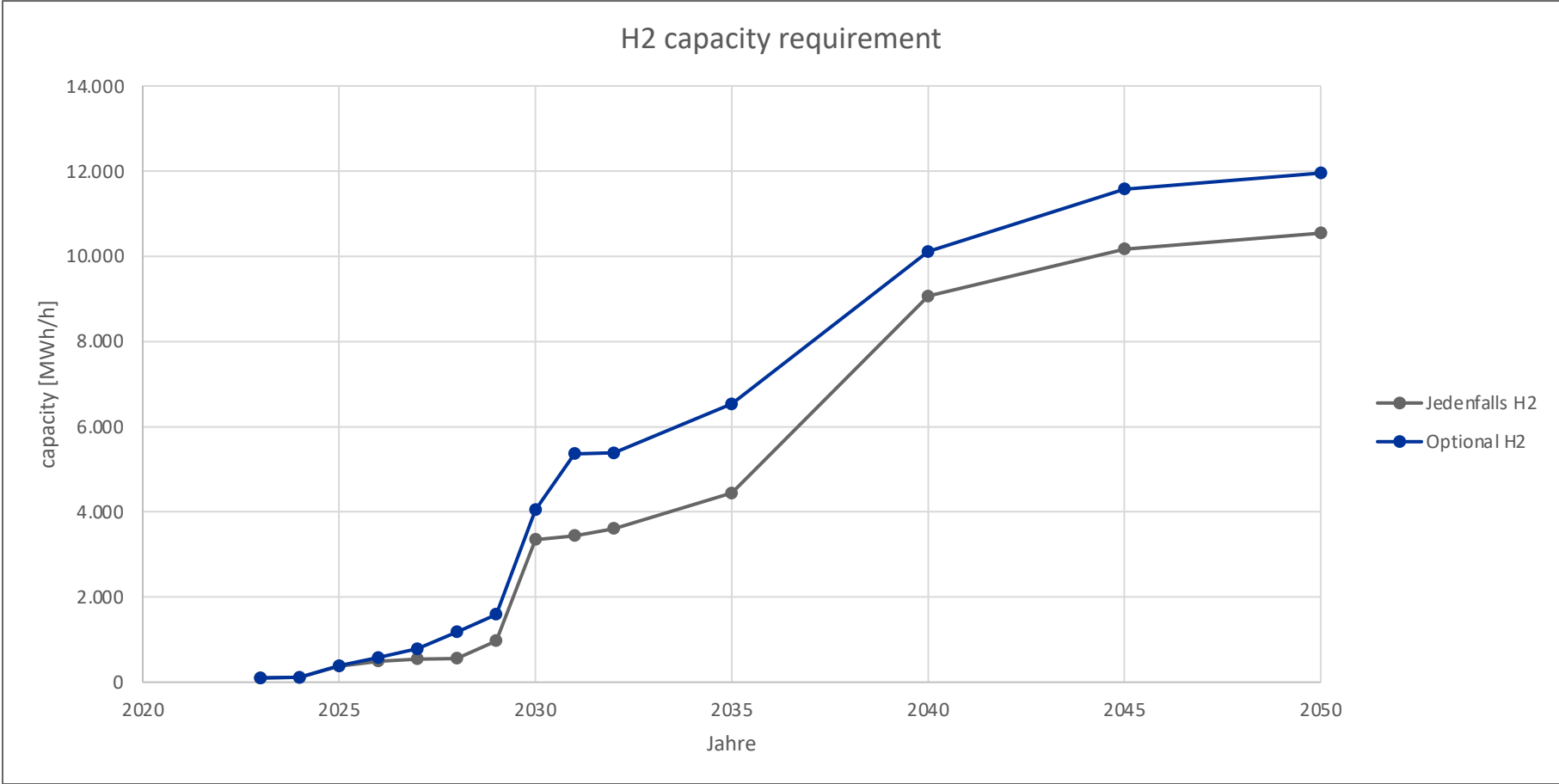
- ▶ Project Phases
 - ▶ Phase 1: Determination of the H₂ readiness of the gas network components
 - ▶ Phase 2: Survey of the Austrian H₂ demand
 - ▶ Phase 3: creation of the H₂ Roadmap for Austria

Phase 1: pipeline steel materials

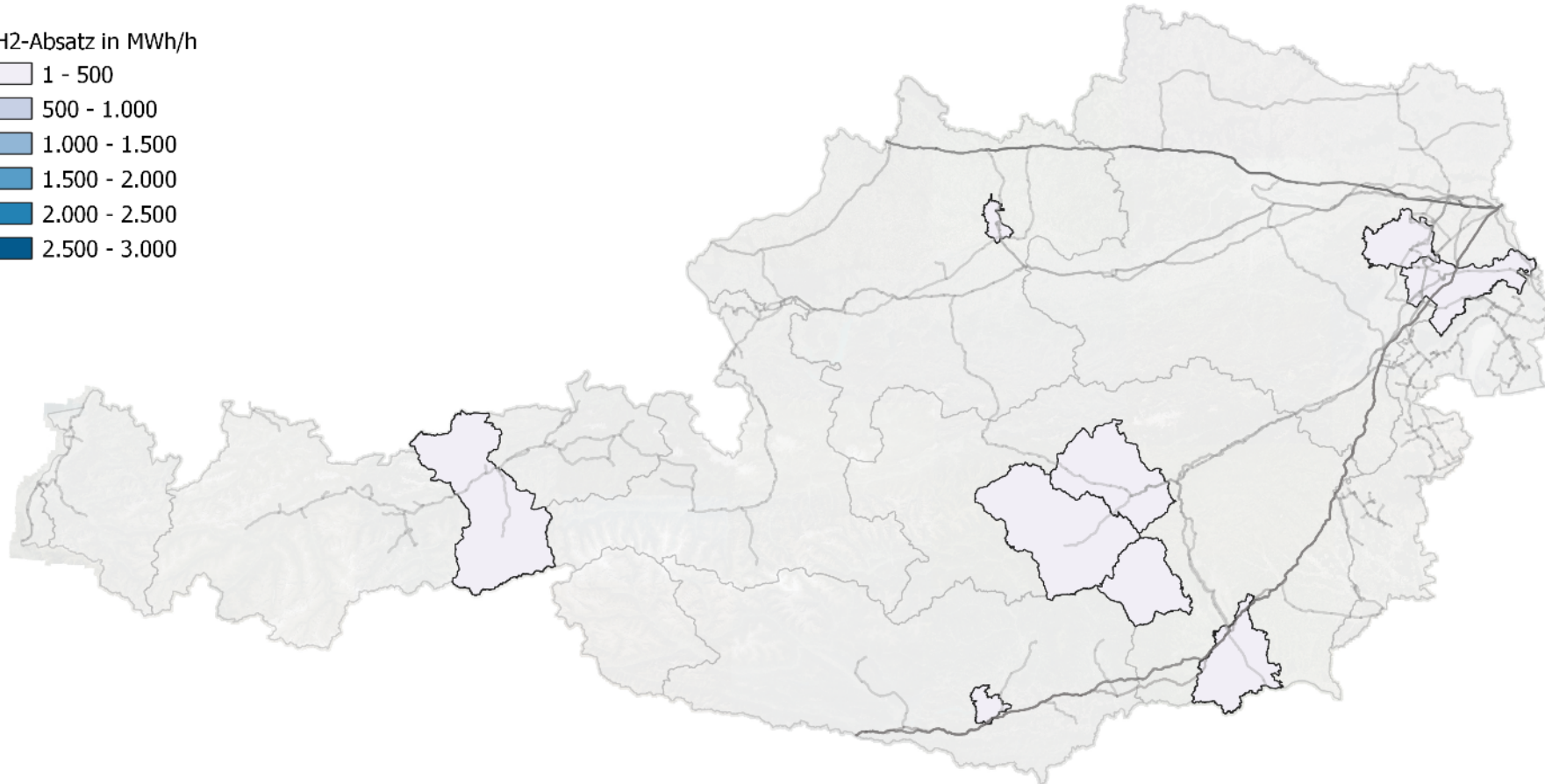
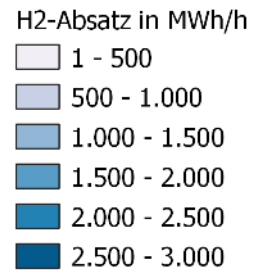
- H2-readiness gem. ASME B31.12 und EIGA 121/14
- H2-readiness gem. ASME B31.12 und EIGA 121/14 mit Adaptation
- nicht tauglich
- keine Informationen



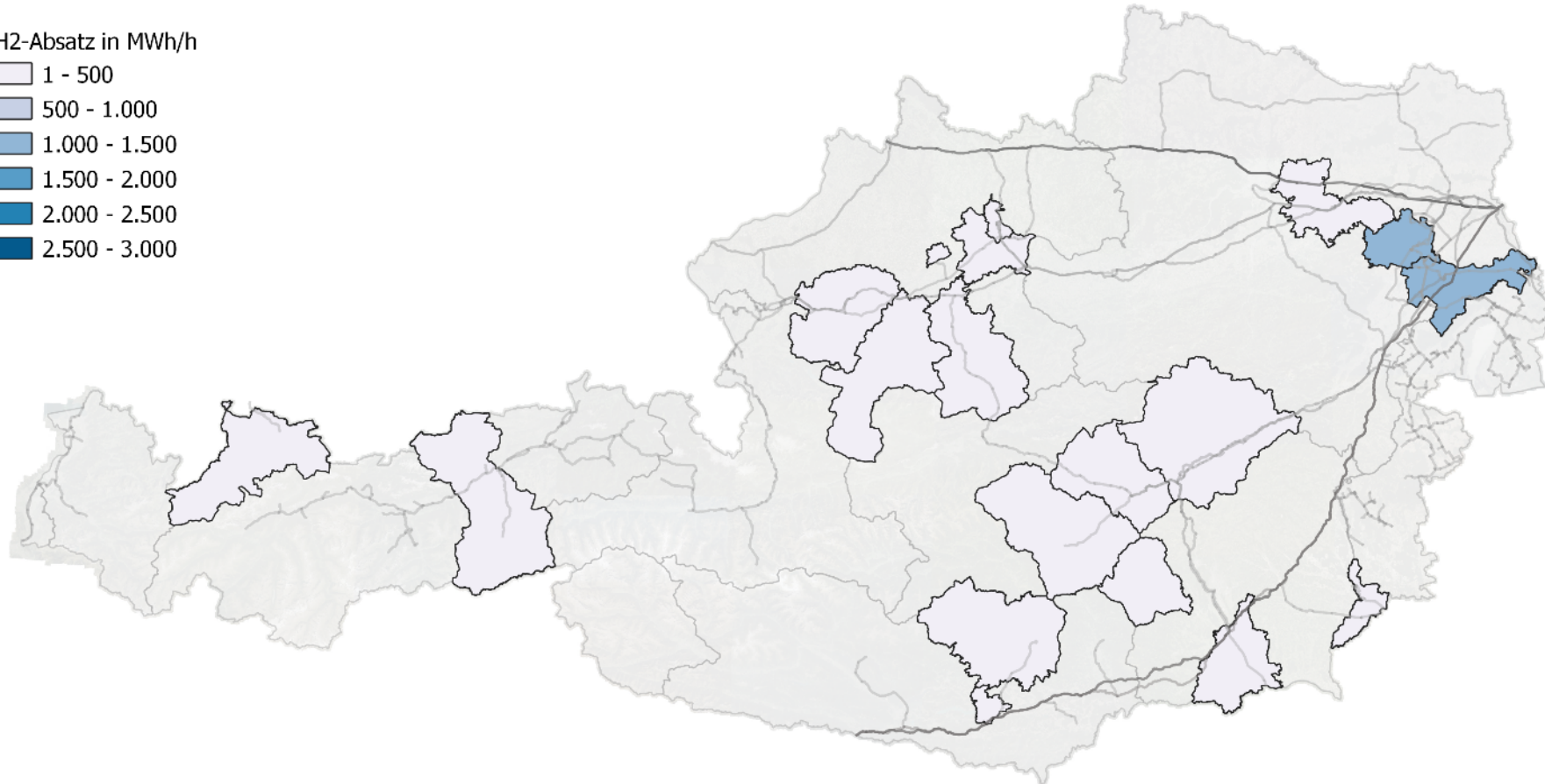
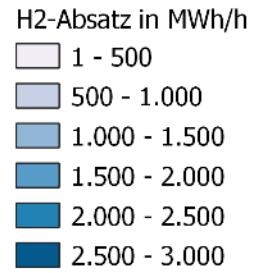
Phase 2: Survey of the Austrian H2 demand



H₂ capacity requirement 2025

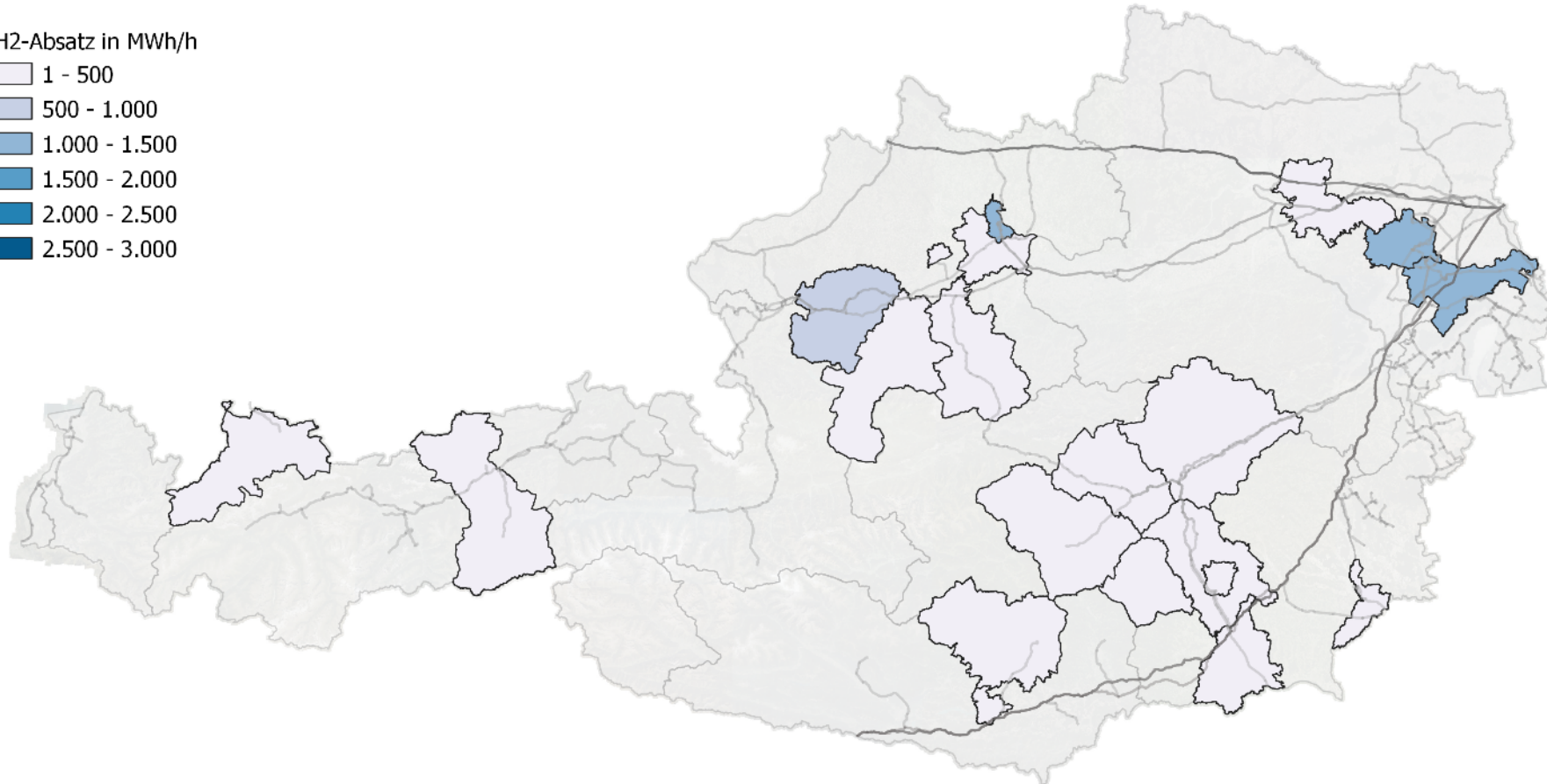
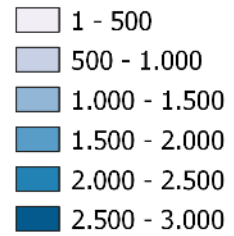


H₂ capacity requirement 2030

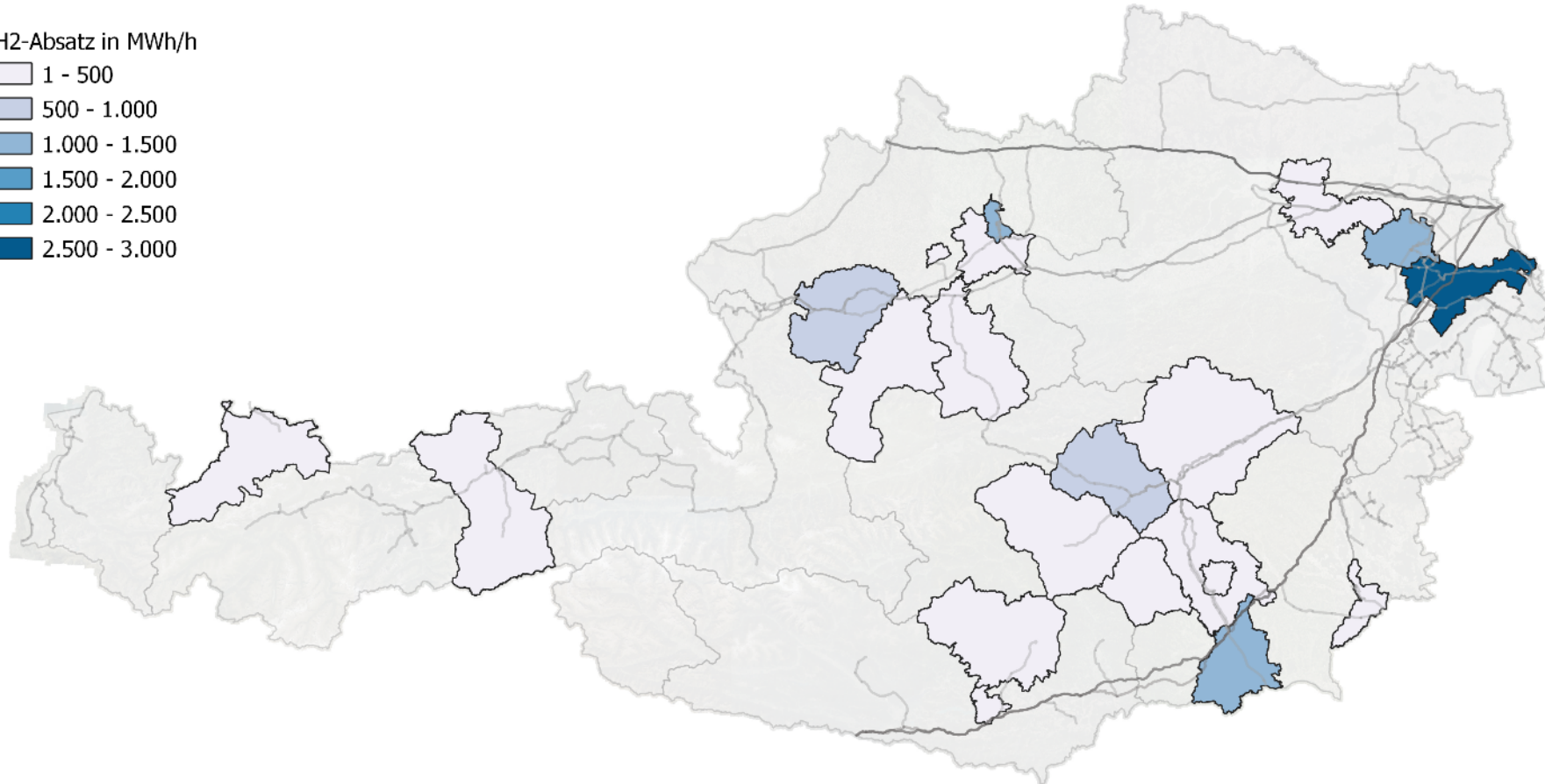
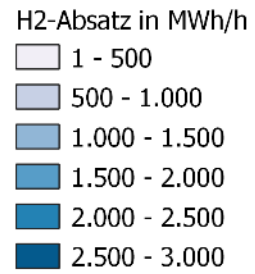


H₂ capacity requirement 2035

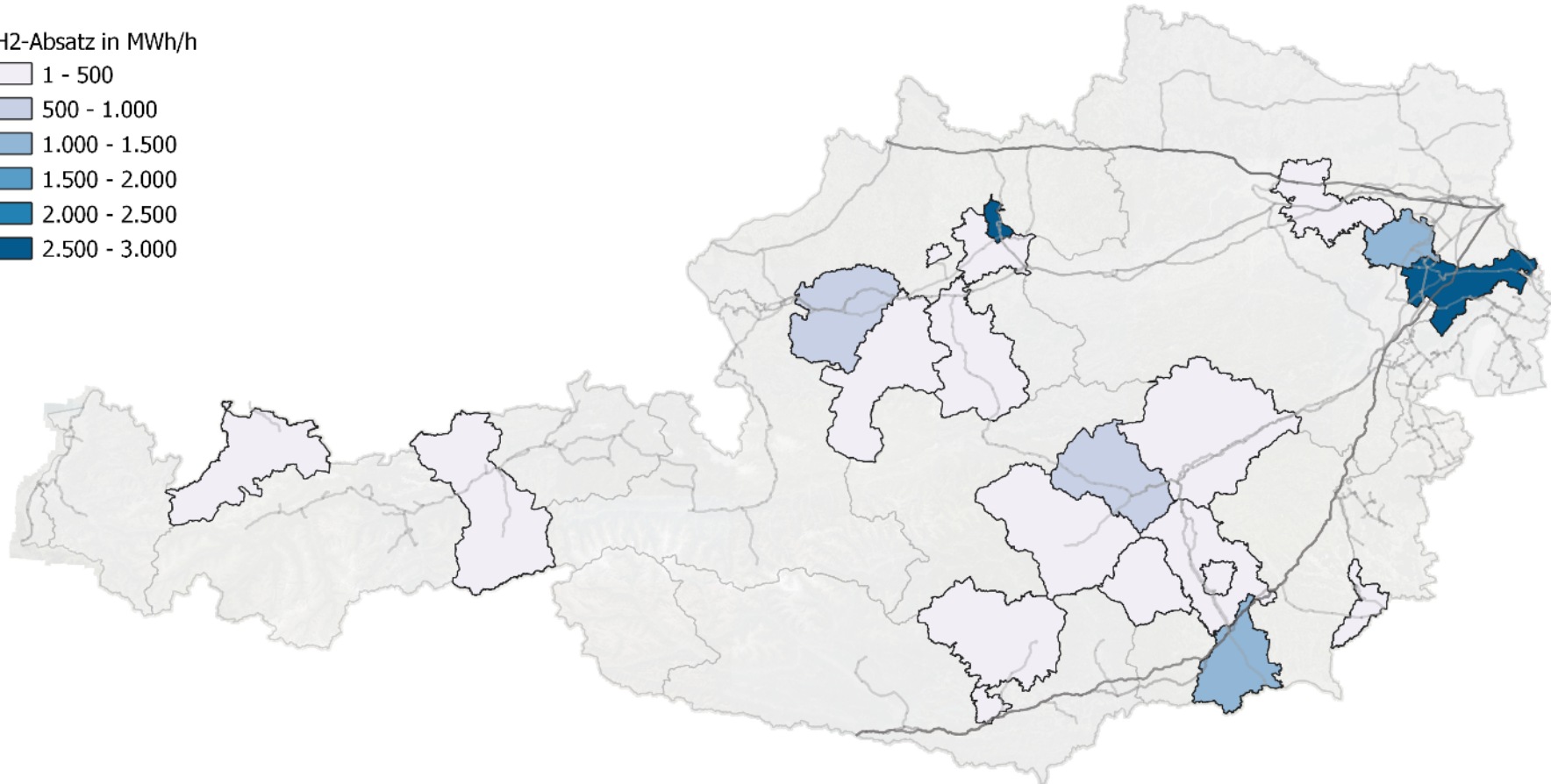
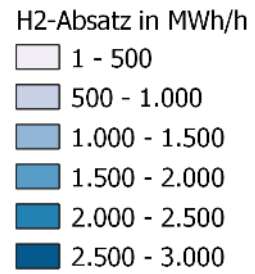
H₂-Absatz in MWh/h



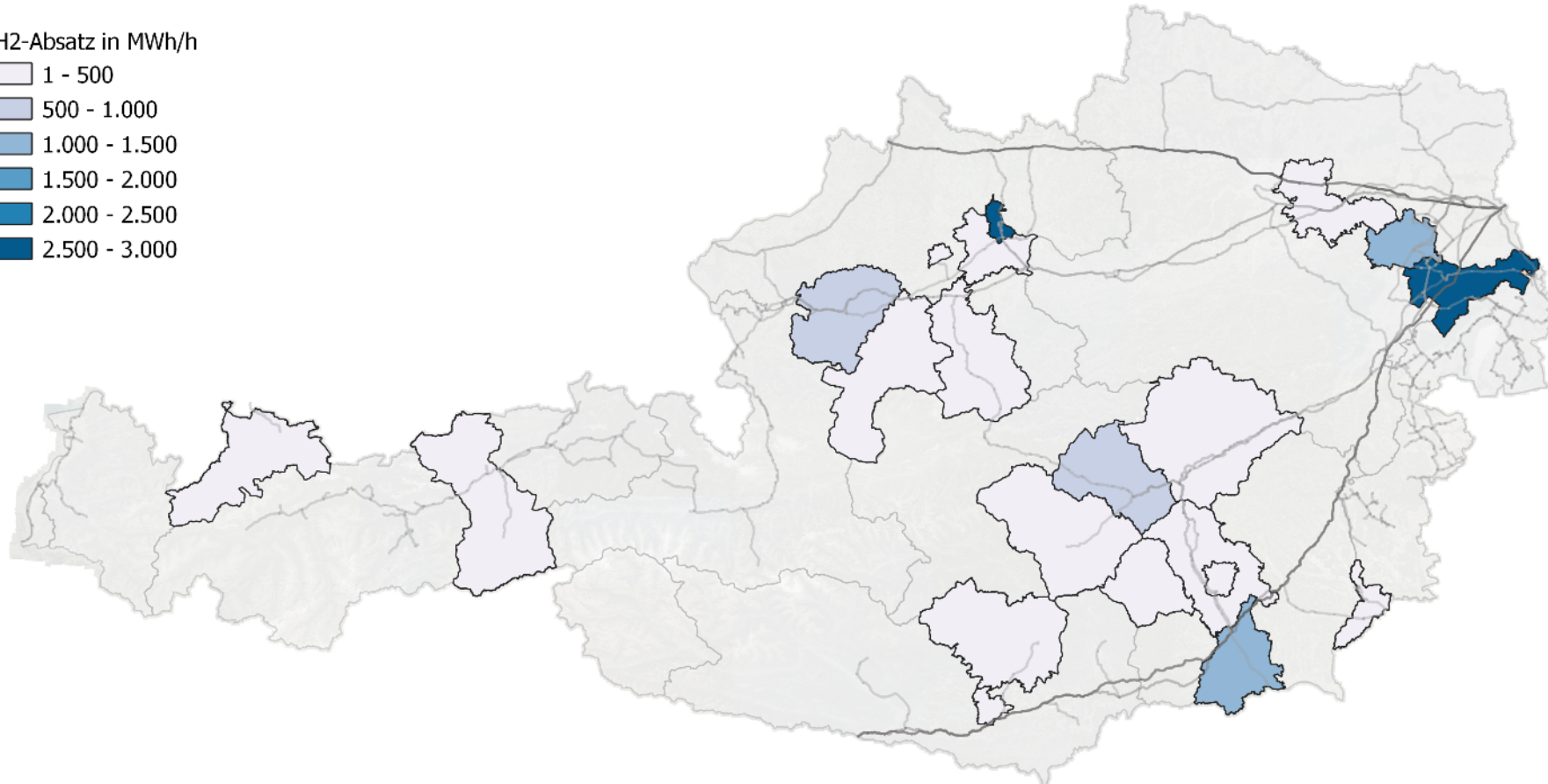
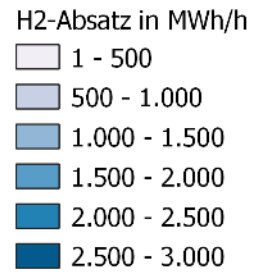
H₂ capacity requirement 2040



H₂ capacity requirement 2045

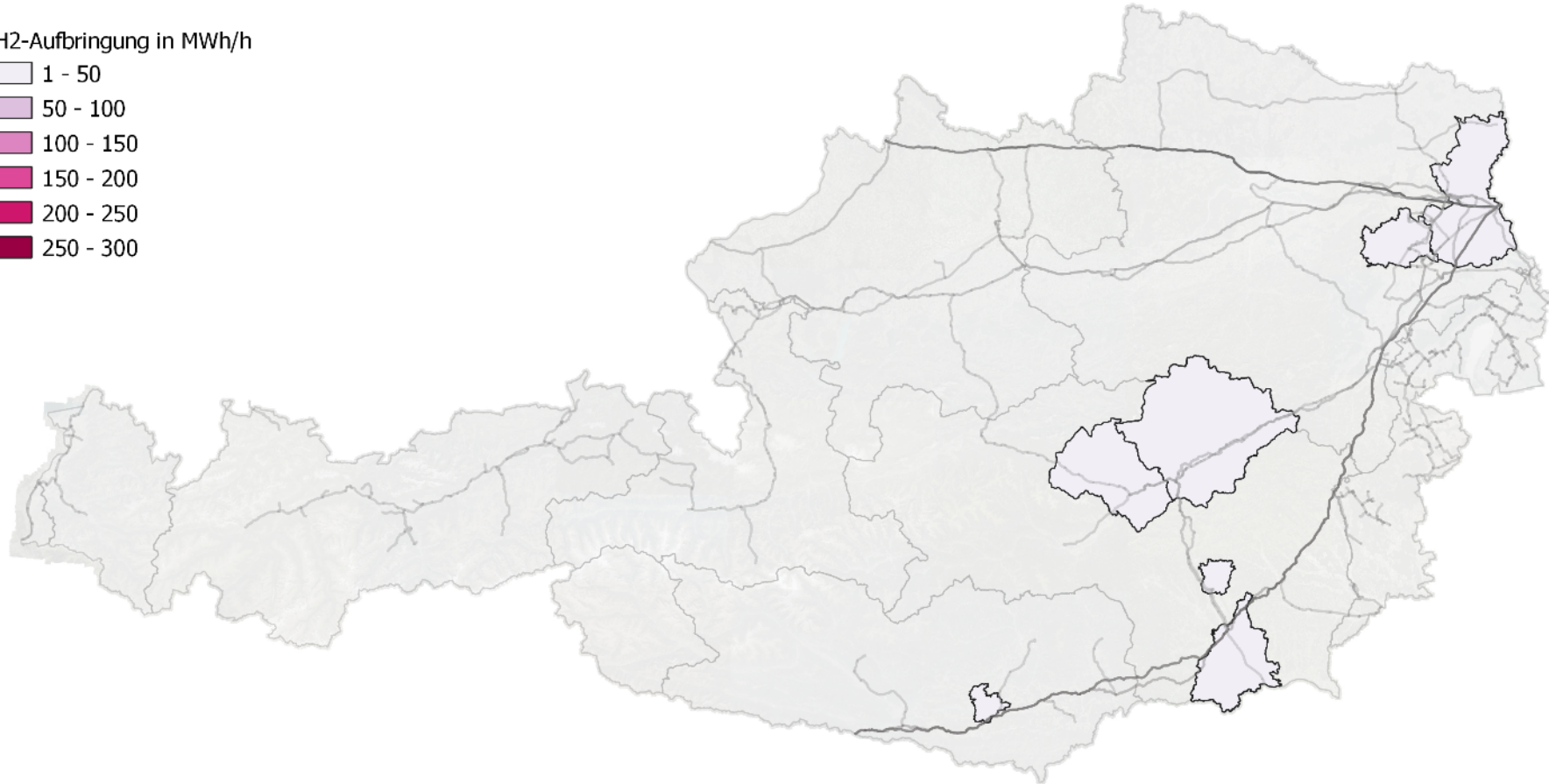
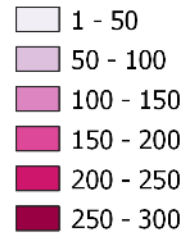


H₂ capacity requirement 2050



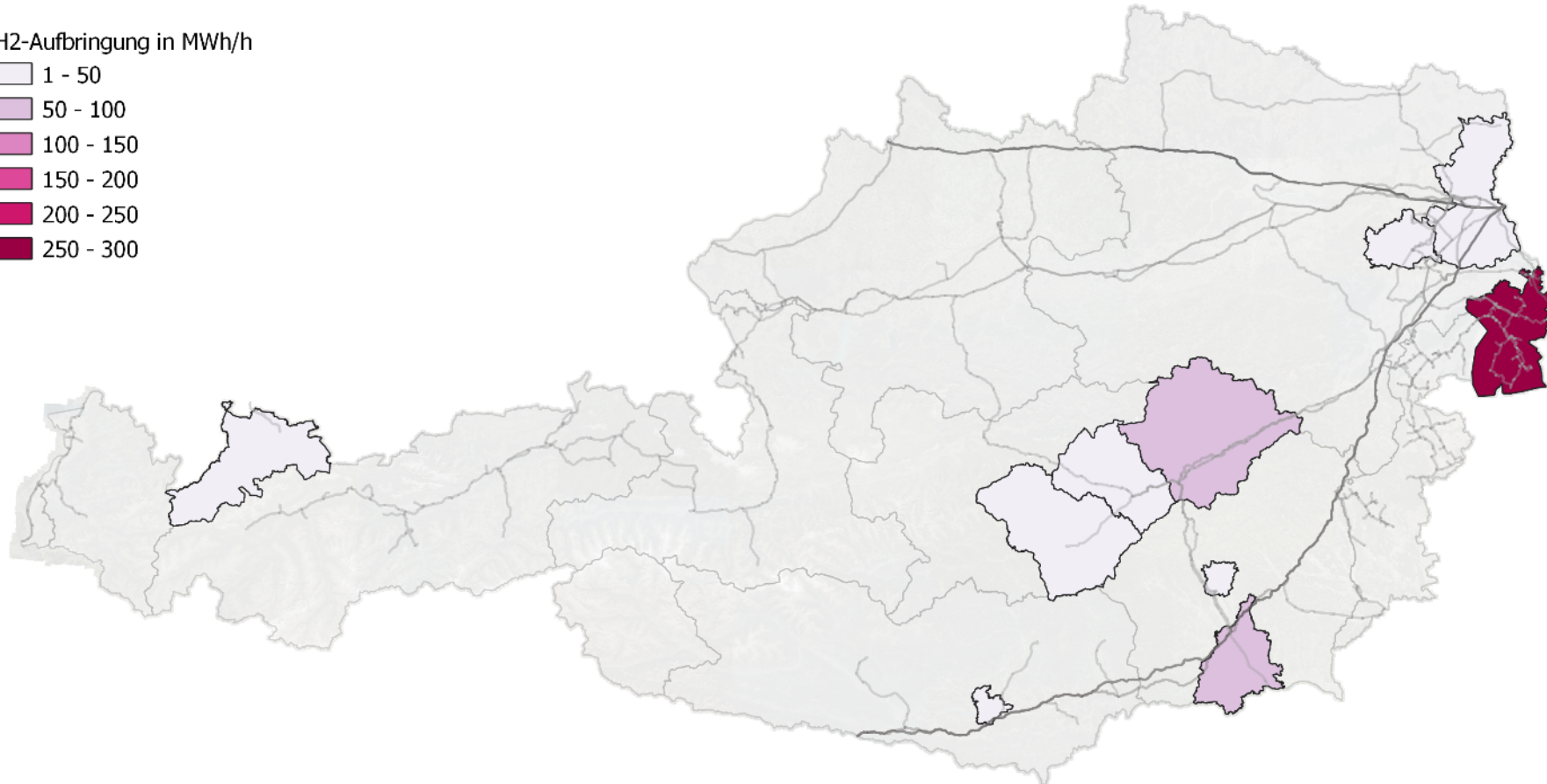
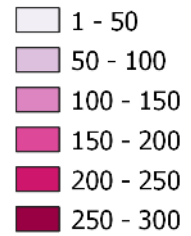
H₂ electrolysis capacity 2025

H₂-Aufbringung in MWh/h



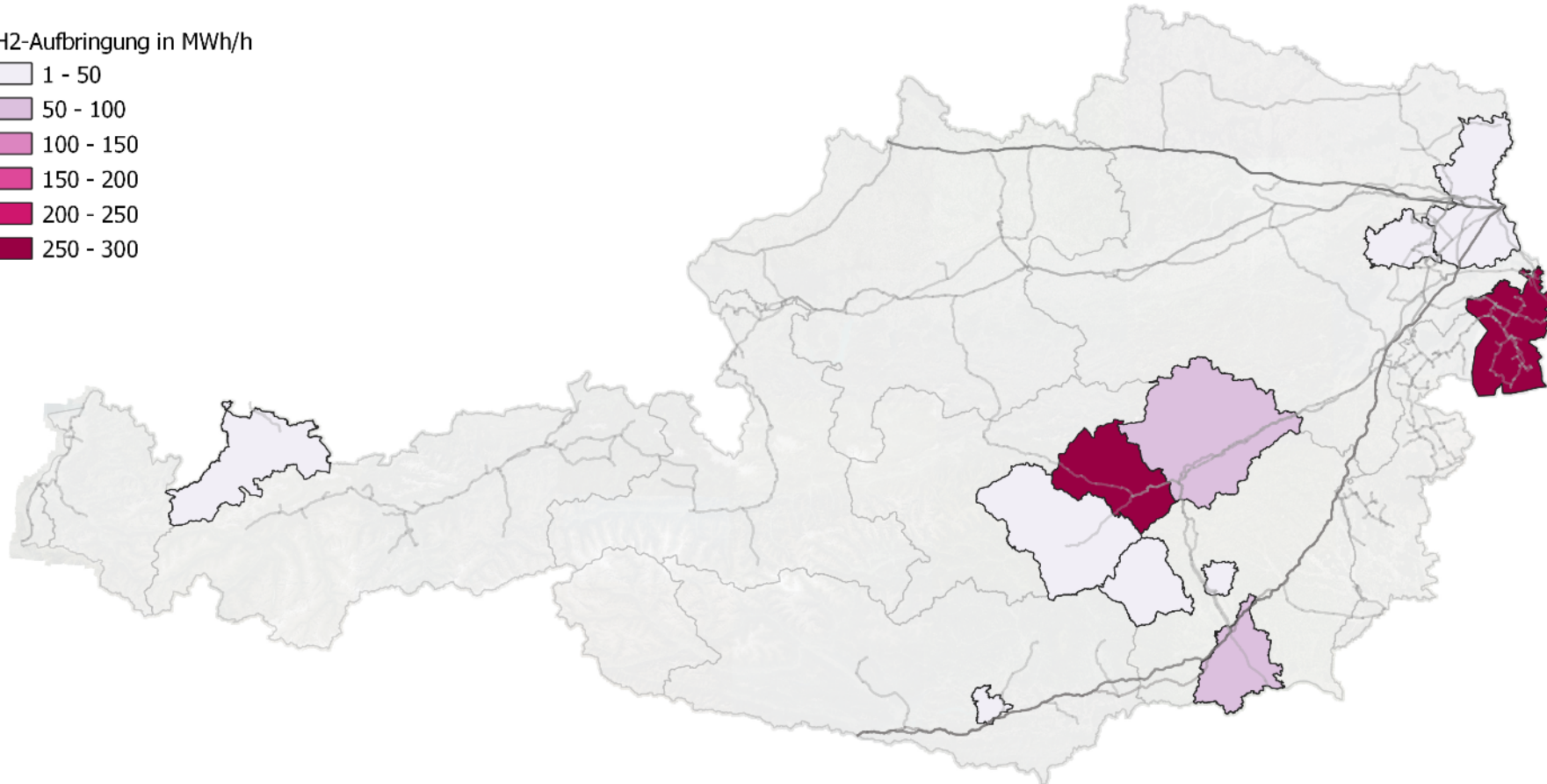
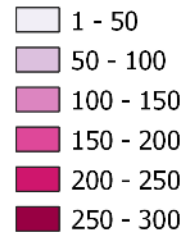
H₂ electrolysis capacity 2030

H₂-Aufbringung in MWh/h

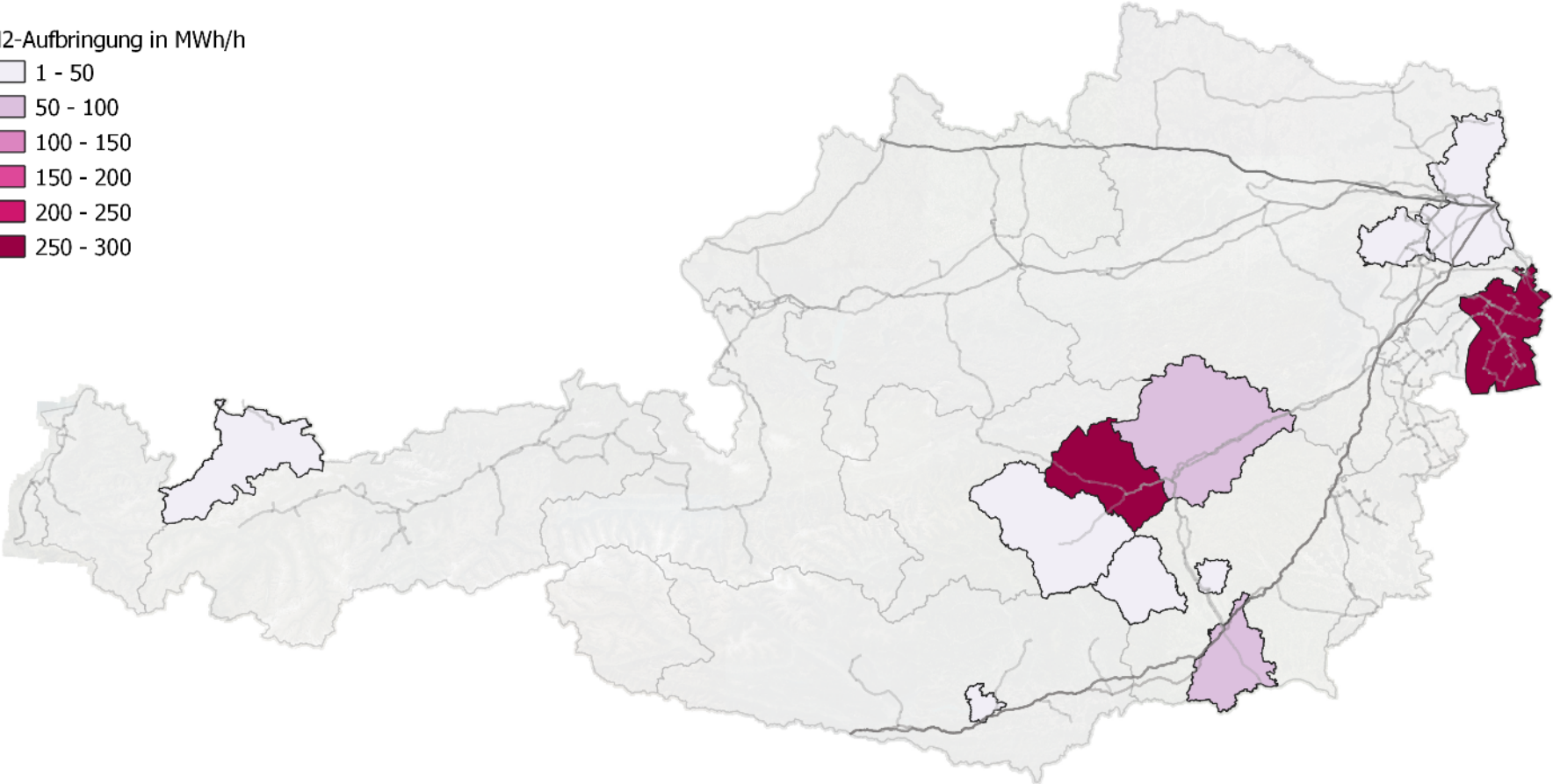
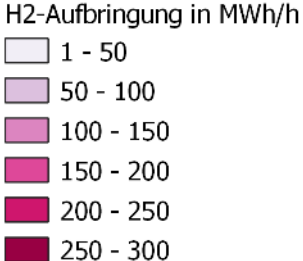


H₂ electrolysis capacity 2035

H₂-Aufbringung in MWh/h

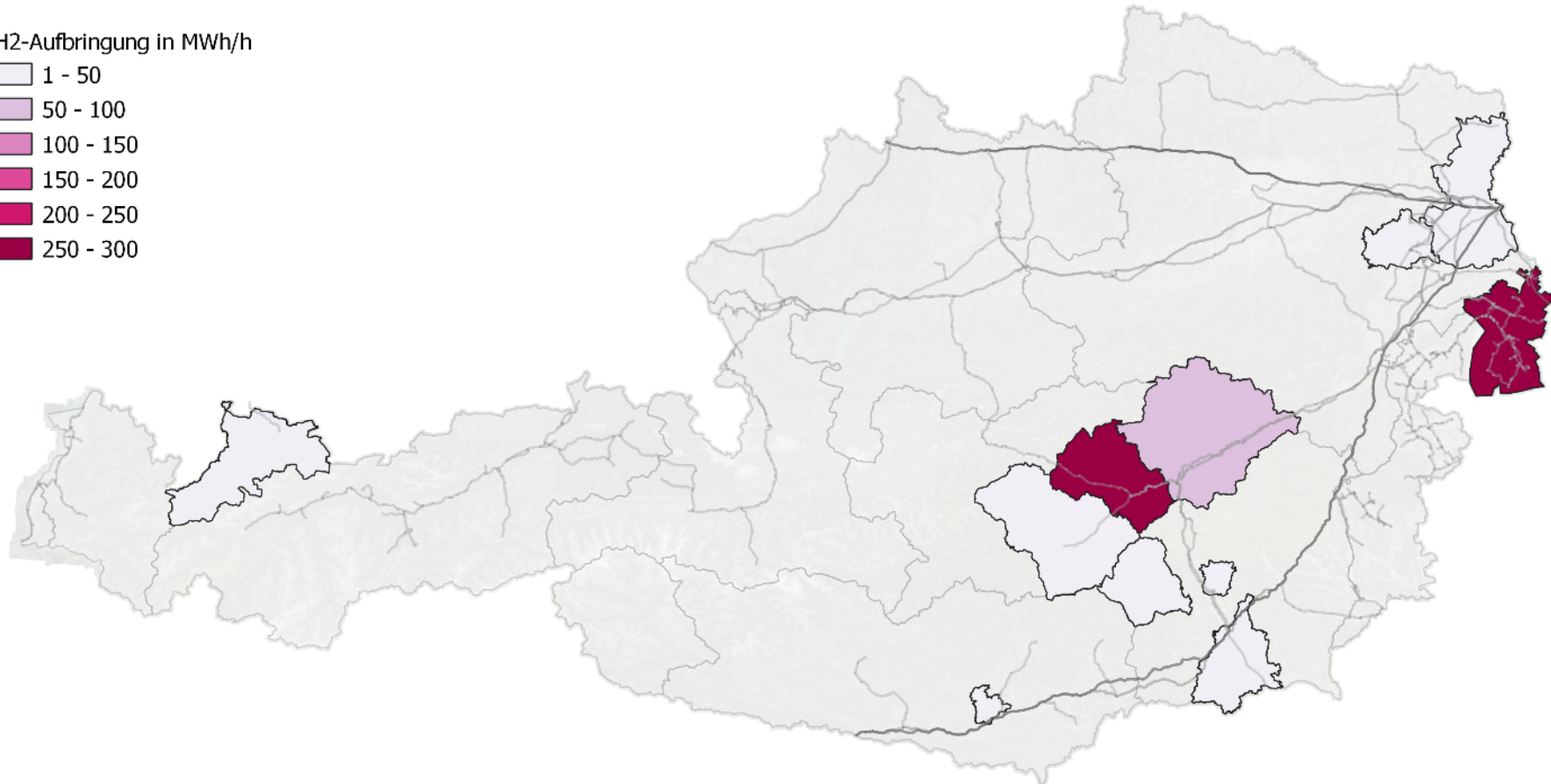


H₂ electrolysis capacity 2040



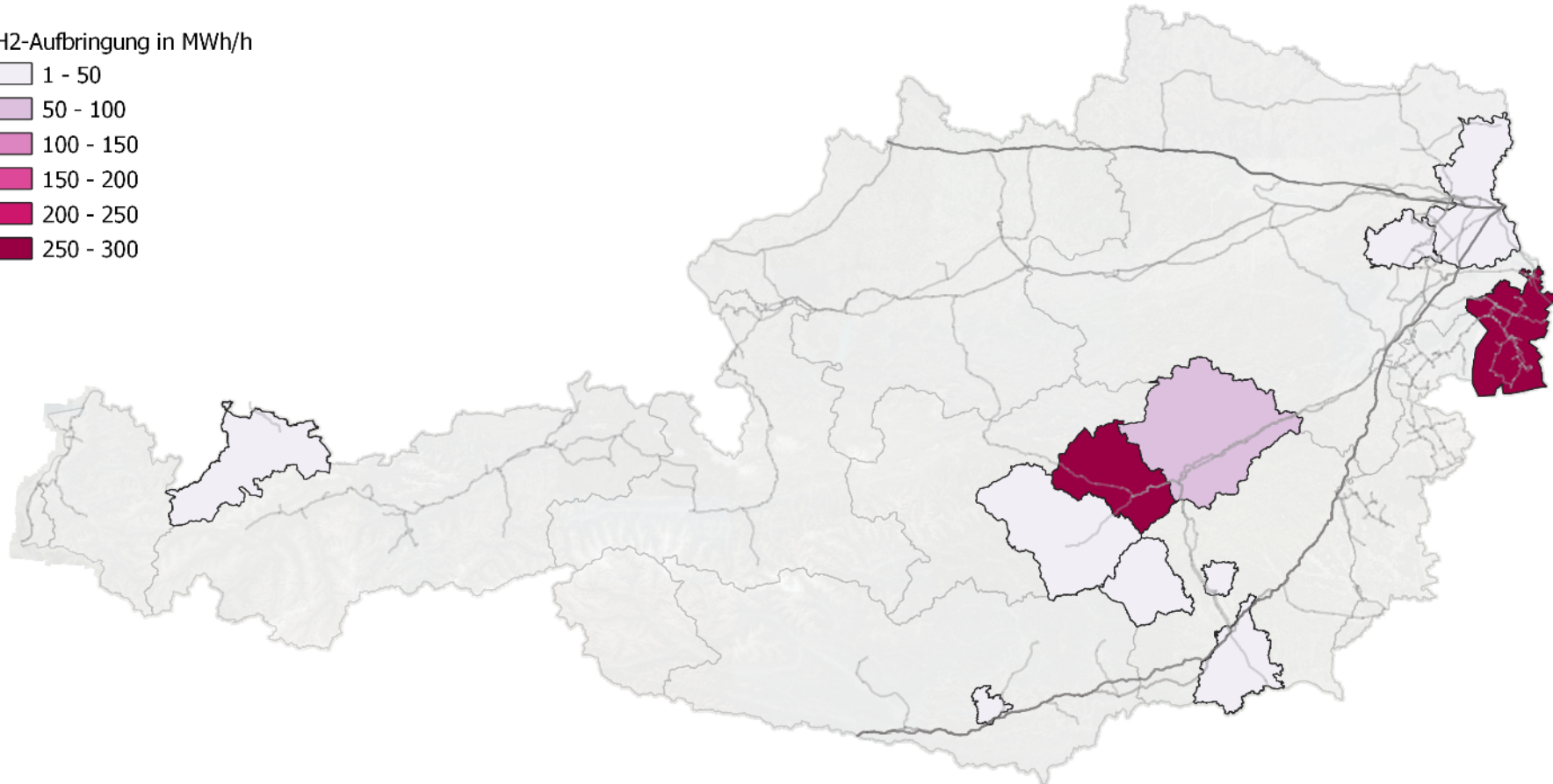
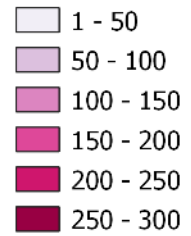
H₂ electrolysis capacity 2045

H₂-Aufbringung in MWh/h

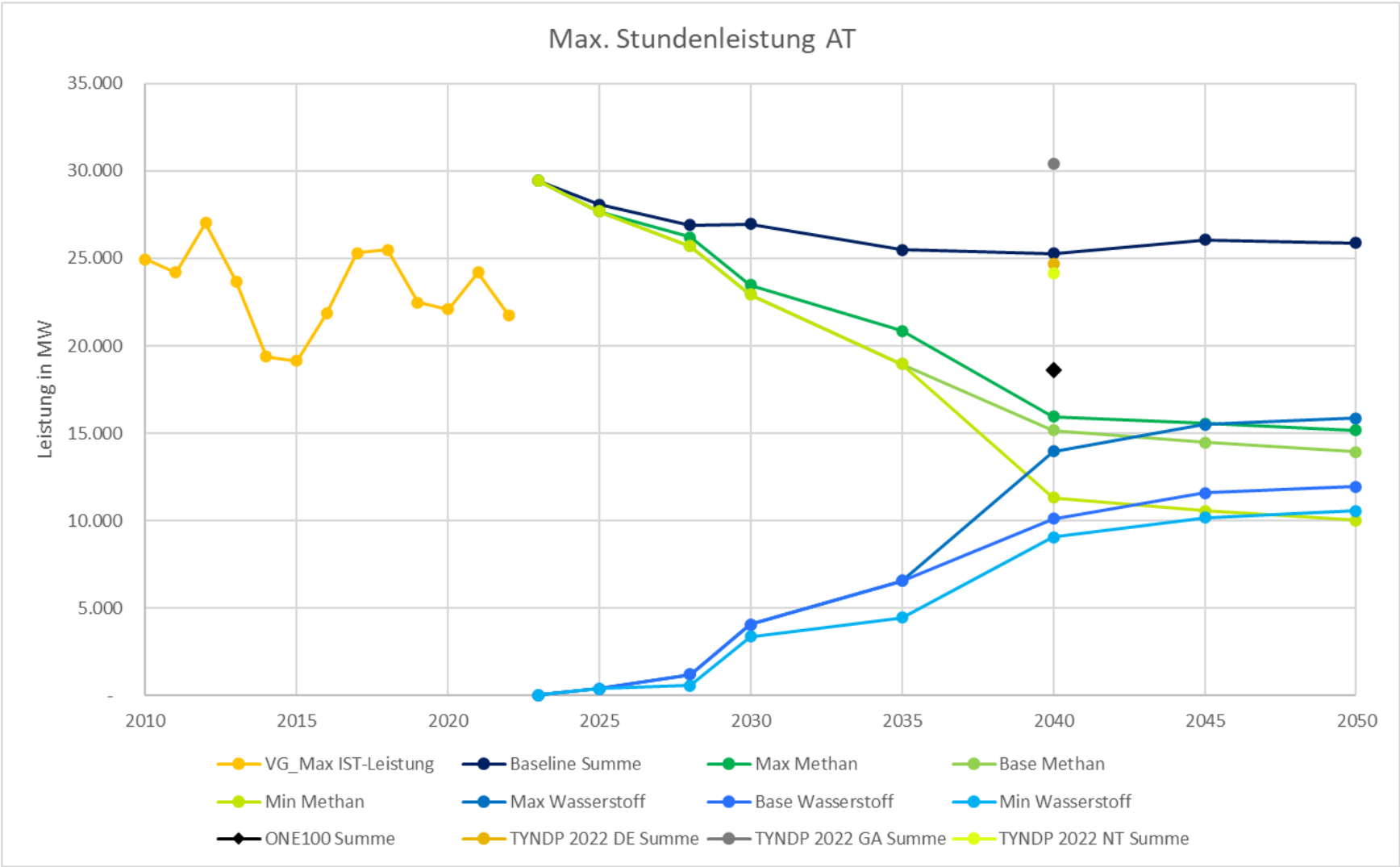


H₂ electrolysis capacity 2050

H₂-Aufbringung in MWh/h



Demand scenarios iLTP 2022 for the network design

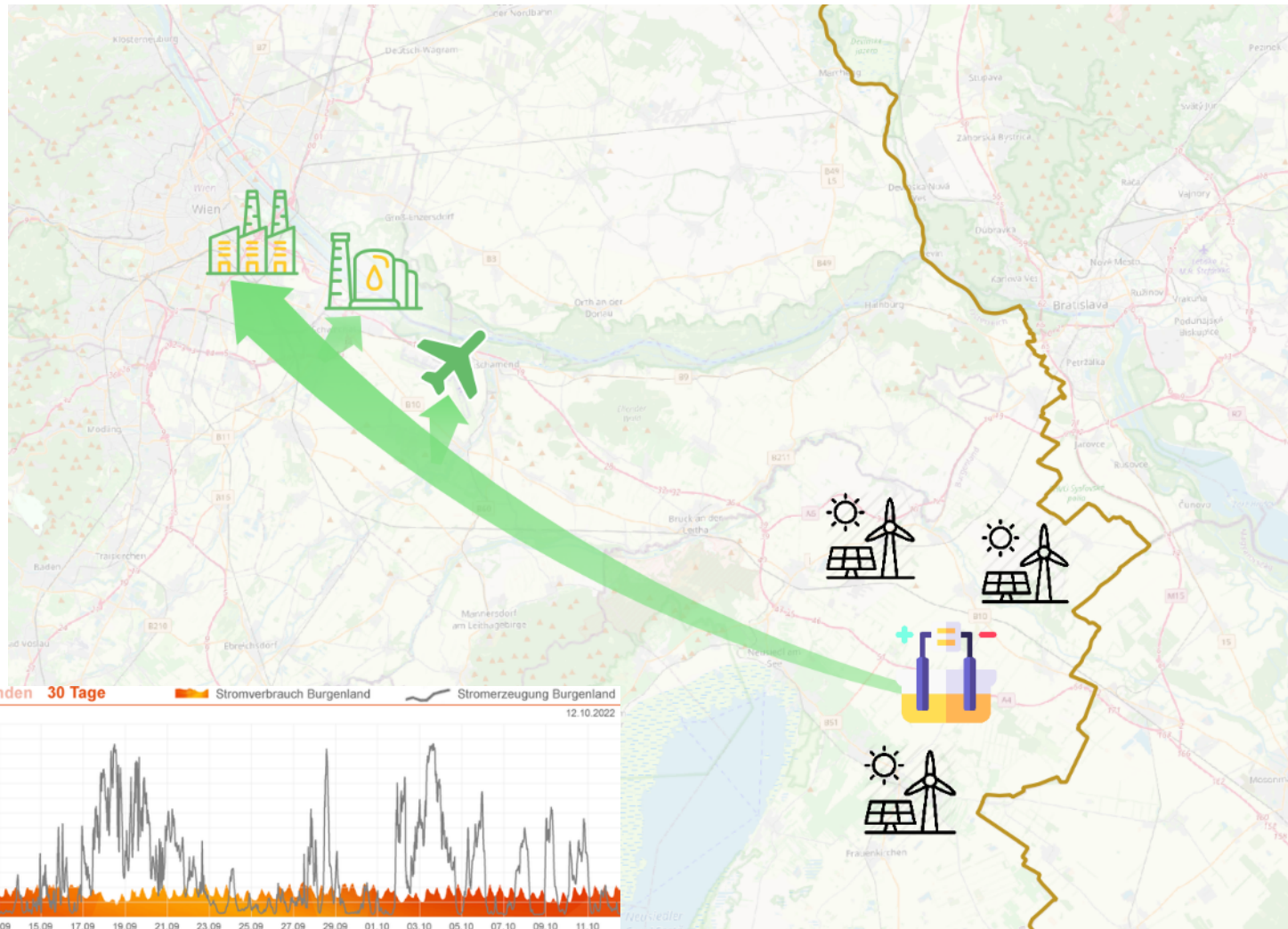


Phase 3: creation of the H₂ Roadmap for Austria

- ▶ Phase 3 is now in progress
- ▶ We perform simultaneous hydraulic calculations for CH₄ and H₂ with various different demand and supply scenarios
- ▶ 2025, 2030, 2035, 2040, 2045, 2050
- ▶ Target: H₂ Roadmap for Austria hand in hand with European Hydrogene Backbone
- ▶ H₂ Roadmap for Austria will be presented at **AGID (Austrian Gas Infrastructure Day) on 19.01.2023**
- ▶ <https://www.aggm.at/veranstaltungen/austrian-gas-infrastructure-day>



integrated long term planning 2022: H₂ Pipeline



- ▶ AGGM received six H₂ capacity enlargement applications (4 Exit, 2 Entry)
- ▶ → Planning order for the iLTP 2022
- ▶ The final H₂ Pipeline project will be presented at **AGID (Austrian Gas Infrastructure Day) on 19.01.2023**
- ▶ <https://www.aggm.at/veranstaltungen/austrian-gas-infrastructure-day>

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