2022-2025

Optimizations for an ideal Bidding Zone Configuration in Europe

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Bidding Zone Review (BZR) project

Background

- Legal requirement according to EU Regulation 2015/1222 (CACM) and "Clean Energy Package“
- Aim: Rethink bidding zone layouts and orient them to actual network bottlenecks.
- Joint project of all ENTSO-E TSOs, method definition by ACER

Central Europe via VAMOS COLLABORATION

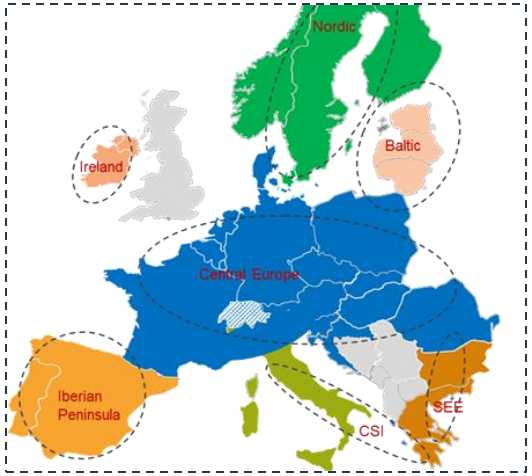
Target year 2025

3 climate scenarios: 1989, 1995, 2009

7+2 configurations + price sensitivity

7 split scenarios + 2 combinations thereof

Commodity and CO2 prices



ACER Methode for BZR → **Preliminary study: Calculation of LMPs** (for the identification of network bottlenecks) → August 2022 **Definition of alternative bidding zone configurations** → 2022 until April 28, 2025 **Main Study** (using APG-Tool „VAMOS“ in CE) → **Decision on potential zone changes**

Implementation timeframe: approx. 3-5 years

Downloads

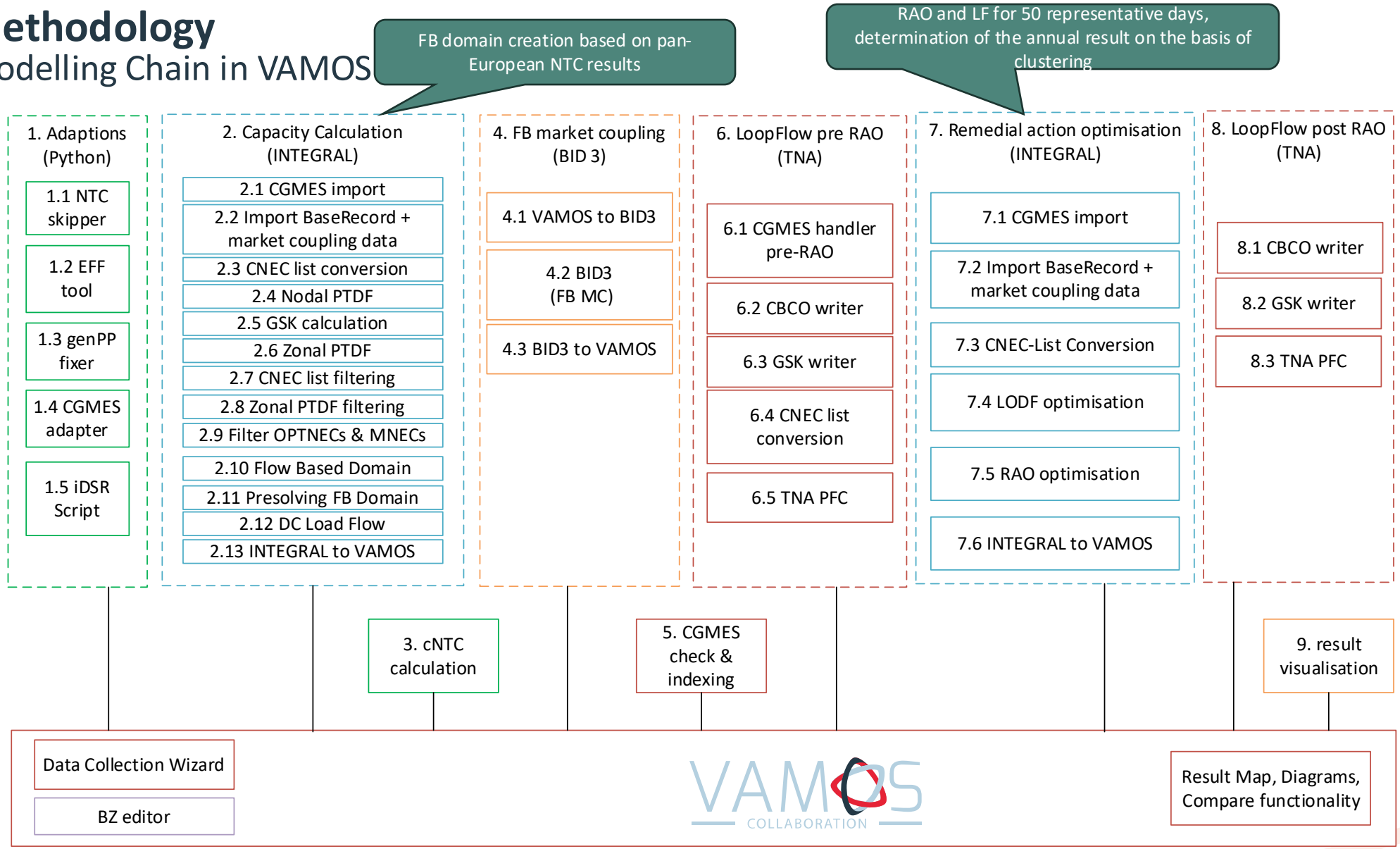
- ACER Decisions
  - Methodology
  - Definition of alternative configurations
- Final Report and further information / data

Role of Optimization

- Combination of various software tools and solvers
- First cross-TSO project to realize a complete integrated modelling chain for FB-simulation

Legend
ACER/NRAs
TSOs
Member States

Methodology
Modelling Chain in VAMOS



24
GB data

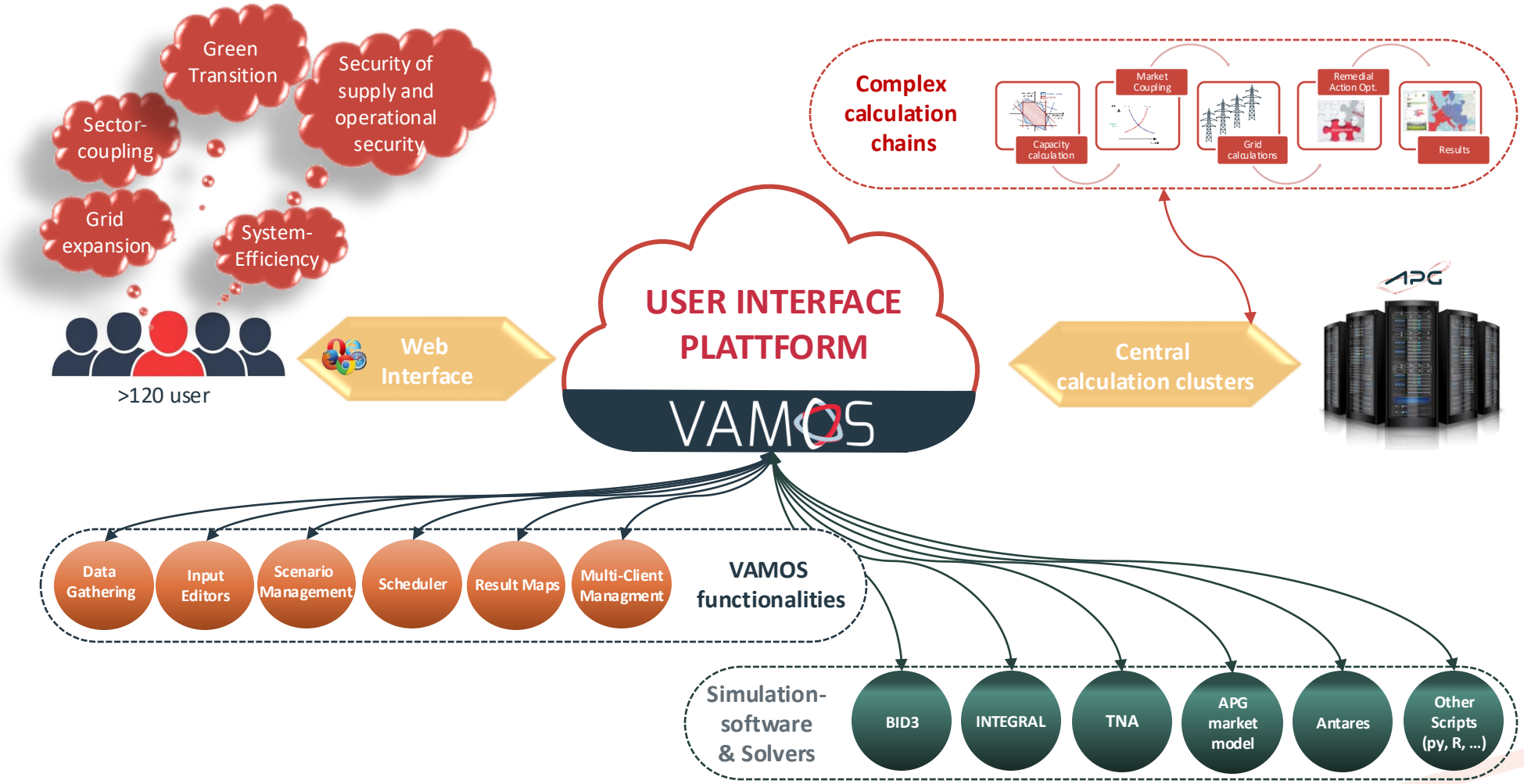
15k
power plants

55+
interconnections

7.5k
CNECs

10-14
days runtime

VAMOS (Varied Model Operating System)



Why using a Modelling Platform for complex optimisations?
Payoffs from cooperations

Ressource Sharing
Efficient use of personnel and computing resources

Data Sharing
Common data standard, plausibility checks, fully consistent market and network data, transparency

Knowledge Sharing
Specifics of Tools, Laws, and Policies

Software Develop-ment
Joint development and procurement of software

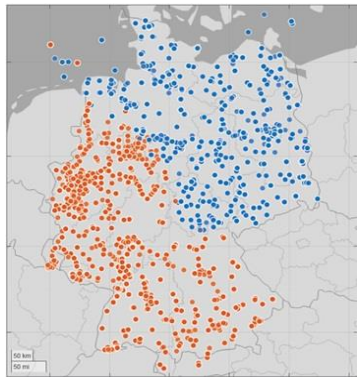
Results of the Bidding Zone Review

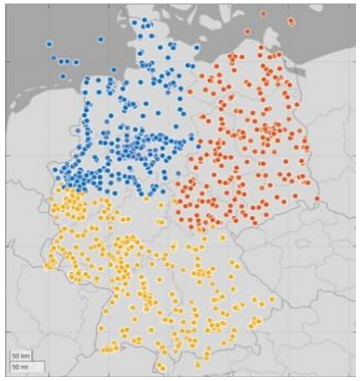
Indicator 04 – Economic efficiency	Market Dispatch	Redispatch	Auswertung	
	⌀ Change over all climate years in EUR million	⌀ Change over all climate years in EUR million	Net profit/loss	Ranking
Split				
Status Quo		*Ref. 1.384 Mio. EUR*		
C14-DE5	-274	-613	339	1
C13-DE4	-291	-603	312	2
C02-DE2	-344	-607	264	3
C12-DE3	-390	-641	251	4
C07-NL2	14	5	9	5
C05-FR3	-42	-33	-9	6
C06-IT2	-214	-154	-60	7
DE2+NL2	-331	-598	266	
DE5+NL2	-243	-576	332	
DE4+NL2	-298	-566	268	

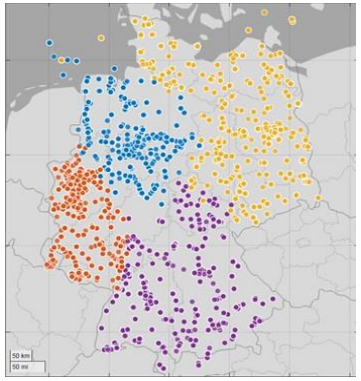
TSO-Recommendation

Division of the German market into five bidding zones.

- Highest payoff (339 million euros per year) and no contraindications to network security.
- Additional considerations:
  - **Target year** 2025
  - **Input data** derived in 2019
  - **Robustness Analysis** not in scope.
  - **Liquidity and transaction costs**
  - **Balancing markets**
  - **Distributional aspects**
  - Ongoing **Power Purchase Agreements**
  - **Support schemes**


DE-2


DE-3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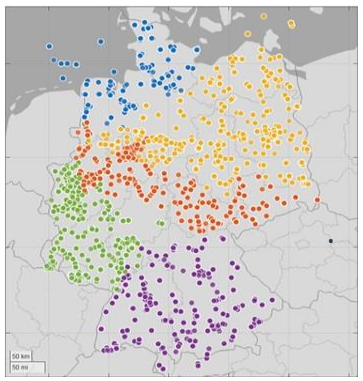
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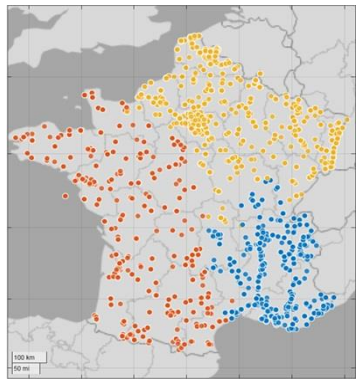
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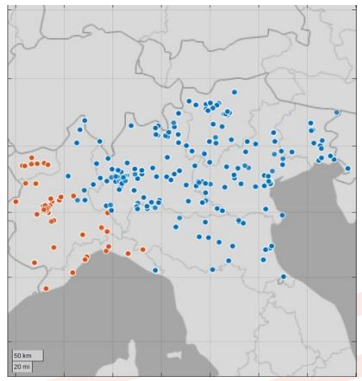
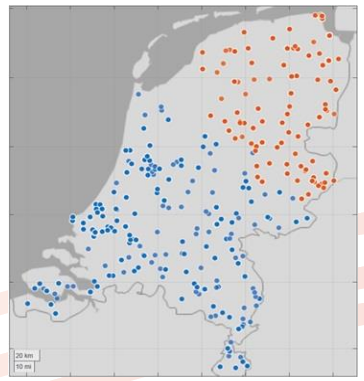

IT-2


NL-2

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