

Strategiedialog Automobilwirtschaft BW

# FLEXIBILITY FOR THE GRID: BENEFITS AND CHALLENGES FROM PERSPECTIVE OF A TSO

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SDA BW 2022: Flexibility for the grid

# TSO ROLE AND RESPONSIBILITIES

System planning



System security



Grid invest  
and  
optimization



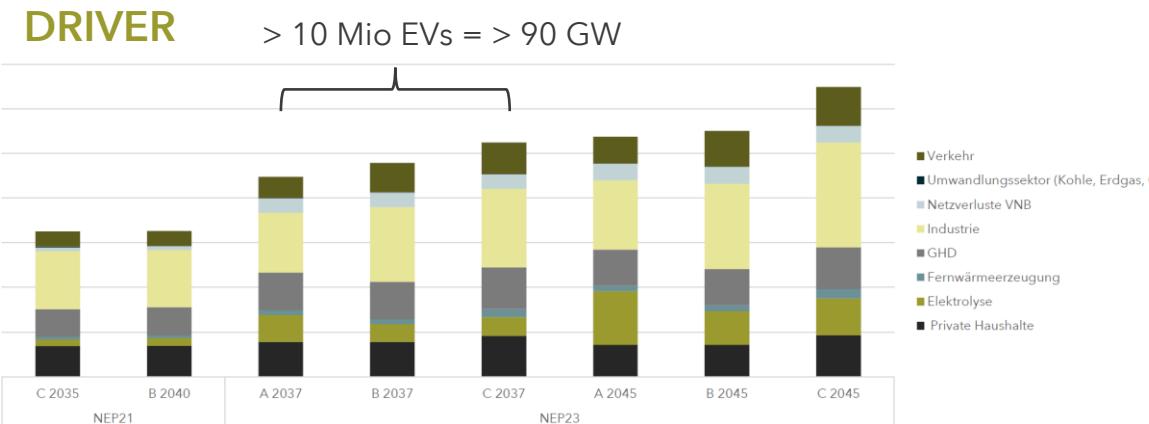
Innovator and  
enabler for  
sector coupling



E-mobility has an impact on all four fields!

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# E-MOBILITY AND ENERGY TRANSITION: DRIVER AND SOLUTION



- / Run-up of electric vehicles (EV) (how much? when?) = challenge for grid planning
- / Increasing consumption (e.g. industry, charging) = stress for the grid
- / „We have **promised** to provide flexibility for the grid“



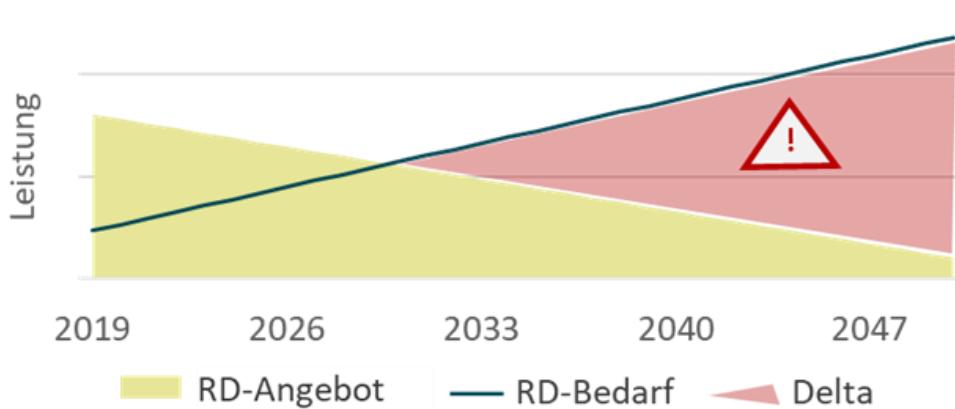
- / Reduction of CO2 emissions
- / Batteries of electric vehicles (EV) offer flexibility for:
  - / optimization (household, balancing account)
  - / system- and grid security
- / This leads to (business) **opportunities** for:
  - / TSOs, DSOs, aggregators, OEMs, owner of EVs ...

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## BENEFITS FROM THE PERSPECTIVE OF A TSO

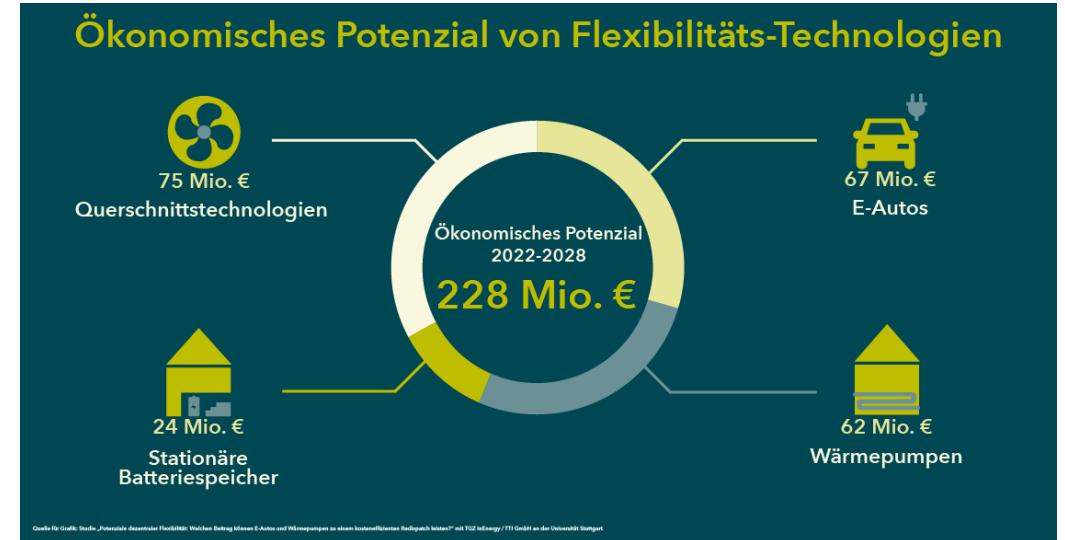
### BENEFITS FOR GRID SECURITY

Sketch: „redispatch gap“



- / We need **positive redispatch** potential in South GER
- / We need **efficient balancing markets** (e.g. FCR, aFRR)

### ECONOMIC BENEFIT

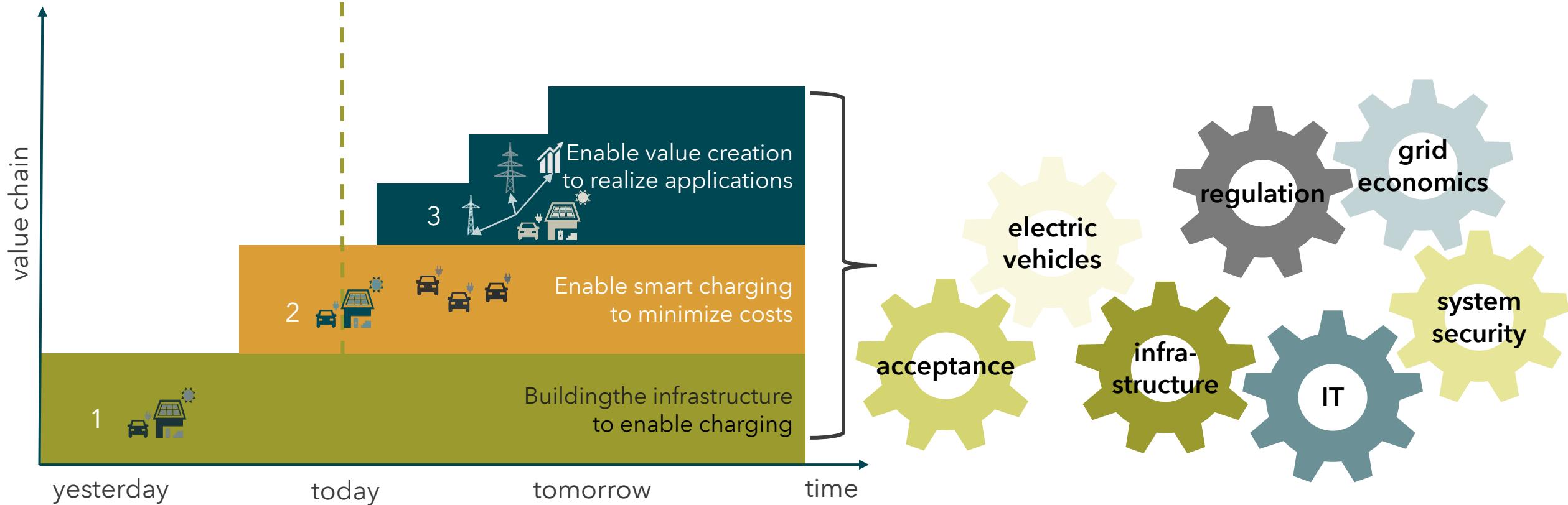


- / Small-scale flexibilities can **reduce the costs** for redispatch (grid tariffs)

Electric vehicles can significantly contribute to grid security and social welfare!

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# WHAT NEEDS TO BE DONE? BUILD THE VALUE CHAIN TOGETHER!

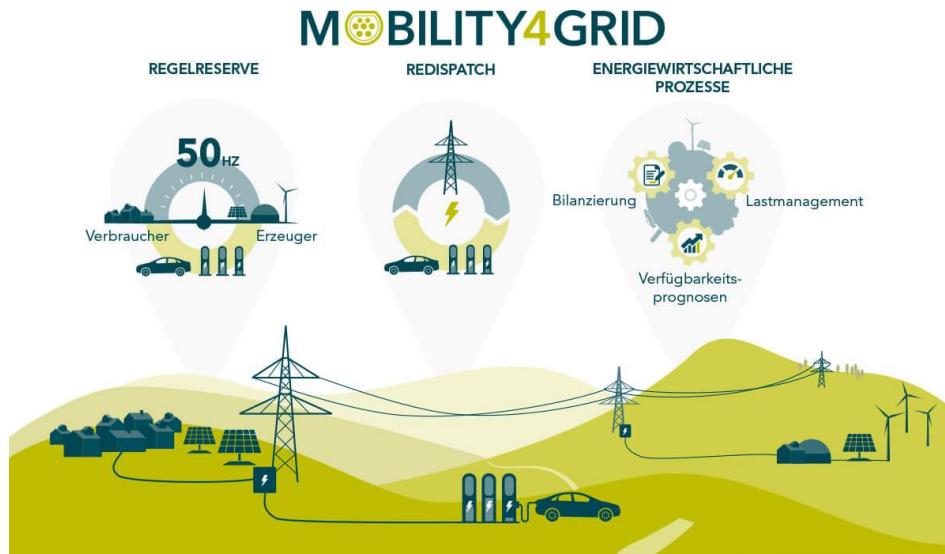


/ The successful implementation of the **new value chain** can only be achieved if the „gear wheels“ fit together.

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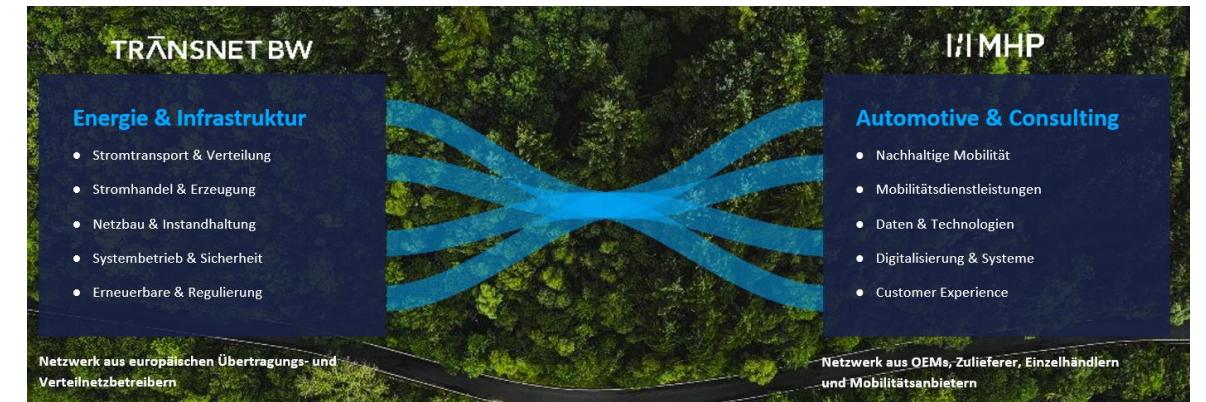
# TRANSNETBW IS AN ACTIVE PLAYER

## COMPETENCE CENTER „MOBILITY4GRID“



- / SPOC for project partners
- / Framework for pilot projects

## PARTNER FOR INDUSTRY „IE2S“

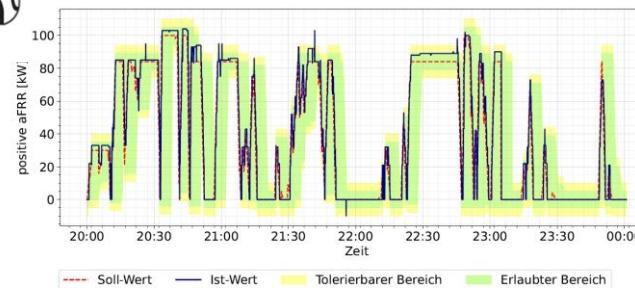
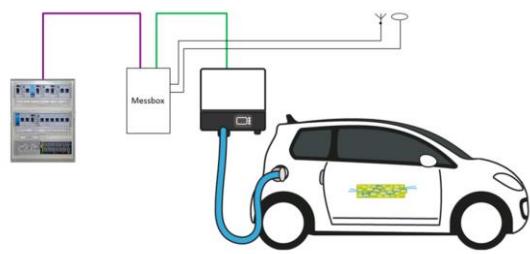


- / Joint venture TransnetBW - MHP for consulting and more
- / Know-how on the new interface mobility-grid

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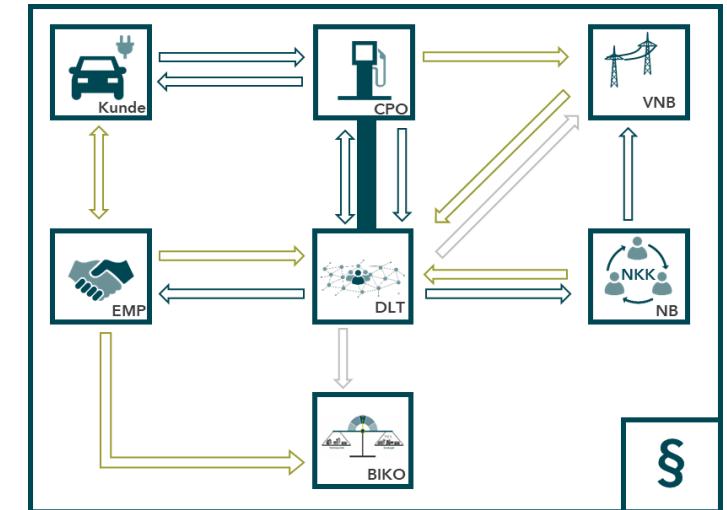
# OUR PILOT PROJECTS DRIVE INNOVATION!

## EV FLEET



- / EVs can deliver balancing power aFRR
- / Partners: Jedlix, next, FhG IEE, NetzeBW

## BANULA



- / Easy charging everywhere + system security
- / Partners: Oli systems, bbh, Schwarz-Gruppe, badenova, FhG IAO, Uni Stuttgart, PBW, smartlab

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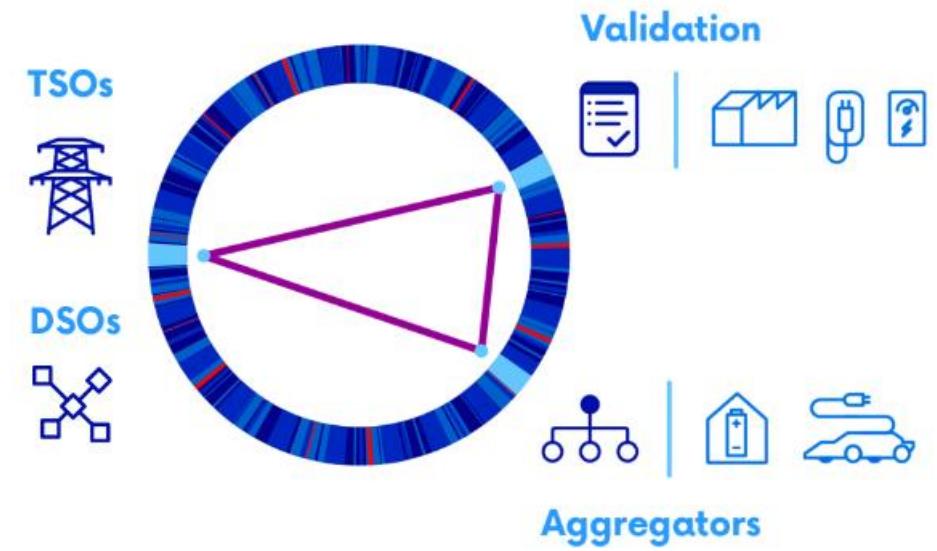
## OUR PILOT PROJECTS DRIVE INNOVATION!

### BDL



- / Discover the potential of bi-directional charging
- / Partners: BMW, Kostal, FfE, bayernwerk, TenneT, ...

### EQUIGY



- / The crowd balancing platform: a European standard for data exchange
- / Partners: TenneT, APG, Terna, Swissgrid

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# FLEXIBILITY FOR THE GRID: BENEFITS AND CHALLENGES FROM THE PERSPECTIVE OF A TSO

- / Summary
  - / TSOs realize challenges of E-mobility
  - / TSOs see E-mobility as an important source of flexibility for the grid (benefit, solution, opportunity)
  - / TSOs are active in the design of the necessary „infrastructure“ for the connection between EVs and the grid
- / Next steps
  - / We need an update of the regulatory framework to realize „vehicle2grid“ etc.
  - / We need more scalable pilot projects to answer the complex questions
  - / We need to push our interdisciplinary cooperations

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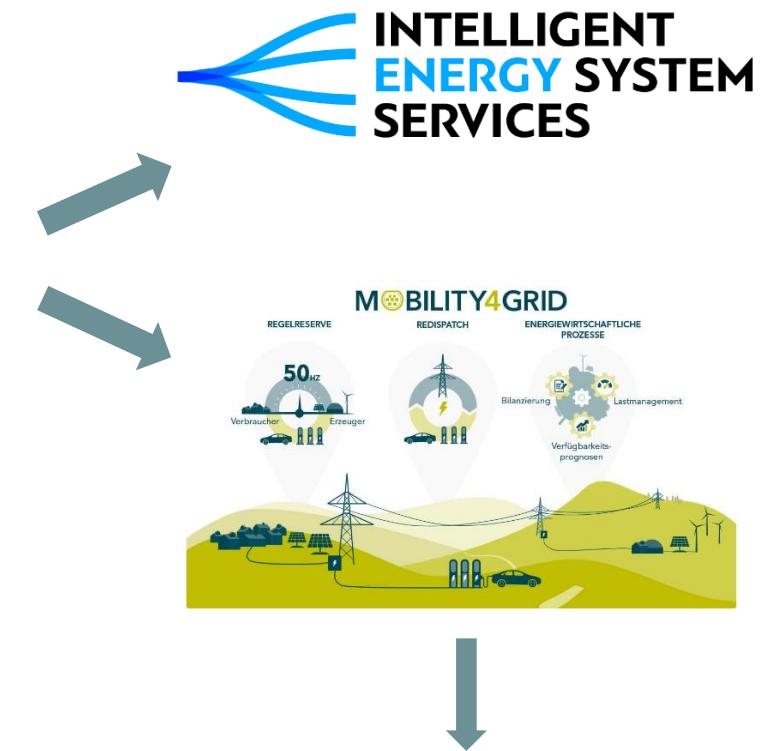
# THANK YOU VERY MUCH! QUESTIONS?



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