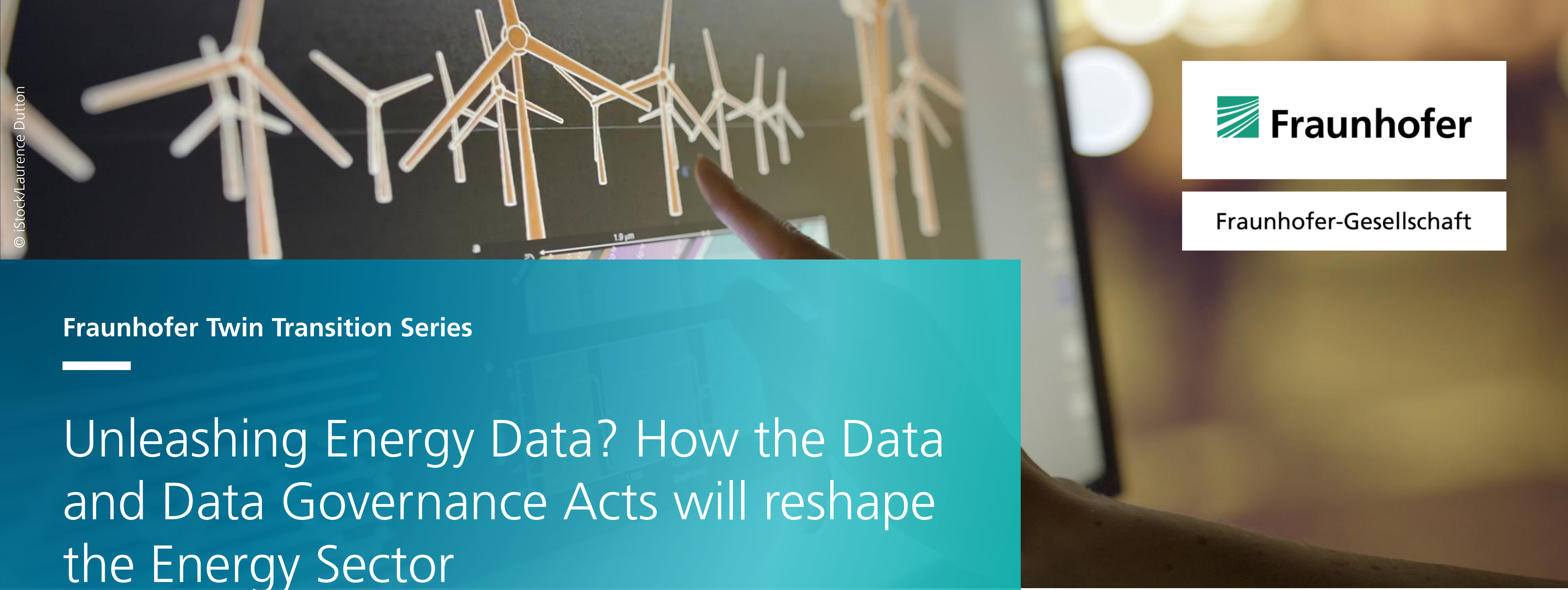

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Unleashing Energy Data? How the Data and Data Governance Acts will reshape the Energy Sector

September 25, 2025

Fraunhofer CINES

Unleashing Energy Data? How the Data and Data Governance Acts will reshape the Energy Sector

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Welcome and introduction

Martin Braun

Head of Institute
Fraunhofer Institute for Energy Economics and Energy System Technology IEE

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Energy is the spine
of our society and industry
» reliable
» affordable
» renewable

Transformation of the energy system

- Renewable Energy
- Electrification of heat, mobility and industries
- Grid expansion
- Flexibility from energy storages
- Backup generation capacities
- Digitalization and automatization

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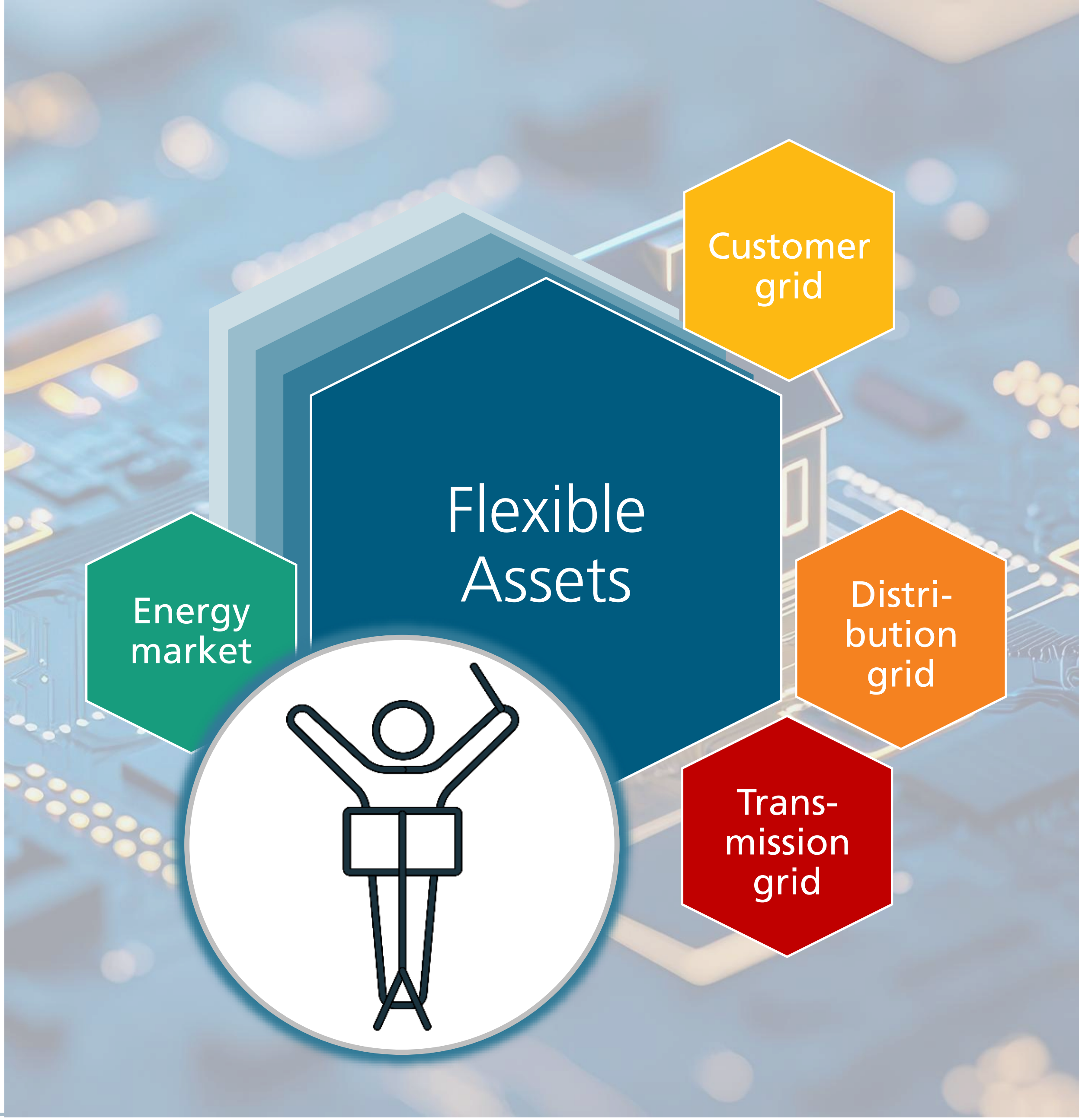
Orchestrate flexibilities

Orchestrate flexibilities

And who is conducting the orchestra?

Objectives:

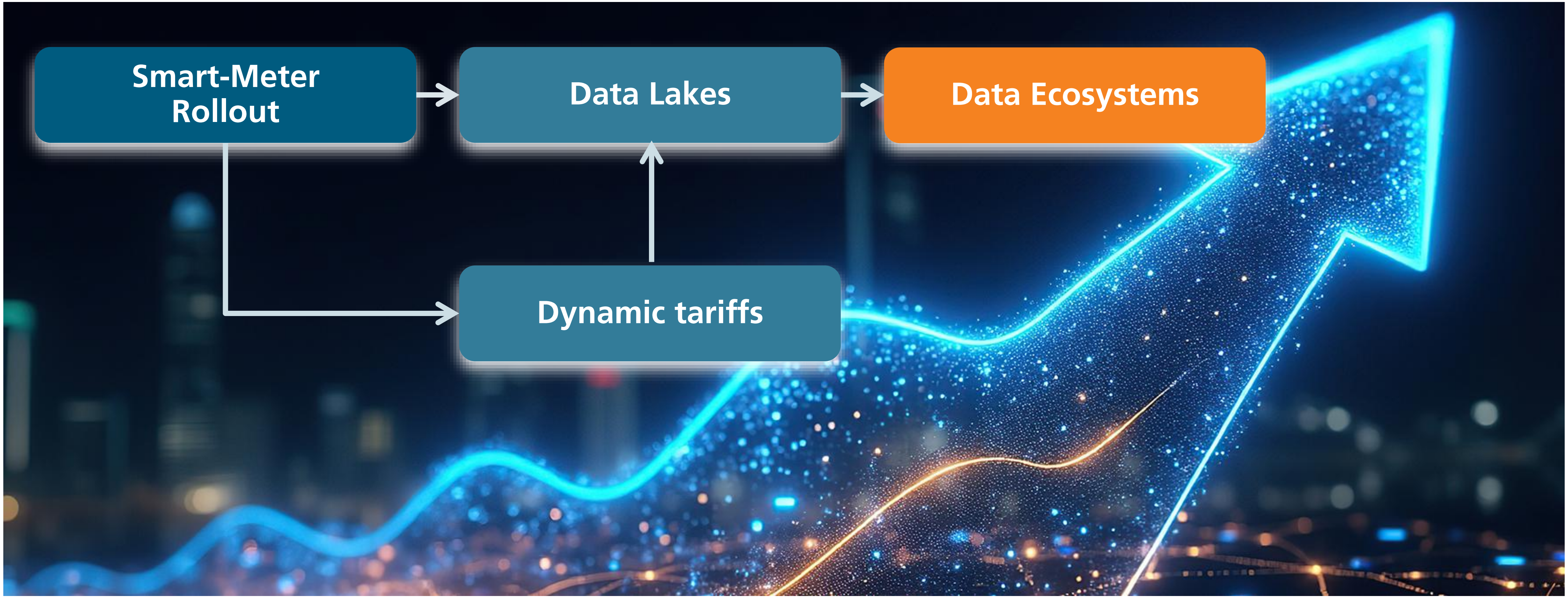
- Orchestrate millions of decentral assets
- Manage the complexity
- Optimize cost efficiency on the total system level
- Provide reliability and resilience of supply through variable flexibilities



Digitalization & Automatization as an Enabler

Pathway to automatization

Relevant first steps



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Pathway to automatization

Relevant first steps

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Setting the Scene

Damian Boeselager

Member of the European Parliament

Common European Energy Data Space (CEEDS)

Policy Update

Pablo Riesgo Abeledo

Policy Officer
Research, Innovation, Competitiveness and Digitalisation
DG ENER, European Commission

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Common European Energy Data Space (CEEDS)

Pablo RIESGO ABELEDO

DG ENER.B4 – Digitalisation, Competitiveness, Research & Innovation

25 September 2025

Path towards the Common European Energy Data Space

Digitalisation of Energy Action Plan (October 2022): announcement of the Common European Energy Data Space.

Smart Energy Expert Group and Data for Energy subgroup (D4E) – Working on 3 high level use cases: - Flexiblity services, - Smart and bidirectional charging, - Energy efficiency in buildings

Strategic Roadmap for Digitalisation and AI in the energy sector (to be adopted)

Open public consultation on the Roadmap is open until 5/11

SCAN ME

European Commission

Establishing the CEEDS

Horizon Europe projects

Smart energy expert group (SEEG) and D4E group

INSIEME (deployment project funded by Digital Europe)

Horizontal and sectoral legislation

Towards a governance of the CEEDS

Thank you

European Commission

Boosting Innovations with Data Act and Data Governance Act?

Expert Presentation I


Nicholas Martin and Marian Klobasa

Department of Emerging Technologies
Department of Energy Technology and Energy Systems
Fraunhofer Institute for Systems and Innovation Research ISI

Motivation – New EU initiatives to support data sharing and data ecosystems

The Data and Data Governance Acts are the main legislative initiatives to come out of the Data Strategy

Data Strategy


EUROPEAN COMMISSION

Brussels, 19.2.2020
COM(2020) 66 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

A European strategy for data

- A Common European energy data space, to promote a stronger availability and cross-sector sharing of data, in a customer-centric, secure and trustworthy manner, as this would facilitate innovative solutions and support the decarbonisation of the energy system.

Sectoral Data Spaces

European legislation


EUROPEAN COMMISSION

Brussels, 23.2.2022
COM(2022) 68 final
2022/0047(COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on harmonised rules on fair access to and use of data
(Data Act)

(Text with EEA relevance)

{SEC(2022) 81 final} - {SWD(2022) 34 final} - {SWD(2022) 35 final}

- Data Governance Act
- Data Act

Timeline for the Data Act and Data Governance Act

23 June 2022
DGA came into effect

DGA applicable from Sept 2025
(for new entities already since Sept 2023)

11 Jan 2024
DA came into effect

Most duties from DA apply
from Sept 2025

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Data Act (DA)

Opening up data silos and creating a competitive data market to enable data-driven innovation

The problem the DA seeks to solve

- Data generated by connected devices often remains siloed, controlled exclusively by the device manufacturers
- Users have limited control over their data, tend to remain dependent on device manufacturers for related services
- Access to data continues to be difficult for many companies, esp. SMEs, limiting data-based innovation and value creation

The DA's solution to this problem

- New rules to facilitate B2B and B2C data sharing
  - Users of connected devices & related services get the right to request data from their devices, have it transferred to 3rd parties
  - Data holders must provide data but can demand appropriate compensation; need contract with user to use user-generated data themselves
  - "Data recipients" prohibited from using the data received to develop competing products and services
- Manufacturers must design devices so that users can easily and securely access data (applies from 2026)

Data Governance Act (DGA)

A legal framework to facilitate data sharing

The problem the DGA seeks to solve

- Growth in 3rd party data sharing institutions (data spaces, trusts, markets,...) but real-world data sharing still limited
- The EU believes that data is not being shared because data sharing institutions lack a legal framework to guarantee their trustworthiness to data holders and data users
- The DGA seeks to create such a legal framework

The DGA's solution to this problem

- The DGA defines two types of data sharing institutions, and creates a series of legal rules for these:
  - Data Intermediary Services, DIS (for commercial sharing of data)
  - Data Altruism Organisations, DAO (for altruistic sharing)
- The thrust of these rules is to limit the range of permissible activities of DIS (and of DAO) mainly to just facilitating data exchange between two parties A and B
- The idea seems to be that this will guarantee the neutrality and thus trustworthiness of DIS and DAO, in turn solving the problem believed to be hampering the growth of data sharing

Data Governance Act

Data Intermediary Services and Data Altruism Organisations

EU Recognised
Data Intermediary

EU Recognised
Data Altruism
Organisation

Data Intermediary Services (DIS)

- Services that "establish commercial relations for … data sharing between an undetermined number of data holders and data users"
- DIS helps Data Holder A and Data User B establish commercial relations (*e.g.*, a contract between A and B)
- DIS may anonymize or reformat data with permission
- But DIS may not aggregate or enrich data
- DIS may not use data for own commercial purposes
- Unclear if DIS may provide analytics services
- Brokers, internal data platforms or closed groups are ***not* DIS**
- Unclear if all commercial data trusts, spaces etc. must be DIS

Data Altruism Organisations (DAO)

- Independent non-profit entity
- Collect and provide altruistically donated data to users for purposes of general interest
- Data must have been provided for free, i.e. not in exchange for a payment (compensation of costs excluded)
- Relatively extensive compliance obligations
- Get registered as an "EU-Recognised Data Altruism Organisation" (in Germany: with BNetzA)
- It is explicitly not necessary for entities making altruistically-donated data available to register as EU-Recognised DAOs

Data Sharing and the Energy Sector

Data sharing is expected to offer significant benefits, yet so far it seems to remain limited

Expected energy sector impacts

New and improved services, technologies, performance, e.g. more efficient provision of flexibility

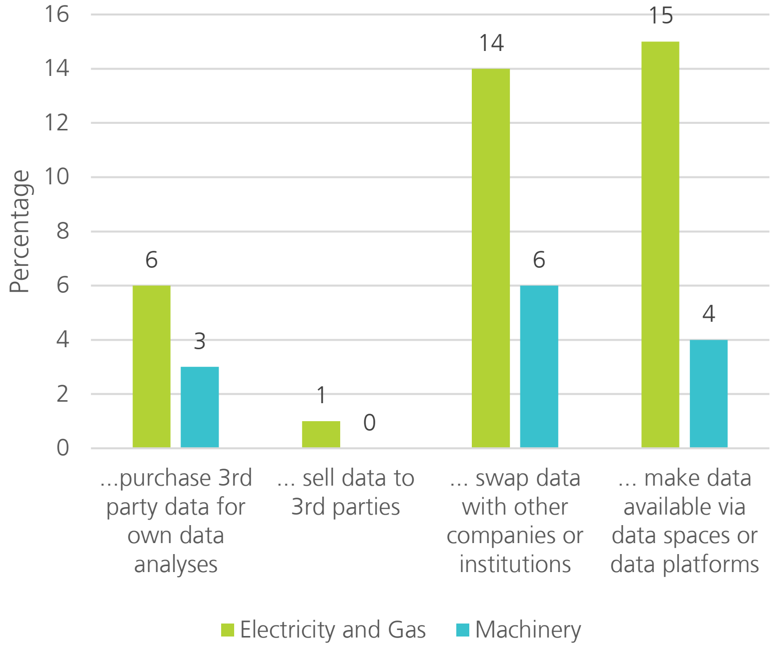
But so far data sharing remains limited

- Recent German survey finds that only ~15% of energy companies systematically share data
- Across sectors, very few fully operational data sharing institutions; prominent failures
- Only 23 entities from 6 countries have so far[1] registered as a DGA-conform DIS; only 3 as a DAO

Do the Data Governance and Data Acts solve the key problems?

- Companies will voluntarily share data *when benefits outweigh risks and costs*
  - Trust/Untrustworthiness is *only one* source of risk. Others, e.g. legal compliance, important too
  - Costs of sharing and using shared data often remain high, e.g. due to data heterogeneity
  - Benefits can be uncertain: developing new use cases are often challenging innovation projects
- New rights and obligations to share data may remain ineffective if de facto costs of finding and using relevant data remain high or data holders refuse to make data available in ways that allow it be to easily used

Share of German electricity & gas and machine tools companies that systematically...



Source: Rammer, C. (2025), Dokumentation zur Innovationserhebung 2024. ZEW Dokumentation 25-01, Mannheim.

[1] *As of 19 September 2025*

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Use Cases in the Energy Sector based on DA and DGA regulations

Expert Presentation II

Volker Berkhout

Research Associate
Fraunhofer Institute for Energy Economics and Energy System Technology IEE

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Data Sharing Institutions for Home Energy Management Data (HEMS)

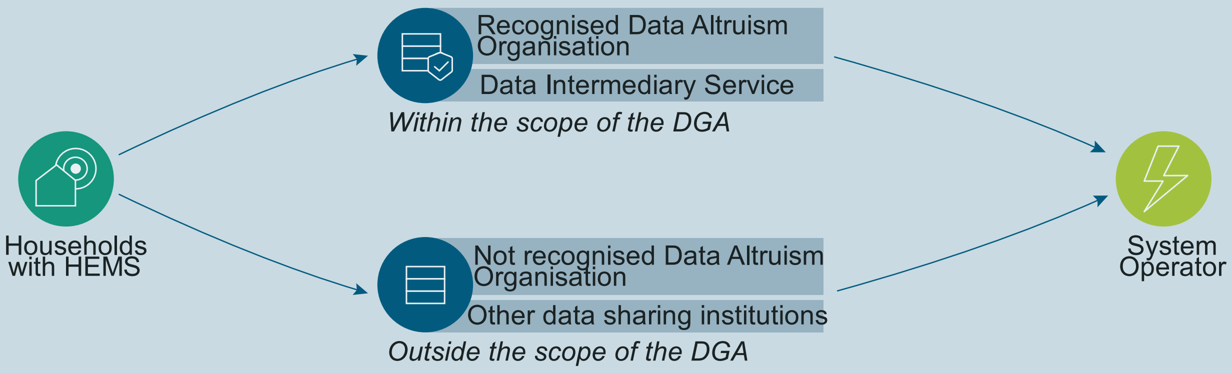
Sharing data for better load profiles

Status quo

- Supply schedule based on standard load profiles
- Consumption increasingly deviates
- Limited granular data available with reference to household devices of consumption for system operators

Impact of Data Governance Act

- Opportunity for the use of anonymized HEMS data via a Data Intermediary Service, a Data Altruism Organisation or other data sharing institution (altruistic or commercial)
- Data sharing institution acts as intermediary, regulating access
- Benefits and obstacles vary between design options within or without scope of DGA



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Operation and maintenance data of wind farms

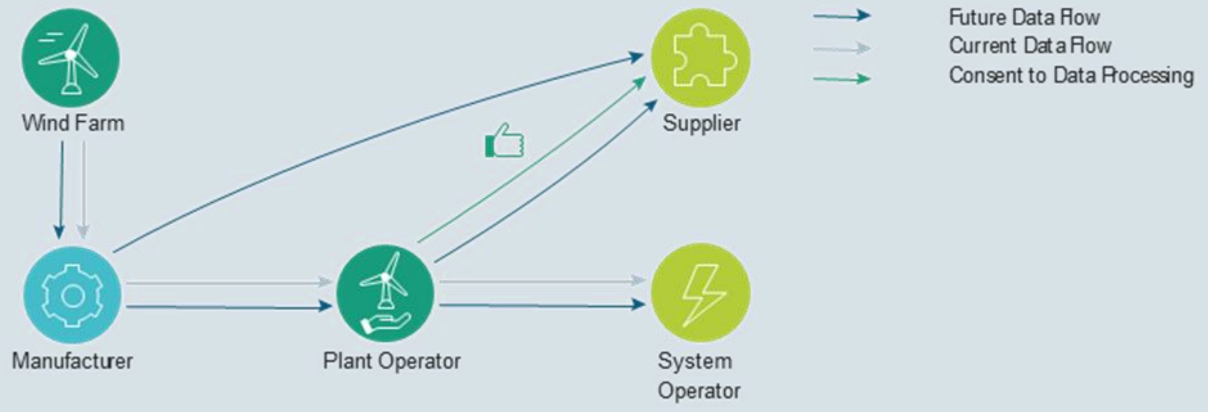
New data usage rights for operators

Status quo

- Access to sensor data is governed by the purchase agreement
- Manufacturers collect all available data, buyers acquire subset
- For (full-) service agreements, access to exclusive data gives a competitive advantage

Impact of Data Act

- Extended access for operators to full data set within DA scope
- Enhanced usage rights extend to third-party services
- Optimization for operation and maintenance



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Access to electric vehicle battery data

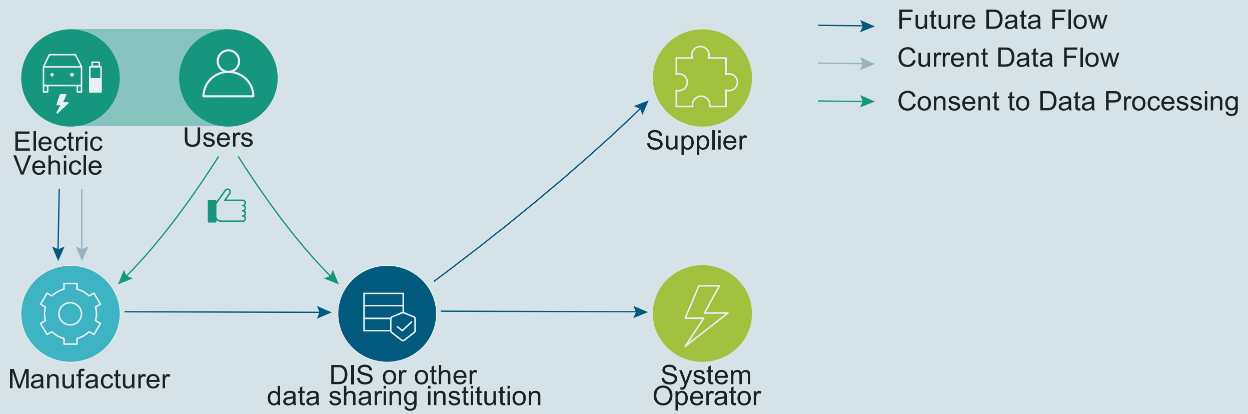
DIS or other data sharing institution to overcome concerns

Status quo

- Increasing number of EVs can lead to bottlenecks and at the same time the EV-fleet is the largest source of flexibility
- Battery data is available to the manufacturer, conflict of interest as data is critical due to IP concerns on battery managements systems

Impact of Data Governance Act and Data Act

- EV users use data usage rights from the DA to require data to be shared with the System Operator and/or Supplier (service providers), via a data sharing institution
- Data sharing institution can be set up as a DIS according to DGA
- Data sharing institution regulates access and manages compliance to mitigate concerns on data provision.



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Conclusion

Use Cases in the Energy Sector

Data sharing institutions for HEMS data

Opportunity to improve load profiles and thus network management while keeping trust

Data sharing can happen on altruistic (DAO) or commercial basis (DIS, other data sharing institution like broker)

Value of sharing data to households is an open question

Data usage rights for operational data on wind farms

Extended usage rights for operators and third-party services could improve operation and maintenance

For OEMs of connected devices requirements on data provision and reviewing digital business model

Access to electric vehicle battery data through data sharing institutions

Data sharing institutions like DIS are a possible solution for conflict of interest

Large potential for grid flexibility could be significantly more accessible

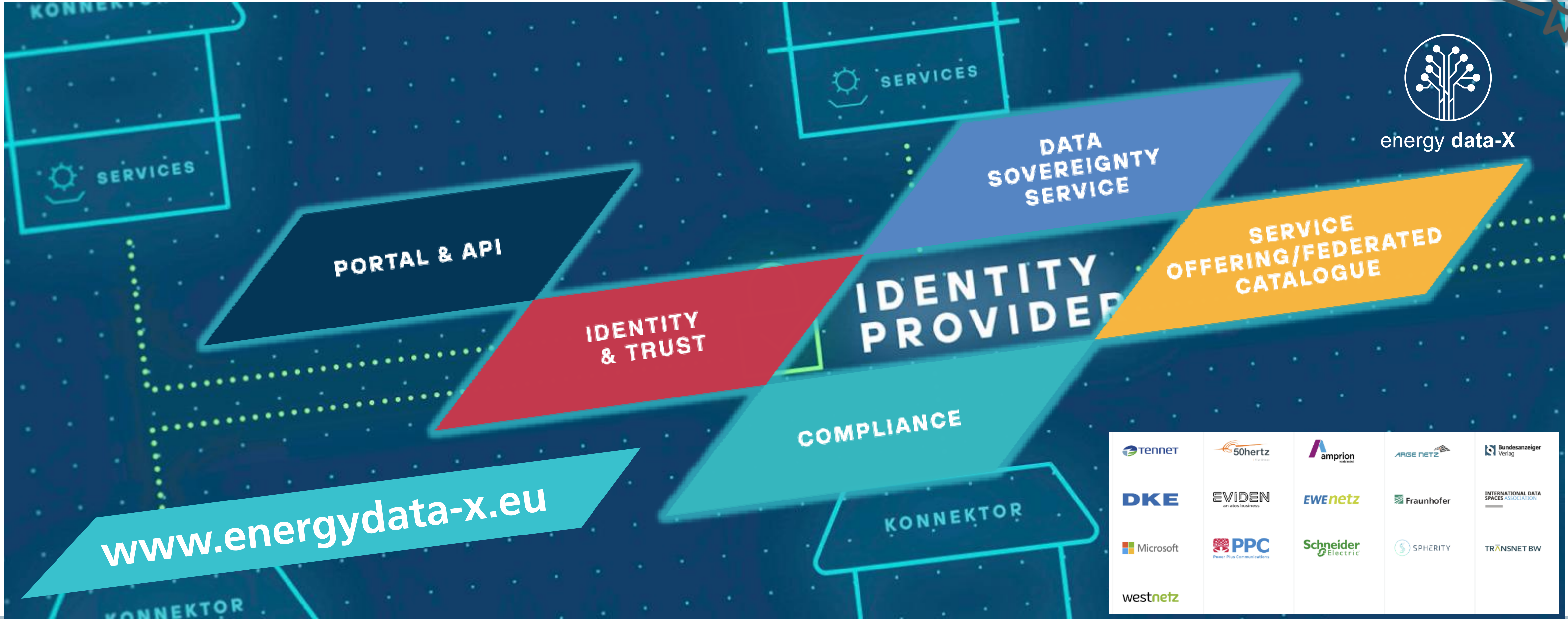
Data Intermediary Services and other data sharing institutions can help solve trust-related conflicts of interest

Data Act improves accessibility to relevant data

Pathway to automatization

Relevant first steps into Data Spaces: project energy data-X

PROJEKT



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Synopsis

From obligation to opportunity: Making the Data and Data Governance Acts work for energy

Opportunities

- Extended data access for energy sector participants & related sectors (e.g., equipment providers) → data-driven value
- New business models for operators & service providers
- Growth of ecosystems and markets for energy-sector data

Challenges

- Economics of data sharing and data sharing institutions (“spaces”, “trusts”, DIS, DAO) are difficult
- How to lower the costs of finding and using shared data?
- Will data holders fulfill the spirit and not just the letter of their new obligations?

What’s Needed

- Efficient implementation by technology providers
- Uptake by operators & service providers
- Standardized interfaces & data models
- Secure portals (API, authentication & authorization)

How to make the **economics of data sharing and data sharing institutions** work?

What **role** can **industry associations** play as, e.g., **trusted operators for data sharing institutions**?

Which concrete **steps** are most urgent to **enable energy-sector use cases**?

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