



"Digital ID management and data governance"

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A graphic featuring a blue map of Europe in the center, surrounded by twelve gold stars arranged in a circle, similar to the European Union flag. The text "EU Policy context" is written in yellow over the map.

EU Policy context

COMPETITIVENESS COMPASS

Decarbonisation and competitiveness

Closing the innovation gap

Simplification

Reducing excessive dependencies and increasing security

Single Market

Coordination

Financing competitiveness

Skills & quality jobs

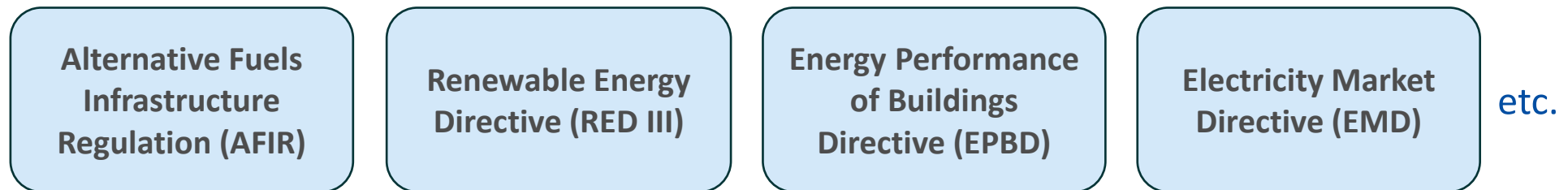


Ensuring regulatory orchestration in data sharing

Sector-agnostic data legislation, like:



Sector-specific legislation with data sharing provisions, like:



- Green energy systems of the future cannot be designed and operated in isolation
- Data sharing through data spaces is core for orchestration across sectors and the foundation for AI
- (Generative) AI will enable better integrated, more efficient and sustainable energy systems
- **Building on European strengths and driving competitiveness**

Legal provisions on sharing data

Examples:

- Renewable Energies Directive (RED III)

- EV manufacturers must make available **real-time EV battery data** (capacity, state of health, state of charge, power setting, EV location) to EV owners/operators – roughly the same applies concerning **industrial batteries**
- TSOs must make available data on the **share of RES** and the **greenhouse gas emissions content** of electricity supplied; DSOs must make available **aggregated** data on **demand response potential** (but only if technically available) and on **energy from RES** fed into their grid

- Alternative Fuels Infrastructure Directive (AFIR)

- Owners must make available certain **dynamic data pertaining to publicly accessible recharging stations** (operational status, availability, ad-hoc-price, renewables origin) via national / European access point(s)

- And more (including especially the Data Act)...

→ Current regulations do not cover all data exchange relations required for energy flexibility

→ Many provisions mandate “making data accessible”, but not sharing this data in specific formats

Legal provisions requiring / incentivizing (ID) registration

For assets

- **Digital Product Passport**
(Ecodesign for Sustainable Products Regulation)
- **Digital Battery Passport**
(Batteries Regulation)
- **Database(s) of public recharging points**
(Alternative Fuels Infrastructure Directive)
- **National database(s) of buildings**
(Energy Performance of Buildings Directive)
- **European Product Registry for Energy Labelling (EPREL)**
(Energy Labelling Regulation)
- **Substances of Concern in Articles or Products Database (SCIP)**
(Waste Framework Directive)
- And more...

For individuals / companies

- **European Digital Wallet**
(eIDAS Regulation)
- **Register of battery producers**
(Batteries Regulation)
- **Register of mobility service providers**
(Alternative Fuels Infrastructure Directive)
- **Register of public recharging point operators**
(Alternative Fuels Infrastructure Directive)
- **Register of electricity capacity providers**
(Energy Market Regulation)
- **National registries of electrical and electronic equipment producers**
(Waste Electrical and Electronic Equipment Directive)
- **National registries of economic operators**
(European Union Customs Code)
- And more...

? One Stop Shop ?

- Many „classic“ central ID registries
- Do not cover everything and anybody connected to the grid
- Hosted by different entities with different policy goals and different technical standards

Easy on-boarding of energy assets

- Regulated:

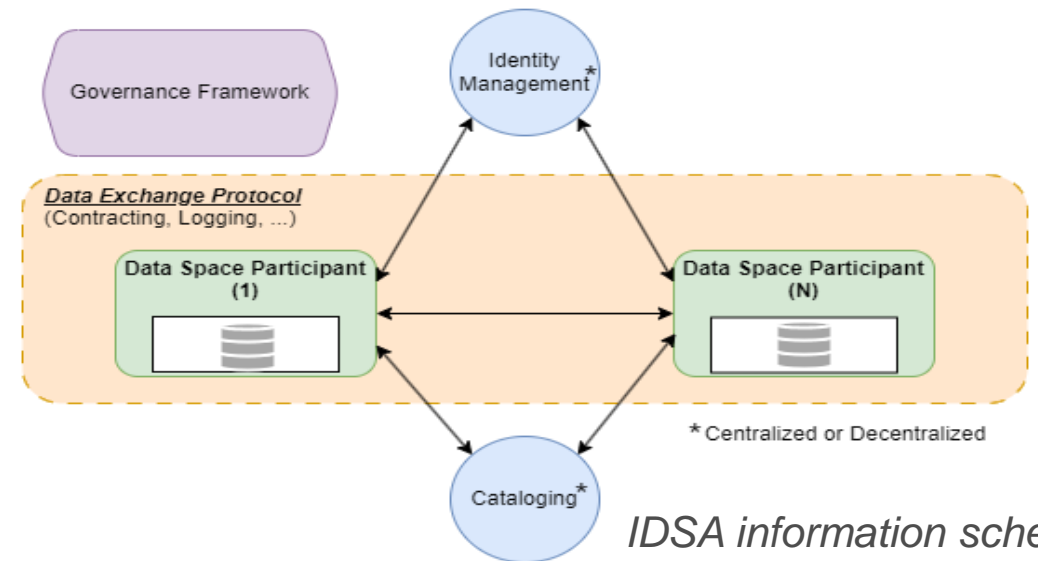
- The *Flexibility Resources Register* proposed by the TSO-DSO TF
- includes significant data/information about the resources/assets which seek participation in flexibility services,

- Two modules

- *Energy asset registration*
- Registering Flex service providers, aggregators and communities.

- Market:

- Cloud device registry
- Gateway or Edge controller
- Device identification and/or on-boarding through *protocol standards*



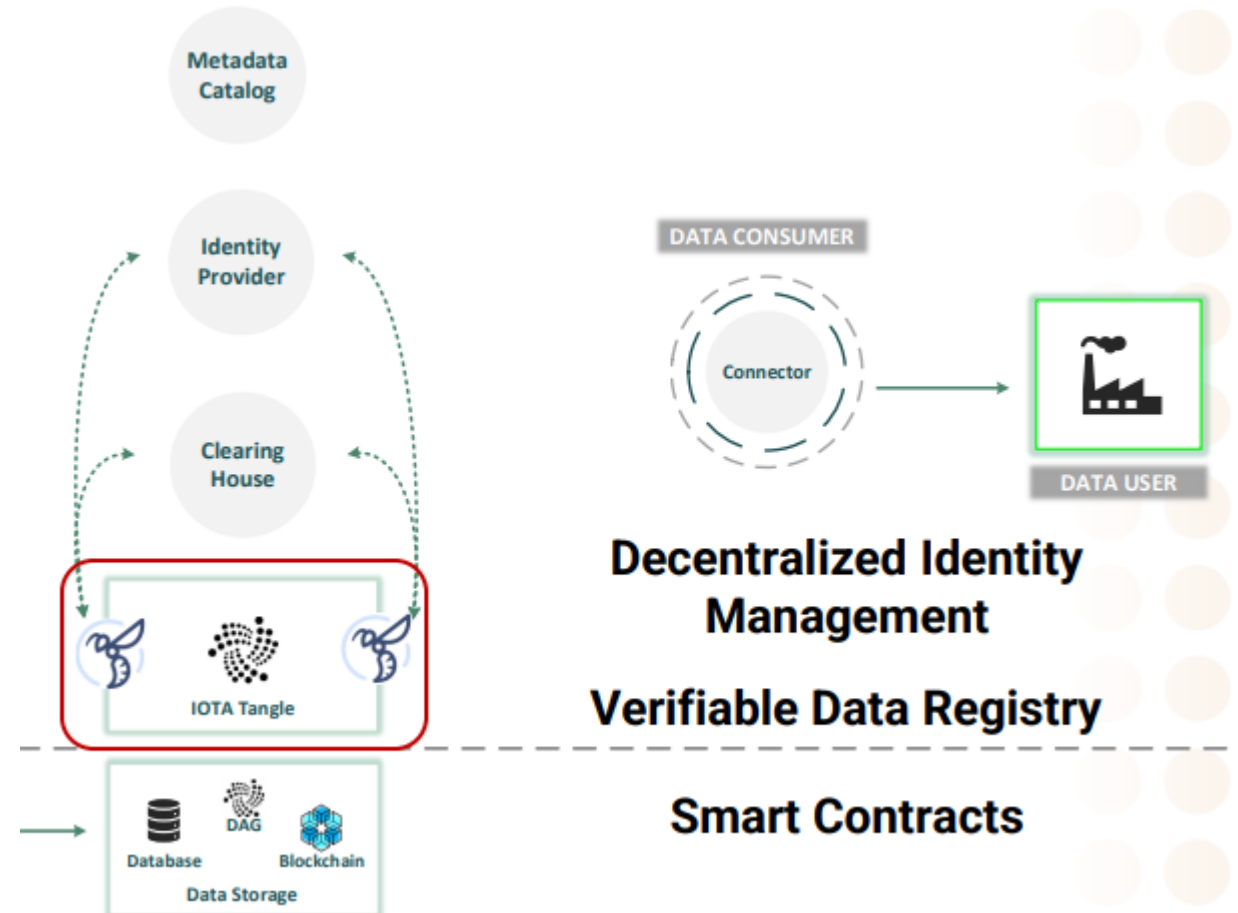
IDSA information schema

Distributed versus Central Transaction

- Central Clearing House: **Paypal / Amazon**

- Central registration
- ID certification via bank account
- Contract conclusion via marketplaces
- Transaction registered in a central data base
- *BUT vendor lock-in*

- Decentralised DLT platform: **IOTA**



Digital Product Passport – Design



- The DPP registry (Article 13 ESR) (Unique identifiers)
- The DPP web portal (Article 14 ESR)
- All standards and protocols related to IT architecture are discussed by CEN – CLC JTC24 (based on [M/604](#)):
 1. Unique identifiers (product, operator, facility)
 2. Data carriers and links between physical product and digital representation
 3. Access rights management, information security, and business confidentiality
 4. Interoperability (technical, semantic, organisation)
 5. Data processing , data exchange protocols, and data formats
 6. Data storage, archiving, and data persistence
 7. Data authentication, reliability, integrity
 8. APIs for the DPP lifecycle management and searchability

Information to be included in the DPP will be **product-group specific** and identified in delegated act process.

It may include information/data on one or more of the following areas:

- Technical performance
- Environmental sustainability performance
- Circularity aspects (durability, reparability, etc)
- Legal compliance
- Product-related information (e.g., manuals, other labels)
- Article 10 (2) [ESPR](#) allows other Union law to include data in the DPP

ESPR: tentative timeline & milestones

25 April 2024

EP Plenary voted on final ESPR text

28 June 2024

Publication of ESPR in the OJ

07 November 2024

Establishment of Ecodesign Forum; [calls for membership](#)

March 2025

Adoption of the 1st ESPR Working Plan (9m after entry into force)

Late 2025

Acts on DPP registry, [service providers](#), data carriers, digital credentials

18.02.2027

First DPP required for 'large' batteries ([2023/1542](#))

22 May 2024

Council endorsed ESPR

18 July 2024

ESPR entry into force

Q1 2025

First meeting of the Ecodesign Forum

Mid 2025

Acts on **unsold goods** destruction ban & exemptions (12m after entry into force)

2026

Adoption of the **first ESPR measures** (e.g. textiles/steel)

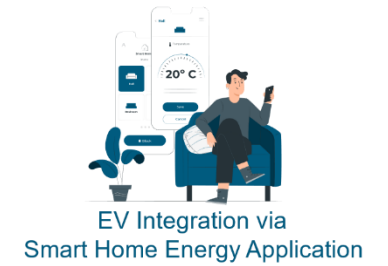
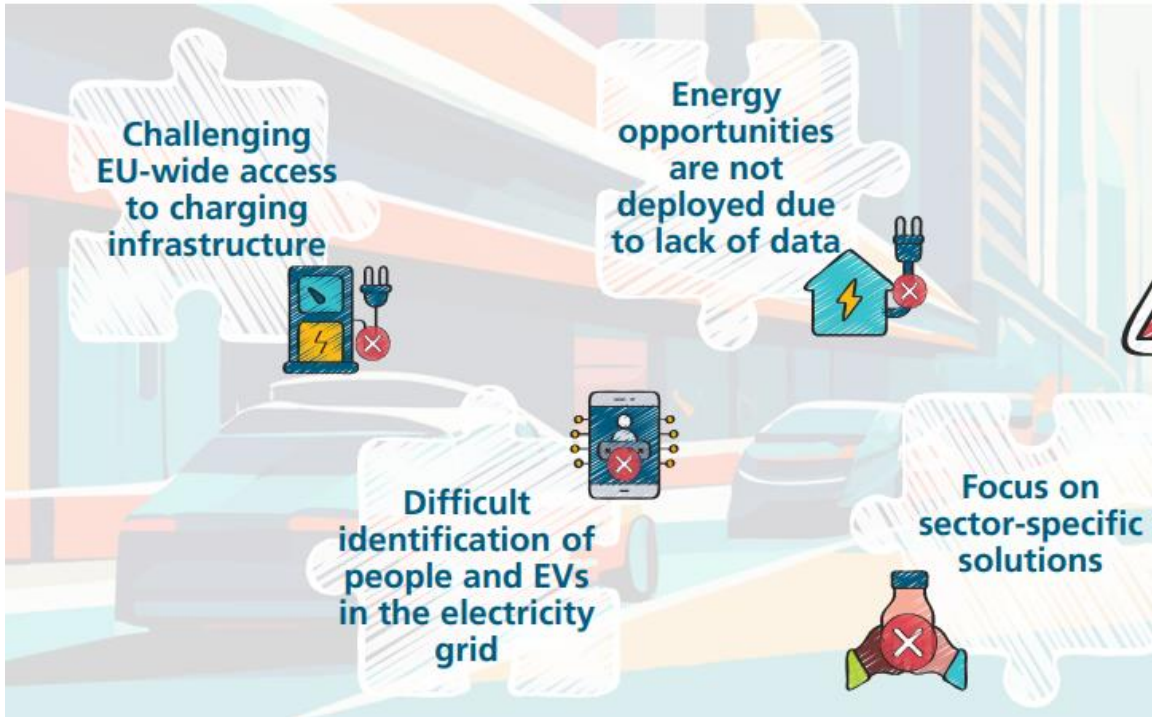
2027/2028

First ESPR product requirements start to apply (inkl. DPP).



Lack of cross-sector orchestration

Challenges

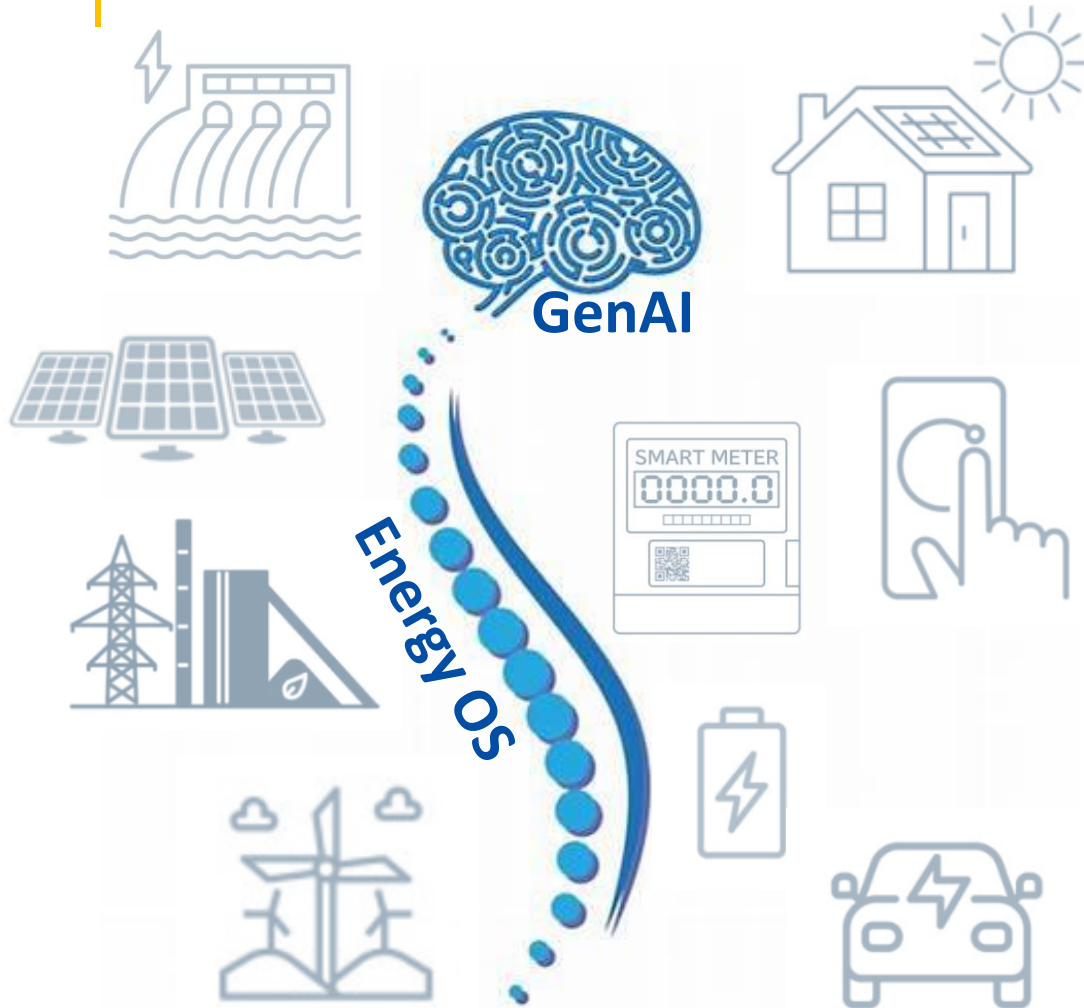


Opportunities

Study Report by Fraunhofer FIT, May 2024 <<LEVERAGING TWIN TRANSFORMATION DIGITAL INFRASTRUCTURES TO ADVANCE DECARBONISATION AT THE NEXUS OF ENERGY AND MOBILITY >>



Towards a digital spine of the EU's energy system powered by GenAI



The power of Generative AI:

- Scenario generation & simulation
- Time series forecasting
- GenAI Decision-making models



Better supply – demand side optimisation:

- Harness flexibility - shave peaks
- Increase security of supply
- Reduce carbon footprint
- Empower industry & consumers
- Reduce energy prices

IoT Pilots for the Edge

- **Challenges of System Integration**
 - from hardware of smart devices
 - to operating systems at device and at system level
 - to middleware and to application software
- **An Operating System @theEdge**
 - by **building open platforms**, agreement on common architectures and standards.
 - Open platforms underpinning **an emerging open edge ecosystem** including midcaps, SMEs and start-ups that foster edge solutions.
 - Demonstrating **cross-domain standardization** and up-scaling of edge infrastructure solutions



*HE WP2024 Call on
IoT Platforms and
Decentralised
Intelligence*

45 Mill. €

HORIZON-CL4-2024-DATA-01-05: Platform Building, standardisation and Up-scaling of the 'Cloud-Edge-IoT' Solutions (Horizontal Activities - CSA)

Related Background

- **Competitiveness Compass**
- **Horizon Europe:**
→ [Calls, topics, deadlines WP2023-24](#)
- **Position Papers and Event Reports**
→ Alliance AIOTI Strategic Foresight : [IoT and Edge Computing Convergence](#)
- **Cloud-Edge-IoT Portal** – see www.EUCloudEdgeIoT.eu
- **HIPEAC Vision** <https://www.hipeac.net/vision/#/latest/>
- [Edge-IoT Policy on Europa](#)
- **Cross-domain standardisation 26 Nov. 2024** .. → [Infos & Registration](#)

