

H2020 IoT Project

SOFIE

**Enabling next generation secure energy services
through data exchange liberation**



guardtime 

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Workshop - Decentralised operation and security
in the Internet of Things Space
18th of June 2020

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 779984



The challenge in Energy sector

Regulatory drivers

- EU Clean energy package – must enable data access and deal with 50% of energy from renewable energy sources
- GDPR – must comply with 8 rights

Financial drivers

- Race to offer suitable energy flexibility services to market

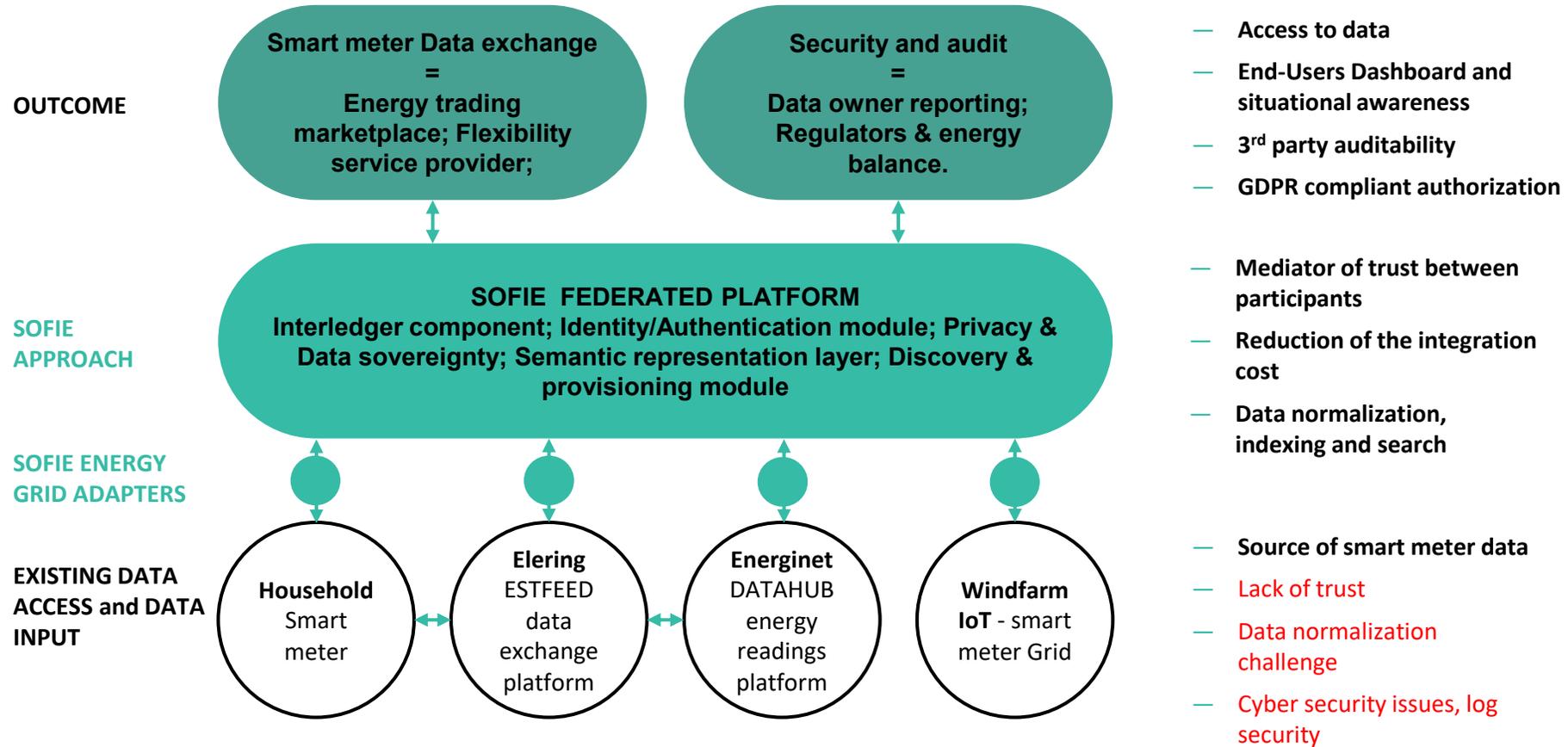
End-user expectation

- Need to be in control of his/her data

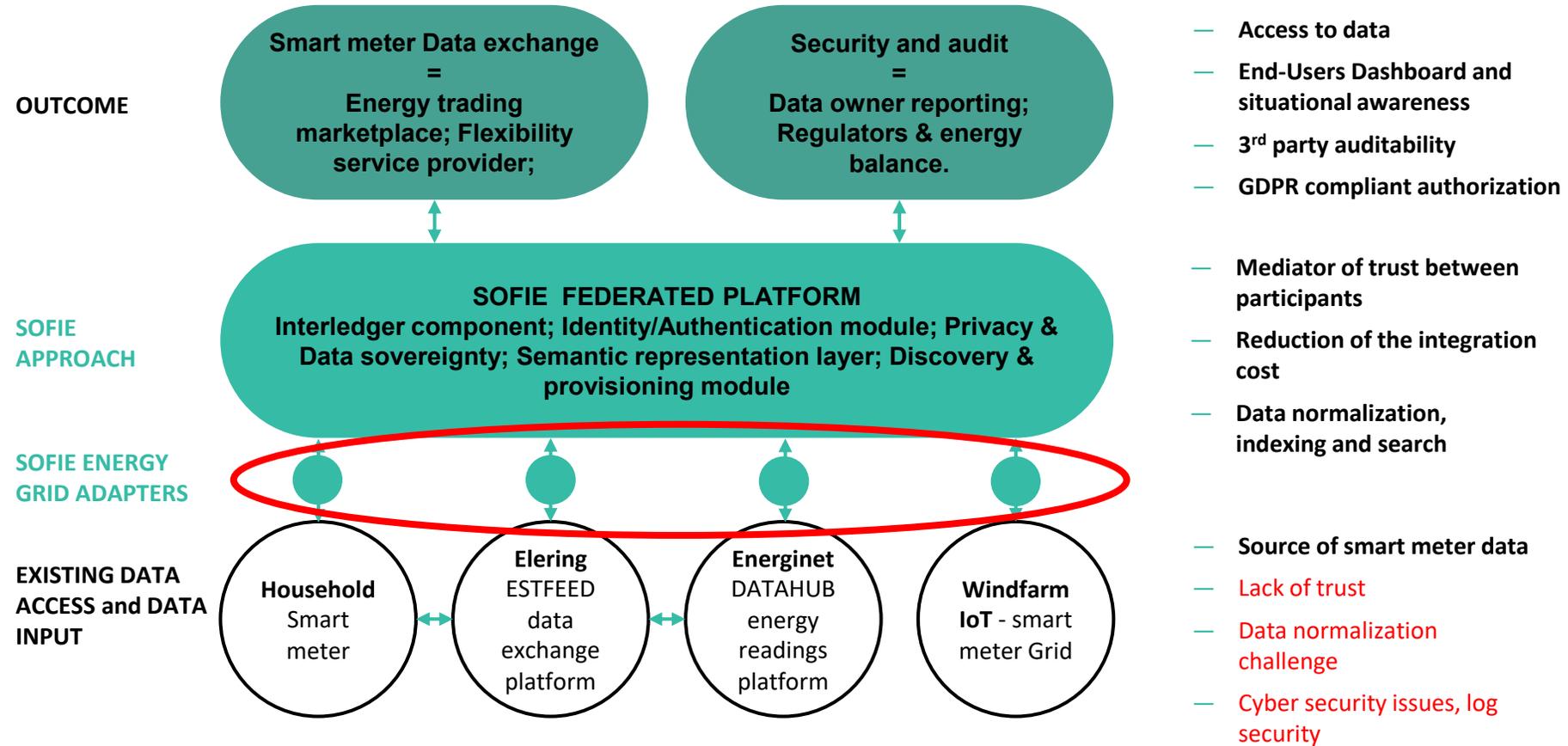
Problem we are solving

- **Enable data access** (from household to datahub level)
- **Deliver an auditability and privacy solution**
- **Integrity of energy consumption data and transparency mechanisms.**

SOFIE Practical approach

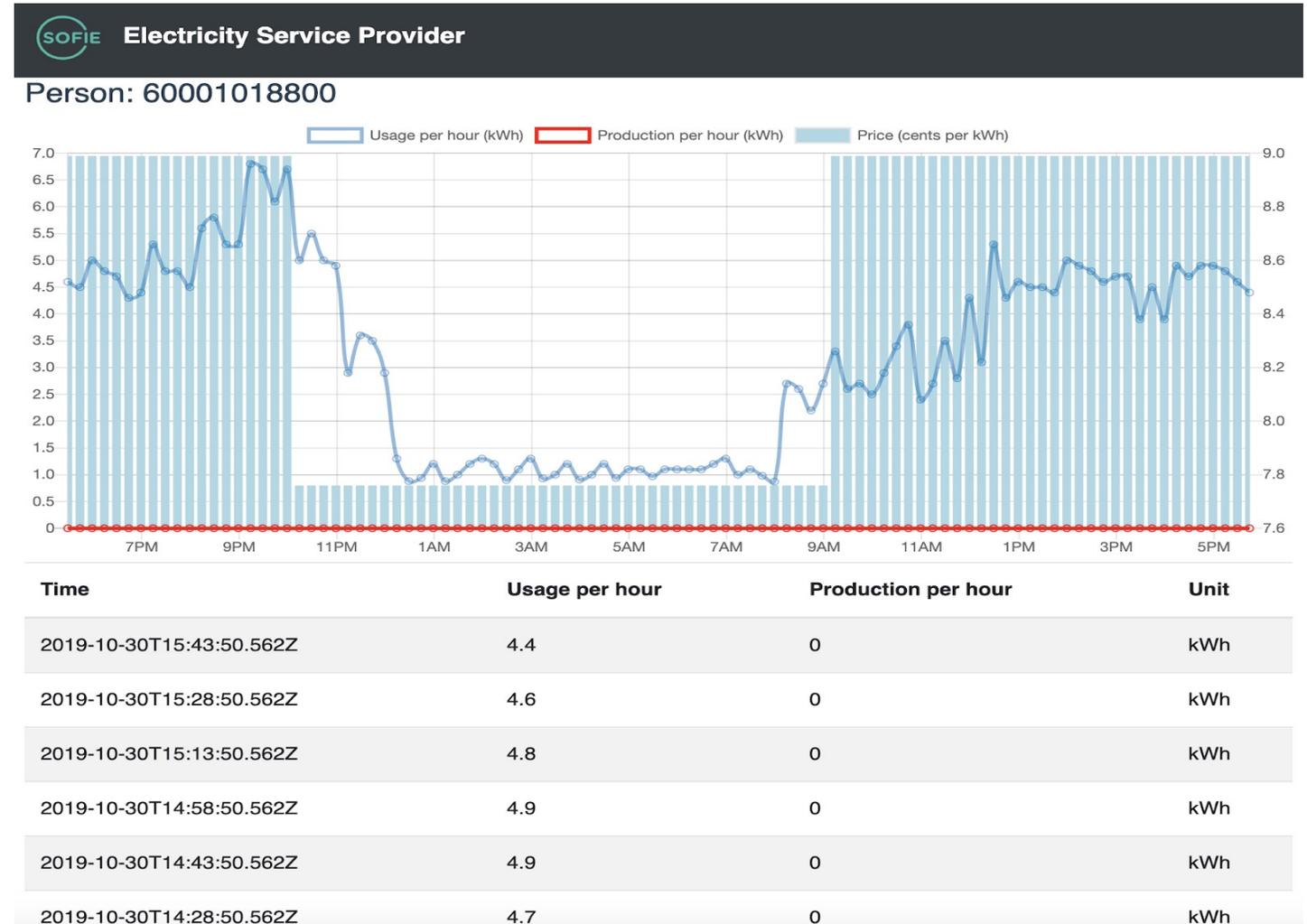


SOFIE Practical approach



What does the consumer get?

An overview of energy consumption/production



What does the consumer get?



An overview
who has accessed,
received data

The screenshot shows the SOFIE Energy Data Dashboard. The top navigation bar includes 'Home', 'Credentials', 'Audit', and 'decentralized.demo'. The main content area is divided into two sections: 'Issued to me' and 'Issued by me'.

Issued to me

Issuer	Validity	Content	Timestamp
Customer Portal	VALID	{ "nationalId": "60001018800" }	Wed Oct 30 2019 10:17:11 GMT+0200 (Eastern European Standard Time)

[Request Credential](#)

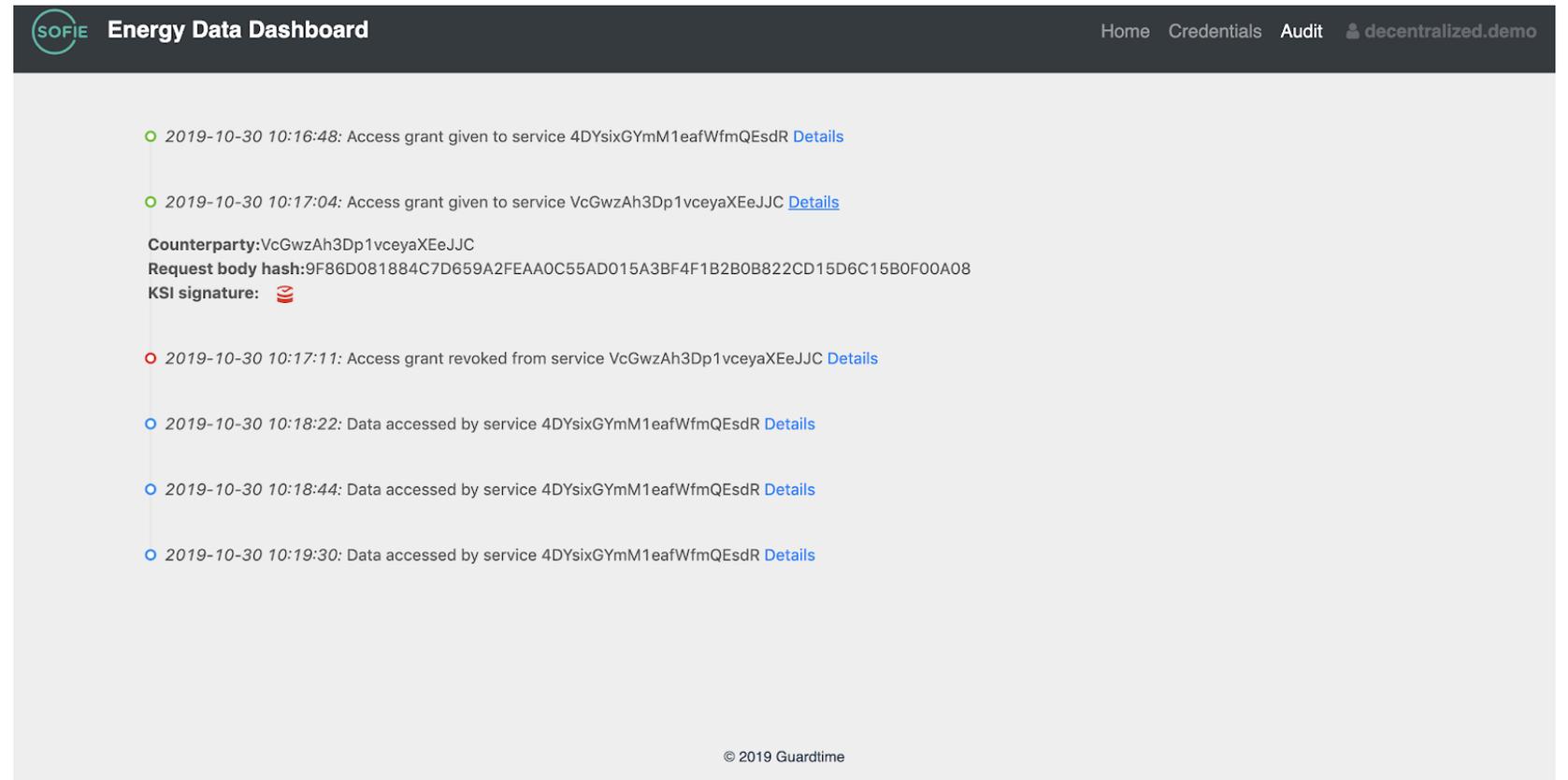
Issued by me

Issued to	Validity	Consent Start	Consent End	Action
Electricity Seller 1	VALID	Wed Oct 30 2019 10:16:48 GMT+0200 (Eastern European Standard Time)		Revoke
Smart Home App	REVOKED	Wed Oct 30 2019 10:17:04 GMT+0200 (Eastern European Standard Time)	Wed Oct 30 2019 10:17:11 GMT+0200 (Eastern European Standard Time)	

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What does the consumer get?

Cryptographic proof



Energy Data Dashboard Home Credentials Audit decentralized.demo

- 2019-10-30 10:16:48: Access grant given to service 4DYsixGYmM1eafWfmQEsdR [Details](#)
- 2019-10-30 10:17:04: Access grant given to service VcGwzAh3Dp1vceyaXEeJJC [Details](#)
Counterparty:VcGwzAh3Dp1vceyaXEeJJC
Request body hash:9F86D081884C7D659A2FEAA0C55AD015A3BF4F1B2B0B822CD15D6C15B0F00A08
KSI signature: 
- 2019-10-30 10:17:11: Access grant revoked from service VcGwzAh3Dp1vceyaXEeJJC [Details](#)
- 2019-10-30 10:18:22: Data accessed by service 4DYsixGYmM1eafWfmQEsdR [Details](#)
- 2019-10-30 10:18:44: Data accessed by service 4DYsixGYmM1eafWfmQEsdR [Details](#)
- 2019-10-30 10:19:30: Data accessed by service 4DYsixGYmM1eafWfmQEsdR [Details](#)

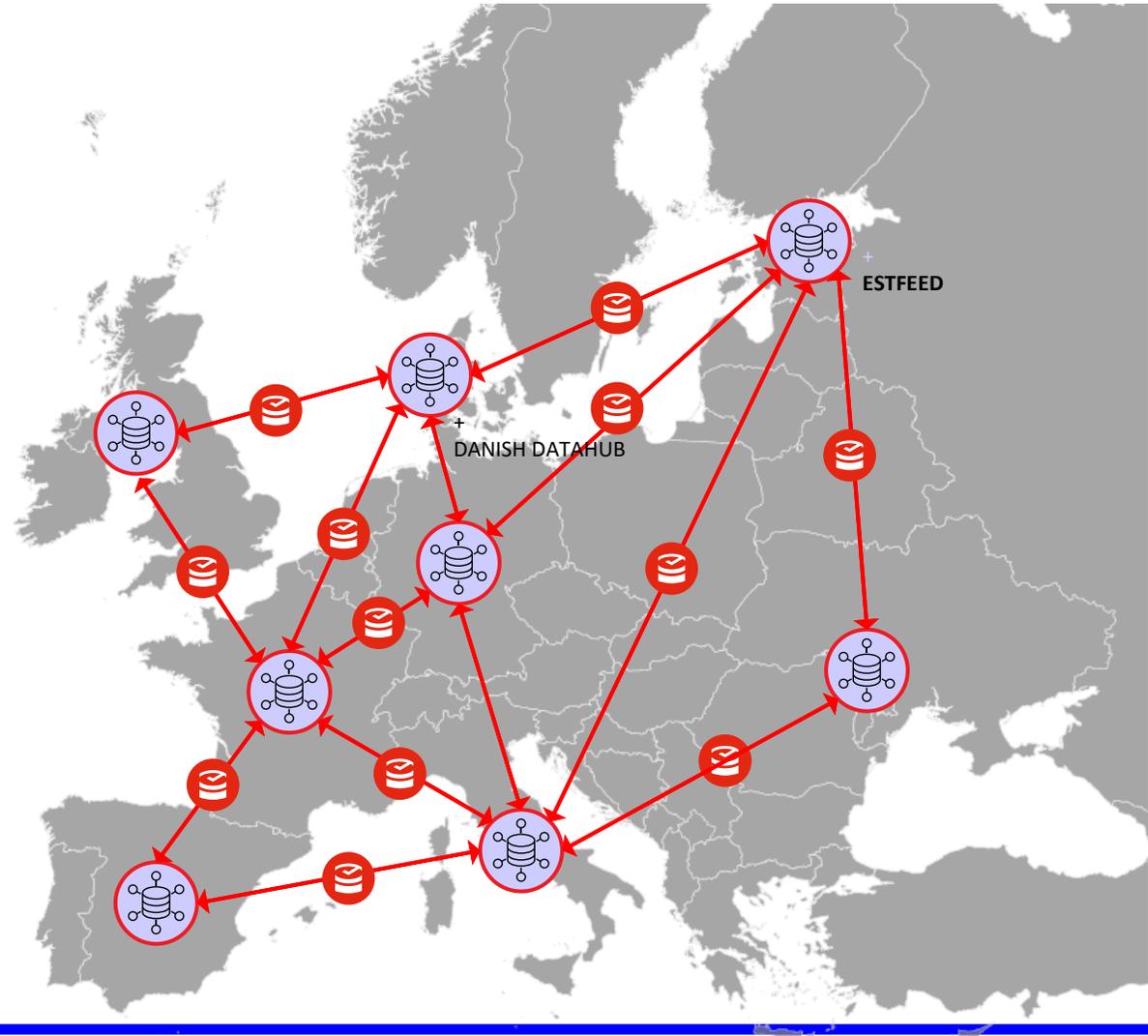
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Pilot's Vision

To enable seamless exchange of data in Europe with just few clicks from data owner side

Users

- Data owners
- Intra day energy brokers
- Retailers
- Network operators



Conclusions

General:

- Data accessibility is a must
- Decentralization is vital for future energy platforms
- Security and privacy aspects to be solved together with new infrastructure

Pilot perspective:

- Authentication and Decentralised Identifiers are working
- Data owner has control



Thank you!

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