DATAWEEK
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SYNERGIES

SYNERGIES Key Results, Experiences & Lessons Learnt

Session “Energy Data Spaces & AI Trends and Challenges”
Tuesday, May 27, 11.30 - 13.00

ORGANISED BY BDV BIG DATA VALUE ASSOCIATION
HOSTED BY COSMOTE
IN COLLABORATION WITH ATC, CERTH ICCS, core|IC, DEMOKRITOS, FORTH, NEUROPUBLIC

Καλημέρα!
My name is Fenareti Lampathaki

My professional work is focused on Data* & AI… *“how data intelligence can be leveraged into everyday operations of any stakeholder, enabling them to reach better decisions at the right time”*

Suite5 We Deliver Intelligence — Technical Director

SYNERGIES at a Glance

Shaping consumer-inclusive data pathwaYs towards the eNERGy transItion, through a reference Energy data Space implementation

Start Date 01/09/2022	22 Partners
42 Months	10 Countries
Innovation Action	3 Demonstration Sites in Europe (Greece, Spain, Denmark)

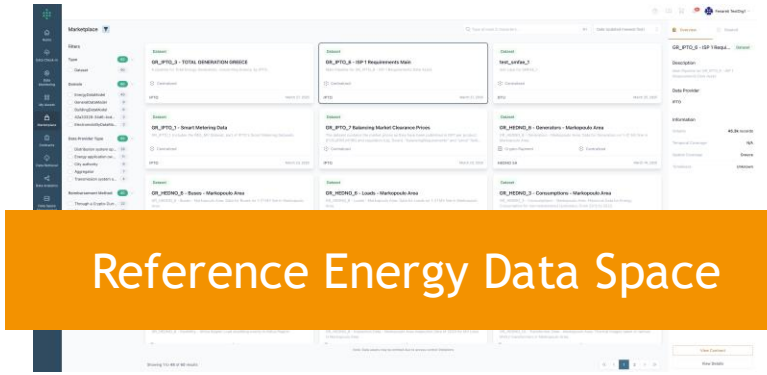
Consortium

Coordination Team:

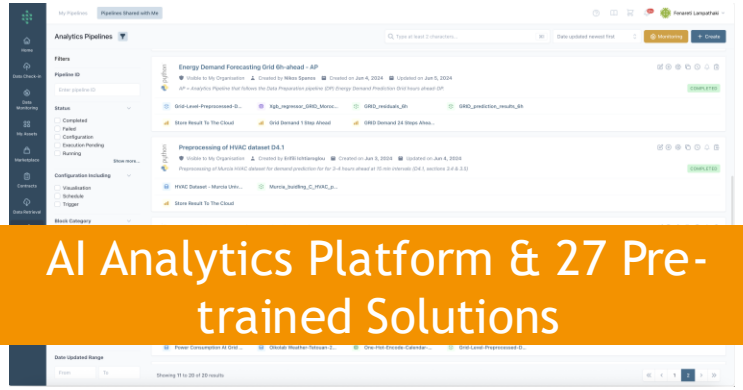
Project Coordinator: TXT e-tech srl (Michele Sesana)

Technical Coordinator: SUITE5 (Fenareti Lampathaki)

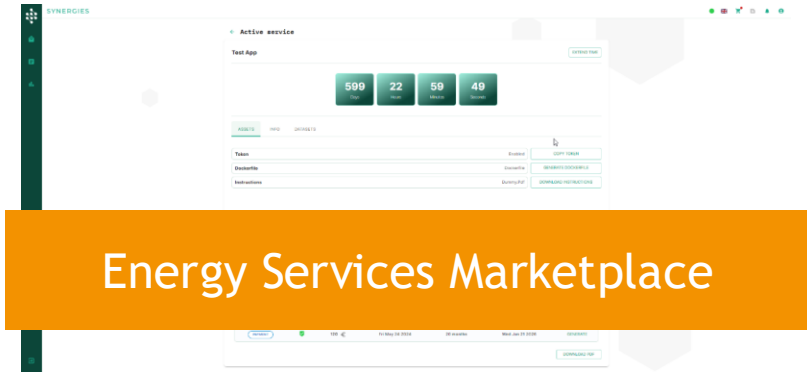
SYNERGIES Key Results



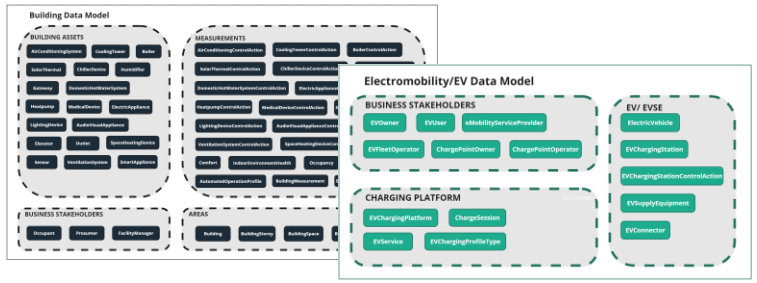
Reference Energy Data Space



AI Analytics Platform & 27 Pre-trained Solutions



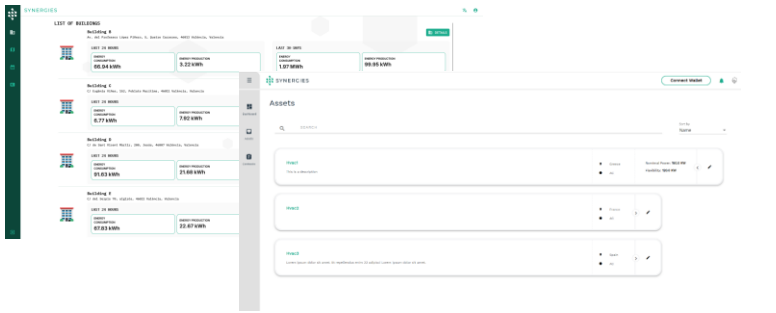
Energy Services Marketplace



Network of Sectorial Data Models

- Digital Twin for Real-time Network Congestion and Voltage Violations Identification and Management
- Digital Twin for Short-to-mid-term Network Operation Planning (T&D), Asset Management and Long-term Asset Sizing
- Community Digital Twin for Local Energy and Flexibility Management Optimization
- Prosumer Digital Twin for Optimized Management and Control of Individual Assets

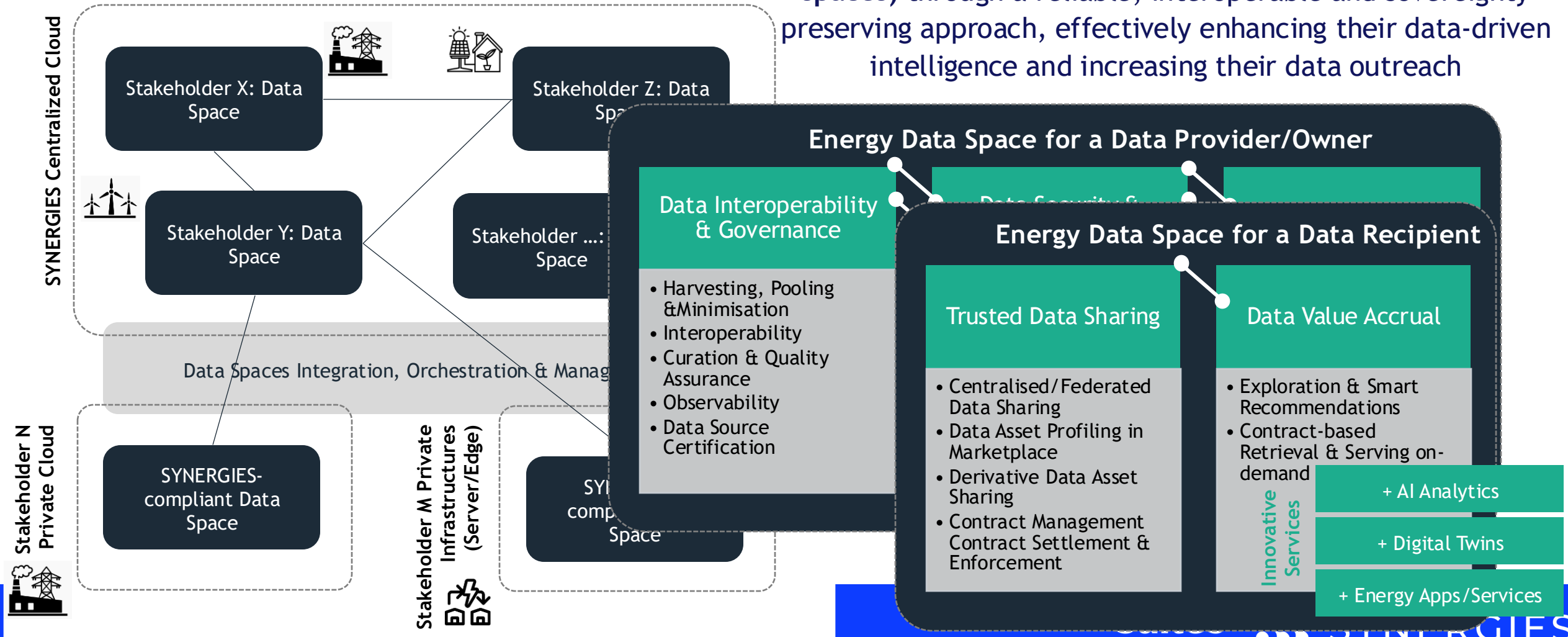
4 Digital Twins



6 Energy Apps

Energy Data Space: The SYNERGIES Perspective

A **secure and isolated data sandbox** that is provided to or is available by each stakeholder (from the energy data value chain and its interrelated, coupled sectors) to **collect, monitor, control, analyse and share their data in their own terms** and to **obtain, access and use external data (from other data spaces)** through a reliable, interoperable and sovereignty preserving approach, effectively enhancing their data-driven intelligence and increasing their data outreach



Challenges, Experiences & Lessons Learnt so far…

- Energy data come in different standards, formats, volumes, velocity and with many different restrictions -> **scalability & multifaceted data ingestion** must be anticipated without requiring changes in the stakeholders' side.
- There is no data model/standard/ontology that addresses all needs of the energy domain… Harmonizing data formats, syntax, and semantics across diverse energy systems and stakeholders is never trivial -> do not reinvent the wheel when it comes to energy data modelling, reconcile existing data models but **"design to anticipate change"**
- High-quality, accurate, and reliable data need to be ensured to effectively train AI models and derive meaningful insights -> **advanced data cleaning and data observability** mechanisms are instrumental in a data space.
- **Prosumer data** bring additional requirements for data protection and compliance with regulations (e.g., GDPR) -> **data anonymization techniques** that run on the stakeholders' side (prior to data sharing) need to be in place.
- Resistance to data sharing is inherent in energy stakeholders -> **who can view a dataset's profile vs who can use a dataset** through fine grained access policies and data contracts with **concrete and clear terms in data sharing**
- Integration of demo data in AI solutions, Digital Twins, Energy Apps always comes across roadblocks -> **start with data profiling and data matchmaking** from the beginning of the project
- Change in the mentality/culture and training of all users is necessary -> live demos, user manuals, and support channels do help.

SYNERGIES

https://synergies-project.eu

Thank you!

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