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GREENET Brokerage Event

6th May 2025

Interested in

- **Climate sciences and responses**
  - HORIZON-CL5-2025-03-D1-05: Adaptation to **Climate Change**: Effectiveness and Limits
- **Sustainable, secure and competitive energy supply**
  - HORIZON-CL5-2025-02-D3-17: Control and operation tools for a **RES**-based energy system IA
  - HORIZON-CL5-2026-02-D3-19: Innovation solutions for a **generative AI**-powered digital spine of the EU energy system IA
  - HORIZON-CL5-2026-02-D3-20: Innovative tools and services to manage and empower **energy communities**
- **Efficient, sustainable and inclusive energy use**
  - HORIZON-CL5-2026-02-D4-02: **Smarter buildings** as part of the energy system for increased efficiency and flexibility
  - HORIZON-CL5-2026-02-D4-04: Innovative approaches for the deployment of **Positive Energy Districts**

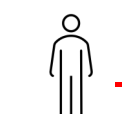***EU projects in:*** Energy, Health, Security, Wireless/IoT, Agriculture

- **Energy**
    - **NUDGE -** Nudging consumers towards enerGy Efficiency through behavioral science (https://www.nudgeproject.eu/
    - **Interconnect -** Interoperable solutions connecting smart homes, buildings and the smart grid https://interconnectproject.eu/
- **Agriculture: PRUDENT** - Promoting green nudging for sustainable agriculture and forestry https://prudent-project.eu/
- **Health: Coordinator** of PRE-ACT https://preact-horizoneurope.eu/   (Prediction of Radiotherapy side effects using XAI)
- **Networks: SMOTANET -** Software Defined Networking; Online Learning from streaming data; Cybersecurity and Forensics
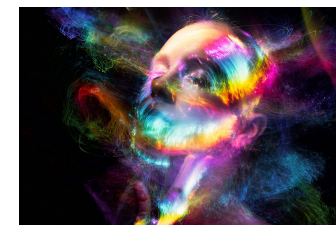
■ <mark>Responsible AI</mark>

– Explainable AI → satisfy "right to explanation"

– Continual Learning → learn from continually evolving, <u>streaming</u> data

– Federated Learning → train AI models out of <u>distributed</u> data, without data leaving their location; privacy preservation

– Personalization

■ <mark>Trustworthy AI</mark>

– Generative AI / LLM Hallucination mitigation

– Intelligent Services at the network edge

  • resource-limited devices/IoT: How can an LLM fit?

Intelligent Trustworthy Energy Services (2)

- **AI: Learning from diverse DATA**
  - **Multi-modal AI**: text, diverse time series, images, tabular data,…
  - Learning from Human Feedback
    - **Reinforcement Learning from Human Feedback (RLHF)**
  - **Generative AI, Self-supervised Learning** → data augmentation to overcome data scarcity

- **Consumer centrism tools: Digital Twins**
  - **Digital Twin & AI integration** → representation of building/ energy community functiionalities at different levels/scales
  - **Digital Twin & LLM integration** → advanced forms of digital assistants

Greenet

The network of Horizon Europe
Cluster 5 National Contact Point.

Main message: PREPARE…

…to ride the wave of

Intelligent Trustworthy Energy services

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