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Info Day 2 – Pitches

25 October 2022

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Info Day 2 will start at 10:00 am CET, this is a preparatory session

Instructions for pitching

- Write the code you have received before your name. If you can not edit your name, please raise your hand for assistance, or write in the Q&A tool your pitch code.
- You will be invited to be a panelist, please accept the invitation.
- Stay muted and with your camera off until it is your turn.
- Please keep your presentation to **2 minutes**
- **I will switch on my camera and send you a message by the chat when you have 30 seconds left.**
- The ppt will be shared at the website https://cetpartnership.eu/

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House keeping

- Attendees:
  - Muted
  - Camera off
  - You may use the “Q&A” tool to pose questions and we will be answering them.
- The ppt will be shared at the website https://cetpartnership.eu/

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CETPartnership Joint Call 2022 Infoday 2 - Pitches (online)	
10:00 - 10:05	**Welcome and Instructions**
10:05 - 10:45	**General Aspects of CETPartnership Joint Call 2022: Call timeline, rules, how to apply**
11:45 - 11:00	**Reporting and Knowledge Community Standard Work Package**
11:00 - 11:15	Coffee break
11:15 - 14:05	**Pitches**
11:15 - 11:40	**TRI1 Pitches**
11:40 - 12:00	**TRI2 Pitches**
12:00 - 12:30	**TRI3 Pitches**
12:30 - 12:55	**TRI4 Pitches**
12:55 - 13:20	**TRI5 Pitches**
13:20 - 13:40	**TRI6 Pitches**
13:40 - 14:05	**TRI7 Pitches**

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Joint Call 2022

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CETPartnership Joint Call 2022 Info Day 2

We will be back at 13:40

Pitches

Please use the “Q&A” tool to pose your questions

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TRI 1
Presentation
event

To discover more about TRI 1 Call Modules

SCAN ME

Need-owners and experts will take part to the event and will provide information about the state of the art and the paths we need to take.

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MOHA

Multi-use **O**rchestration of **H**ybrid **A**ggregators

"Orchestration of Renewable and Hybrid Virtual Power Plants for best possible use in multiple markets and new business opportunities."

TRI 1 – RESDemoPowerFlex

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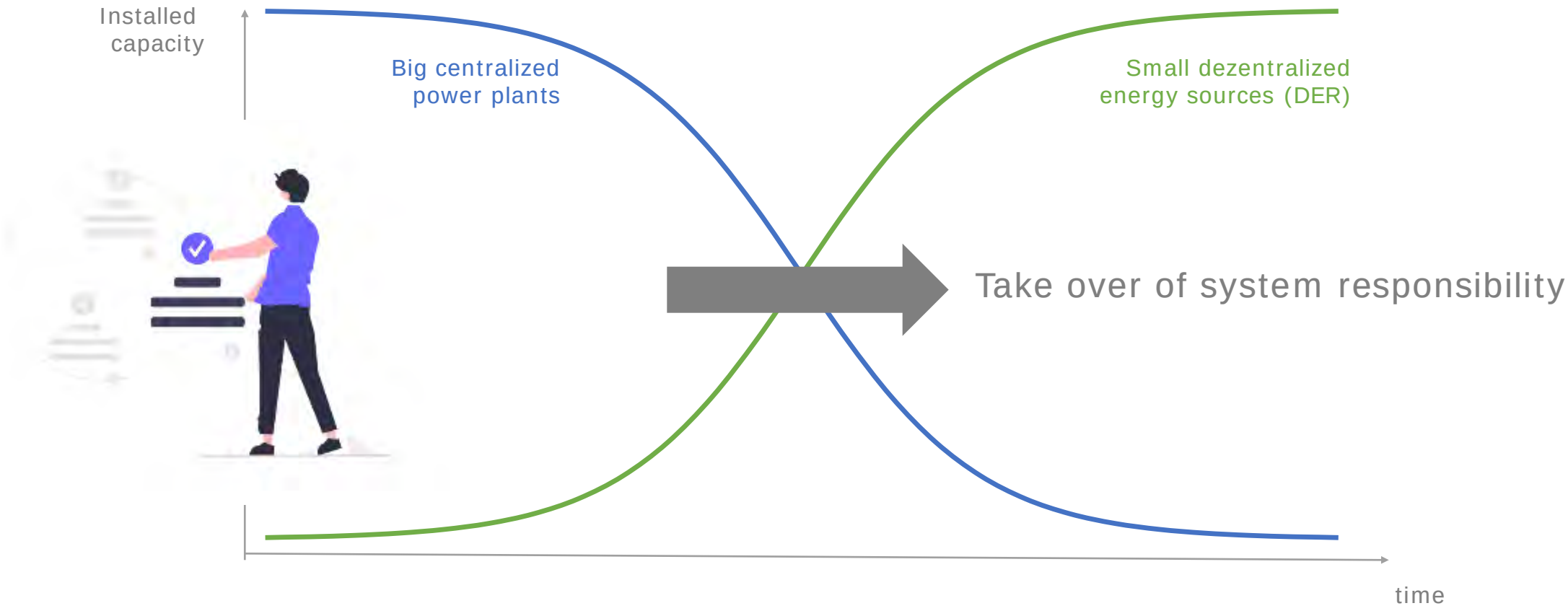
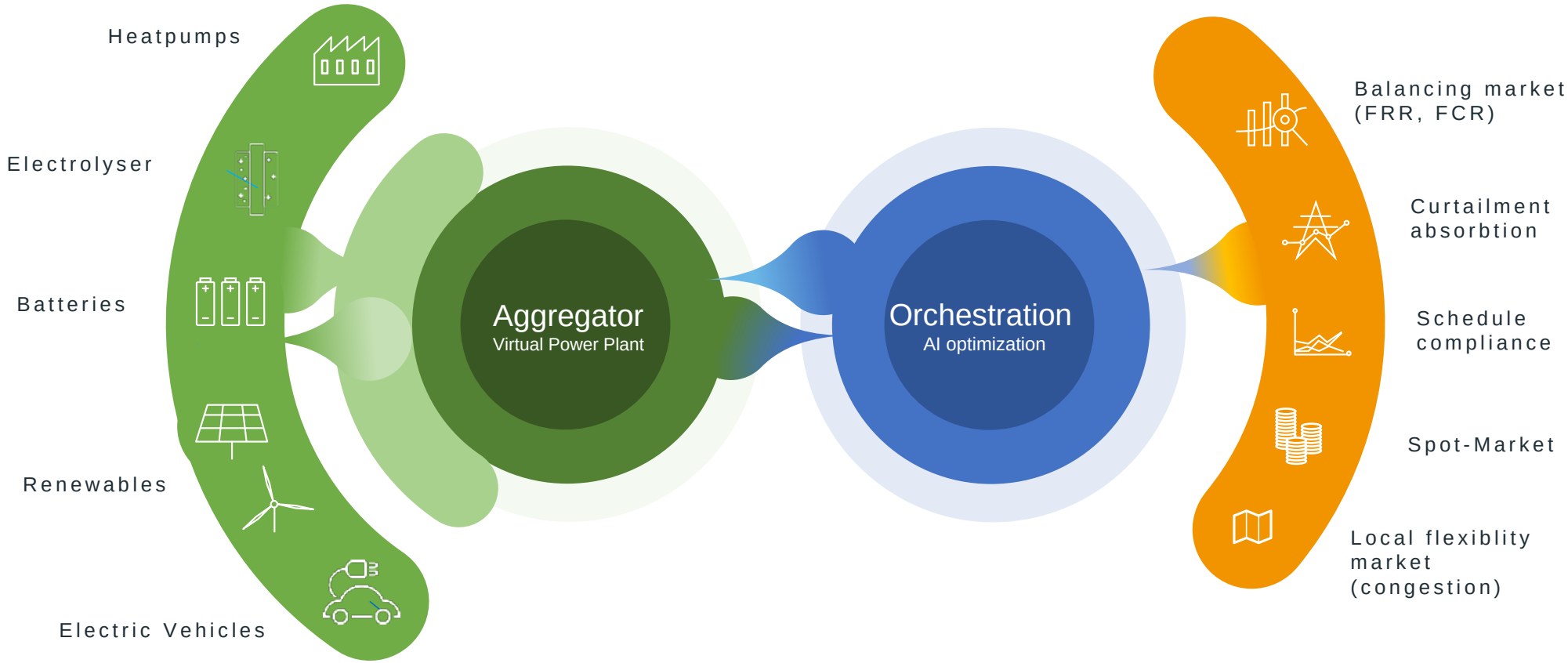
TRI104

Accelerating energy transition



Multi-use optimization by Virtual Power Plants



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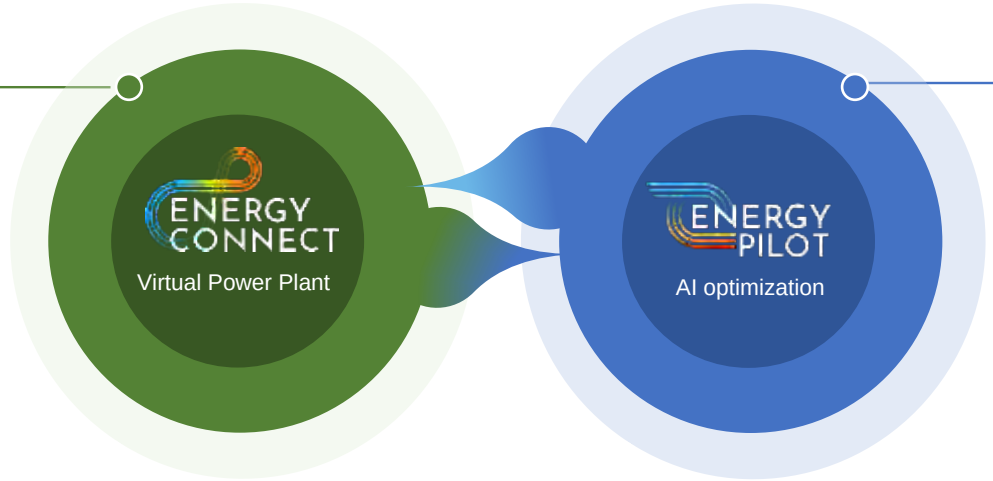
TRI104

Main topics & research questions

FlexDemonstration

How can energy flexibilities act on multiple market and ensure system stability?



Multi-use Orchestration

How can Artifical Intelligence (AI) empower cross-usecase optimization and scaling of an hybrid aggregator?

Support mechanisms

What kind of market design & digital solutions can support the flexibility provision by DER?

Consortium & expertise

WANTED:
Partner from further European countries

- DER- or ChargePoint Operators
  for Flex-Demonstrations
- Research Institute / Universities
  a) digital twin development
  b) stakeholder interaction for user-driven demonstration design
- Optional: Provider for digital & data driven solutions
  to support flex integration & provision

Fraunhofer IEE

Initiator Fraunhofer IEE
Expertise in Virtual Power Plants, AI Optimization, Demonstrations, market design

Potential consortia (status quo)
- *Hybrid RES operator (DE)*
- *Forecasts (FR)*
- *RES Operator (FR)*

Contact

Daniel Zahn

Research Associate

Product Manager Virtual Power Plant

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Fraunhofer IEE

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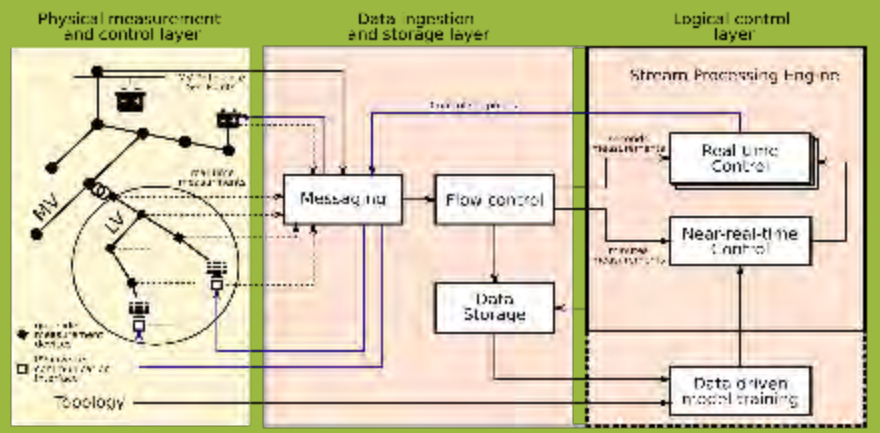
Optimal Flexibility Provision in Distribution Grids

Scalability and Communication Challenges



Mohammad Rayati

Senior R&D Engineer at HES.SO at University of Applied Sciences and Arts of of Western Switzerland

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Optimal Flexibility Provision

Scalability and Communication Challenges

- **Objectives:**

- Scalable algorithms and methods for **distributed operation/control of controllable resources in flexible distribution grids**
- Validation of models and algorithms aim at **representing the physical/stochastic behaviour of complex generation/consumption components** in distribution grids
- Integration of **electric vehicle fleet** into distribution grids
- Demonstration of **distributed provision of ancillary services** in real time operation of distribution grids

Competencies at HEIG-VD

- ✓ ReIne Laboratory facilities
- ✓ Power electronic and control expertise
- ✓ Power system and distribution network expertise
- ✓ Proposing and programming algorithms

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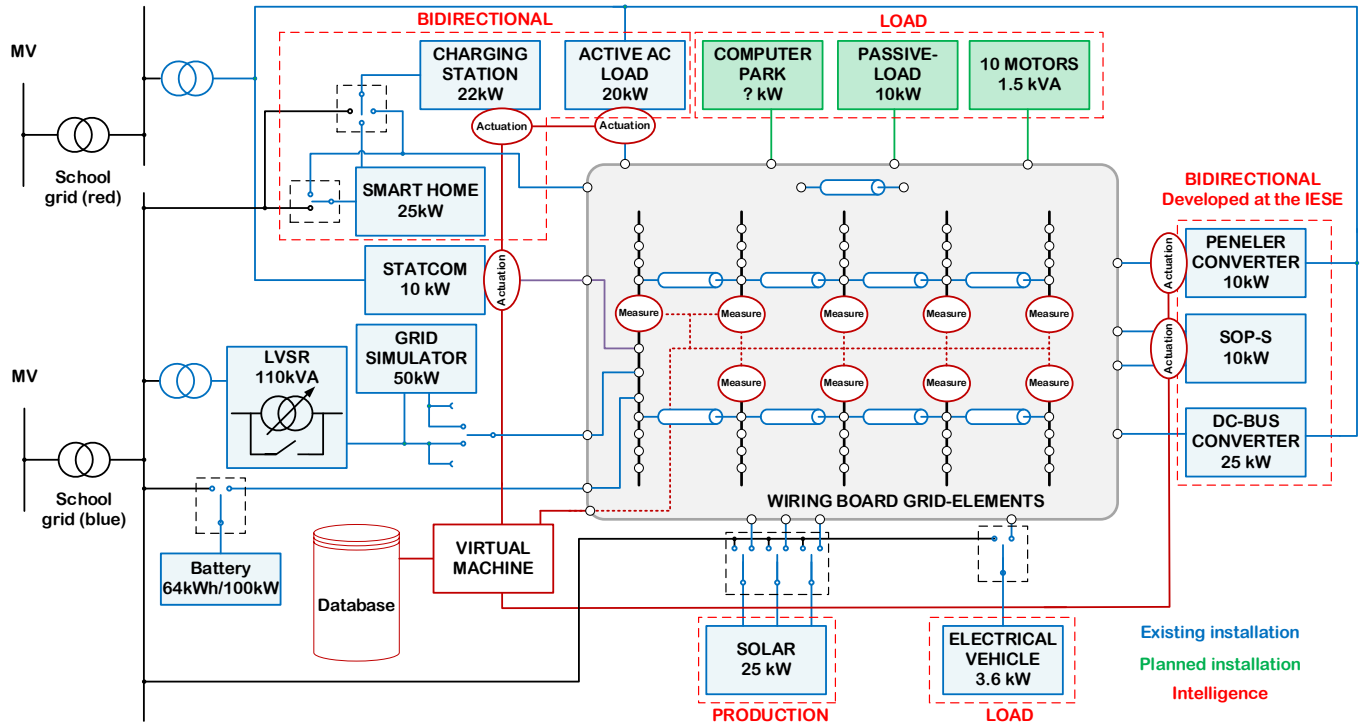
Laboratory of Smart Grid (ReIne)

Emulation of Real Distribution Grids



- Monitoring with a high frequency sampling (50 kHz)
- Data acquisition based on GPS synchronization.
- Flexible structure

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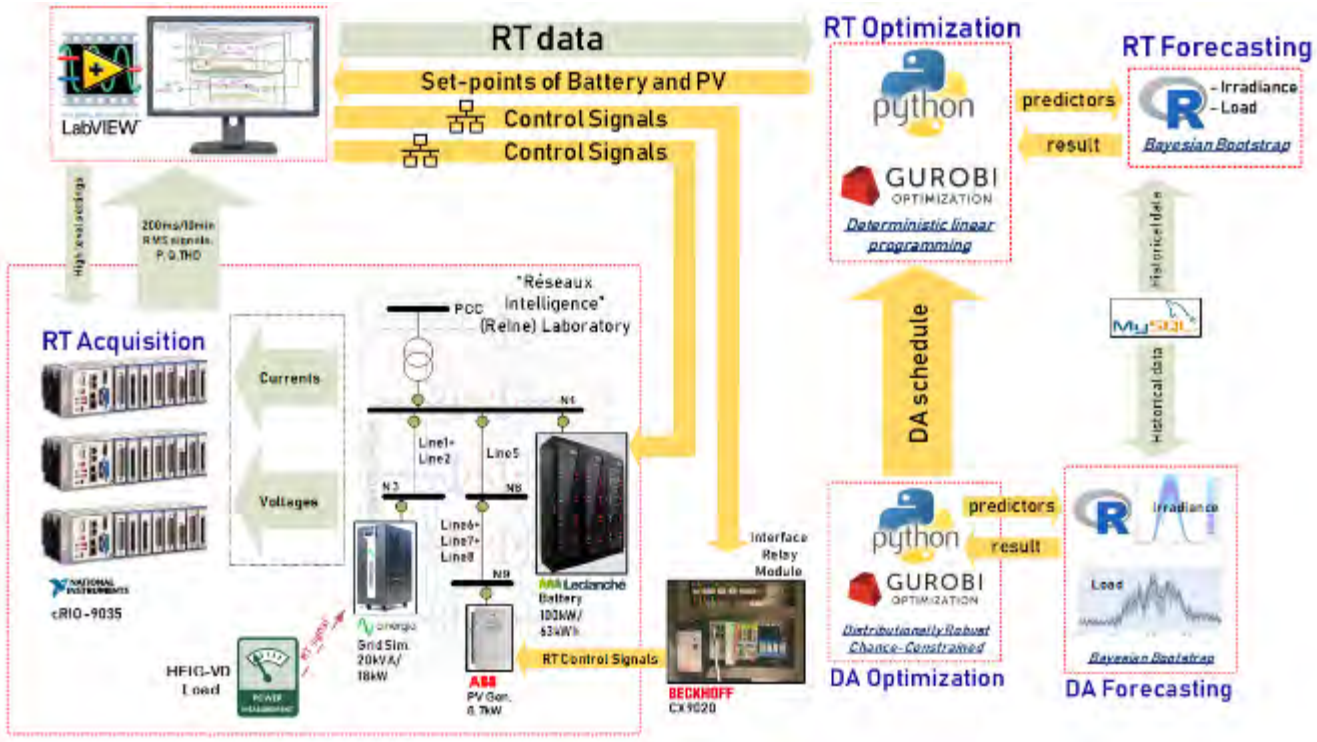
Control Implementation

What is already implemented



Integrating energy carriers and model scales

Potential contributions to projects for the CETPartnership's TRI 1

German Aerospace Center (DLR), Institute of Networked Energy Systems

Contact: Hans Christian Gils, hans-christian.gils@dlr.de

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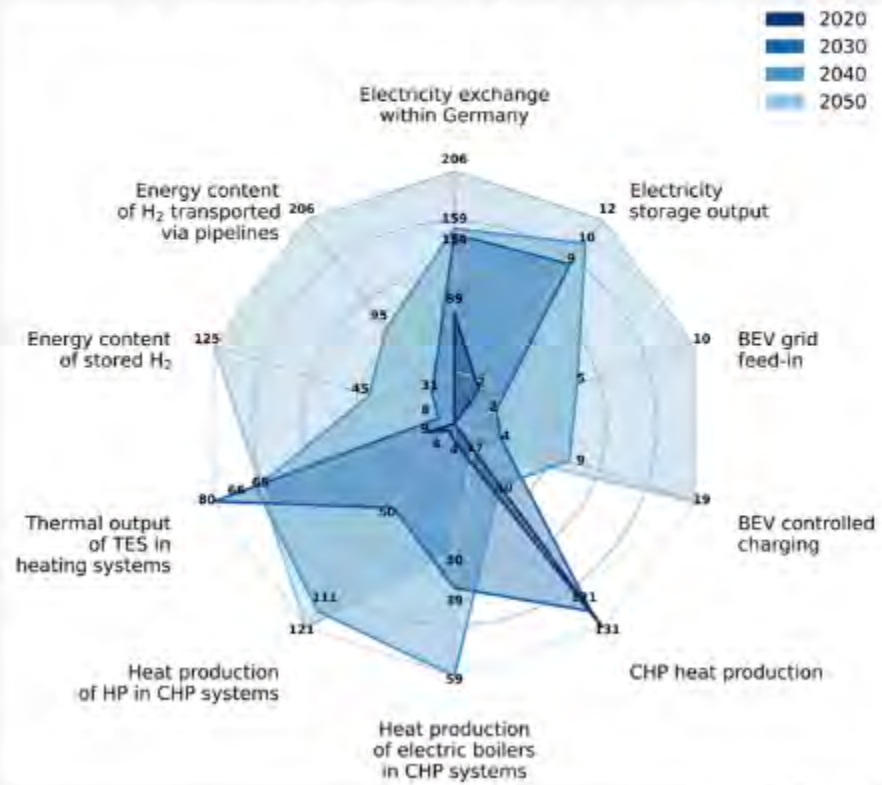
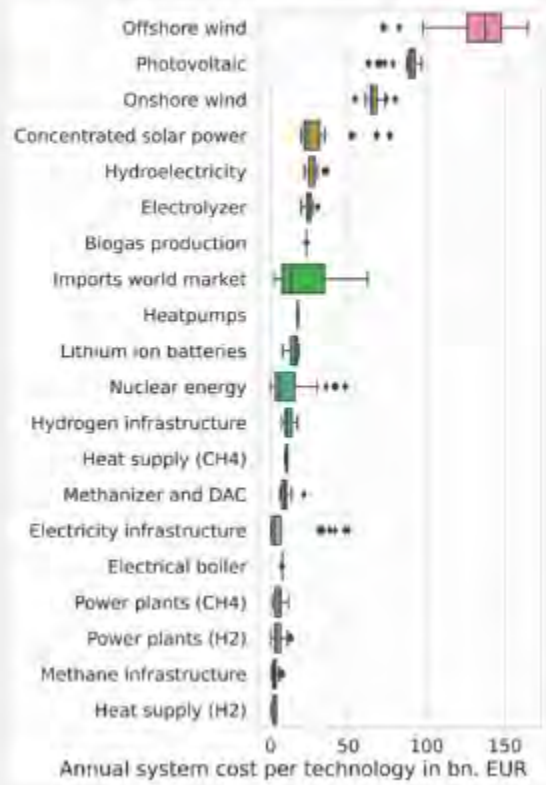
Modelling integrated future energy systems





Gils et al. 2021, Interaction of hydrogen infrastructures with other sector coupling options towards a zero-emission energy system in Germany, https://doi.org/10.1016/j.renene.2021.08.016
Wetzel et al. 2022, Green energy carriers and energy sovereignty in a climate neutral European energy system, https://elib.dlr.de/186549/

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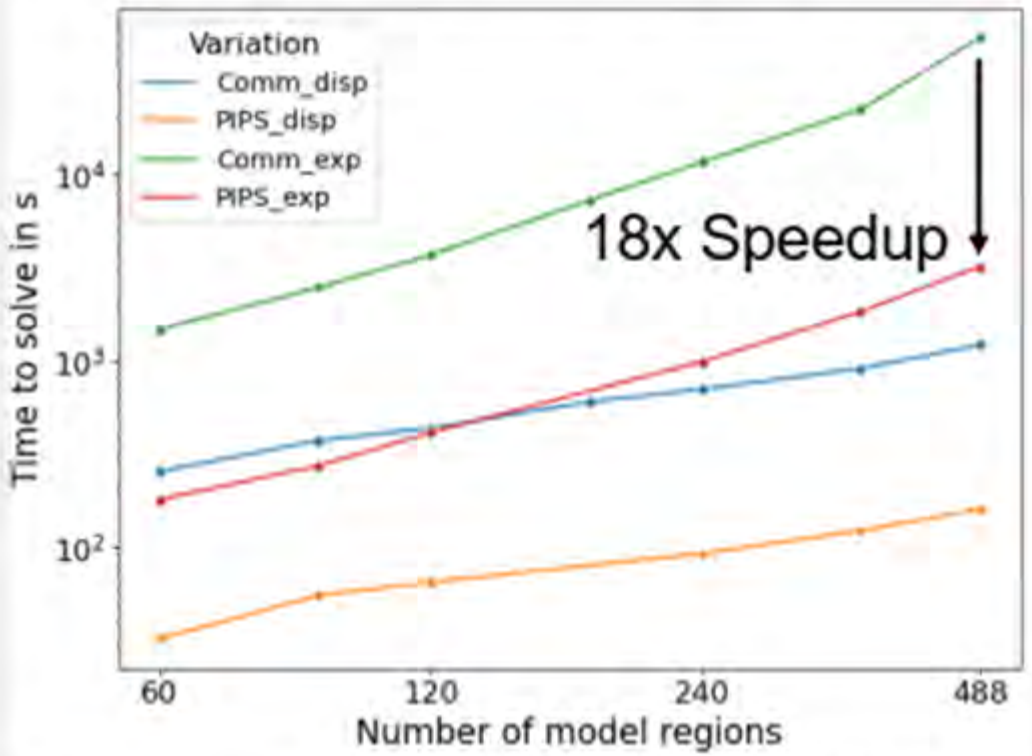
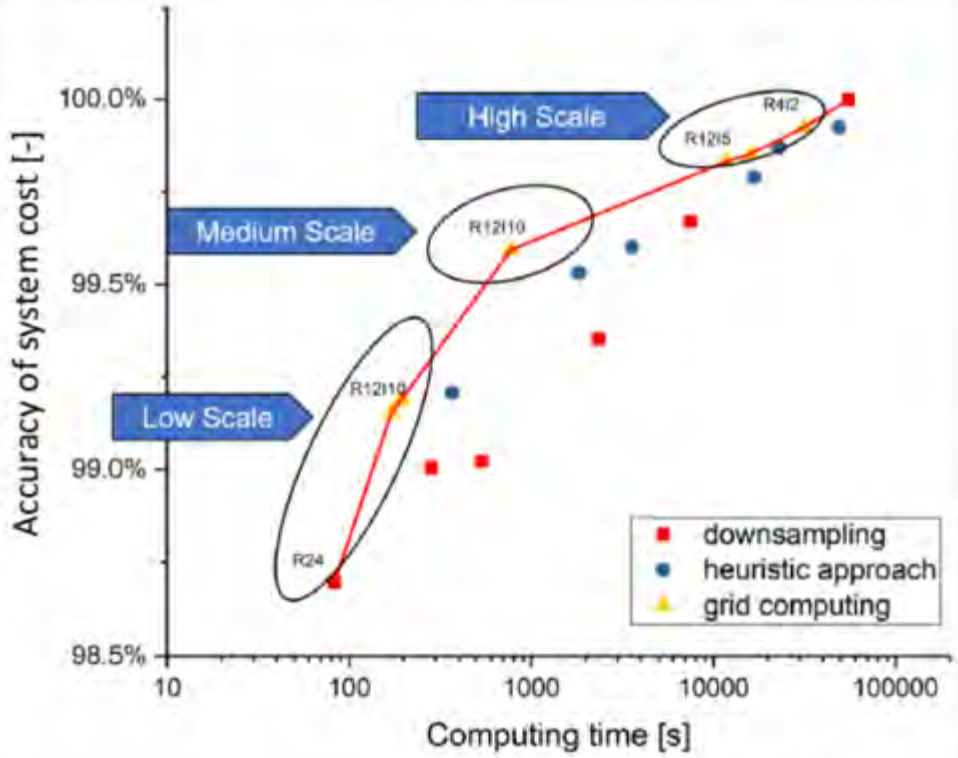
Methodological enhancement of energy system models



Wetzel et al. 2021



Wetzel et al. 2021

Wetzel et al. 2021, Speeding up energy system optimization models - lessons learned from heuristic approaches, parallel solvers and large scale models, IFORS 2021, https://elib.dlr.de/147615/

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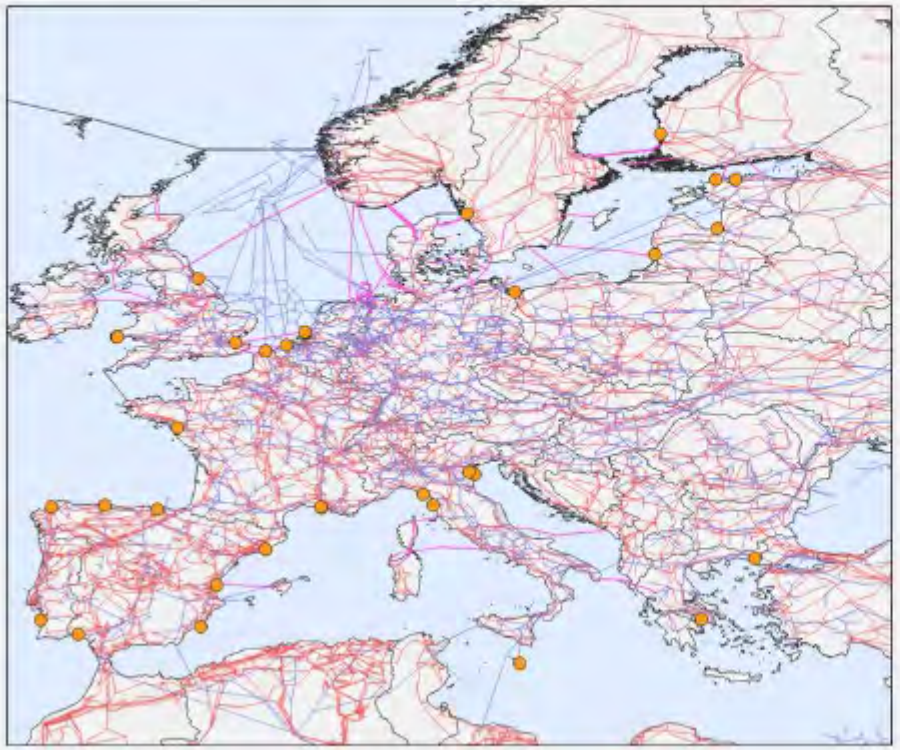
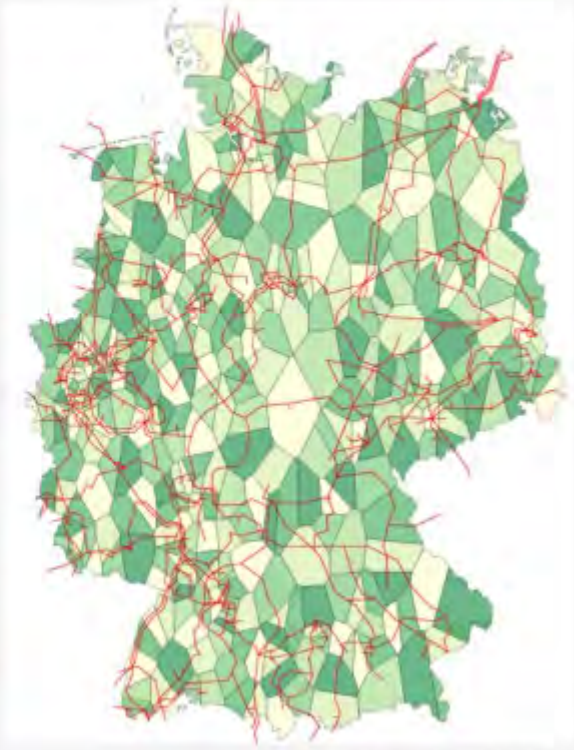
High resolution energy system models





Cao et al. 2018

Cao et al 2018, Incorporating Power Transmission Bottlenecks into Aggregated Energy System Models, https://doi.org/10.3390/su10061916

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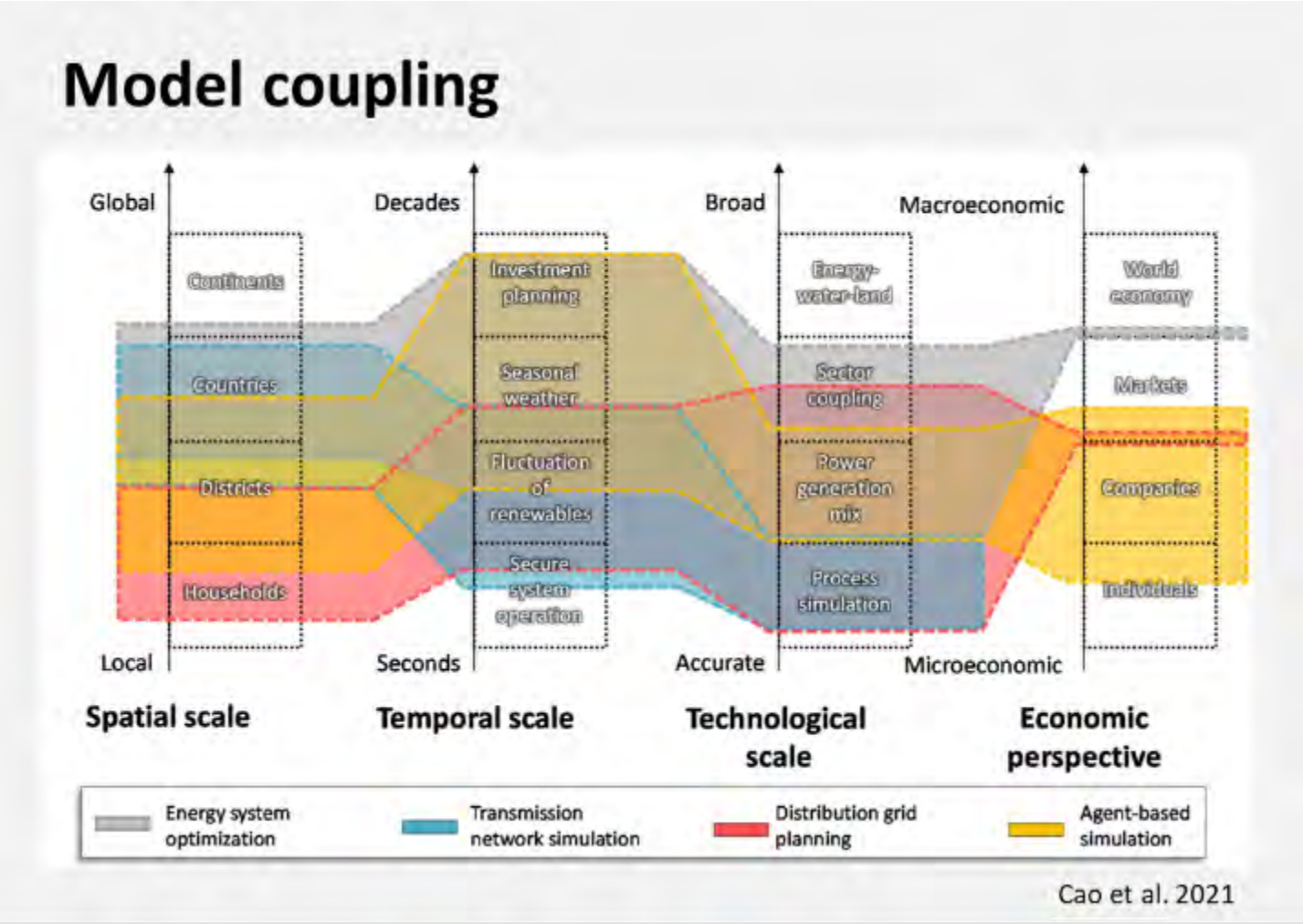

Cao et al. 2021, Bridging granularity gaps to decarbonize large-scale energy systems — The case of power system planning, https://doi.org/10.1002/ese3.891

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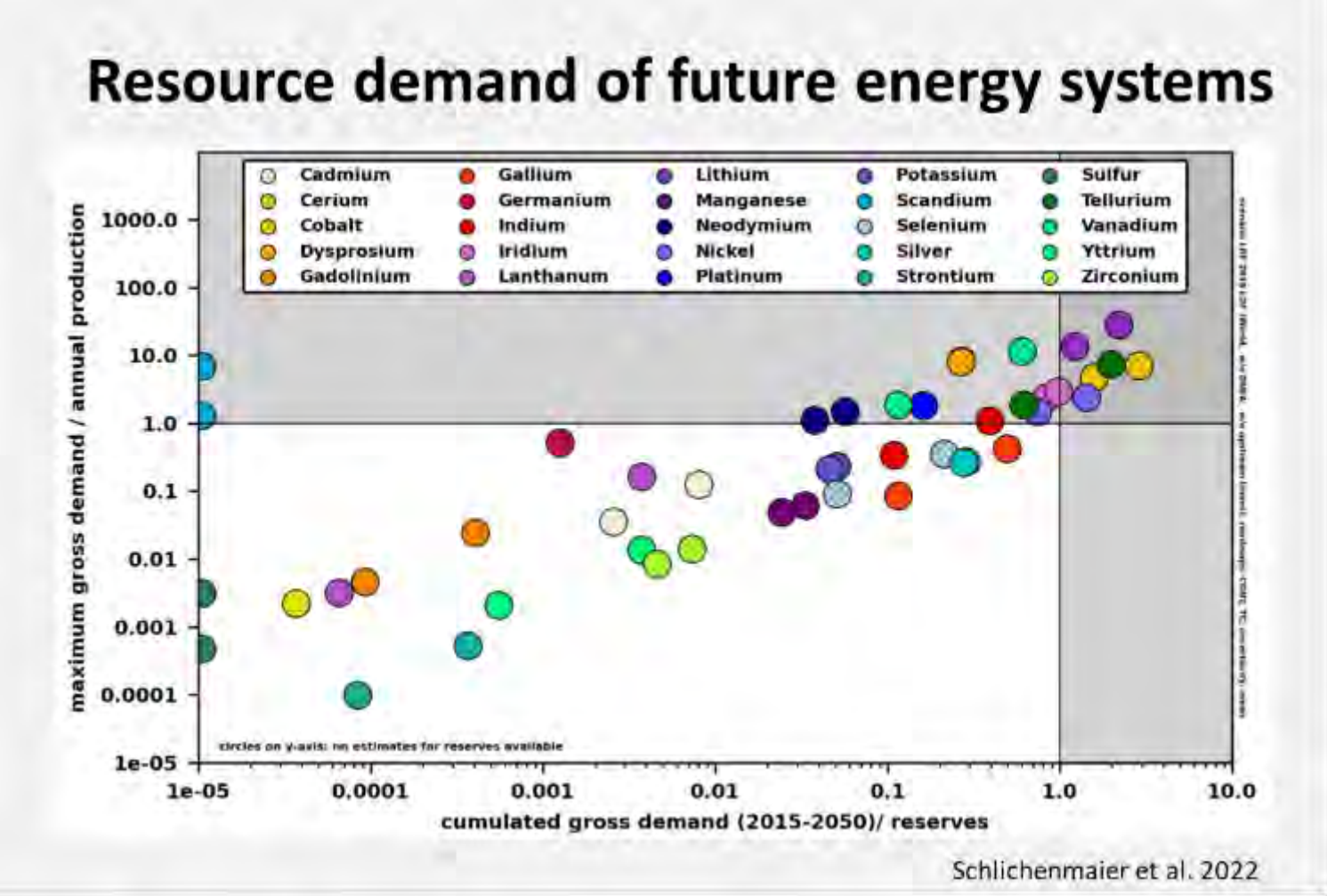

Schlichenmaier et al. 2022, May Material Bottlenecks Hamper the Global Energy Transition Towards the 1.5°C Target?, https://elib.dlr.de/186264/

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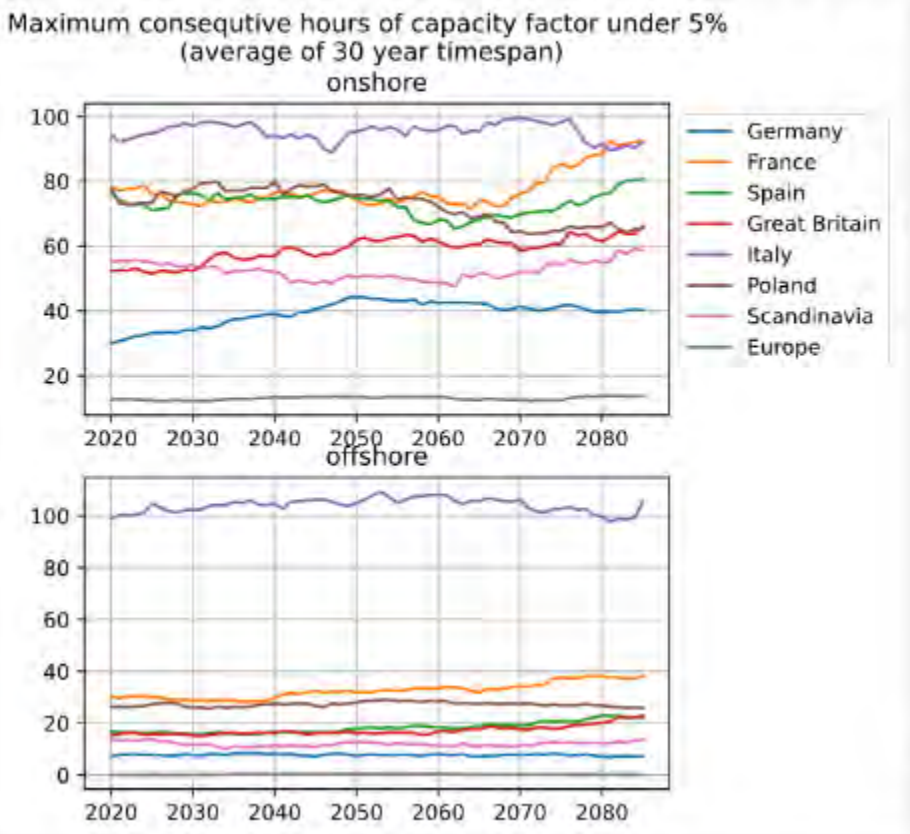
Climate change impact on the energy system



Scholz et al (forthcoming)

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Provision of open models and open data to science and industry

German energy system model open_eGo

Energy systems modelling framework REMix*

GUI-based district energy system model FlexiGIS

Power market model AMIRIS

Vehicle flexibility modelling tool VencoPy

European gas system data SciGRID_gas

...

Renewable energy potential evaluation EnDAT**

European power grid data SciGRID_power

Framework for agent-based energy models FAME

Setting the standards for linked open data

*open source in late 2022

**open source in 2023

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And there is more…

energy system resilience

energy demand modelling

consideration of uncertainty

modelling decentralized flexibility

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TRI 2

TRI 2: Enhanced zero emission Power Technologies

TRI 2's Mission is to **develop a pool of zero-emission power technologies and solutions based on Renewable Energy Sources** as the backbone of the future energy system, being able to deliver carbon-neutral electricity accessible to all and to contribute to the resilience of the system.

TRI 2 Lead
Francesco Basile (MUR, IT)
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TRI 2 Office
Rachele Nocera (MUR, IT)
TRI2@cetpartnership.eu

The TWEFDA Association

Most Flexible Energy Tool in the Market

Four machines in one. Generation and Storage

25 October 2022

The key for decarbonisation.

TRI201

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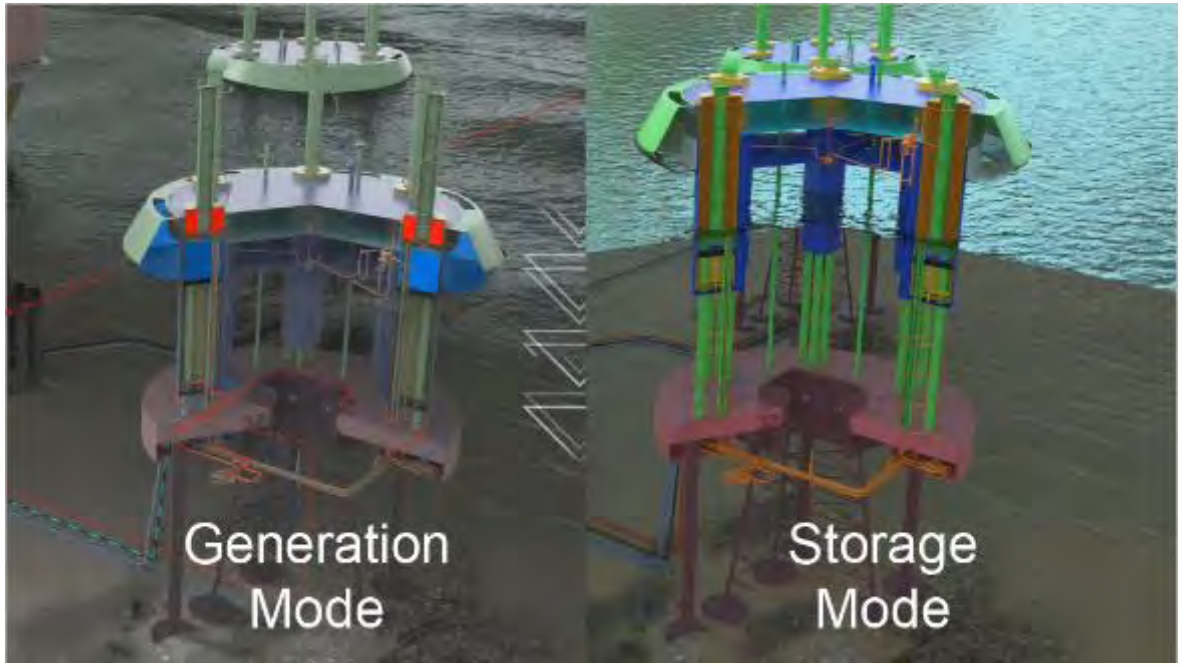
Flexibility

Generation and Storage in one single machine



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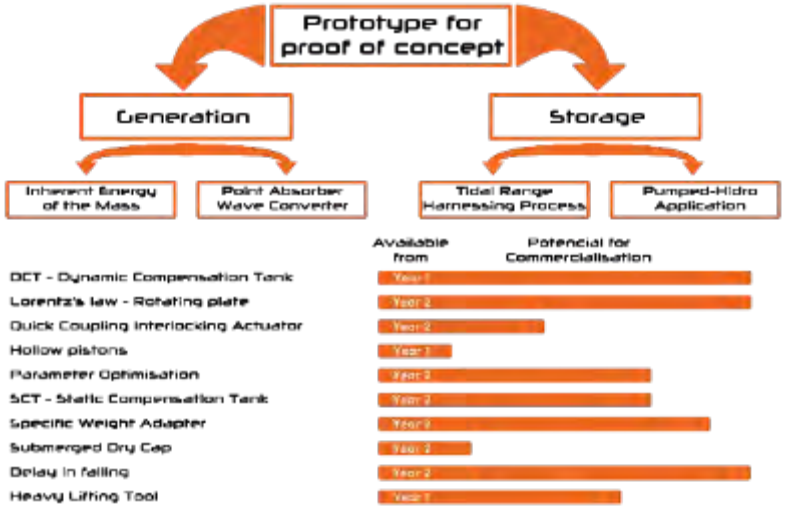
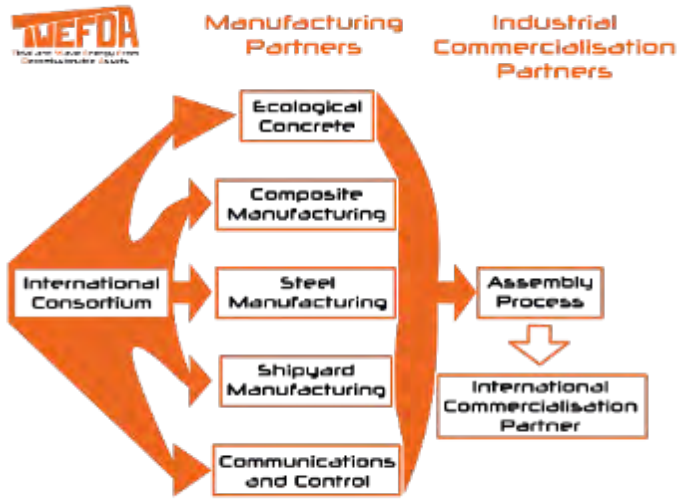
Strategy

Short term strategy (3-4 years from now)	Long term strategic approach. After 3-4 years, this long-term strategy will take place but activities carried out in the short-term strategy will still apply.





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TWEFDA

Tidal and Wave Energy From Decomissionable Assets

Javier Dominguez
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Looking for consortia of manufacturing partners

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TRI 3

TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

The main aim of TRI 3 is to **provide technological cleaner solutions for storage technologies, hydrogen and renewable fuels, CCS** (Carbon Capture and Storage) **and CCU** (Carbon Capture and Utilisation), promoting RD&D and innovation projects until 2030, to achieve the European goal of climate neutrality by 2050.

Two call modules: 3.1. **CCU/CCS - technologies** 3.2. **Hydrogen and renewable fuels**

TRI 3 Lead
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TRI304 MOBI – BioCNG

Decentralized carbon negative BioCNG Production for CNG Trucks

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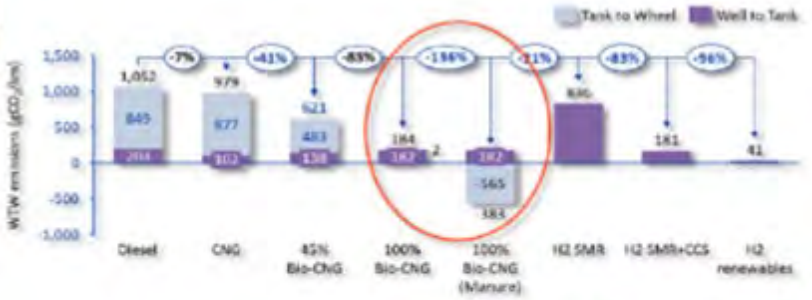
Vision

BioCNG + synthetic
Methane = negative CO2 emissions

Biogas turns **organic waste** into green energy **avoiding methane emissions**. The best business case for biomethane is the **use as a fuel, BioCNG**, especially for **heavy transport**.

- **50% less fuel costs**
- **100% less CO2 emissions**

With **CO2 from offgas** and **H2** from PV/wind additional e-gas can almost **double output** and turns **BioCNG carbon negative**.



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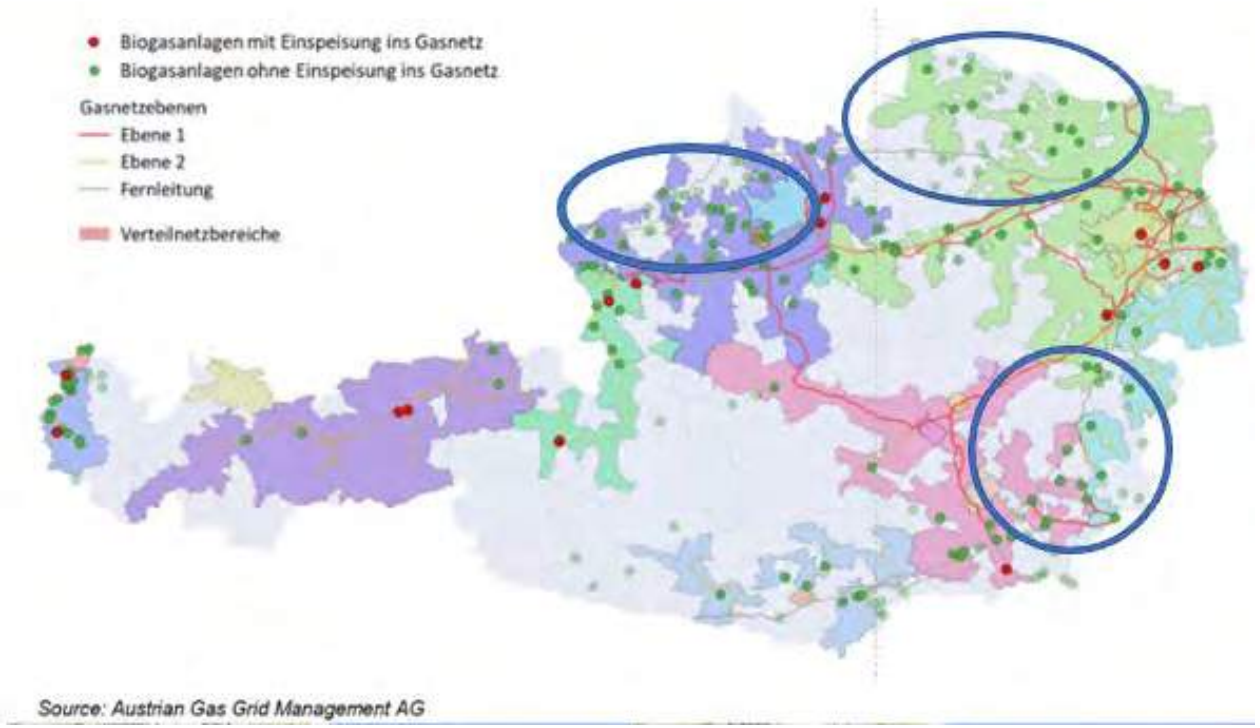
Problem

BioCNG supply far from the gas grid

Biogas Plants **far from the gas grid** have no option to inject biomethane to the grid. And for **smaller biogas** producers, **upgrading**, **CO2 capture** and **cleaning**, **H2 production** and **methanization** are a too **high investments**.

There are regions like the examples in Austria in whole Europe. There **decentralized BioCNG production** is the **best business case for biogas**.



Source: Austrian Gas Grid Management AG

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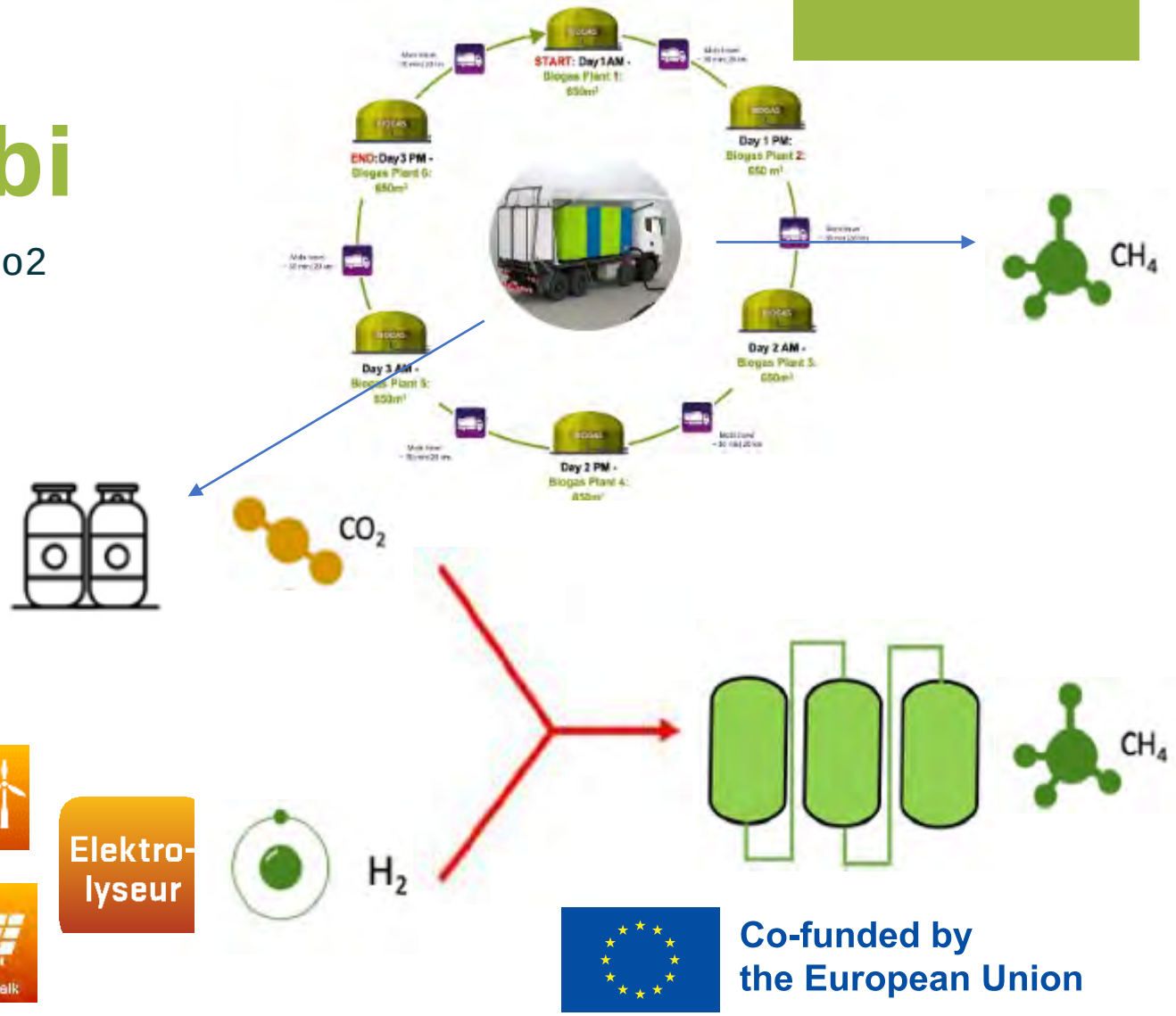
The solution - Mobi

Dezentralized production of BioMethane and Co2

Mobi is a solution for **decentralized BioCNG production (CH4)** plus **CO2 (offgas)** from biogas. Mobi works like a ‘milk truck’ driving from one biogas plant to the next, **sharing the high costs** of upgrading between biogas producers. CH4 and CO2 are delivered to a **central refinery** where the **CO2** is cleaned and **methanised with H2** und supplying the **carbon negative BioCNG** at a gas filling station.

1 Mobi can:

- Cover the daily demand of up to **50 trucks**
- Save estimated **€ 800.000 fuel costs** per year
- Save **7.000 t/year** in CO2 emissions



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Partners

Existing and sought-after partners

Atmove has a **market study**, a **business plan**, a **technical concept**, a (**partial) project development roadmap** and a consortium of excellent partners.

We are looking for:

- research partners from Europe **small electrolysis** and **methanization**
- A **pilot region** with regional **biogas producers** and **food industries with captive truck fleet**

Support by Scania Latam

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Contact

Mag. Georg Wagner

Founder

Strategy, Business Development,
Innovation & Technology Transfer

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Email: georg.wagner@atmove.at

Web: www.atmove.at

- **R20 Schwarzenegger foundation:** https://www.climateactionstories.com/mobility/atmove
- **Mission Innovation**: Atmove selected under the 100 best CO2 reducing projects worldwide: https://misolutionframework.net/Innovations
- **Solarimpulse foundation**: Atmove selected for the best 1000 solutions

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TRI304

Project proposals of the RCNS, Budapest, Hungary

RTD activity for the promotion of the innovative use of green hydrogen and bioenergy

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TRI306

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Problem 1: Storing/releasing green hydrogen. Catalyst and catalytic process development for hydrogen storage using Liquid Organic Hydrogen Carrier (LOHC)

The objective of the project is to develop new hydrogenation-dehydrogenation catalyst and a compact equipment that uses a LOHC. A demonstration system is to be built that has the capacity to store the daily energy demand of a household, an office or an SME.

Problem 2: Carbon capture and utilization. Development of catalytic process for CO2 utilization (methanation, methanol or Fischer-Tropsch synthesis).

In the favored process CO_2 and H_2 reactants are obtained from solar energy conversion, for instance, from gasification of biomass or solar energy induced water splitting.

Problem 3: Renewable fuels and chemicals. Development of catalytic processes for the utilization of platform chemicals obtained from lignocellulosic waste.

Sugar or lignin monomers and oligomers, obtained by depolimerizing lignocellulose components can be converted to platform compounds (ethanol, levulinic acid, etc.). Catalytic processes are to be developed to convert platform compounds to component of fuels and value-added chemicals.

Problem 4: Hydrogen production using CSP. Development of solid composite for hydrogen production from water using a thermochemical cycle at reduced temperatures.

The proposed project concerns the development of metal oxide bound to porous inorganic carrier and their use in thermochemical cycle for water splitting.

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Countries or entities represented:

Renewable Energy Research Group, Institute for Materials and Environmental Chemistry, Researcg Center of Natural Sciences, Budapest, Hungary.

Current state of the proposed project:

We search for consortium partners.

Existing expertise:

The RCNS has firm scientific bases and experience in developing heterogeneous catalysts and laboratory-size chemocatalytc processes.

Expertise, looked for:

Partners are needed for research co-operation, technical development, for upscaling and testing laboratory-size solutions. We look for project coordinator who can integrate any or more of the suggested project topics in a full collaboration project.

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Contact details

Representative: József Valyon, professor emeritus

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Website: http://www.ttk.hu/en

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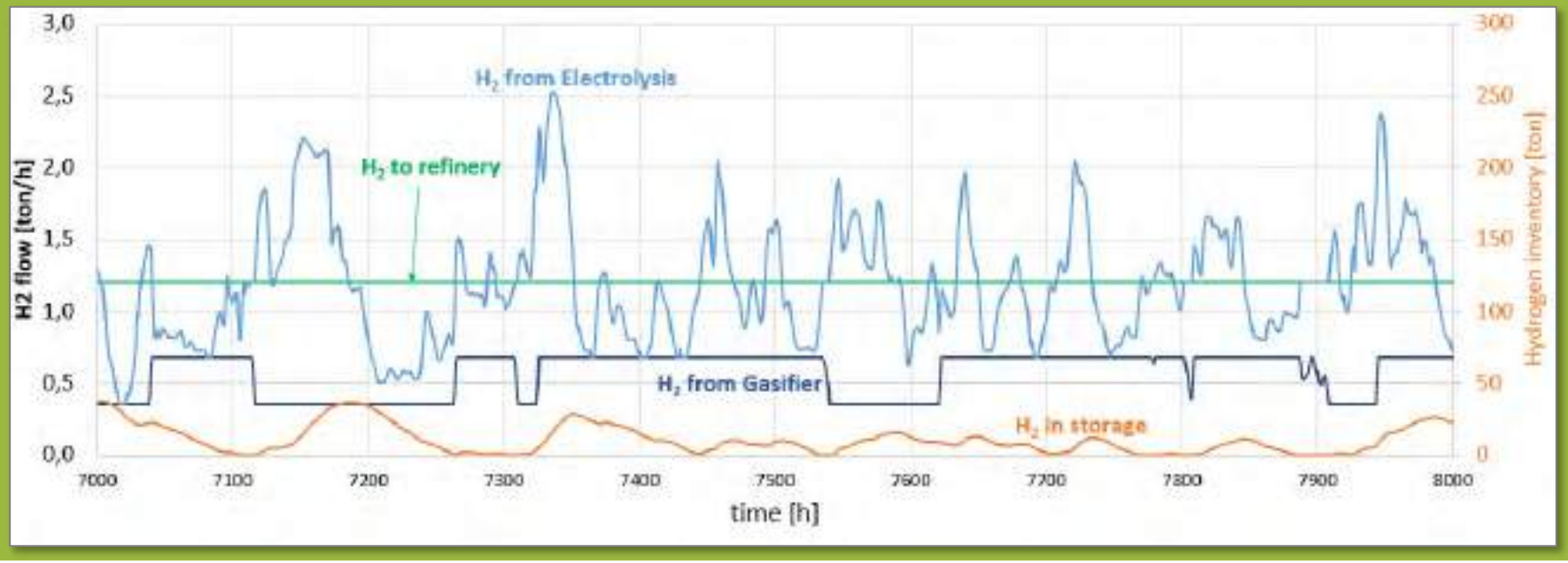
Hybrid Hydrogen

Smart solutions for continuous renewable hydrogen production;
Minimizing costs while maximizing environmental benefits



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Hybrid Hydrogen

The goal:

Production of renewable hydrogen for industrial use, focusing on (bio)refineries:

- ✓ Continuous supply (24/7/365)
- ✓ Minimizing costs
- ✓ Maximizing environmental benefits
- ✓ Combine renewable power with bioenergy

The challenge:

Fluctuating availability of renewable electricity (no grid connection!)

Limiting storage & buffer capacities to minimize costs

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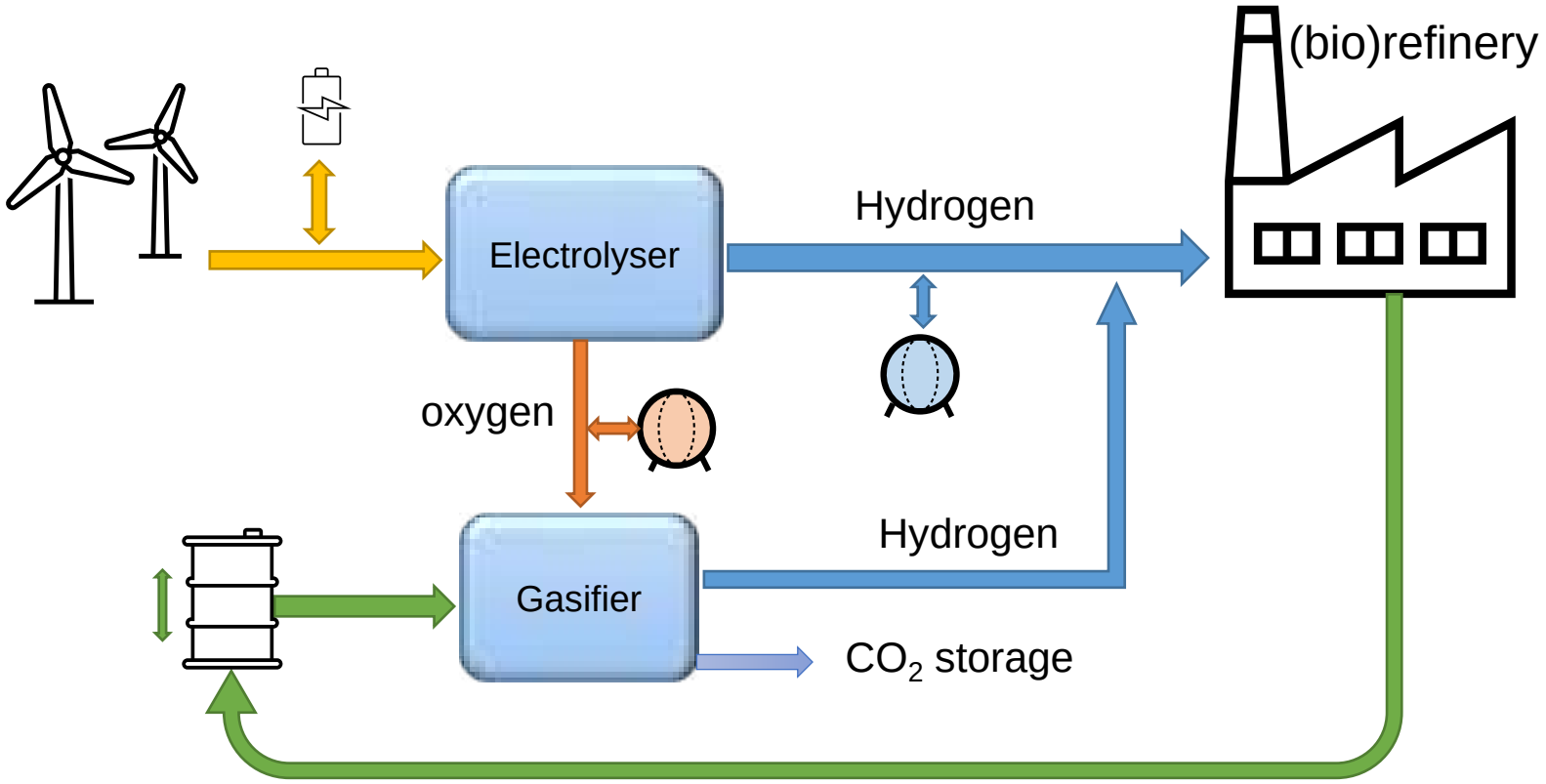
Hybrid Hydrogen - concept

Combining electrolysis with gasification



Reformers converting bioliquids from the refinery

- ✓ Continuous base load, peak production for 'low wind/sun' situation
- ✓ CO_2 storage options for carbon negative hydrogen production
- ✓ High energy density liquid fuel for minimum storage capacities

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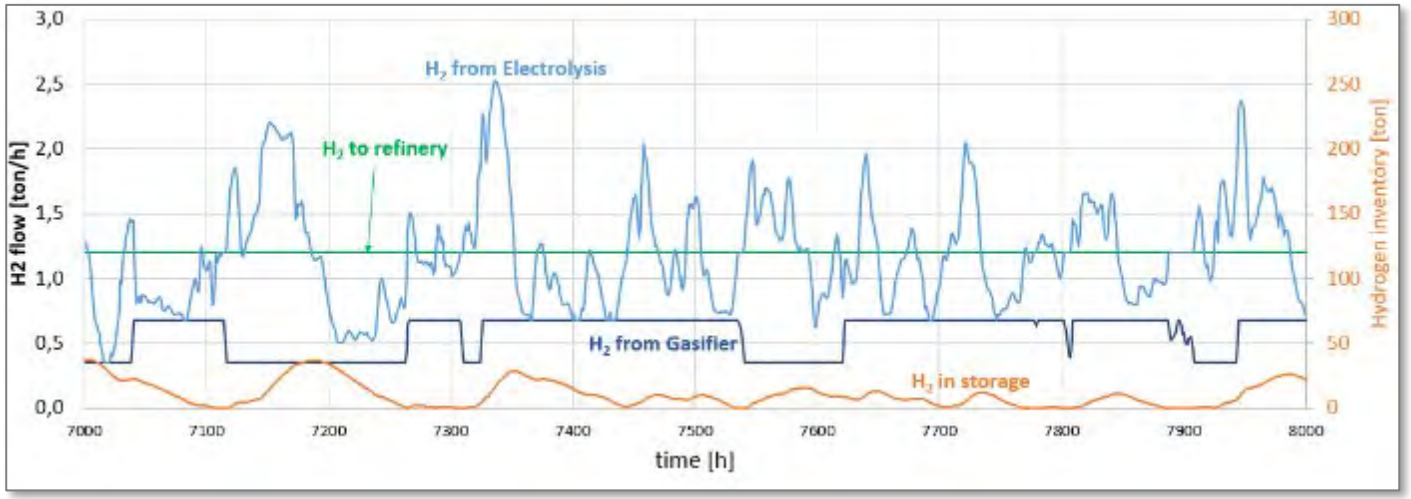
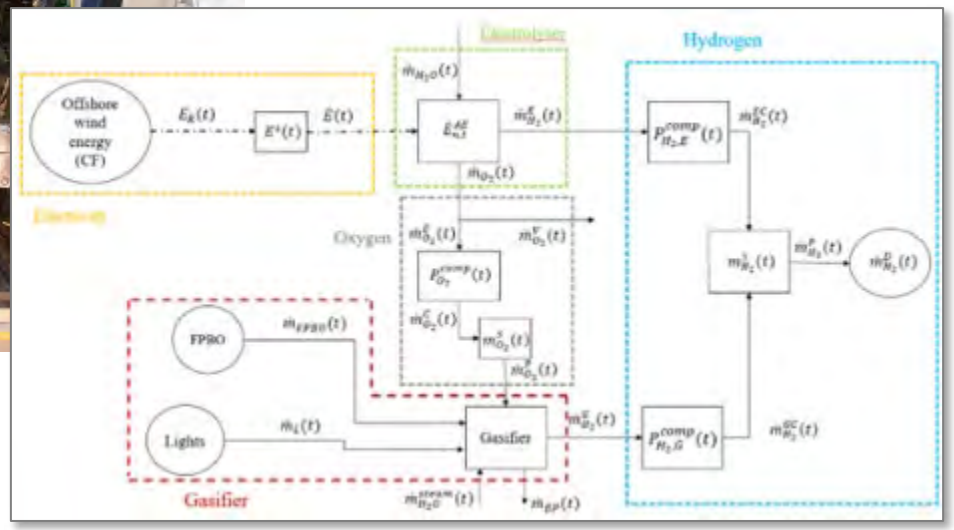
Hybrid Hydrogen - approach

Modelling & Experimental work
Electrolyser & gasifier
Advanced biofuel scenario's
(HEFA / HVO / HPO / MeOH / FT)





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Partner search

'project' is still a blank canvas at this point. Looking for:

- Potential end user / (bio)refinery – techno economic evaluation
- Electrolyzer expertise
- Dynamic system modeling expertise

✓ **(small) Pilot reformer available at BTG Biomass Technology Group (NL)**

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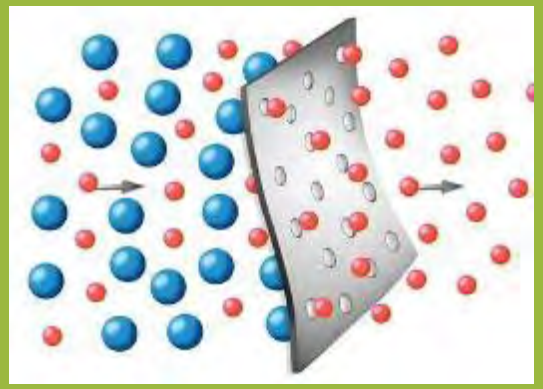
Membranes and materials for CCS and Hydrogen

A new generation of selective and sustainable materials for low energy carbon capture and hydrogen purification and distribution



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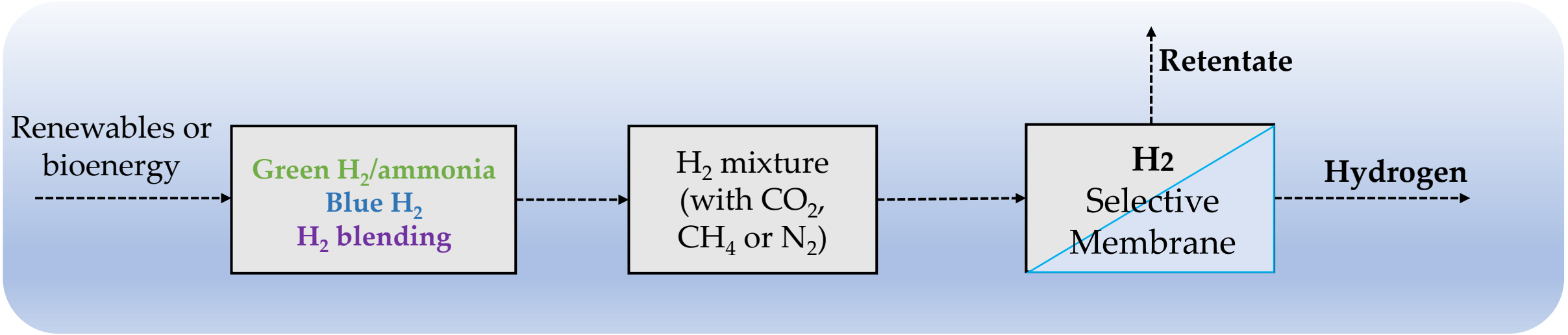
Green and blue H_2 purification at point of production and point of use



- Membranes have 40% of the capital cost and use 50% of the energy of solvent **absorption**
- Scottish Companies potentially interested in the collaboration

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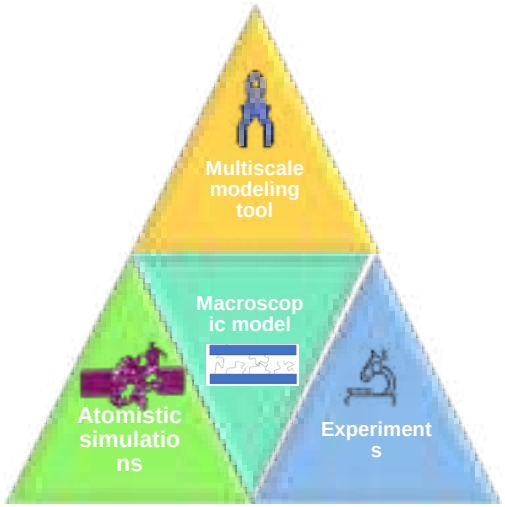
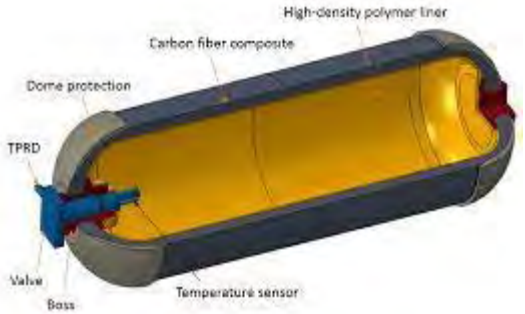
Materials for H_2 handling



Multiscale platform



- The building of a H_2-ready infrastructure needs low-cost and reliable materials
- **An efficient materials modelling screening platform is key to this objective**
- Scottish Companies potentially interested in the collaboration

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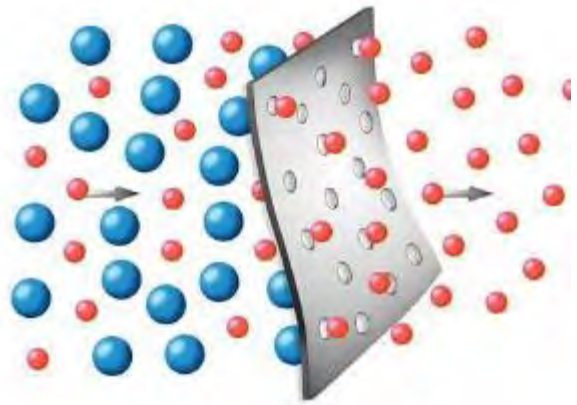
Membranes for CCS and DAC



- CCS and DAC needs low-cost solution
- **Materials can be engineered**
- Scottish Companies already in the collaboration, Italian University and Company, Norway

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Contacts

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Sustainable Processes and Materials Modeling group

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The University of Edinburgh

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https://www.eng.ed.ac.uk/about/people/prof-maria-grazia-de-angelis

Solid and liquid green sorbents for Carbon Capture and Storage

Green strategies for the absorption of carbon dioxide from different industrial sources: biogas, fluegas, industrial CO_2 emission

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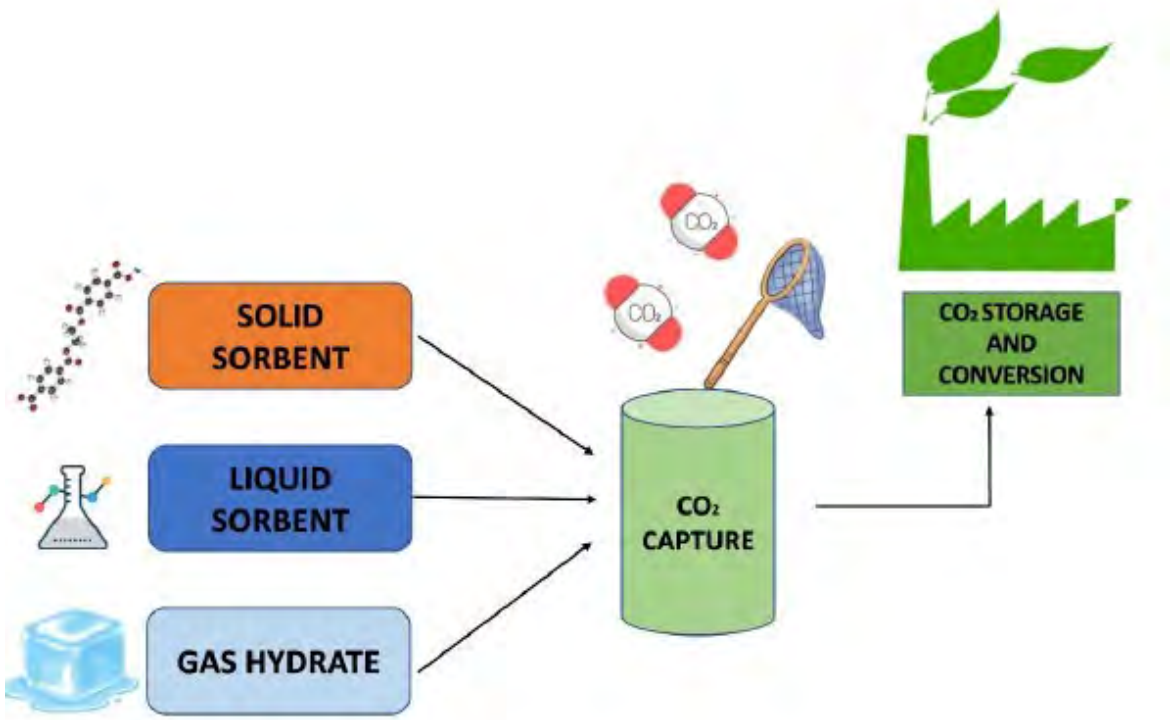
Goal of the project



- The main purpose of the project is to **increase the selectivity** of sorbent systems toward CO_2.
- GHF has already tested several liquid sorbents as potential CO_2 capture media, with the advantage of **easy reversibility** in absorption and desorption, **non-toxic and affordable costs**.
- Among solid sorbents, **electrospun and/or polymeric materials** are the most promising candidates due to their physico-chemical properties.
- In the case of gas hydrates, **GHF and PhLAM** have shared an ongoing project on use of **green additives and low pressures** conditions to obtain a higher selectivity toward CO_2.

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Existing partnership and expertise

University “G. d’Annunzio” of Chieti – Pescara, Department of Pharmacy, GHF Group (Italy)

Synthesis and characterization of chemical entities for selective interaction with specific gases

Characterization of formed structures in advanced technological **reactors** (Real-time P/T data recording)

Experimental facilities (Raman and FT-IR, NMR, GC-MS, DSC, XRD, Atomic Force Microscope (AFM), Scanning Electron Microscope (SEM)

High expertise in **Raman Spectroscopy**

Different reactors linked to Raman spectroscope for **in-situ analysis**

Cryostat and Linkam cell for specific in-situ Raman characterizations

University of Lille, PhLAM, Laboratoire de Physique des Lasers, Atomes et Molécules

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We are looking for...

- **Industrial partners** with expertise on the scale-up for designing and building pilot plant using the sorbents developed in this partnership.

...Contact!

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+39 0871 355

Dr. Michele Ciulla
michele.ciulla@unich.it
+39 3275354678

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Low-cost, high-safety media for the storage of hydrogen for off-shore and space-based infrastructures

Hydrogen storage media will be developed, based on *clathrate hydrates*, a class of supramolecular solids consisting of water molecules organized in cage structures that can host *gas molecules*.

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Off-shore H_2 storage

- A major role in the renewables field will be played by **wind turbines**, tidal and wave devices.
- Part of the energy produced by such means should be ***stored during low-demand hours*** (e.g., night time).
- Current energy storage technologies (e.g., batteries) are *not suitable for very large scale uses*.
- Hydrogen is obtained by ***water electrolysis*** by using surplus energy during low-demand hours, and stored into clathrate hydrates.
- Clathrate hydrates of hydrogen can be formed ***under seafloor conditions*** (e.g., 40-120 bar, 1-5°C), with ***no further expenditure*** for cooling and pressurization.

Space H_2 storage

- Hydrogen is stored in cylinders or in metal hydrides is ***not suitable*** for energy storage in prospective ***planetary infrastructures***, due to very high spacecraft payloads for carrying the storage media and related appliances.
- Solar-powered electrolysis can form ***hydrogen***, which is then ***stored into clathrate hydrates*** by controlled contact with (sub)surface water in *sun-shaded or deep crater areas of planets and satellites*, where temperatures reach very low values (30-120 K).

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Goal of the project

This project aims to ***overcome some critical points*** of hydrogen storage in clathrates:

(i) **slow capture kinetics**; this will be addressed through a patented process based on nanoemulsions, which improve the kinetics by 1-2 orders of magnitude

(ii) **low gravimetric content**, with the design of stabilizers (co-formers) of the hydrate cages.

The ultimate goal is to develop a hydrogen storage medium with a gravimetric H_2 content around 4 wt%, which is demonstrably competitive with current top technologies at a fraction of the technological level and economic cost, due to a very favorable ***Net Energy Content***.

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Existing partnership and expertise

University “G. d’Annunzio” of Chieti – Pescara, Department of Pharmacy, GHF Group (Italy)

Synthesis and characterization of chemical entities for selective interaction with specific gases

Characterization of formed structures in advanced technological **reactors** (Real-time P/T data recording)

Experimental facilities (Raman and FT-IR, NMR, GC-MS, DSC, XRD, Atomic Force Microscope (AFM), Scanning Electron Microscope (SEM)

High expertise in **Raman Spectroscopy**

Different reactors linked to Raman spectroscope for **in-situ analysis**

Cryostat and Linkam cell for specific in-situ Raman characterizations

University of Lille, PhLAM, Laboratoire de Physique des Lasers, Atomes et Molécules (France)

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We are looking for...

Partners with ***expertise*** and ***facilities*** for:

- simulating the *low pressures, very low temperatures* of planetary and satellite surfaces, where the properties of hydrogen hydrates will be tested.
- design and deployment of sea water electrolyzers

...Contact!

Prof. Pietro Di Profio
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+39 0871 355

Dr. Michele Ciulla
michele.ciulla@unich.it
+39 3275354678

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TRI 4

TRI 4: Efficient zero emission Heating and Cooling Solutions

The Transition Initiative Heating & Cooling (TRI4H&C) will contribute to Challenge 4 “Efficient zero-emission Heating and Cooling Solutions”, formulated in the SRIA of the CETP. The overarching goals of this initiative are the **provision of enhanced and improved heating and cooling technologies and systems** for all major parts of Europe by 2030 and to enable 100% climate-neutral heating and cooling by 2050.

TRI 4 Lead
Gerdi Breembroek (RVO, NL)
gerdi.breembroek@rvo.nl

TRI 4 Office
Alicja Wiktoria Stokłosa
TRI4@CETPartnership.eu

Sensitive Universities for a Sustainable Future

UNISENS

Prepared by: Dr. Ceyda AKILLI

Fırat University

EUROPEAN PARTNERSHIP

25 October 2022

Co-funded by the European Union

TRI402

CETPartnership

Aims & Objectives

Aim:

This project aims to synthesize bio-raw materials from renewable sources and to improve lightweight bio-materials by EU standards.

Objectives:

1. Create synthesis of raw materials with a strategic approach and then the development of the obtained biocomposites.
2. Evaluate biowastes by using economical methods with strategic approaches and to develop biocomposites suitable for their intended use.

Within the scope of the project, both the originality of the method used and the characteristics of the developed biocomposites will come to the fore. A strategic raw material will be improved by using economic inputs such as air, water, organic, and industrial wastes during the production phase. Especially in raw material production, an economical method will be preferred with oxygen in the air, water, and synthesized alcohols.

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Scope of the Project

The amount of biomass to be used within the scope of the project is anticipated to be more than 50 % by mass of the total mixture. Moreover, the applicability of the production process to be carried out under laboratory conditions in real conditions is also considered. The density, carbon footprint, and carbon dioxide emissions of the products developed with bioraw-materials will decrease and environmentally friendly advanced lightweight biocomposites will be obtained. In addition, both the thermal stability and flame retardant properties of biocomposites will be improved by supplementing industrial inorganic waste. Also, by making optimization studies with RSM, raw material synthesis and biocomposite materials production will be realized by using minimum energy at maximum efficiency.

The project has several innovative outcomes. Since it will lead to a new methodology for the production of biocomposite materials, as it is pointed out the possibility of a new way to apply previous knowledge, and to new possibilities for the benefit of society by suggesting sustainable resources for bio raw materials. It is not a reproduction or a derivative work.

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Methodology

The project aims to promote research, innovation, and enhanced manufacturing flexibility. It will support the modernization of existing industrial models with new bioraw material synthesis technology, optimization models and processes improved. It is foreseen that this situation may increase the industrial flexibility of EU countries. It is necessary to ensure the sustainability of critical raw materials to create a permanent right way for the use of renewable resources in production. Within the scope of the project, it is aimed to reduce dependency on (non-EU) third countries in sectors where raw materials with strategic value for EU countries are needed. In the raw material value chain, both the recovery of waste and its successful reintroduction into the circular economy is a vital requirement.

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Activities

- Processing and analysis of biomass resources
- Determination of bioraw material production steps
- Optimization of experimental studies
- Physical and chemical characterization of the synthesized raw material
- Production of biocomposite materials
- Evaluation of the effects of additives and fillers on biocomposite materials properties
- Use of industrial, metallurgical, mining, and mineral wastes in the production of biocomposite materials
- Comparison of both application and performance of commercial and biocomposite materials
- Determination of mechanical properties of biocomposite materials
- Evaluation of thermal properties of the biocomposite materials
- Evaluation of the flame retardant property and high-temperature performance of the biocomposite materials
- Determination of the density and thermal conductivity coefficient of the biocomposite materials
- Determination and evaluation of the final product material

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Thank You For Your Listening...

cakilli@firat.edu.tr

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ALIAGA INDUSTRIAL ZONE TECHNOLOGY TRANSFER OFFICE

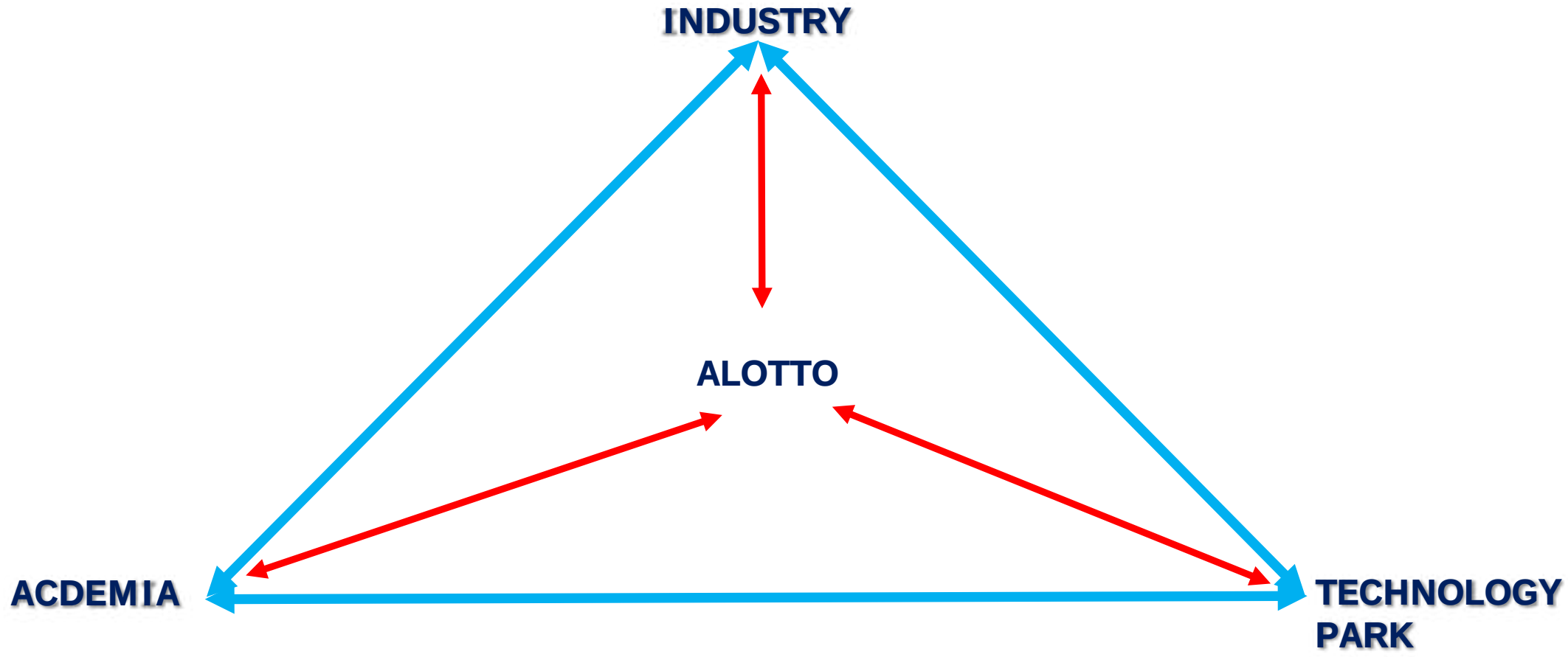
ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ TEKNOLOJİ TRANSFER OFİSİ (ALOTTO)

Dr. F. Can ÖZKAYA

Alotto
ALOSBİ TEKNOLOJİ TRANSFER OFİSİ

CETPartnership

Where is the ALOTTO



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What are we doing?

ALOTTO

Smart Energy Applications

- Resource productivity
- Energy usage security
- Renewable energy production and usage

Artifical Intellengence

- Internet of Things (IoTs)
- Machine learning
- Endless factory

Syber Security

- Process datas
- Company datas
- Staff datas

Social Sustainabilty

- Green Transtion
- Energy managment
- Digital transtion
- Sustainbility
- Lean transtion

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Aims

- Solving technological problems via tranfering technology and inovative solution problems
- Industry 4.0
- Improve R&D culture in the local companies
- Increasing R&D project (national & international) and interaction CETPartnership
- Supporting companies Green and Digital Transtion
- Energy management and renewable energy production
- Establishment inovation hub for green solutions
- Creation eco-industiral park in Aliağa – İzmir

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Projects

- Establisment energy management system
- Monitoring, management and optimisation via artificial intelligent
- Establisment of Lean Management
- Matching the partner in CETPartnership

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Contact

- Dr. F. Can OZKAYA – Vice Manager
- Tel: 00 90 543 222 37 46
- Email: ferhatcan.ozkaya@alotto.org.tr / fcanozkaya@gmail.com

Zero emission biopolyol production

ecorbio – displacing unsustainable polyols via waste valorization

Lukas Jasiunas, lukas@ecorbio.com

www.ecorbio.com

EUROPEAN PARTNERSHIP

25 October 2022

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TRI405

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Piloting large-scale sustainable biopolyol production

Patent pending tech validation at 2 t/day pilot in Cyprus ☑

Next steps involve further environmental impact reduction, including **the incorporation of a zero emission heating system.**

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TRI405

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Seeking to join a consortium

ecorbio is ready to be a case study for innovative zero emission heating solutions.

In-house capacity for **prototyping, engineering and tech troubleshooting & validation.**

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TRI405

CETPartnership

Let’s connect

We look forward to collaborating towards even more sustainable biopolyol production via integrated green economy solutions.

Lukas Jasiunas
lukas@ecorbio.com
www.ecorbio.com

EUROPEAN PARTNERSHIP

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TRI405

Transition to the ecosystem of renewable energy communities (teco-REC)

New paradigm of **renewable energy community**

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25 October 2022

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TRI407

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Our Idea

- The project supports the transition towards the ecosystem of renewable energy communities aims at defining a **new paradigm of renewable energy community building (REC)** that contrasts with the current "turnkey" mining model that generates limited environmental and social impacts in the territories surrounding traditional REC.

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How?

Innovation elements

- **Bottom-up approach** in the construction of the ERC characterised by a plurality and differentiation of the actors involved, far from the current approach in which everything is centralised on the figure of energy suppliers.
- **Development of an innovative system management and optimisation software** that will allow precise control of the entire process while managing costs and incentives to be attributed to CER producers and consumers. Ù
- Strong propensity to **define a specific CER model for each local reality**, customised therefore for specific needs and potentialities. The approach is characterised by the integration of public administration and private sectors involved.
- **Potential areas of action:** Residential, Industrial, Tertiary (to be assessed and defined)

Transition to the ecosystem of renewable energy communities (teco-REC)

Fabrizio Guarrasi
f.guarrasi@energycluster.it
www.energycluster.it/en

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25 October 2022

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TRI407

Ravariu's Group is looking for European Partnership

We can join to a Partnership as:

1. SME, as Start-up company. C. Ravariu is Head of EduSciArt SRL from Bucharest, Romania.
2. SME, as consultancy or sell Company. Also we can use EduSciArt SRL here.
3. University, Faculty of Electronics, Micro-Nano-Bio-Electronics Group. Prof. C. Ravariu is Full Professor at University Polytechnic of Bucharest, Romania.
4. We can add more institutions from Romania if it is necessary. We have connections with: Dept. of Organic Chemistry from UPB, Inst. of Microtechnology, Inst of Biology Virusology Dept., other Universities from Romania (Brasov, Galati, Iasi, Pitesti, Cluj)

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EduSciArt SRL from Bucharest, Romania

EduSciArt SRL from Bucharest, Romania is a SME born in April 2021. C. Ravariu is Director and Admin. CAEN codes include Research, Teaching, Learning, Art and Selling sections.

- Competencies in "Edu" = Education: offering consultancies and tutorial in General Topic or Topic developed in a Research Project about: Microelectronics, Electronic Devices, Biosensors, Green Electronics, Applied Physics, Visual Art (Drawing, Painting, Jewelry Design & Fabrication), including Sell piece and e-commerce.

- Competencies in "Sci" = Science: Electronic Devices, Low power electronic devices, Simulations of Si-technology in Athena, **Atlas** Simulations, Silvaco+Spice – Modeling and Simulations, Mathematical Modeling of Living Matter, Development of New Electronic Devices for Green Planet, Nano-transistors co-integrated with Bio-materials, New materials for transistors.

- Competencies in "Art" = Arts: Design of Jewelry, New technologies in Jewelry industry with low power consumption, Jewelry fabrication, Creation of Drawing & Painting, New and Old technologies for Drawing (Sanguine Technique, Silver Point Drawing, New materials and New Technologies).

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Polytechnical University from Bucharest (UPB), Romania

C. Ravariu is also Full Prof. at Polytechnical Univ. of Bucharest (UPB), at Department of Electronic Devices, Circuits and Architectures.

(see link: http://www.dcae.pub.ro/en/membri/12/ravariu_cristian/)

C. Ravariu was Head and Full Director of 7 National Projects with UPB-University.

(see link: https://www.brainmap.ro search Ravariu Brainmap)

C. Ravariu published more than 220 research papers in International Journals (IEEE, Elsevier, Springer, others), International Conferences and was Invited Professor at more 10 Conferences, especially in the last 3 years.

(see link: https://www.researchgate.net/profile/Cristian_Ravariu)

Competencies of Ravariu's Group in UPB-University:

(1) **Electronic Devices** (new transistors, MOSFETs, vacuum nano-transistors, Organic Thin Film Transistors, Enzyme-FETs) – Developing of new concepts, simulation, modeling, technology simulation, testing and devices characterization.

(2) Good connection with **Organic Chemistry** Dept. that has fabrication facilities (deposition of organic films, covers, synthesis of organic semiconductors or insulators, MALDI Laser, SEM and TEM Microscopy, DLS, other facilities for material characterization.

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Ravariu's Group can invite more partners

1. We can attract in a Project more institutions from Romania if it is necessary: We have connections with: Dept. of Organic Chemistry from UPB, Inst. of Microtechnology, Inst of Biology - Virusology Dept., other Universities from Romania (Brasov, Galati, Iasi, Pitesti, Cluj) to enhance competencies in: Electronic Circuits, Signals processing, e-Learning, Photovoltaic cells, New energies.

2. International connections of Ravariu's Group:

- C. Ravariu is Chairman of the IEEE Electron Device Society EDS-15 – Romanian Chapter from 2014 to present, with all IEEE and EDS connections.

- A potential partner: EPFL Lausanne Swiss, Group of Prof. A. Ionescu – Head of Nano-electronics Lab.

- Potential partner: **Mohan Babu University, TIRUPATI,** India, Group of Prof. Avireni Srinivasulu - Dean. **Dean Research & Innovation,** Competencies in Digital and Analog Circuits.

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Contacts:
For Ravariu Cristian

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Phone & WhatsApp: **+40-720033482**

These slides (without EU Logo) are available also on:

https://www.researchgate.net/profile/Cristian-Ravariu/research

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TRI 5

TRI 5: Integrated Regional Energy Systems

The main aim of TRI 5 is to **develop and validate integrated regional and local energy systems**, that make it possible to efficiently provide, host and utilize high shares of renewables, up to and beyond 100% in the dynamic local or regional supply by 2030. Such systems shall provide tailor-made solutions that meet the individual regional and local requirements and demand.

TRI 5 Lead
Michael Hübner (BMK, AT)
michael.huebner@bmk.gv.at

TRI 5 Office
TRI5@CETPartnership.eu

TRI 5: Integrated Regional Energy Systems

Develop and Validate Local Energy System Integration (ESI) in Turkey / Antalya

Farzaneh Bagheri, PhD
R&D Project Manager

INELSO Energy Company
Antalya/Turkey

EUROPEAN PARTNERSHIP

25 October 2022

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TRI501

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Streamline, Synergize, Empower

Each energy system will approach ESI from a different starting point .
It is crucial to define the geographical scope as well as the components, the boundaries, and the influence of the surroundings.
Find the driving force in the integrated energy system in Antalya…….
Renewable energy sources
Combining heat and power
Increase efficiency
Is it possible to shift from natural gas to renewables and how much percent
Information and Coordination between different energy actors technical integrity, social equity, and/or political acceptability.

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HOW INELSO can assist:

Antalya is dependent to natural gas for heating and electricity, while it has a great potential for an integrated energy system by leveraging the strength of the renewables such as the sun power.

Analysis, Project and R&D

Smart Grids and Cities

Renewable Energy

Energy Management (smart metering, communication and Scada systems)

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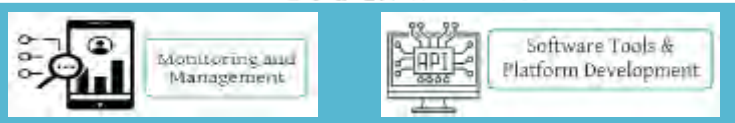
EUROGIA 2030 : Nearly Zero Energy Concepts for Solar Apartment

CSP-ERANET: Digital twin analysis of solar Parabolic trough collector plant to scale to higher powers for the integration into Electrical Distribution network



Energy Monitoring and Management Platform

Virtual RTU

Lighting Fault Detection Platform

Smart Grid Hardware Tool to Improve Supply Continuity in Distribution Grids

Optimization Of Long-Term Investments Of Electric Distribution Systems Considering Planning Metrics

New Tech. Rectifiers Compatible with SCADA Systems with High Efficiency Battery Charging System and Dual Control Unit

Contact: CETPartnership

http://inelsoenergy.com/en/index.html

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Email

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An energy independent regional system

Famagusta as a pilot for an energy independent region in the EU

EUROPEAN PARTNERSHIP

25 October 2022

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TRI505

CETPartnership

Important steps to facilitate the transition

Before transitioning into new systems to capture and manage our energy, Intermediary pilot systems can provide invaluable insights

The energy industry is working towards transitioning to more sustainable energy capture practices, but in a very fragmented way, mostly driven by competition rather than collaboration. Uniting the different aspects of energy capture (Fertilisers, Electricity, Fuels etc) within a collaborative space, can accelerate the transition, design and implementation of new systems.

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An Energy Innovation Park

A collaborative space for new systems of energy capture and management

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the European Union

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Consortium

Current collaborators:

- Local Authorities(Cyprus)
- Ignite Foundation(Cyprus):
  - Management and project execution
  - Coordinate stakeholders
  - Secure land
- University of Nicosia(Cyprus)
  - Provide expertise in system design, management and advisory

External collaborators:

- ADPT(United States):
  - Off-grid renewable energy plant to data centre
- Be.exchange(United States):
  - Management of corporate infrastructure of the facility
  - Utilizing blockchain technology

Looking for expertise in:

- Energy system design
- Energy capture
- Circular economy
- Energy storage

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Contact details

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Panagiotis Zantis

E-mail: p.zantis@outlook.com

LinkedIn: https://www.linkedin.com/in/panagiotis-zantis-223ba61a2/

Interactive and participatory identification of areas targeted for the regional energy transition

GIS-based modeling- Solar park

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25 October 2022

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Climate change and energy crisis drive planning

- ✓ Decentralized use of wind and PV to secure local energy supply and climate neutrality
- ✓ The Amendment and opening clause of EEG promotes the expansion of solar parks in disadvantaged areas
- ✓ Regional planning offensive and plan reference maps to accelerate the development of solar potential via regional authorities

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Municipal opportunities and challenges

- ✓Which criteria should be taken into account when selecting a location?
- ✓At which locations can synergies between climate protection, climate adaptation, and the protection of biodiversity be achieved?
- ✓How can the spatial management of open space PV by regional planning and municipal land use planning be optimized from the citizens' perspective?
- ✓Which areas should be prioritized - and which should not?
- ✓How can digitalization shape the decentralized expansion of solar energy and its use for climate-neutral electricity and heat supply in a socially and environmentally compatible way?

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Project Objectives

- ✓Selection and definition of the criteria for restrictions, preferences, and suitability determine the potential and location of the area.
- ✓Our data- and criteria-based GIS model can map different scenarios and supports regional administration and municipalities in the designation of suitable areas for solar parks.
- ✓The tool facilitates the participation of stakeholders and citizens as well as the transparent elaboration of decisions for planning the local energy transition and regional sustainable development.
- ✓The risk of technical-economic planning issues and hesitation or even resistance to the realization of solar parks can be significantly reduced.

Co-funded by
the European Union

CETPartnership

Contact Information

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Scientific staff
Research group “Sustainable Bioeconomy”

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Just Transition

Just Transition Network

Just Transition Network: Your Path to Asia

Societal and policy perspectives from EU-China-Indonesia energy cooperation

by Dr Dinita Setyawati

EUROPEAN PARTNERSHIP

25 October 2022

Co-funded by the European Union

TRI509

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Challenges:

- Finding **suitable business models** reflecting a well-integrated and connected EU.

- Addressing political and social challenges facing the EU Integrated energy system through multilevel and cross-sectoral **synergies.**

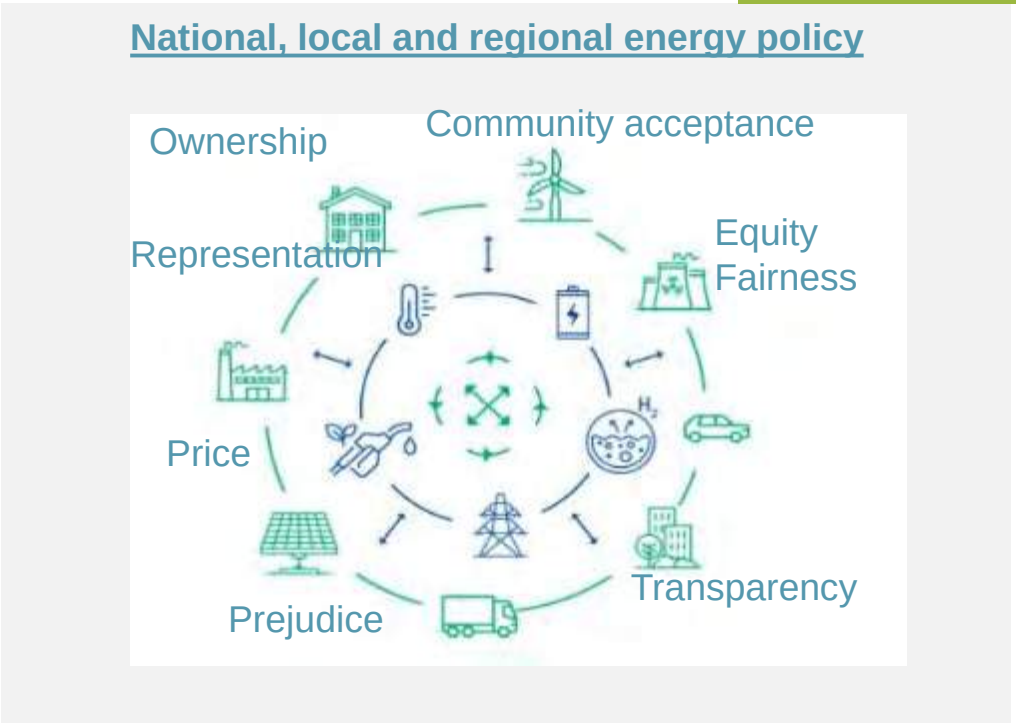

Figure 1. Challenges facing EU integrated energy system

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Just Transition Network Solutions

1. Just Transition Network four-way methodologies:

1. Policy dialogue	2. Business to business	3. Knowledge exchange	4. Grassroot campaigns

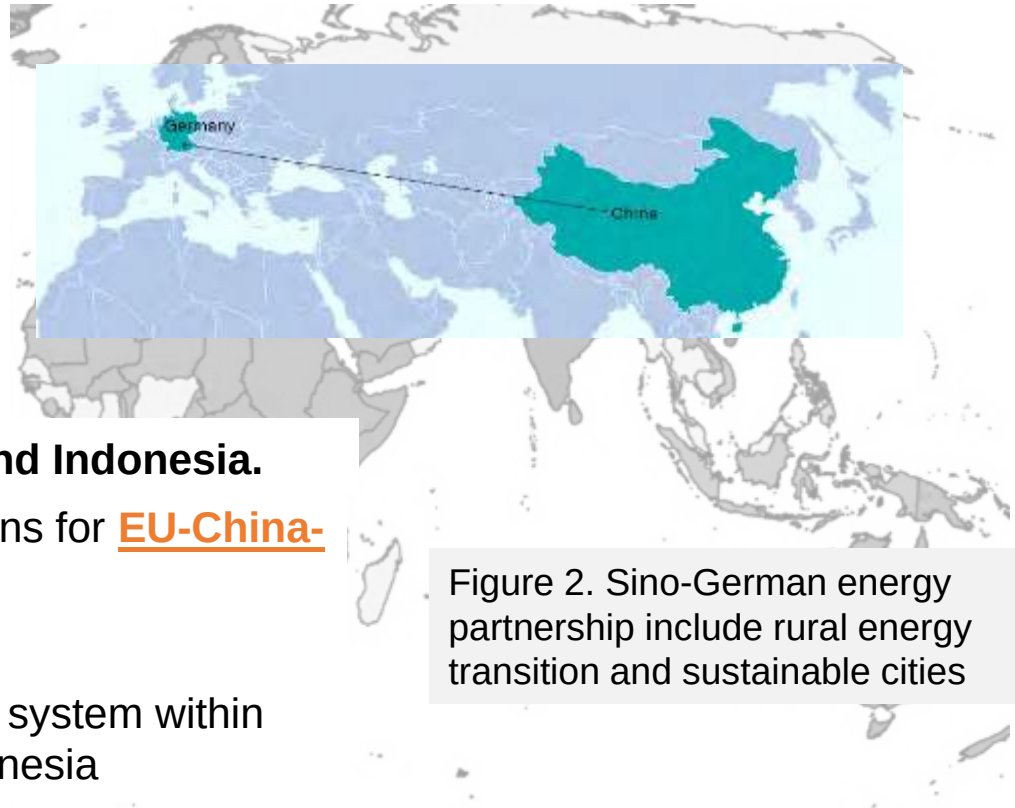

Figure 2. Sino-German energy partnership include rural energy transition and sustainable cities

2. Lesson learnt and knowledge exchange between EU, China and Indonesia.

1. Identify prospects, public acceptance and sustainable supply chains for **EU-China-Indonesia energy cooperation platform.**

2. Explore the societal and policy acceptance of an integrated energy system within the **Sino-German energy partnership** that can be modelled for Indonesia

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Just Transition Network Expertise

Our expertise:

Technical reporting	Policy dialogue	Grassroots campaign	Business to business	Knowledge exchange

- Our members include **Professors working on China and sustainability issues from Kyoto University, Keio University and the former President of Corpus Christi Oxford University.** We have publications in Elsevier (Energy Policy) and Springer.
- We have produced documentary movies on the energy survival or marginalized urban communities in Indonesia.
- We have worked on corporate sustainability indicators in Southeast Asia.

We are looking for two partners for the consortium who are based in Germany. Preferably have technical expertise in integrated energy system application and modelling.

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Thank you

Let’s mitigate the risk of conflict by collaborating with us.

Picture1 : Protest against incinerator plants in Wuhan, China (BBC, July 2019)

Picture 2 : Indonesia Fuel Price Protest, September 2022

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Source

Source:

Picture 1: BBC (July 2019). Wuhan Protests Incinerator Plans Breaks Mass Unrest. Link. https://www.bbc.com/news/blogs-china-blog-48904350. Accessed 24 October 2022.

Picture 2: Bloomberg (September 2022). Thousands Protest Indonesia Fuel Price Hike. Link: https://www.bloomberg.com/news/articles/2022-09-06/thousands-protest-indonesia-s-fuel-price-hike-in-test-for-jokowi?leadSource=uverify%20wall. Accessed 10 October 2022.

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TRI 6

TRI 6: Integrated Industrial Energy Systems

TRI 6 aims at **developing and demonstrating a set of technical solutions for integrated industrial energy systems that enables efficient carbon-neutral industrial production** sites and takes industrial energy systems into development as part of the entire energy system. It focuses specifically on integrated solutions across industries, across energy sectors and across public and private sectors.

TRI 6 Lead
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fredrik.backman@energimyndigheten.se

TRI 6 Office
TRI6@CETPartnership.eu

„Looking for a project, offering ICT“

TRI 5 & TRI 6

Stefan Linecker, Advanced Networking Center, Salzburg Research.

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“Looking for a project, offering ICT”

TRI 5 & TRI 6

Salzburg Research is an independent RTO, specialized in applied research and development in the field of ICT.

Past & current energy projects (excerpt)

What we can offer…

- … track record, network, broad/specialist knowledge in energy domain ...
- … all things ICT (requirements, middleware, protocols, security, etc.) …
- … ICT prototyping platform(s), energy communities, 5G testbed, …
- … simplicity ;-)

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Contact me

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Smart Active Network Operations

Active congestion management tool thanks to IA and machine learning

Help the network manager in the energy transition

haulogy

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TRI603

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Challenges

Decentralized production on the MV/LV grid

New uses of the LV grid (PV, EV, HP)

New businesses (Energy communities and roaming)

Our solution

SANO

Benefits

Optimized management of electrical distribution network in real-time

IA, machine learning → Exploit and secure all the electricity facilities

Flexibility, control and financial benefit

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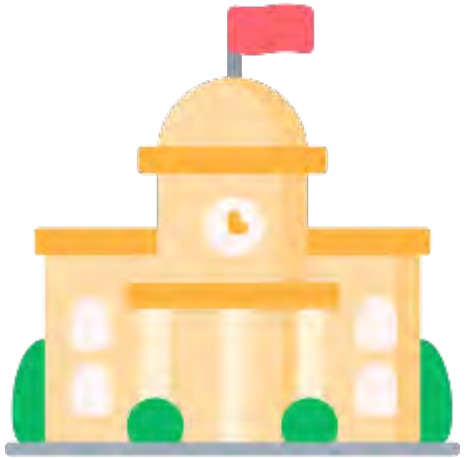
TRI603

CETPartnership

Target / Partners

Grid system operator
(DSO's)



Council / institutes

CETPartnership

Contact details

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+32 497 21 28 49

haulogy
IT ENERGY LEADER

Two project proposals:

1 – The prototype system for continuous recovery of waste heat from the industrial installations

2 - The system of water preparation for electrolyzer and storing hydrogen in a hydrogen energy system

Marta Żurek-Mortka, Ph.D.
Łukasiewicz Research Network – Institute for Sustainable Technologies, Radom, Poland

marta.zurek-mortka@itee.lukasiewicz.gov.pl

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Lukasiewicz Research Network – Institute for Sustainable Technologies, Radom, Poland

Łukasiewicz
Institute
for Sustainable
Technologies

- Established in 1986
- Category A
- Staff: ≈200
- 31doctors, 9 associate professors, 4 professors
- 300 national research projects
- 5 strategic research and investment programmes
- 30 prototypes a year
- ≈150 publications a year
- Implementation of ca. 300 innovative products and processes
- Over 70 international research projects
- Cooperation with international research centers (EU, e.g. Finland, Germany, France, Italy, Denmark; and Mexico, Israel, Chile)

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Project proposal #1 – CET, TRI 6 Integrated industrial energy systems, Joint Call 2022 Module 6 - The prototype system for continuous recovery of waste heat from the industrial installations

The purpose of the project:

In order to management of waste heat from industrial installations and lost irretrievably by discharging to the environment the exchange the thermal energy of waste heat into useful electric energy with the use of thermoelectric generators is proposed.

Description of the project:

- Obtaining the maximum value of the electric current power from the heat flux under the conditions of energy balance in the system.
- Providing high-temperature heat energy to the hot side of the thermogenerator, taking into account the compensation of uneven temperature distribution on the surface of the waste heat source and maintaining the nominal operating temperature of the thermogenerator.
- Conversion of DC output waveforms of thermogenerators into power grid parameters with the possibility of working in on-grid and off-grid systems and ensuring that the operating point is maintained at the maximum power of the thermoelectric generators.
- Effective heat collection from the cold side of thermogenerators ensuring minimum energy consumption.
- Integration of system elements in the form of a control system that monitors the condition and parameters of the system and enables cooperation with external systems.

Who are we looking for?

- companies from the heating, metallurgical and electric industries, specialized enterprises, scientific institutions

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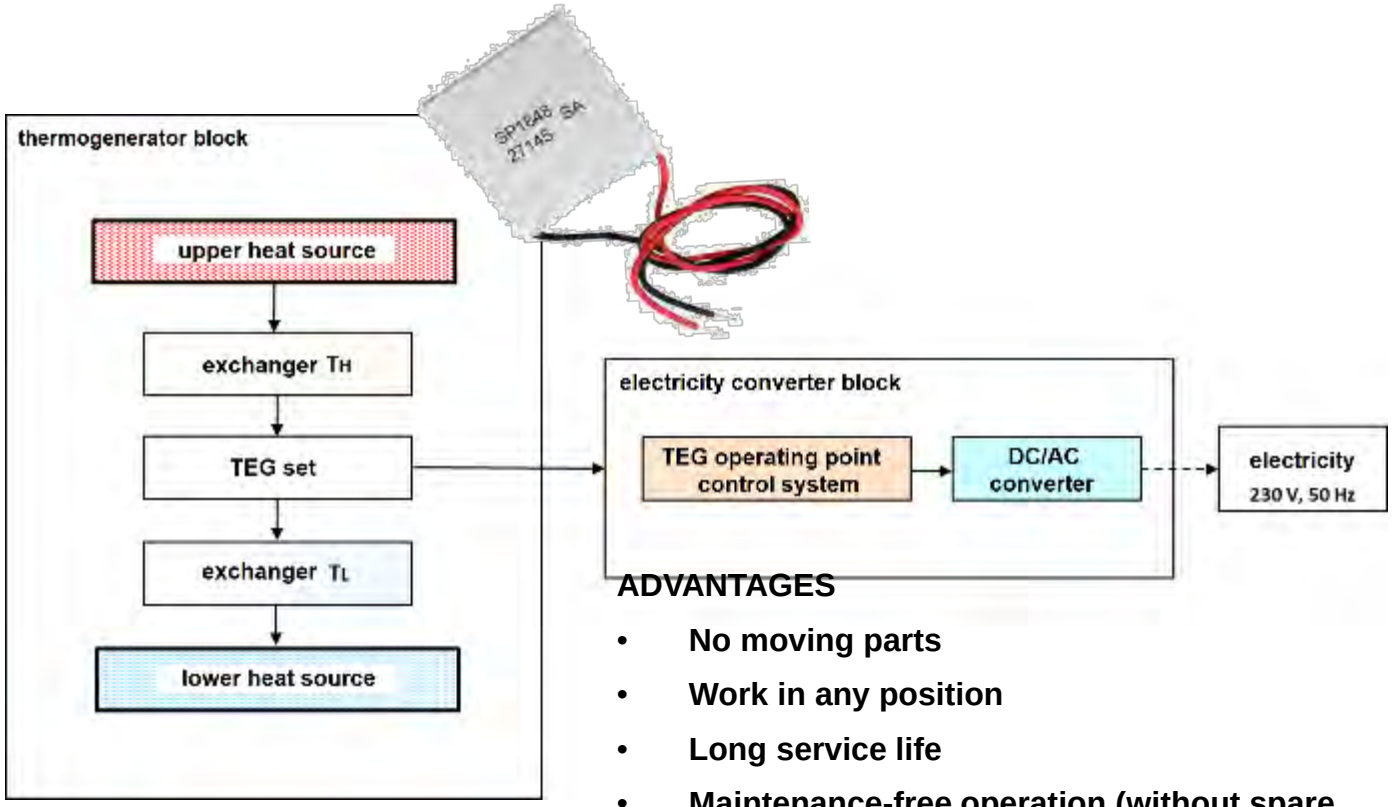
Waste Heat Recovery Systems Using Thermoelectric Generators



ADVANTAGES

- **No moving parts**
- **Work in any position**
- **Long service life**
- **Maintenance-free operation (without spare parts and maintenance)**
- **The refrigerant is water**

An experimental waste heat recovery system developed in the Institute

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Project proposal #2 – CET, TRI 3, Joint Call 2022 Call Module 3.2 Hydrogen and renewable fuels - The system of water preparation for electrolyzer and storing hydrogen in a hydrogen energy system

The purpose of the project:

The planned, tangible effects of the project are a prototype of a water preparation system for an electrolyzer producing hydrogen in hydrogen installations and a prototype of a laboratory installation for the production, storage, and conversion of hydrogen into electricity.

Description of the project:

- Development a water preparation system of appropriate quality intended to power the electrolyzer and the hydrogen storage system.
- Development a multi-stage water purification system.
- Structure of the hydrogen energy system: receiving hydrogen from the electrolyzer, compressing hydrogen, storing hydrogen, generating electricity with the use of a fuel cell. The parameters of individual systems will be specified, taking into account the scalability of the solutions adopted.
- Possibility of closing water circuits in energy hydrogen installations by using industrial wastewater.

Who are we looking for?

specialized enterprises in hydrogen production and storage, scientific institutions

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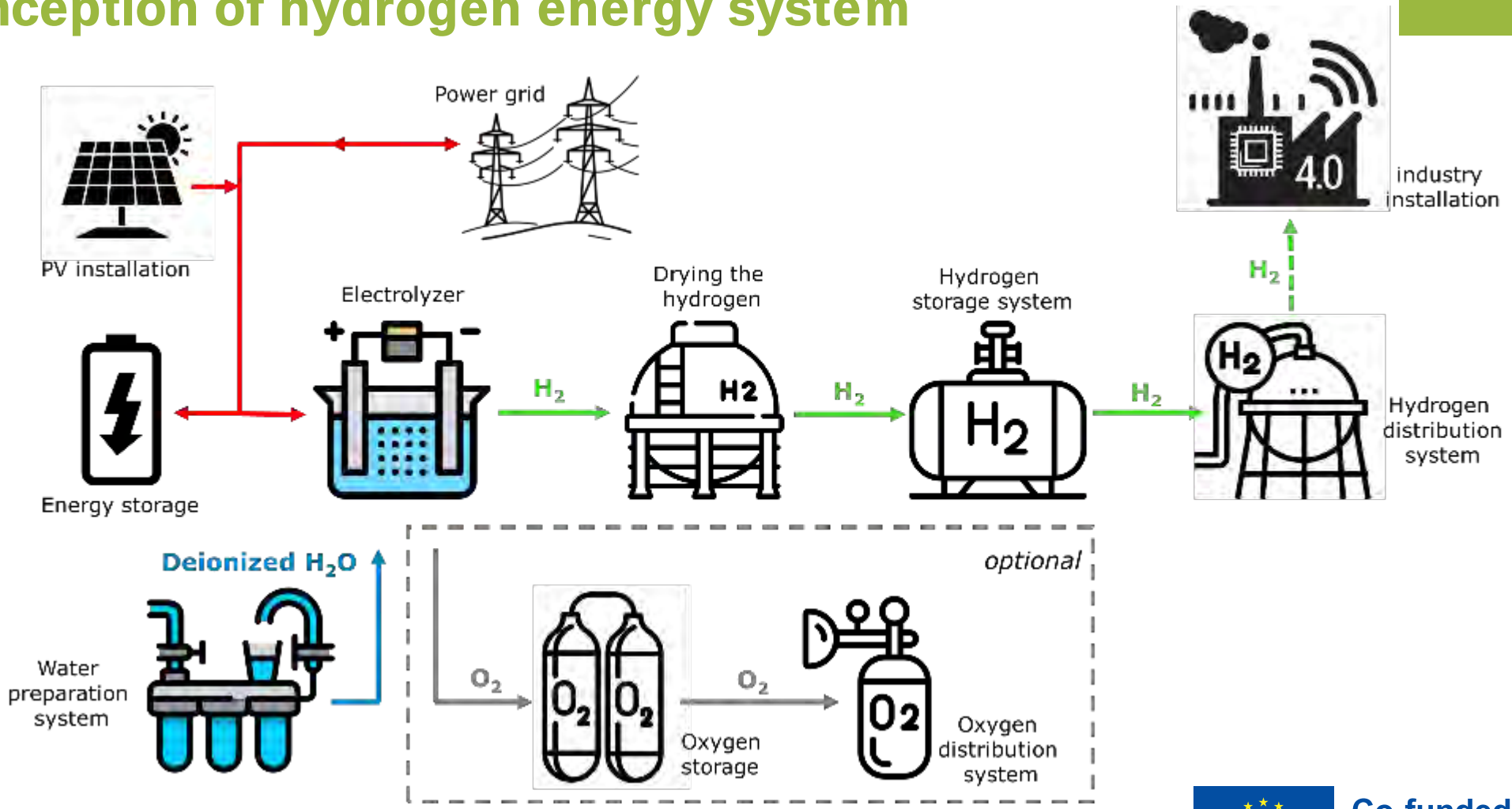
Conception of hydrogen energy system



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Andrzej Majcher, Ph.D.

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Lukasiewicz Research Network – Institute for Sustainable Technologies, Radom, Poland

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Email: **andrzej.majcher@itee.lukasiewicz.gov.pl**

Eesti Energia (Enefit) as your collaboration partner

Your text or inspiring picture here

EUROPEAN PARTNERSHIP

25 October 2022

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TRI606

CETPartnership

Areas of interest

- Smart charging solutions and services, V2G charging applications, charging optimization
- Demand response service design and software development
- Energy storage solutions and their use in combination with fluctuating RE power plants, conventional power plants, EVs and electrolysers.
- Circular economy and recycling of plastics
- Green hydrogen production and consumption in various means of transport (buses, trucks, ferries, and ships) and operating the electrolyser to offer ancillary grid services
- Demonstration of large-scale CHP fuel shift to biomass
- Carbon dioxide Removal technologies

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What we can offer

- More than 500 000 customers for energy and network services
- Enefit Volt smart charging solution that can follow the prices in the energy markets and provide reactive power support to DSO grid
- Estonia´s largest public charging network with 180 chargers including ultra-fast chargers
- Working demand response portfolio with integrations to Estonian, Finnish and Lithuanian TSOs' systems
- Wind parks in Estonia and Lithuania with annual outputs in the range of roughly 10 to 100 GWh of renewable electricity that translates to a total potential of 17 000 tons of renewable hydrogen production per year.
- 215 MWe 160 MWth oil shale fired CHP power plant together with a sustainable forestry industry and supply chains for waste wood
- Expertise in energy related project management, business model development, software development and testing

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We are looking for partners, who

1. aim to drive innovative technologies to the market
2. have profound experiences with leading large-scale projects
3. have a wide circle of partners around Europe
4. have core competencies in all or some of the mentioned areas of interest

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Contact information

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Partner relations specialist

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Lelle 22, 11318 Tallinn | www.energia.ee/en

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ontotext

making sense of text and data

Sirma AI (Ontotext)

Energy Knowledge Graphs

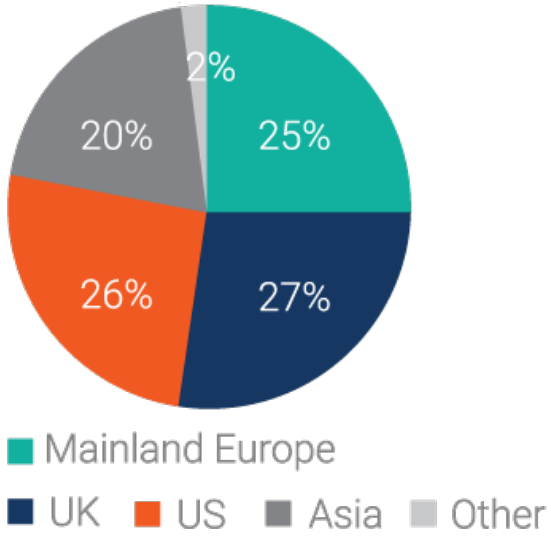
Vladimir Alexiev, PhD, PMP
Chief Data Architect

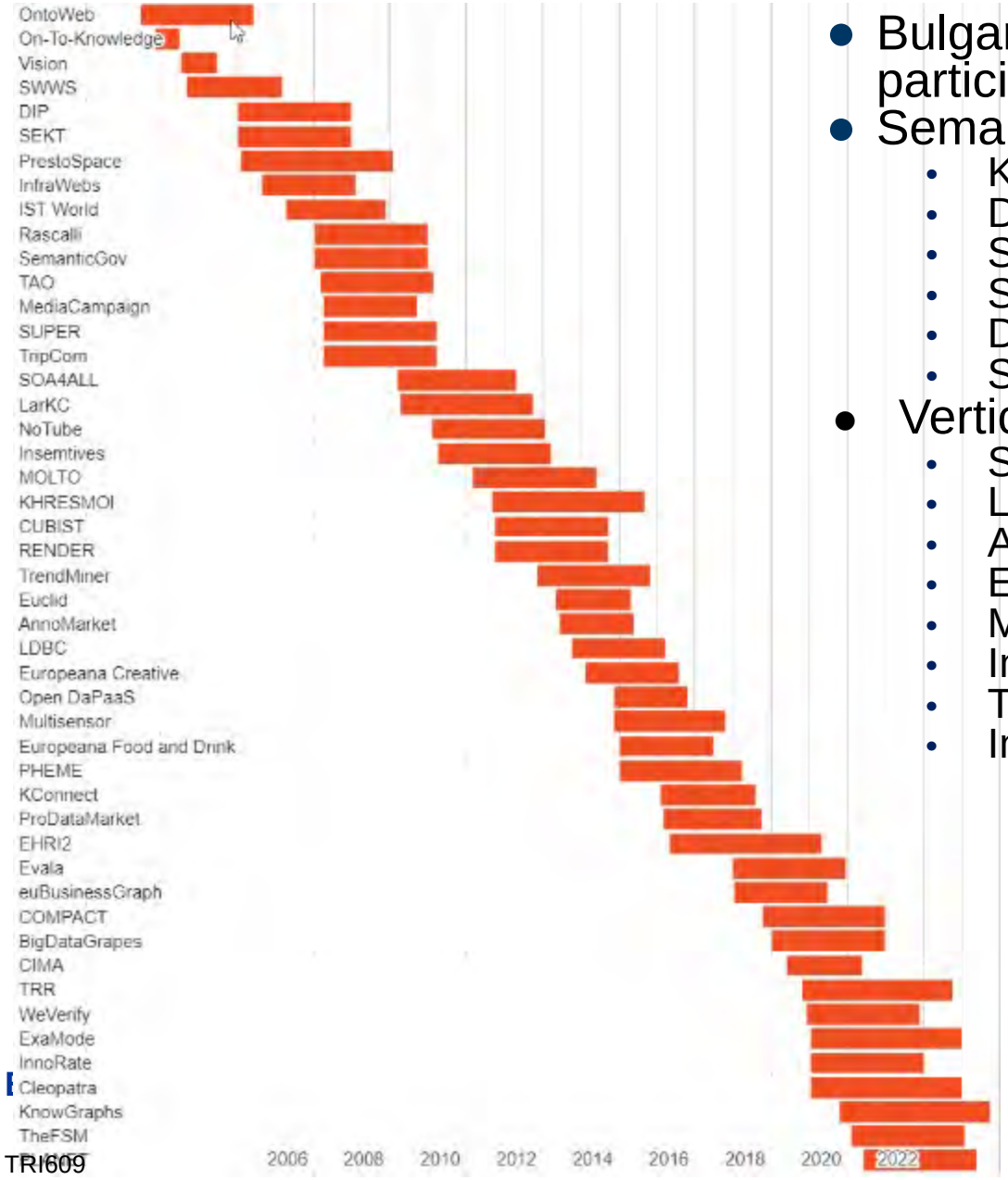
October 2022

https://www.ontotext.com/

Ontotext Introduction

- **History**
  - 2000: started work on semantic technologies.
    As part of Sirma Group (SGH on Bulgaria Stock Exchange, part of SOFIX)
  - 2008: spun off after 8M EUR investment
  - Sep 2022: acquired for 30 MEUR
- **Profitable and Rapidly Growing**
  - 80% of revenue from commercial projects and multinational companies
  - Grew from 80 to 95 staff this year: 85 engineers, many with MS and PhD
  - **Verticals**: Industrial data, Fintech, Healthcare and Life Sciences, Publishing, Government
  - **Energy**: Statnett (NO TSO), EDF (FR largest producer), ENTSO-E (energy transparency research project)
  - **AECO (buildings/infrastructure)**: Johnson Controls (BMS), Schneider Electric (BMS), Triona & Statsbygg (infrastructure research project)
  - **Other Clients:** S&P, BBC, FT, Top-5 US Banks, UK Parliament, NASA, Fujitsu, Novartis…
- **Innovator**
  - Member of W3C, ODI, STI, LDBC, DBPedia Association, Pistoia Alliance, DHI Cluster
  - 50 collaborative research projects with the best academic groups in Europe





- Bulgaria's most successful participant in EU research
- Semantic Technologies:
  - Knowledge Graphs
  - Data markets, Data spaces
  - Semantic Text Analysis
  - Semantic data integration
  - Data Virtualization, OBDA
  - Semantic Analytics
- Vertical Domains:
  - Science KGs
  - Life science & Healthcare
  - Agriculture, viticulture
  - Economics, companies, Fintech
  - Media, Publishing, Journalism
  - Innovation, startups
  - Transport & Logistics
  - Industry 4.0, Manufacturing, Energy

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Ontotext

Products

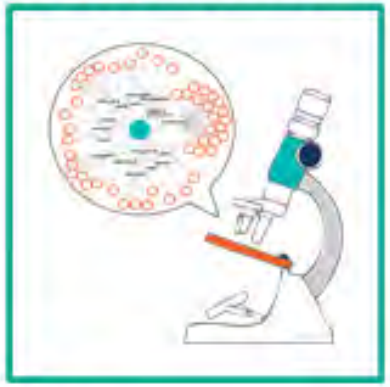
GraphDB

ontotext platform

Sep 2022: acquired for 30M EUR

Sectors

Life Science & Healthcare



ExaMode

AI4EU (CODE)

Food & Agriculture

Big Data Europe

TheFSM The Food Safety Market

Financial Services

euBusinessGraph

INNORATE

Media & Publishing

WeVerify

Transport & Logistics

planet

Industry

Manufacturing; Automotive; Energy; Building Automation; Infrastructure; Aerospace

Projects

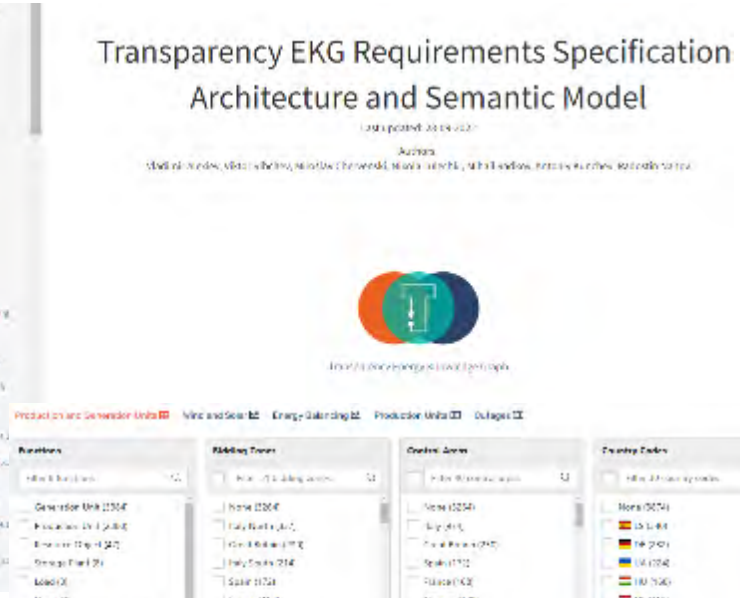
AECO (1): Accord
Analytics (1): enrichMyData
Disinformation (3): Vera.ai, VIGILANT, BROD
LifeSci (2): RES-Q, AIDAVA

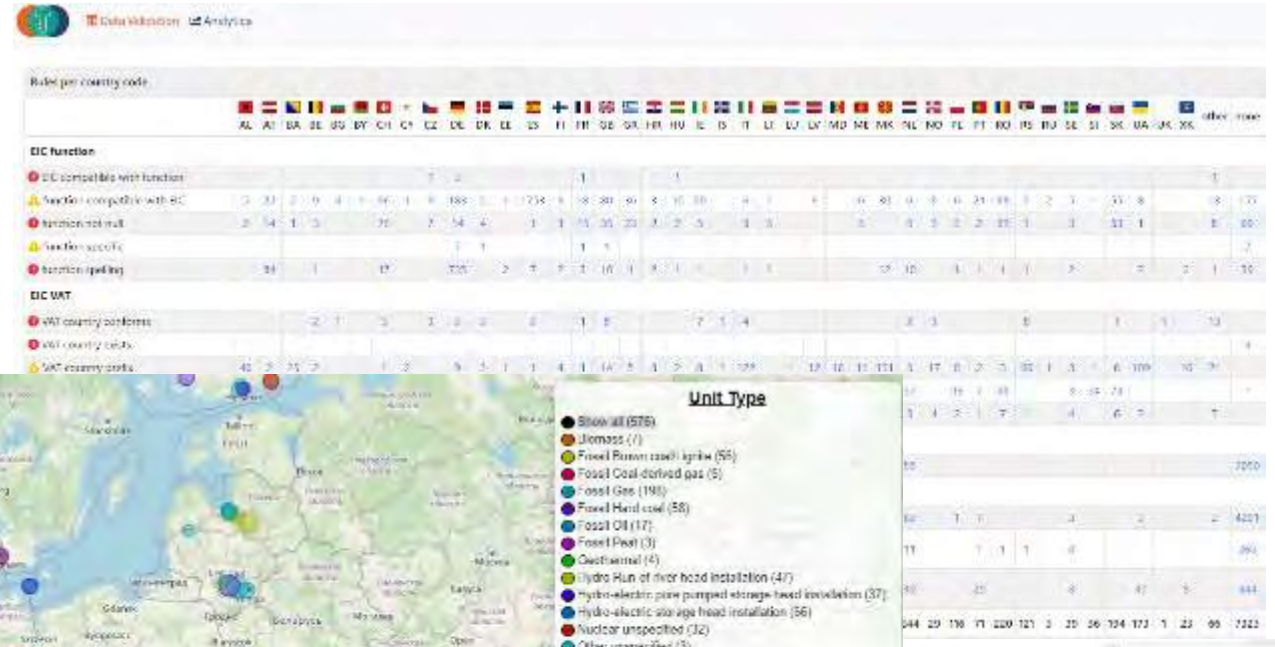
EUROPEAN PARTNERSHIP

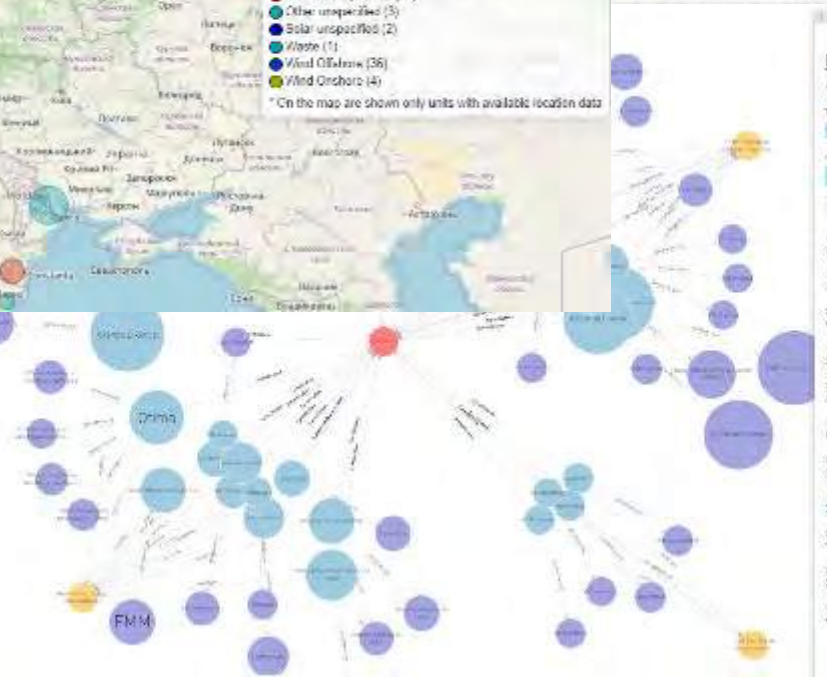
the European Union

- **Energy**
  - IEC CIM standards
  - ENTSO-E, ENTSO-G, REMIT, market transparency platforms
  - Energy efficiency: DABGEO, SAREF4EE, SEAS, FSGIM
- **AECO**
  - IFC, LBD, BCF, bSDD, Bricks, RealEstateCore
  - Automated compliance checking
  - Life Cycle Assessment
- **Oil & Gas, Process Industry**
  - ISO 15926, CFIHOS, DEXPI

Transparency Energy Knowledge Graph (TEKG)



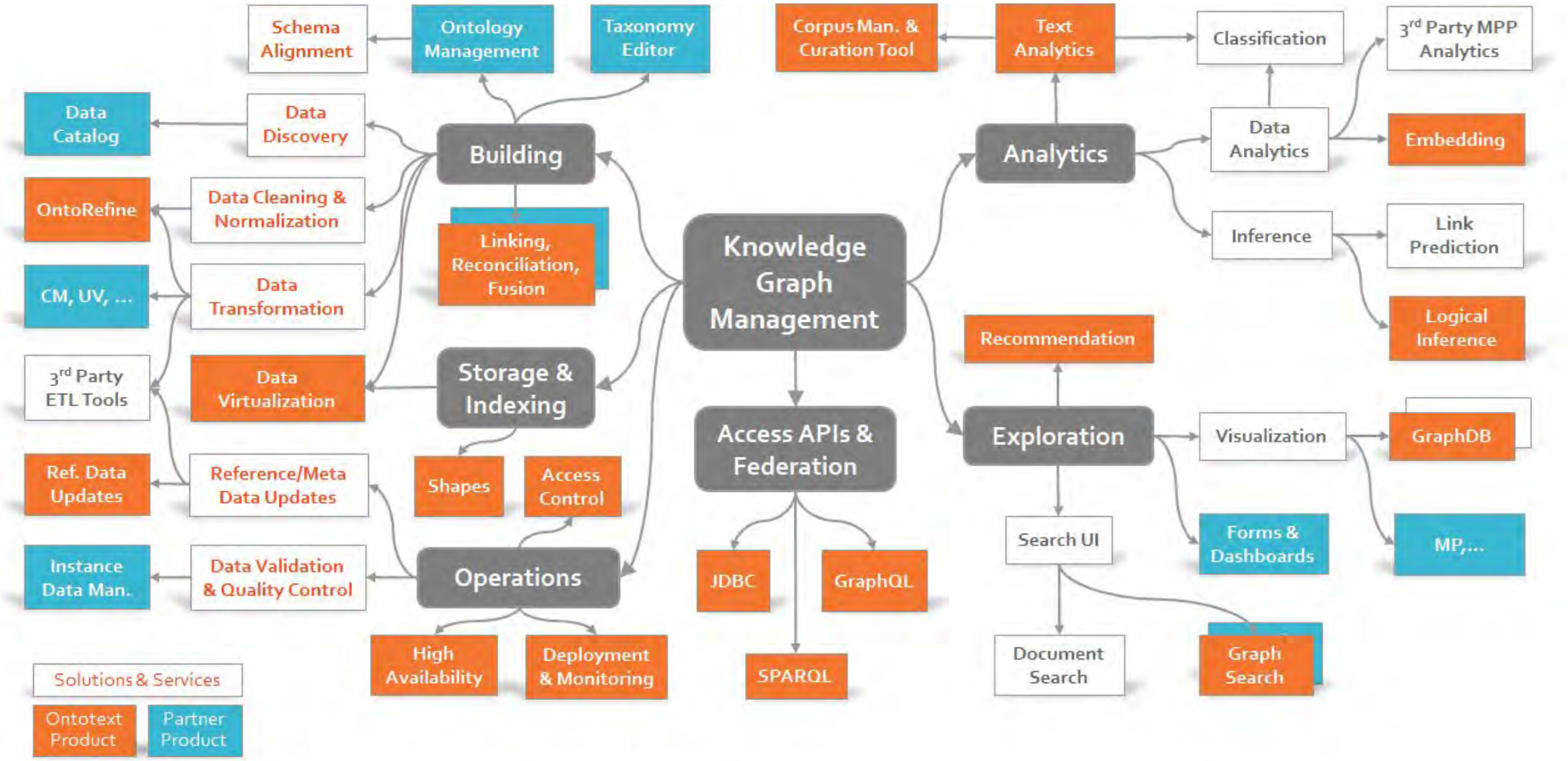




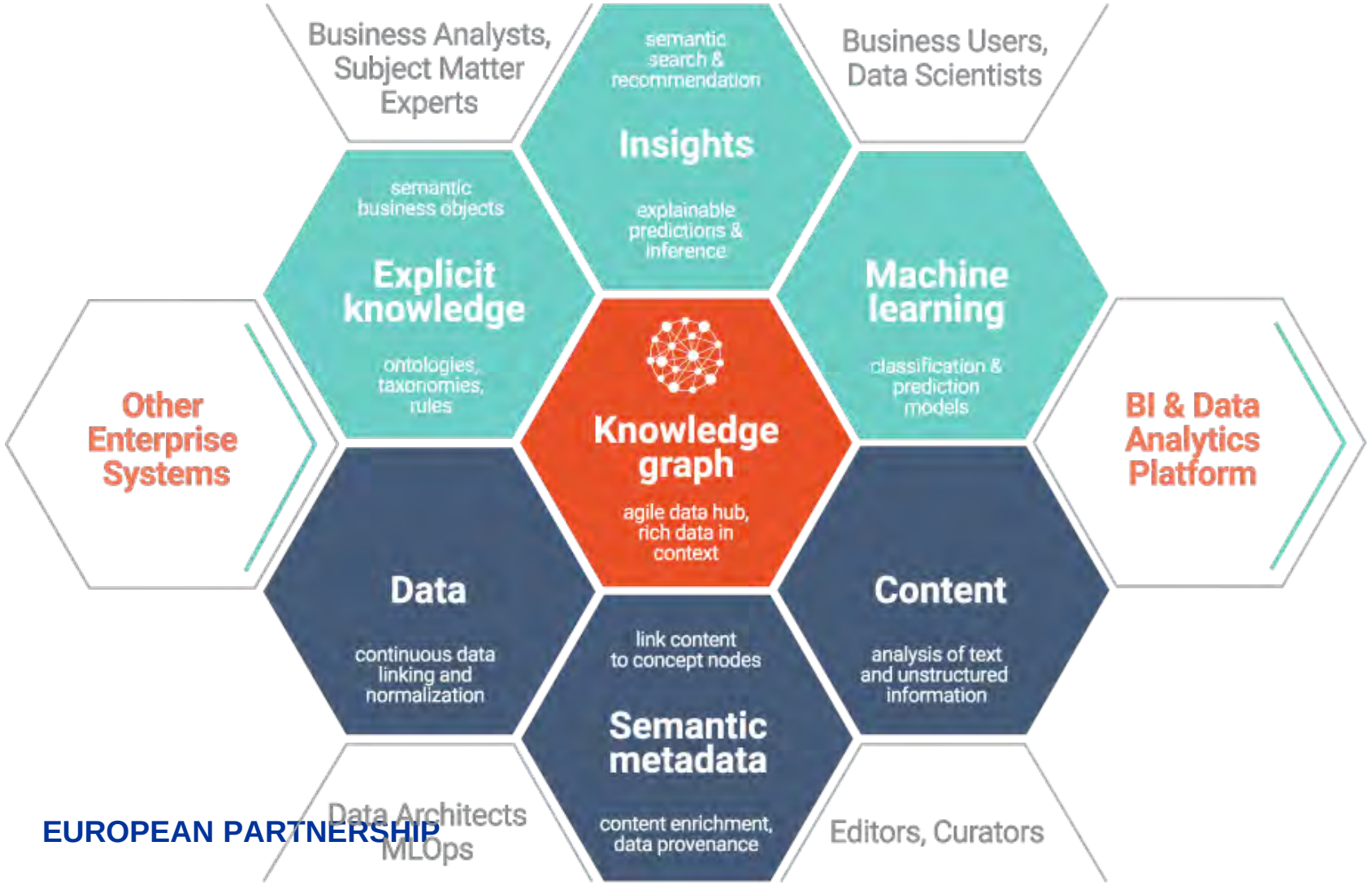
TRI609

Ontotext Energy-Related Presentations

- 2021-07 Energy Knowledge Graphs. Presentation to IIA/KeyLogic and US DOE NETL and OSTI
- 2021-10 Energy Knowledge Graphs to Facilitate Evolution of the European Energy Market. Presentation at Knowledge Graph Forum (KGF 2021), with Ch.Ivanov
- 2021-11 Cross-disciplinary ontologies for buildings, infrastructure, smart grid, electricity, energy efficiency. Presentation at European Big Data Value Forum (EBDVF 2021)
- 2021-09 Electrical Standards, Smart Grids and Your Air Conditioner. Ontotext blog post
- 2021-12 Ontotext Wins Cascade Funding From INTERRFACE To Build A Transparency Energy Knowledge Graph. Ontotext news brief
- 2022-01 Ontotext's Perspective on an Energy Knowledge Graph. Ontotext blog post
- 2022-01 Transparency Energy Knowledge Graph (PDF). Presentation at INTERRFACE meeting (project start); (PPTX)
- 2022-05 Advanced SHACL Data Validation for the Transparency Energy KG. Presentation at Ontotext Demo Days (Video)
- 2022-06 Transparency EKG Requirements Specification, Architecture and Semantic Model (detailed HTML document)
- 2022-09 Transparency Energy Knowledge Graphs for Energy Traceability. Presentation at Knowledge Graph Forum (KGF 2022)
  - Beyond TEKG: integrating data from 20 Transparency Portals and 140 Registered Reporting Mechanisms
  - Defined 4 use cases in energy policy, energy independence, Green Deal goals, etc
- 2022-10 Transparency Energy Knowledge Graph Project: Final Results. Presentation at INTERRFACE meeting (project finish)


Schema Alignment
Ontology Management
Taxonomy Editor
Corpus Man. & Curation Tool
Text Analytics
Classification
3rd Party MPP Analytics
Data Catalog
Data Discovery
Building
Analytics
Data Analytics
Embedding
OntoRefine
Data Cleaning & Normalization
Linking, Reconciliation, Fusion
Knowledge Graph Management
Inference
Link Prediction
CM, UV, ...
Data Transformation
Logical Inference
Recommendation
3rd Party ETL Tools
Data Virtualization
Storage & Indexing
Access APIs & Federation
Exploration
Visualization
GraphDB
Ref. Data Updates
Reference/Meta Data Updates
Shapes
Access Control
Search UI
Forms & Dashboards
MP,...
Instance Data Man.
Data Validation & Quality Control
Operations
JDBC
GraphQL
Document Search
Graph Search
High Availability
Deployment & Monitoring
SPARQL
Solutions & Services
Ontotext Product
Partner Product

What is the Ontotext Platform?



- **Connect and publish enterprise knowledge**
  - ✓ Fuse structured data
  - ✓ Link documents to graphs
- **Tune up & apply analytics**
  - ✓ Extract new facts from text
  - ✓ Classify and recommend data
- **Ease application development**
  - ✓ Access data via GraphQL

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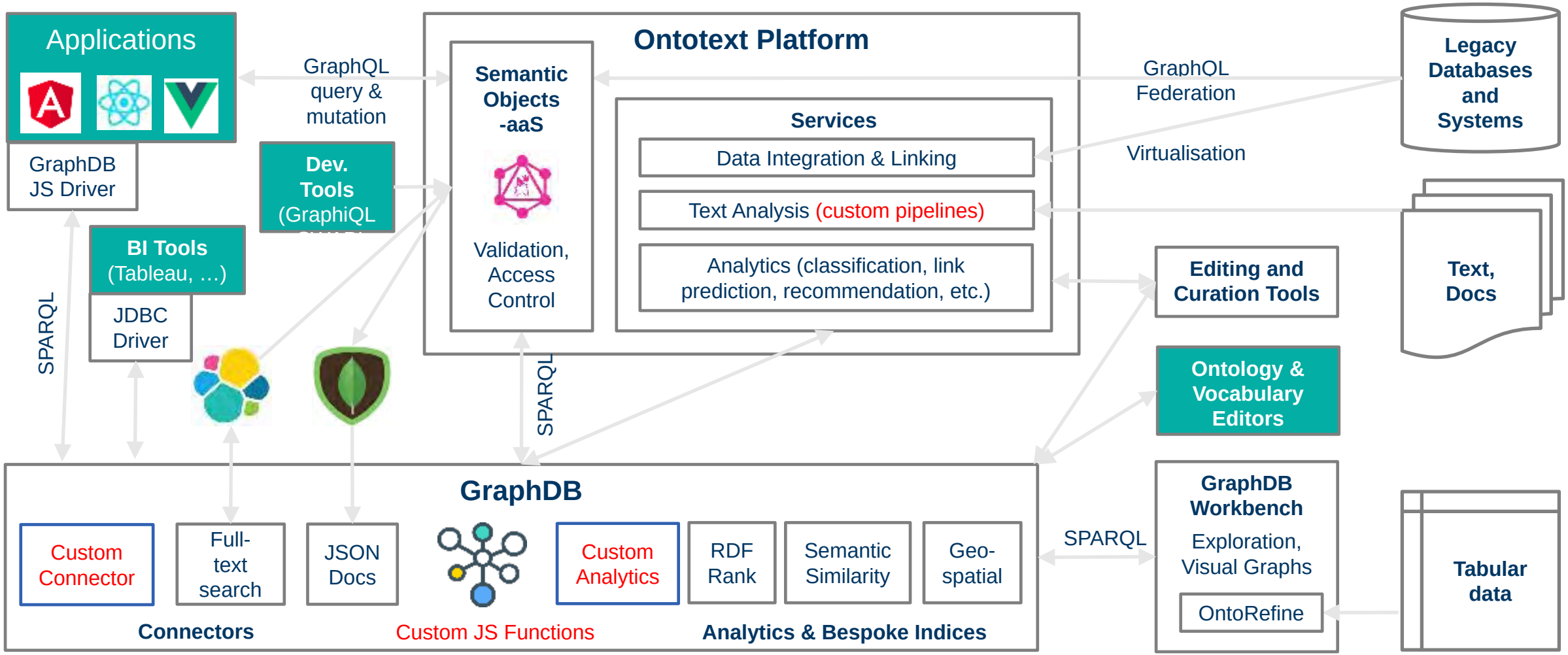
Access, Customization and Integration Points



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TRI 7

TRI 7: Integration in the Built Environment

TRI 7 mission is to **provide solutions and technologies for existing and new buildings to become an active element in the energy system**, with enhanced capability to produce, store and efficiently use energy in the residential and non-residential sector, comprising public and commercial buildings, service and mobility infrastructure buildings, etc.

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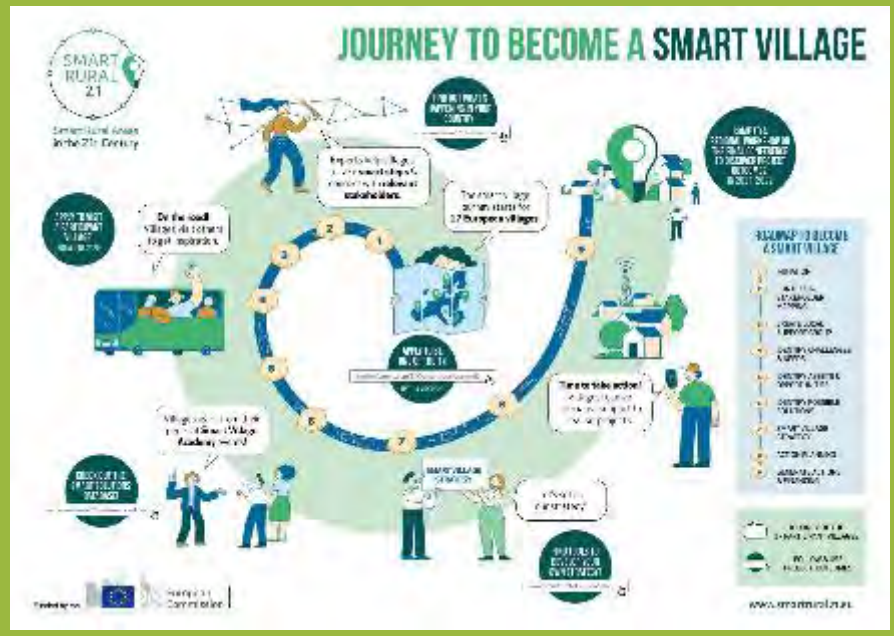
Pablo García Fernández (AEI, ES)
garciafpablo@uniovi.es

TRI 7 Office
TRI7@CETPartnership.eu

Collective Intelligence

Enhancing Social, Environmental and Economical
Impact through Cross-Sectoral Collaboration on
Decarbonisation, Health and Wellbeing and the Built Environment



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TRI706

GenHySi

ENHANCED GREEN CIRCULAR ENERGY SYSTEMS FOR BUILDINGS

EUROPEAN PARTNERSHIP

25 October 2022

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TRI701

WHY and HOW GenHySi ?

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Silicon powder
by Concentration Solar Production
(70 % of solar emissions)
Energetic efficiency of 40%

GREEN & RENEWABLE ENERGY SOURCE

BY-PRODUCTS RETREATMENT

STORAGE
& ON DEMAND GENERATION
(POWER, HEAT, COLD)
+ WATER PURIFICATION

ENERGY MANAGEMENT SYSTEM

Full Autonomy (expect water)
Low carbon
Competitive TCO

WHO? OUR NEEDS…

EIFFAGE

CO-DEVELOPMENT
SYSTEM INTEGRATION

INGENIA
GREEN & BLUE ENERGY SYSTEMS

GENERAL CONCEPTION & DEVELOPMENT

icmcb

POWDER LIFE CYCLE
H2 GENERATORS

foursolaire
SOURCE D'ENERGIE

CONCENTRATION SOLAR PRODUCTION
POWDER REACTORS

?

TECHNICAL MODELISATION (CARBON FOOTPRINT…)
BUSINESS MODEL DESIGN

?

LOGISTIC PARTNER AND OPERATOR

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the European Union

Contact GenHySi

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contact@genhysi.com

Acceleration to Net Zero

By Santane Limited

Delivering Excellence Everyday

Santane
Engineering & Technology Consulting

EUROPEAN PARTNERSHIP

25 October 2022

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the European Union

TRI702

CETPartnership

Engineering & Technology Solution

To Achieve Net-Zero Targets

- We offer engineering and technology solutions to industrial energy systems and built sites, in achieving their Net Zero Targets.
- Our solutions aim to quantify, reduce and decarbonize industrial sites by offering specialist knowledge and practical experience in technology development and deployment, considering the technological, engineering, economic, regulatory and policy implications for innovations and investment decisions.
- We offer our services to various sectors like Offshore Wind and Renewables, Oil and Gas, Refineries, Pharmaceuticals, Chemicals, FMCG and Nuclear.
- We have delivered projects across globe and have clients in the UK, USA, Lithuania, Poland, Czech Republic, France, India, Germany, Italy, South Korea, Malaysia, UAE , Japan and Singapore.

Santane
Engineering & Technology Consulting

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Project and Collaboration

Now and Future

- Our current project is for one of the Oil and Gas Refineries in Europe, where we aim to model the complex interactions across the whole energy system between the physical, digital and market systems, across power, gas, heat, and transport, and from generation to consumer.
- We aim to take whole systems approach, considering the complex interactions of electricity, gas, heat, hydrogen, bioenergy and liquid fuels and the different ways in which the energy might be produced, stored, distributed and consumed.
- We have collaborated with one of the Universities and few of the research organizations in Scotland, UK for our current project .
- We aim to collaborate with companies who have considerable expertise in Systems Engineering and Digitalization projects for built sites/industries.
- Equally, we are happy to liaise and connect with companies to know more about their latest clean energy innovations.

CETPartnership

Contact

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Business Development - Director

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Santane Limited
www.santane.co.uk

Santane
Engineering & Technology Consulting

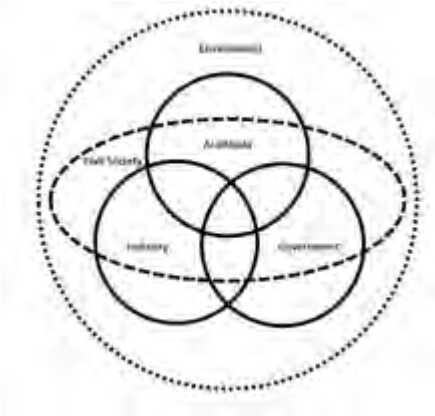
Challenge – Silo Mentality

Industrial/ Commercial

Tertiary/ Public Sector

Residential

Solution – Collective Intelligence



S3 SMART SPECIALISATION STRATEGY

EUROPEAN PARTNERSHIP

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Application – Fuel Poverty

Society	Environment	Economy
Better Homes and Heating Improved Health and Wellbeing Better Education and Careers Better Quality of Life	Accelerate Local Energy Systems Improve Building Efficiency Reduce Carbon Footprint Better Quality of Life	Reduce Health Inequalities Decent Work and Education Reduced Healthcare Costs Better Quality of Life

Application – Fuel Poverty

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Enhance Europe

ENergy **HA**rvesti**N**g **C**oll**E**ctors for **U**rban **RO**ad **P**av**E**ment

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25 October 2022

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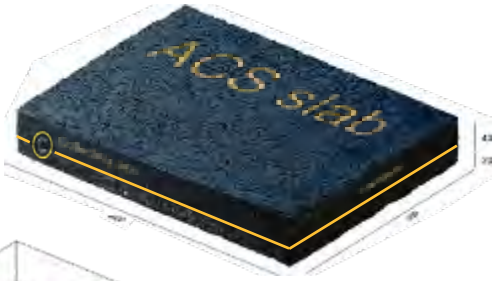
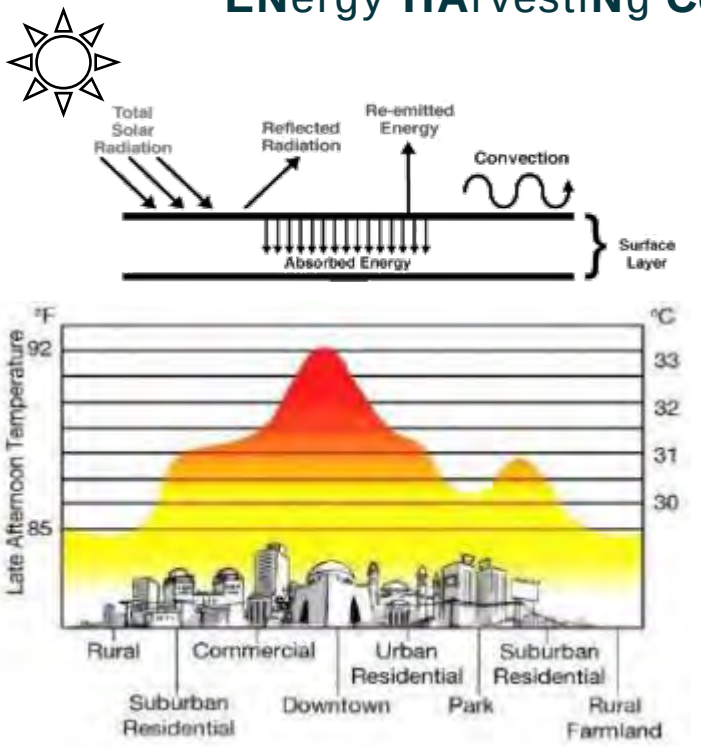
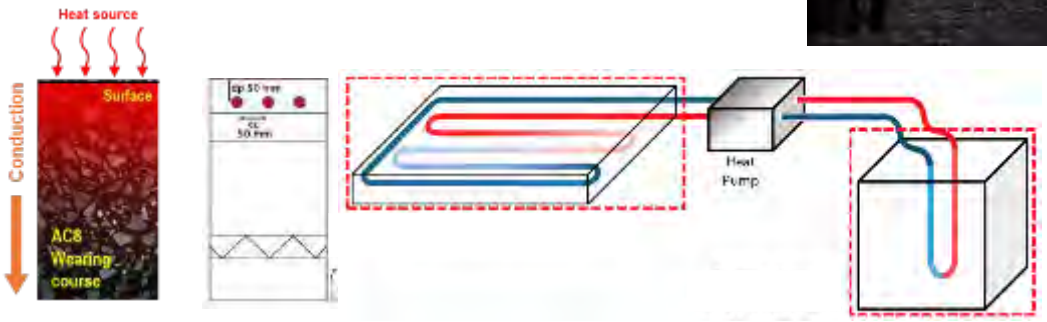
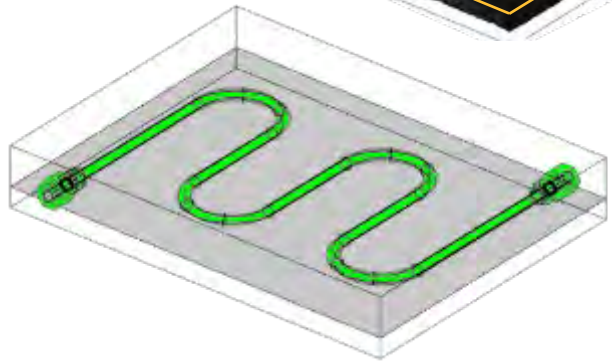
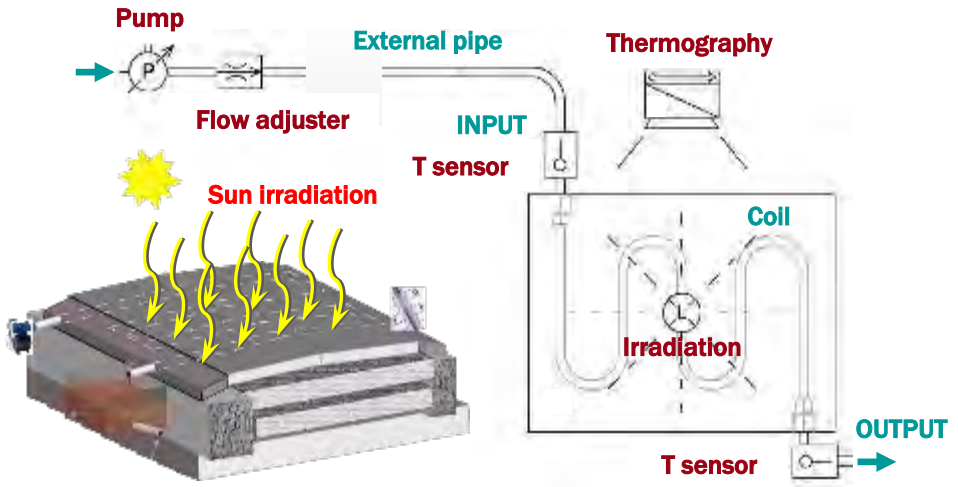
ENergy **HA**rvesti**N**g Coll**E**ctors for **U**rban **RO**ad Pav**E**ment

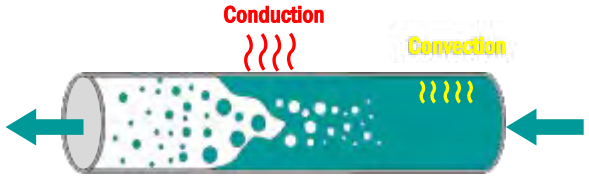












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Expertise: **road construction**, **road materials**, **applied thermodynamics**, **energy conversion**, **construction of thermo-energy plants**.

Currently Consortium:

- University of Padua (Department of Civil, Architectural and Environmental Engineering),
- Italian companies (production of materials for flexible roads and thermodynamic plants),
- Municipality of Padua.

Searched foreign (non-Italian) European Countries partners:

- universities,
- local authorities,
- industries.

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Contact details:

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FlexMeasures

Open source EMS for automating data-driven energy timing

LFENERGY FlexMeasures

Flexibility needs automation

Open source software for managing flexible assets & processes

- We: Ex-smart grid researchers (CWI Amsterdam, TU Delft, USEF)
- Realized the need for well-working automation software
- FlexMeasures is open source, part of Linux Energy Foundation
- Well-documented, developer-friendly, extendable

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LFENERGY FlexMeasures

Optimisation goals

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What we can do

- Smart industry
- Smart city / e-Mobility (V2G)
- API Integrations: E.g. dynamic prices / weather forecasts
- Forecasts
- Scheduling for flexible assets

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LFENERGY FlexMeasures

What we can bring in

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Contact

https://flexmeasures.io

nicolas@seita.nl

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Joint Call 2022 Timeline

Next steps

Deadline for submitting pre-proposals	23 November 2022, 14:00 CET
Communication to applications selected for full-proposal stage	January 2023
Deadline for submitting full proposals	20 March 2023, 14:00 CET
Projects selected for funding	June 2023
Tentative start of funded projects	September 2023

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- More information, call text, link to matchmaking and Electronic Submission system at

https://cetpartnership.eu

- Always check the **specific requirements** of your Funding Agency

- Consult with your national contact point and/or reach us at
callmanagement@cetpartnership.eu

- Deadline for pre-proposal submission:
23 November 2022, 14:00 CET

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Thank You

https://cetpartnership.eu/