

ERA-NET SMART ENERGY SYSTEMS INITIATIVE

CO-CREATION SESSION ON RESEARCH NEEDS AND RESEARCH SOLUTIONS

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Gotzinger Str. 48

81371 München

office@eranet-smartenergysystems.eu

www.eranet-smartenergysystems.eu



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1 BACKGROUND AND PURPOSE

On 23rd of May, the new joint call by ERA-Net Smart Energy Systems (ERA-Net SES) for RDD projects on integrated energy systems (RegSys) was launched supporting innovative ideas with a funding budget of € 33.3 million (for details check <https://www.eranet-smartenergysystems.eu/Calls/Regsys Calls/RegSYS Joint Call 2018>).

ERA-Net SES follows an integrated, interdisciplinary Three Layer Research Model and supports RDI activities that cover multiple layers and integration of sectors (see an explanation I annexes A and B of the [call text](#)).

Flux50 is an Associated Partner of this Initiative and strives help “need-owners” and “solution providers” in developing trans-national projects for this Research, Development and Innovation (RDI) program.

On June 7, 2018, Flux50 invited for an information and match-making event (<https://flux50.com/events/eu-funding-matchmaking-for-smart-energy-systems-brussels>). In the course of that event, representatives of the ERA-Net SES initiative presented the funding opportunity and led a co-creation session with potential applicants. This documentation displays the results of that session without further commenting.



2 LIST OF PARTICIPANTS

Name	Institution	Country
Annelies Desmet	all-round ninja at June	Antwerp, Belgium
Ariane Decramer	Account manager & internationalisation at Flux50	Bruxelles, Belgium
Bart Meersman	Owner at S2ENSO	Lokeren, Belgium
Bernard Germay	Project Funding Manager at CMI	Seraing, Belgium
Christopher Cruys	Business Support Coordinator at Brainbridge Utilities Alliance	Antwerp, Belgium
Davide Garufi	Business Developer at THERMOVAULT BVBA	Genk, Belgium
Dimitrios Thomas	PhD Candidate at UMONS at University of Mons	Mons, Belgium
Emilia Motoasca	ZAP (Prof.dr.ir.) at KU Leuven - TC Gent	Gent, Belgium
Eric Vermeulen	Marketing & Communication at haulogy	Braine-Le-Comte, Belgium
Erwin De Ley	Director at SupportSquare NV	Gent, Belgium
Frank Vermeulen	Founder at Creamo	Lokeren, Belgium
Frederik Loeckx	General Director at Flux50	Bruxelles, Belgium

Gabriela Tatian	Business development assistant at Eurideas	Brussels, Belgium
Giel Valkeneers	Director at house of projects	Merchtem, Belgium
Heidi Lenaerts	Account manager at Flux50	Bruxelles, Belgium
Jan Gilot	Business Development Manager at Flux50	Bruxelles, Belgium
jan jaeken	director at Samen Klimaatactief + FLUX50	Hove, Belgium
kris baert	Business Development Electrical Networks at KU Leuven / EnergyVille	Genk, Belgium
kris van Daele	CEO fifthplay at fiftyhplay NV	Antwerp, Belgium
Lieve De Doncker	business developer at imo-imomec	Diepenbeek, Belgium
Lieven Demolder	Project leader at DuCoop	Ghent, Belgium
Luc Picard	Business Dev mng at ABB	zaventem, Belgium
Ludwig Karg	B.A.U.M. Consult CEO, Head of ERA-Net SES Support Team	München, Germany
Maarten Bijmens	Marketing at Flux50	Brussels, Belgium
Marco Franchin	EU Account Manager at Paragon Europe	Mosta, Malta
Martin Vanandruel	Conseiller à l'Innovatoin at Volta Knowledge	Engis, Belgium
Michael Hübner	Coordinator ERA-Net Smart Energy Systems at Austrian Ministry of Transport, Innovation and Technology	Wien, Austria
Nick Deknudt	Assistant Manager at Flux50	Brussels, Belgium
Patrick Devos	Business development at Flux50	Brussels, Belgium
Paul BRICOUT	Project Engineer at Cluster TWEED	Liège, Belgium
Pavlos-Zinon Dimi-trakos	EU Projects intern at Paragon Europe	Mosta, Malta
Pedro Pattijn	business unit manager at Ingenium	Brugge, Belgium
Pernille Dagø	EU Consultant at South Denmark Region	Brussels, Denmark
Peter Droege	CEO at Liechtenstein Institute for Strategic Development GmbH	Berlin, Germany
Raf Callaerts	Raf Callaerts, Lawyer at Fieldfisher Lawyers LLP	Brussels, Belgium
Sarah Malevé	Manager Public Funding at imec	Leuven, Belgium
Serge Peeters	Business and Relationship Development at VITO NV	Genk, Belgium
Stefaan Aelbrecht	Product Development Management & Strategic Partnerships at OpenMotics	Gent, Belgium
Stefaan Beauprez	Business Unit Manager at Brainbridge Utilities Alliance	Antwerp, Belgium
steve mifsud	Technical Attache Gozo Regional Affairs at Permanent Representation of Malta to EU	Bruxelles, Belgium
Sven Penninck	Pitlane Manager at SF1 bvba	Oudenaarde, Belgium
Tuya Beyers	Association Expert VisitFLANDERS CB at Visit Flanders	Bruxelles, Belgium
Vermeulen Frank	Founder at Creamo	Lokeren, Belgium

3 RESEARCH NEEDS AND RELATED PROJECT CONTENTS

Associated partners, need owners and potential associated partner candidates, were asked to fill “puzzle pieces” with identified RD&D needs, also displaying the need owner (see figure below).

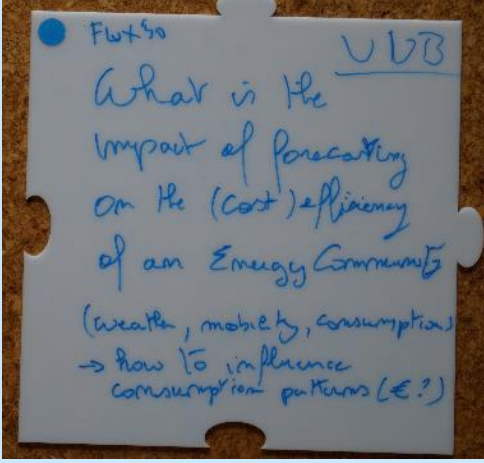
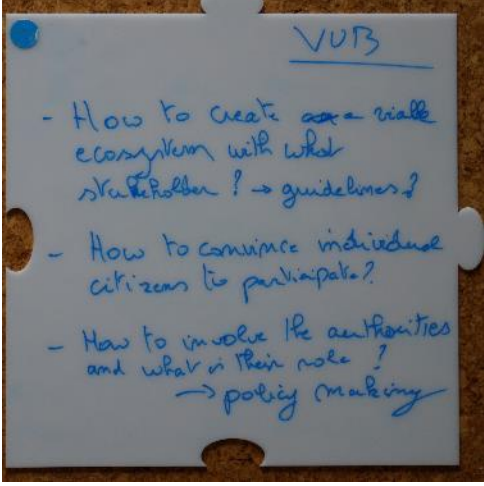
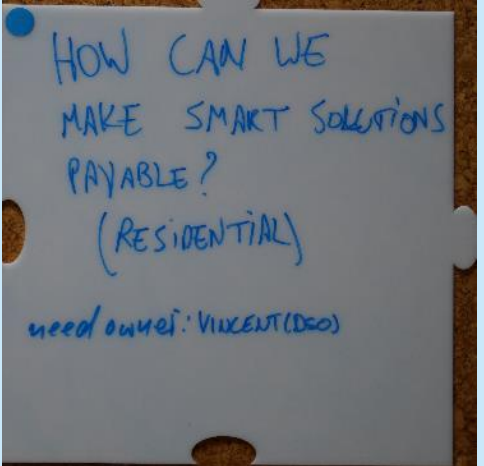


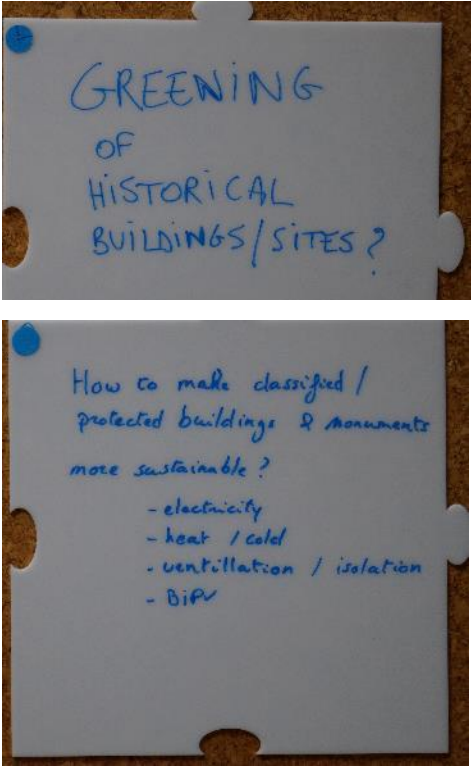
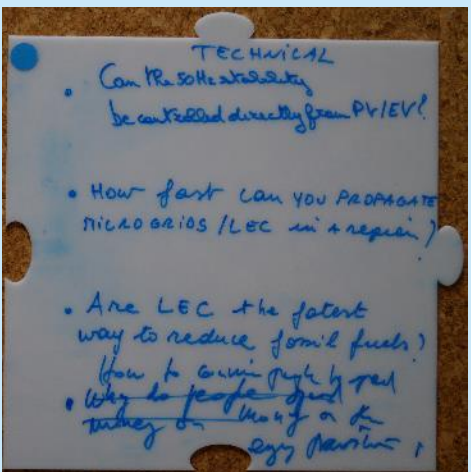
In a next step, participants were asked to connect envisioned research activities to the previously identified research needs - thus combining the puzzle pieces in order to develop fruitful projects (see figure below).

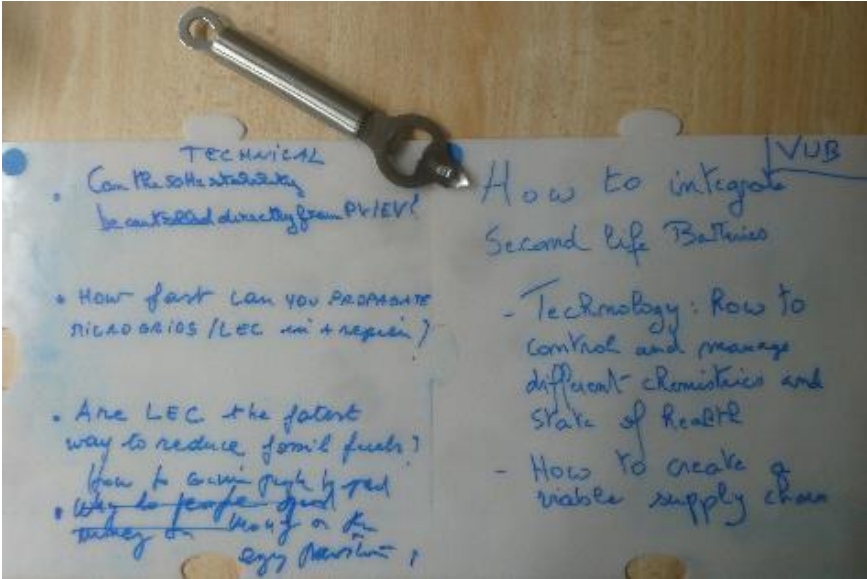


4 RESULTS OF THE CO-CREATION SESSION

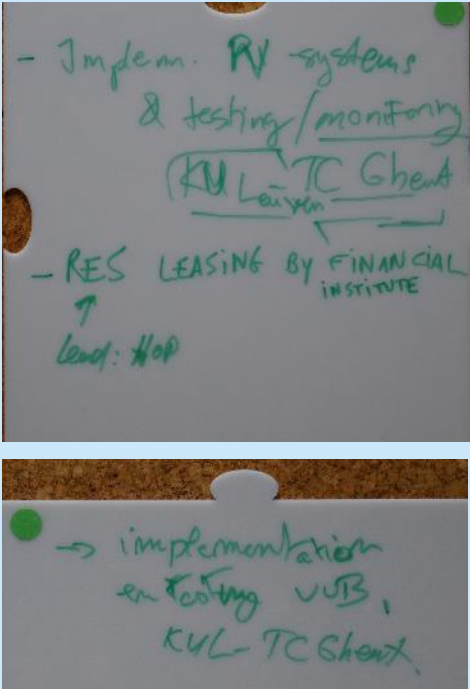
4.1 Identified Needs

Puzzle piece	Summary of the need	Institution
	<p>relation of forecasting and successful operation of an energy community</p> <p>potentials for influencing consumption patterns</p>	<p>VUB</p>
	<p>roles of stakeholders in developing energy eco-system</p> <p>convincing citizens to participate</p> <p>involving authorities (policy making)</p>	<p>VUB</p>
	<p>smart, affordable, residential solutions</p>	<p>DSO (Vincent)</p>

Puzzle piece	Summary of the need	Institution
 <p>GREENING OF HISTORICAL BUILDINGS/SITES?</p> <p>How to make classified / protected buildings & monuments more sustainable?</p> <ul style="list-style-type: none"> - electricity - heat / cold - ventilation / isolation - BiPV 	<p>Sustainable refurbishment of historical, protected buildings</p>	
 <p>TECHNICAL</p> <ul style="list-style-type: none"> • Can the so heat exchanger be controlled directly from PV/IEV? • How fast can you PROPAGATE MICROGRIDS / LEC in a region? • Are LEC the fastest way to reduce fossil fuels? • How to convince people by real • Why do people spend money on the energy market? 	<p>methods to get from small trials to broad rollout</p> <p>will Local Energy Communities scale and speed up the process?</p>	

Puzzle piece	Summary of the need	Institution
 <p>TECHNICAL</p> <ul style="list-style-type: none"> • Can the software be controlled directly from PV/IEV? • How fast can you PRODUCE BILAO BAIOS (LEC unit + repair)? • Are LEC the fastest way to reduce fossil fuels? • How to convince people to get on the way to the energy transition? <p>How to integrate Second Life Batteries</p> <ul style="list-style-type: none"> - Technology: How to control and manage different chemistries and state of health - How to create a viable supply chain 		<p>VUB:</p> <p>Integration of 2nd Life batteries to make LECs more successful</p>

4.2 Identified Research Activities

Puzzle piece	Summary of the Activity	Institution
 <p>- Implement. PV systems & testing/monitoring</p> <p>(KU Leuven / TC Ghent)</p> <p>- RES LEASING BY FINANCIAL INSTITUTE</p> <p>Lead: HOP</p> <p>→ implementation in testing VUB, KUL-TC Ghent</p>	<p>new financing models for PV and testing activities (leasing?)</p>	<p>HOP</p> <p>KU Leuven / TC Ghent</p>

Puzzle piece	Summary of the Activity	Institution
<p> <ul style="list-style-type: none"> • FEASIBILITY STUDY → <u>NO?</u> <u>DvCOOP</u> • INITIATE INNOVATIVE PROJECTS & PILOTS Urban subsidies → <u>LT?</u> <u>Long term?</u> • Regulatory barriers → involve DSO's direct lines (LEC energy owners regulatory free area (sandbox...)) • What do local gov't want to pay for CO₂ - mitigation? <u>LEC or SEAP</u> • open to <u>banking</u> financing (financial markets) </p>	<p>existing feasibility study: trials don't scale >>> new study: alternative methods for scaling up and replications</p> <p>involve DSOs and regulators to test alternatives and compare potential effects of various ways of regulation ("sandbox project")</p> <p>relating smart energy efforts to local planning (SEAP vs. LEC)</p>	<p>DvCOOP</p>
<p> <ul style="list-style-type: none"> - DC SOLUTIONS - BIPV RESEARCH (building integrated PV) ↓ overcome governance/ordinance that prevents from applying BIPV... - REGULATORY: - LEAD: HOP. / Participate: (coordination) KU Leuven - TC Ghent </p>	<p>DC solutions for existing buildings</p> <p>building integrated PV for protected buildings (BIPV)</p> <p>recommendations for governance to develop ordinances that do not prevent application of BIPV</p>	<p>HOP FifthPlay KU Leuven / TC Ghent</p>
<p> <u>RESEARCH ACTIVITY</u> <ul style="list-style-type: none"> • TO DEVELOP ALGORITHMS TAKING INTO ACCOUNT FLEXIBILITY LEC / AG & MARKET CONDITIONS. • PROVIDER OF ADD CAPACITY HAULOGY, SOFTWARE PUBLISHER. • ASSOCIATED PARTNER. DSO, ENERGY SUPPLIER, AG MANAGER. </p>	<p>methods to help LECs participate in the energy market with their flexibility</p>	<p>HAULOGY (Software Publisher)</p>

4.3 Matches

Flux50

VUB

What is the impact of forecasting on the (cost) efficiency of an Energy Community (weather, mobility, consumption) → how to influence consumption patterns (€?)

VUB

- How to create a small ecosystem with what stakeholders? → guidelines?
- How to convince individual citizens to participate?
- How to involve the authorities and what is their role? → policy making

- Implement PV systems & testing/monitoring
KUL-TC Ghent
RES LEASING BY FINANCIAL INSTITUTE
Lead: HOP

→ implementation in testing VUB, KUL-TC Ghent.

HOW CAN WE MAKE SMART SOLUTIONS PAYABLE? (RESIDENTIAL)
need owner: VINCENT (DRO)

Business (flux50)

- What's the business model?
- What's the problem with the current model?
- To what level of flexibility do you need to go to achieve profitability (€)?
- What should be the main solution to embed consumers? → B2B

RESEARCH ACTIVITY

- TO DEVELOP ALGORITHMS TO KINDER INTO ACCOUNT FLEXIBILITY LCC/AG & MARKET CONDITIONS.
- PROVIDER OF AGG CAPABILITY: HOLLAND, SOFTWARE AVAILABLE.
- ASSOCIATED PARTNER: DSO, ENERGY SUPPLIER, MANAGER.

Feasibility study → flux50 / DROOP

- INITIATE INNOVATIVE PROGRAMS & SMART
- When substantial → CO2 / flexibility?
- Separate business → market B2B direct access (LCC being common regulatory framework...)
- What do final you want to pay for CO2 - incentive? LCC or SEAP
- open & flexible financing

GREENING OF HISTORICAL BUILDINGS/SITES?

How to make classical / protected buildings & monuments more sustainable?

- electricity
- heat / cold
- ventilation / isolation
- BIPV

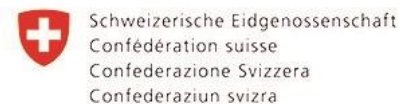
BIPV SOLUTIONS

BIPV RESEARCH (highlighted PV)

↓ OVERCOME response / evidence that prevent from applying BIPV

- FLEXIBILITY
- LEAD / HOP / participate (coordination) KUL-TC Ghent

ERA-Net SES RegSys funding partners



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