Climate, Energy and Mobility
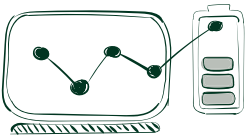
We are looking to collaborate in projects around the following topics:

1. Control Systems for Battery Management; although the advances in the chemical engineering for batteries is impressive we believe that advanced control systems for batteries will gain momentum as a means to extend and optimize the life of the battery, for instance by taking usage patterns into account. Our control systems group is interested in projects that push the limits on this subject.
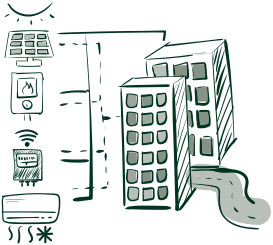
2. Demand Response Architectures for Energy; Almende's interest in demand response is fueled by our deep research into self organization in all aspects of society and our keen use of the appropriate technologies. Our expertise lies in building level demand response hardware combined with multilevel architectures for short-term demand prediction.
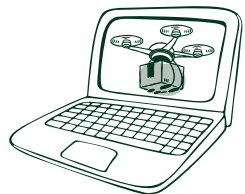
3. Collaborative Robotics and Simulation; our interest in cooperative robotics started ten years ago and we have made significant advancements to swarm behavior and distributed control. Our current goal is to make robotics equally flexible as software engineering by massive application of simulation technologies. Our open designs and focus on open source makes us an easy partner to collaborate with.
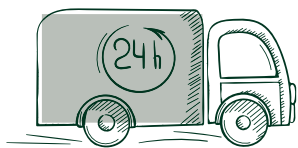
4. Demand-Driven Logistics; the concept of supply driven chains is extremely outdated and causes all kinds of problems in current logistics chains. We believe that the future of logistics is in demand driven chains - once that concept takes hold in logistics issues like pricing and multi modal trips become a lot easier to model and predict. We are interested in projects that can push this concept further.

Collaboration

The table on the next page shows the concrete calls that we have identified within the Horizon Europe Framework Programma - Cluster Climate, Energy and Mobility, which match with our ideas. Beyond these, we are nonetheless open to other collaborations as well.

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CALL	TITLE	TOPICS
HORIZON-CL5-2022-D2-01-03	Furthering the development of a materials acceleration platform for sustainable batteries (combining AI, big data. autonomous synthesis robotics, high throughput)(Batteries Partnership)	1
HORIZON-CL5-2022-D2-01-06	Embedding smart functionalities into battery cells (embedding sensing and self-healing functionalities to monitor and self-repair battery cells)(Batteries Partnership)	1
HORIZON-CL5-2022-D2-01-07	Digitalisation of battery testing, from cell to system level, including lifetime assessment (Batteries Partnership)	1
HORIZON-CL5-2022-D2-01-09	Physics and data-based battery management for optimised battery utilisation (Batteries Partnership)	1
HORIZON-CL5-2021-D3-02-05	Energy Sector Integration: Integrating and combining energy systems to a cost-optimised and flexible energy system of systems	2
HORIZON-CL5-2021-D3-02-06	Increasing energy system flexibility based on sector-integration services to consumers (that benefits system management by DSOs and TSOs)	2
HORIZON-CL5-2021-D3-02-07	Reliability and resilience of the grid: Measures for vulnerabilities, failures, risks and privacy	2
HORIZON-CL5-2022-D3-02-01	Digital solutions for defining synergies in international renewable energy value chains	2
HORIZON-CL5-2022-D3-03-08	Development of digital solutions for existing hydropower operation and maintenance	2
HORIZON-CL5-2021-D4-02-01	Demonstrating integrated technology solutions for buildings with performance guarantees (Built4People)	2
HORIZON-CL5-2022-D4-01-01	Demand response in energy-efficient residential buildings	2
HORIZON-CL5-2022-D4-01-03	Smarter buildings for better energy performance	2
HORIZON-CL5-2022-D4-02-04	Smart-grid ready and smart-network ready buildings, acting as active utility nodes (Build4People)	2
HORIZON-CL5-2021-D5-01-02	Nextgen EV components: Integration of advanced power electronics and associated controls (2ZERO)	2
HORIZON-CL5-2021-D5-01-13	Digital Twin models to enable green ship operations (ZWET Partnership)	3
HORIZON-CL5-2022-D5-01-05	Seamless safe logistics through an autonomous waterborne freight feeder loop service	3

CALL	TITLE	TOPICS
HORIZON-CL5-2021-D6-01-01	More powerful and reliable on-board perception and decision-making technologies addressing complex environmental conditions (CCAM Partnership)	3
HORIZON-CL5-2021-D6-01-02	Common approaches for the safety validation of CCAM systems (CCAM Partnership)	3
HORIZON-CL5-2021-D6-01-04	Cyber secure and resilient CCAM (CCAM Partnership)	3
HORIZON-CL5-2021-D6-01-07	More efficient and effective multimodal freight transport nodes to increase flexibility, service visibility and reduce the average cost of freight transport	4
HORIZON-CL5-2021-D6-01-08	New delivery methods and business/operating models to green the last mile and optimise road transport	4
HORIZON-CL5-2022-D6-01-01	European demonstrators for integrated shared automated mobility solutions for people and goods (CCAM Partnership)	3
HORIZON-CL5-2022-D6-01-03	Human behavioural model to assess the performance of CCAM solutions compared to human driven vehicles (CCAM Partnership)	3
HORIZON-CL5-2022-D6-01-04	Integrate CCAM services in fleet and traffic management systems (CCAM Partnership)	3
HORIZON-CL5-2022-D6-01-05	Artificial Intelligence (AI): Explainable and trustworthy concepts, techniques and models for CCAM (CCAM Partnership)	3
HORIZON-CL5-2022-D6-02-05	Advanced multimodal network and traffic management for seamless door-to-door mobility of passengers and freight transport	4