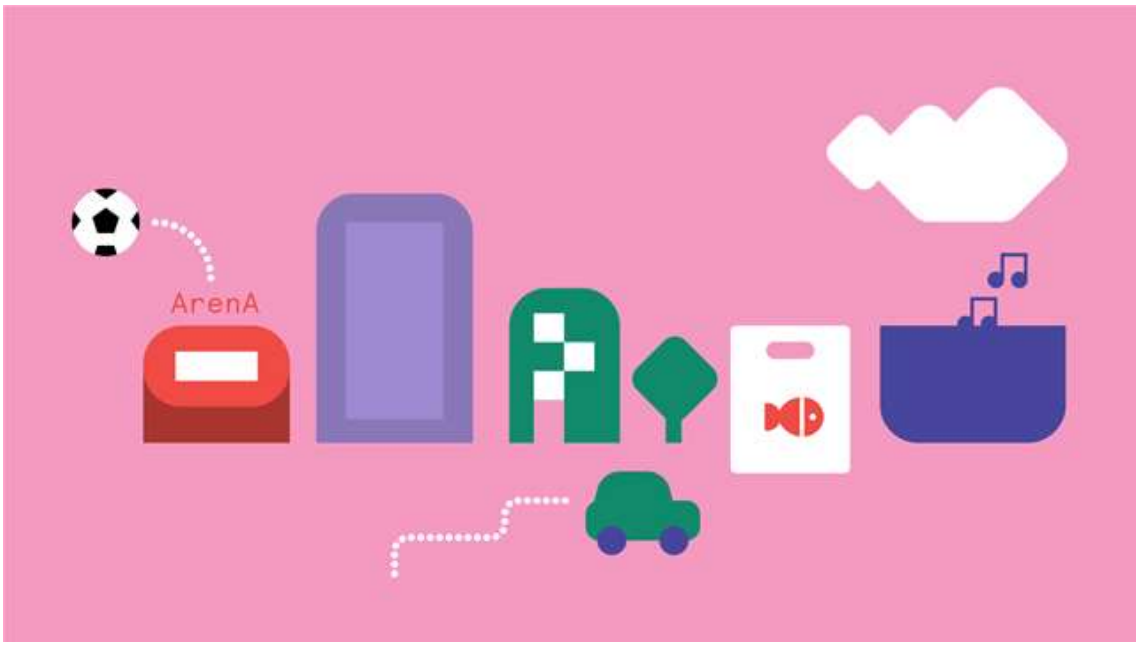
Local
Inclusive
Future
Energy

RVO yearly public report

Project number: MOOI32019

Project title:
Local Inclusive Future Energy (LIFE) City Platform



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Summary of the principles and objective of the project and collaborating parties:

The Local Inclusive Future Energy City Platform (LIFE) project aims to develop a district-scale energy management platform to resolve grid problems by optimizing local energy infrastructure, integrating renewable energy, and creating public support, focusing on the needs of end-users and local stakeholders in its design and implementation.

The key focus of this project is to lay the groundwork for the creation of a grid-integrated local energy market, and to do so in an inclusive manner. In short, can we avoid net congestion through flexible sharing of energy assets and provide an inclusive return, in a replicable and scalable way?

The proposed outcome of the project is to:

1. **research the technical, economic and organizational possibilities** of creating such a platform, and
2. **develop the necessary constituent parts** that will make up and connect to the platform, most notably the Digital Twin (result 2), MultiMarketModel and LIFE applications (result 5), the Next-Generation Grid Management System (result 4), and
3. **demonstrate the successful control, operation and integration of certain asset submodules** within the platform (such as batteries and ATES systems), in some cases virtually, and
4. **develop a strategy for the successful future demonstration of the whole LIFE platform** with various stakeholders involved, and
5. **generate and spread knowledge and know-how** amongst both the consortium partners and end-users of the platform.

Description of activities carried out, results achieved per milestone, bottlenecks and prospects for application:

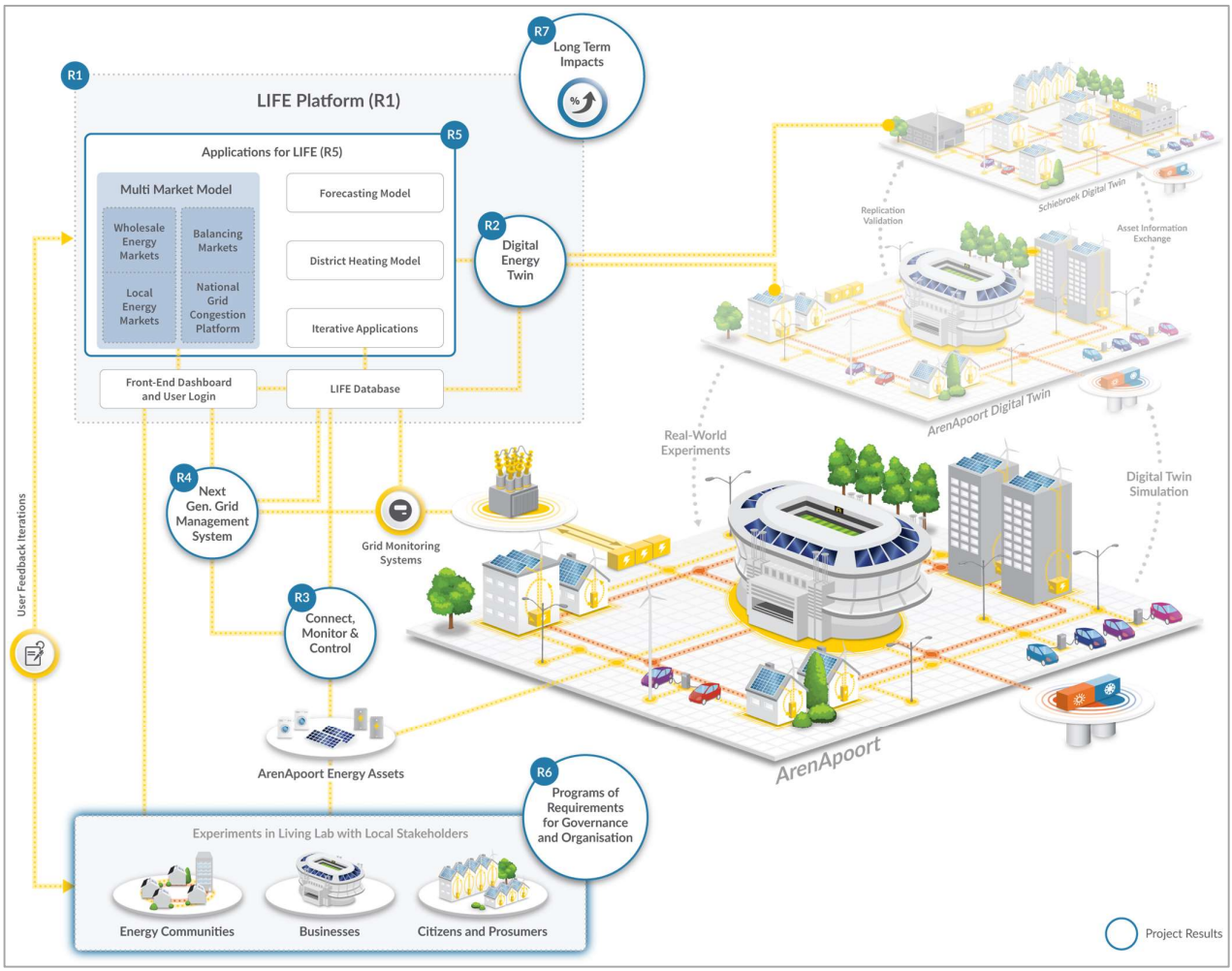


Figure 1 - Overview of LIFE project outputs

In it's first year of implementation, LIFE has been through the setup phase to align all partners, currently working through the first main cycle of integrated design & engineering, and initial engagement activities with some of the identified key stakeholders in the area. Project partners have signed on to the consortium agreement and agreed to the project plan, setting up internal teams with budgets and timelines to work on the activities. Working groups with multiple partners involved were setup to design solutions to the key technical and social engagement challenges.

Building on experience from previous and currently ongoing projects, the LIFE project partners have laid the foundation for each of the milestones in this first year. A stakeholder inclusion and engagement plan has been drafted, which will guide future project interactions with stakeholders in the ArenApoort and Schiebroek area. The stakeholder engagement plan is going to be a "living" document throughout the project, thus will be updated based on new insights to effectively engage with existing and new stakeholders. Modules for the Digital Twin and visualisation dashboard have been prepared, and discussions are under way

within Alliander for procurement of detailed grid information necessary for congestion management. Preparations have been made to soon contact the large energy asset owners in the area that have provided a Letter of Support to the project at the proposal stage, in order to connect these assets to the LIFE platform. A significant set of use cases have been identified to support the design and testing of the platform through co-creation in mixed groups with members from all partners. This use case repository will support agile & iterative application development for the platform in relation to stakeholder needs, which is a driving factor in the design of the platform components and their interactions. A website and animation film describing the project were created for general communication purposes.

Corona lockdowns during 2021 have been a major source of delay in this initial phase of the project, where only two physical project meetings could be organised (in May and November) to break the ice and build working relationships between partner representatives. However, once the lockdowns ended in 2022, a physical project working day and location was arranged to encourage partners to work together as much as possible and stimulate discussions, leading to better collaboration, communication and productivity.

Contributions to the MOOI programme objectives:

The LIFE project contributes to a number of Innovation Themes within Mission B: Built Environment (Gebouwde Omgeving), including (in Dutch):

- Innovatiethema 4 – Slim energiegebruik in/tussen gebouwen door haar gebruikers
- Innovatiethema 6 – Flexibiliteit van/voor het energiesysteem (in de gebouwde omgeving)
- Innovatiethema 7 – Systeemontwerp voor het elektriciteitssysteem in de gebouwde omgeving
- Innovatiethema 8 – Lokale flexibiliteit ten behoeve van het totale elektriciteitssysteem

The activities in LIFE will further technical, social, financial and regulatory know-how of Dutch companies, knowledge institutions, social engagement groups and governments in supporting further electrification of the built environment (to cut-off from natural gas usage) by developing solutions for a reliable and affordable electricity system based on local renewables, smart storage and flexible energy use.

Specifically, LIFE will develop an adaptable, inclusive smart energy system to allow for 1) better matched supply and demand to allow for more local renewable energy installation; 2) manage and optimise energy demand (incl. heat-net) at a district scale between buildings; and 3) utilise aggregated flexibility to solve local grid issues to set an example for the future of urban energy systems.

Spin-offs within or outside of the sector:

There has not been a concrete spin-off from this project as of this moment, but since members from the LIFE project consortium are deeply involved in other related activities we expect cross-organizational learnings will happen within and beyond the project. For example, the LIFE project is part of the Energielab Zuidoost that brings research and public organizations together in their focus on a sustainable and social energy transition in Amsterdam Zuidoost. We are also confident that the involvement of the Rotterdam

municipality and companies such as Enertrans and Spectral will result in additional spin-off effects.

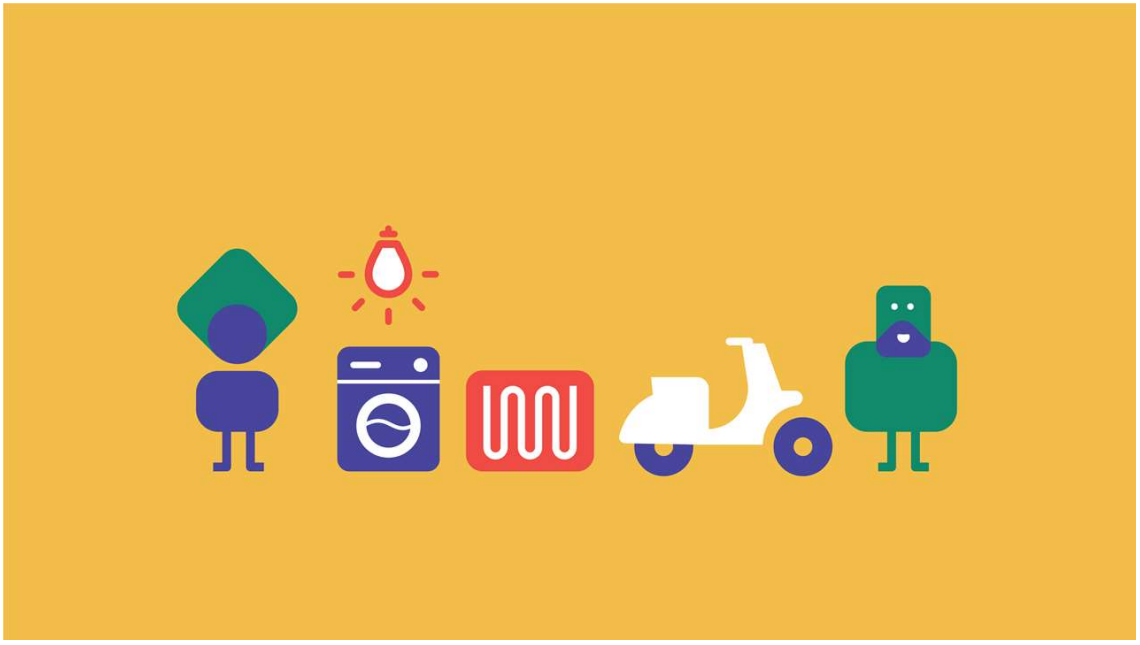
Overview of publicly available publications:

See project website: https://www.energielabzuidoost.nl/about-3

and https://www.ams-institute.org/urban-challenges/urban-energy/local-inclusive-future-energy-life-city-platform/

No academic papers have been completed or published at this point in time, but the LIFE project has already been subject of several external presentations.

- https://reinventingthecity.dryfta.com/program-schedule/program/30/inclusive-and-sustainable-design-of-the-arenapoort-energy-system
- https://www.ams-institute.org/events/ams-urban-living-lab-winter-school-2022/
- https://dezwijger.nl/programma/slimme-energie-in-zuidoost
- https://openresearch.amsterdam/nl/page/83127/presentation
- https://openresearch.amsterdam/nl/page/71786/lab-1-lokale-slimme-energiesystemen
- https://openresearch.amsterdam/nl/page/73015/livecast-slimme-energie-in-zuidoost
- https://openresearch.amsterdam/nl/page/71787/presentatie-life-city-platform



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