

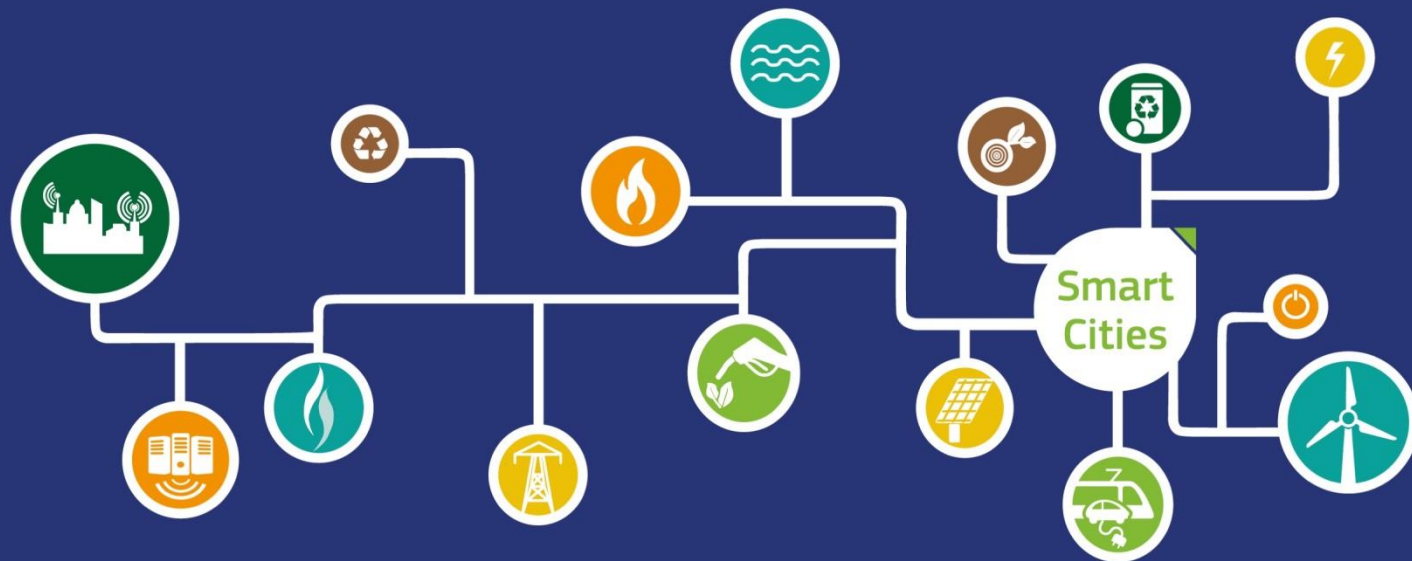
Empowering smart solutions for better cities

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iURBAN: multilevel, integrated, and scalable smart city

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In a nutshell

iURBAN addresses increasing market demands
for **cheaper** and **cleaner energy** through:

- enhanced energy solutions
- flexible energy services
- user-oriented approach

iURBAN is designed with the direct involvement of the end users, the local authorities and the energy utilities

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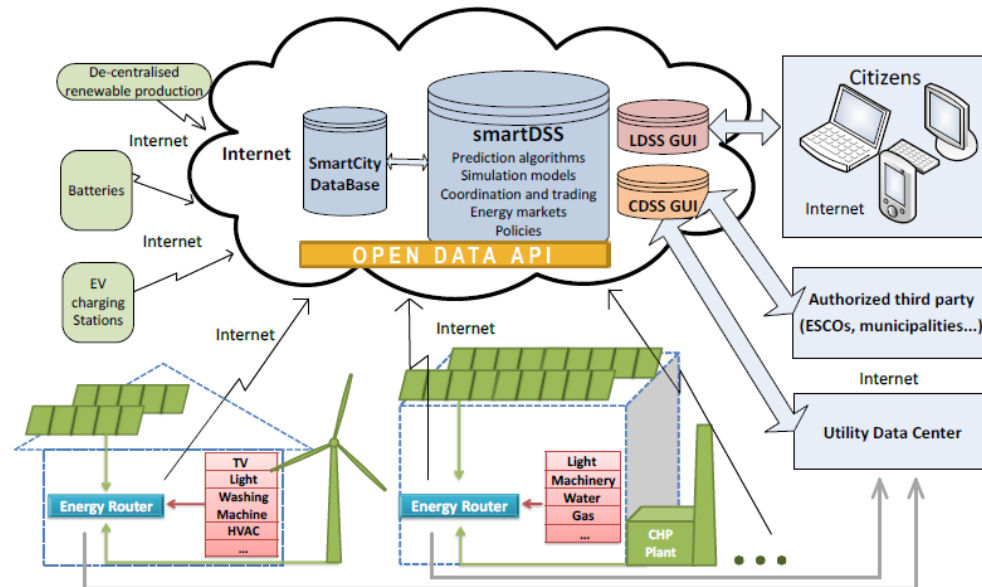


Technology

- *iURBAN Smart Decision support system*

Unifies algorithms for forecast, simulation, visualization and procession of energy data

Collects consumption and production data for electrical, Heat and gas energy



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The iURBAN Pilots: *Plovdiv (BG) and Rijeka (CR)*

- ***Plovdiv (Bulgaria)***
 - 18 residential buildings
 - 1 administrative building
 - 7 kindergartens with solar thermal collectors for Domestic Hot Water
 - 2 office buildings with PV panels
- ***Monitors consumption and production of electrical and heat energy monitored***
- ***Management of heating installation***
- ***Simulations, forecasts and prognosis for energy consumption and production on city level***

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Innovation

iURBAN combined innovation on a few levels:

- Big Data Analytics and distributed intelligence integrated in the iURBAN solutions
- Engagement of citizens as leading actors on the energy market
- Introducing the prosumers to the energy markets
- New business models involving all stakeholders
- Smart City Validation Protocol and KPIs
- Robust security and privacy frameworks

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Innovation

The smart decision support system functionalities

| Local DSS | Central DSS | |
|--|---|--|
| For individual customers | For local authorities and energy providers | For prosumers |
| Visualization, forecast and simulation of individual energy consumption data | Visualization, forecast and simulation of energy consumption and production on city level | Visualization, forecast and simulation of energy production |
| Regular, flexible and dynamic tariffs | Flexible and dynamic tariffs | Virtual power plant |
| Notifications and management of home equipment | Energy losses | Notification and advice on optimisation of energy production |
| Informational materials and advice | Invoices and inquiries | |

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Innovation

- **Prosumer inclusion in iURBAN proved a win-win partnership with significant impact:**
- 86 MWh DHW produced in 7 public buildings
- 23 t CO₂ saved
- Av. payback = 4.6 y (in reality, even lower)
- Financial savings = 4 000 Eur

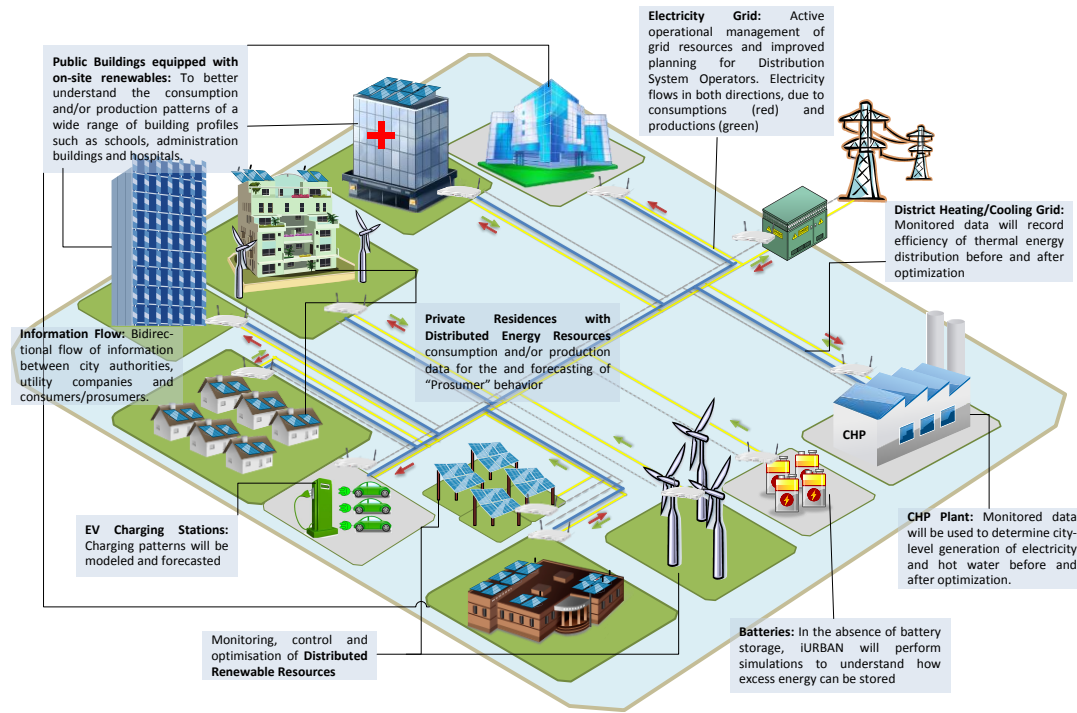
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Innovation

- **Virtual power plant**

module of the smartDSS unifying algorithms for forecast and prognosis of the consumption and production of energy and simulation of installed energy capacities on city level



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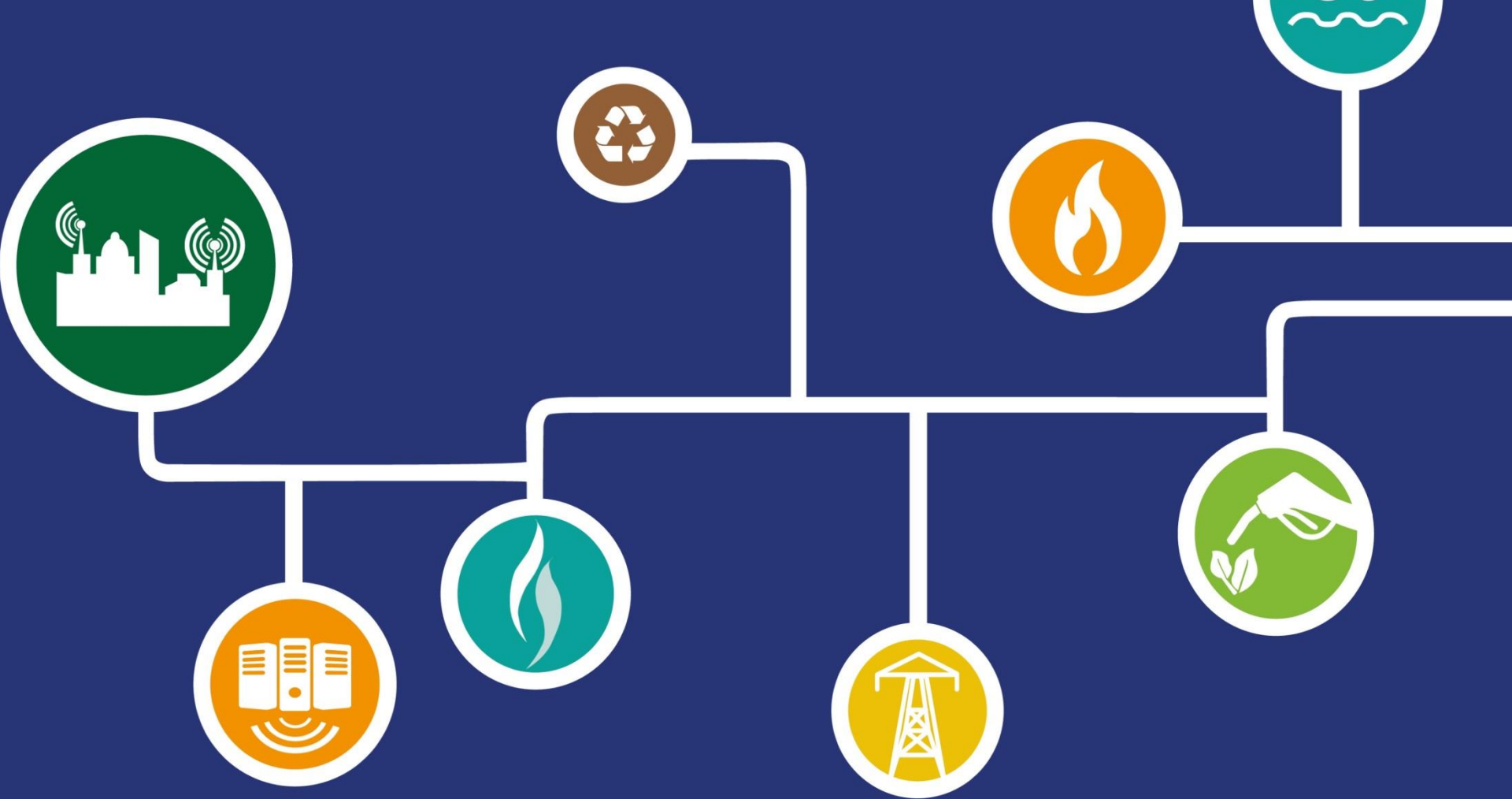


Lessons learned

- Sky is the limit when it comes to Innovation
- EMS are a-must tool for urban energy planning. Have great potential for optimisation of energy consumption and decrease of the CO2 impact
- Involving all key actors is crucial. New business models are key to successful future collaboration
- Technology is difficult to tackle, but communication with end users is even more

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THANK YOU !