

M. CAPEZZALI ¹, G.CHERIX ², L. DARMAYAN ², S. RESTANI ², P. PUERTO², J. RAGER¹
¹ ENERGY CENTER, ECOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL), SWITZERLAND
² CENTER FOR MUNICIPAL ENERGY RESEARCH MARTIGNY (CREM), SWITZERLAND

Platform MEU – Main features and functionalities

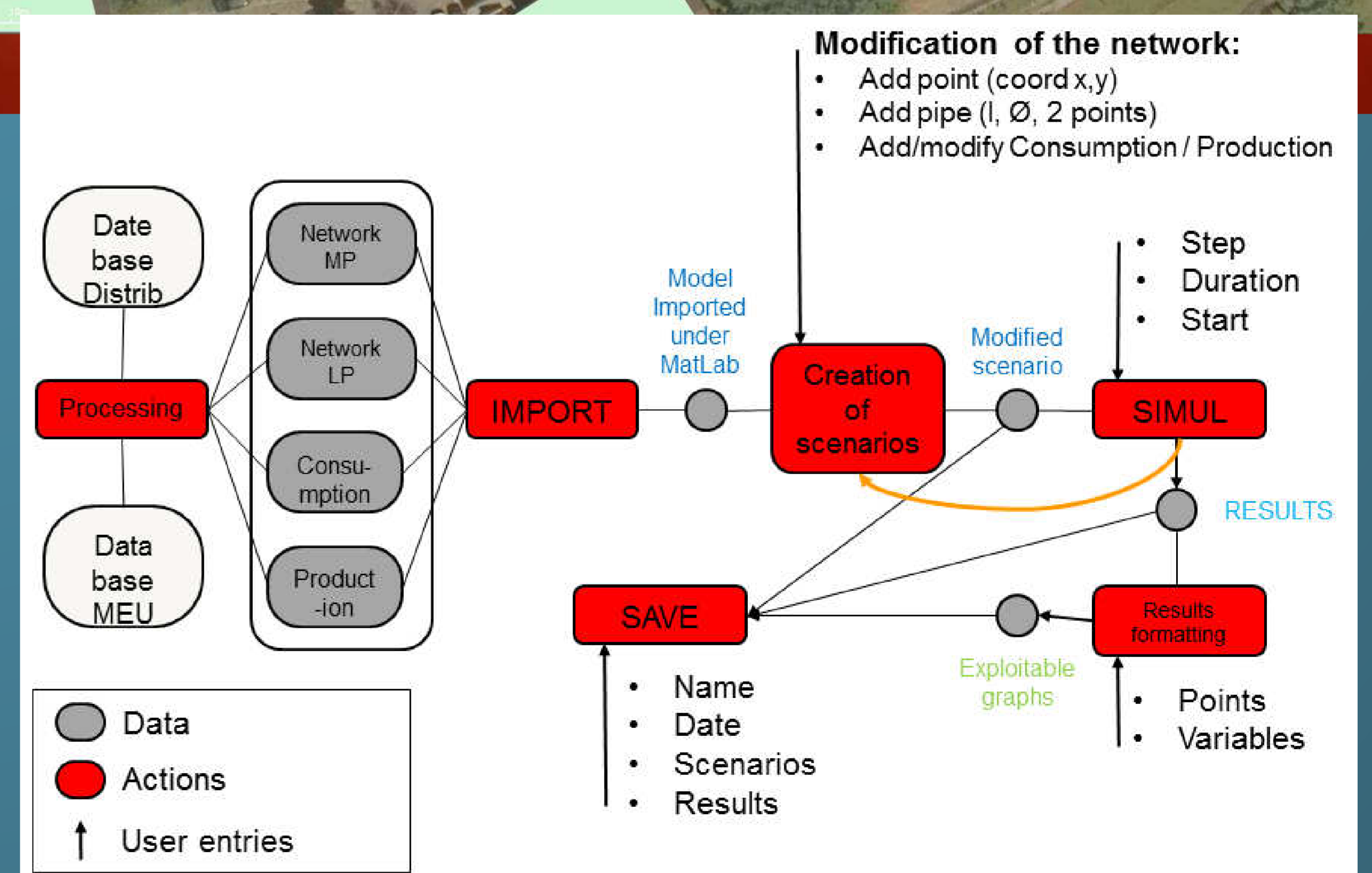
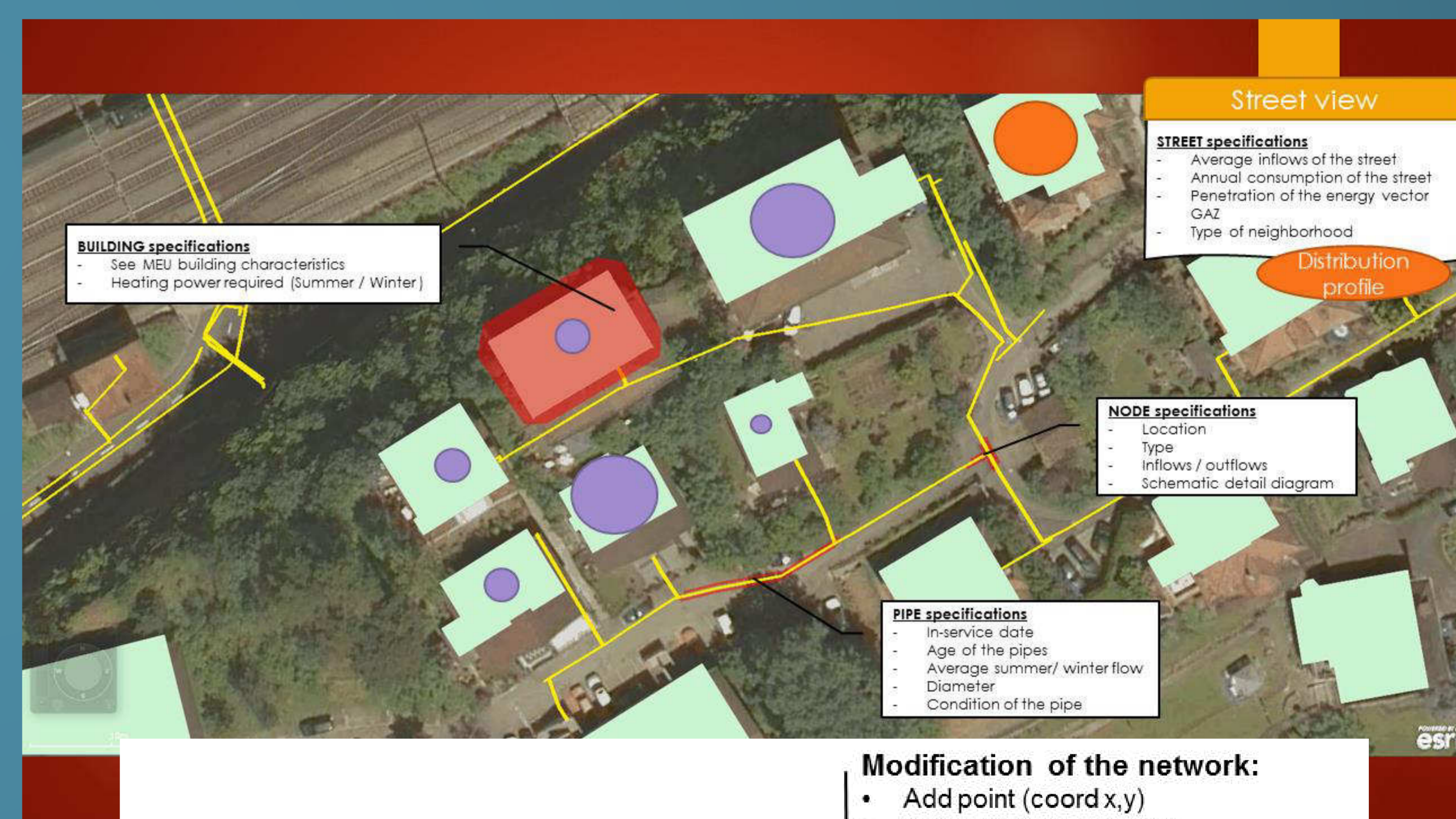
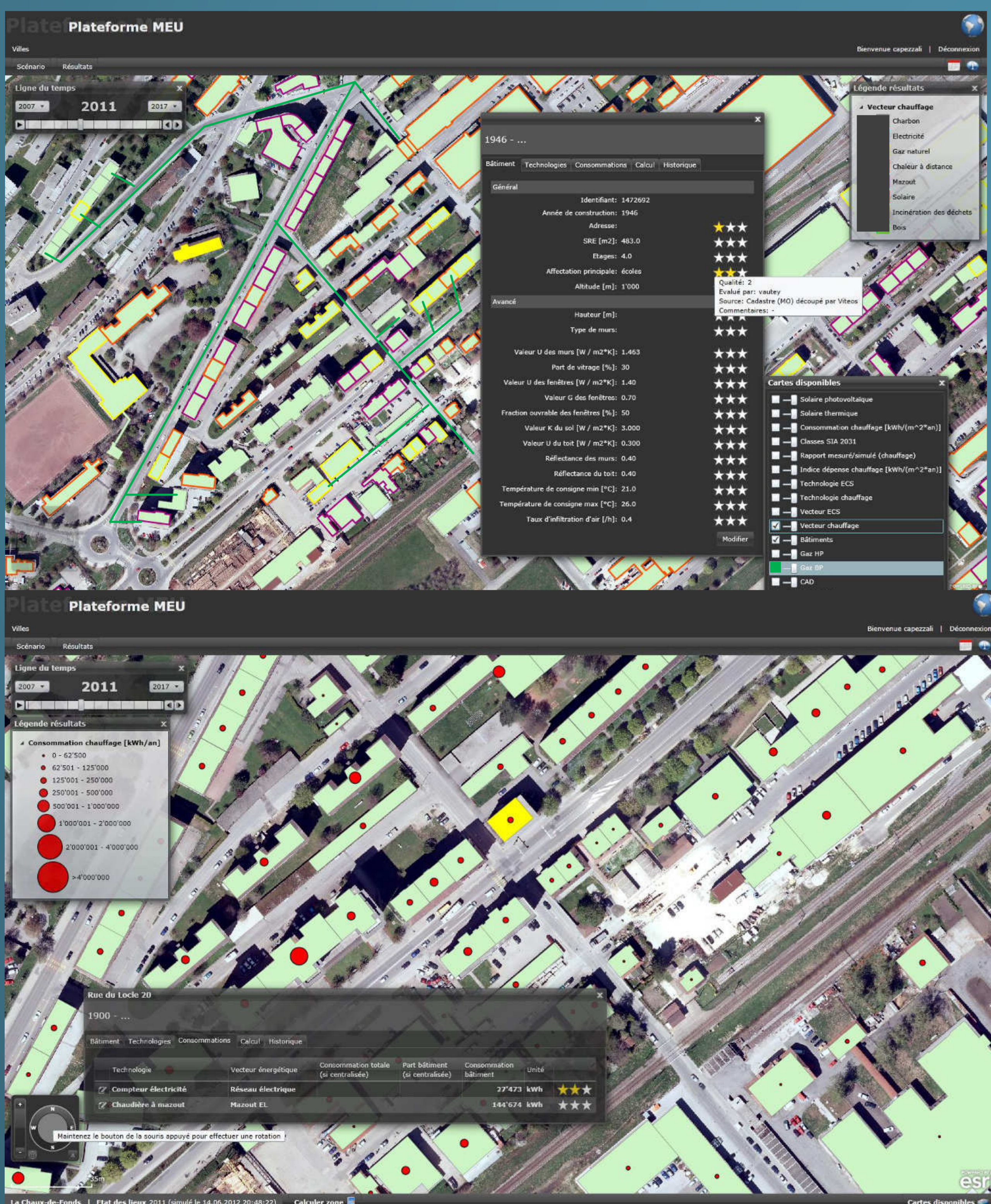
- Developed in direct collaboration with four Western Switzerland cities and local utilities : La Chaux-de-Fonds, Lausanne, Martigny, Neuchâtel - SIL, Sinergy SA and Viteos SA
- Cartographic GIS-enabled interface as main working environment, with possibility to readily switch years
- Web-based platform fed by way of ArcGIS Server (ESRI) services and maps
- Calculation of a complete set of energy-related and environmental yearly indicators for an urban zone at both building (demand) and supply levels, displayed either as detailed tables or as maps and easy-to-visualize symbols;
- Continuous monitoring on a yearly basis of detailed energy flows, aggregated and individual buildings consumptions, as well of the energy-related actions
- GIS-enabled database representing a faithful detailed energy picture of the city at any available year
- Step-by-step comprehensive approach to urban energy planning by way of scenarios directly created by the users – with typical user-friendly library functionalities -, on the basis of real data for a given year.

Platform MEU – Buildings and energy networks

- Buildings ID and physical data (default or manual)
- Energy conversion technologies and services
- Energy supply fully characterized (incl. contracts)

Platform MEU – Indicators for monitoring/planning

- Energy consumptions (building level or aggregated)
- Primary energy and GHG emissions
- Cartographic and symbolic display or as tables



Platform MEU – Additional functionalities towards predimensioning tool

Move beyond “static” visualization of networks → add geo-localized attributes + allow network computations

- Create additional module allowing testing of different pre-designed scenarios, in order to simulate the behavior of each scenario and to compute/display dynamic data on the considered network (e.g. natural gas)
- Cartographic interface prototype of the energy network module, giving access to several specification levels (building, pipe, node, street aso.) → presently in development
- For NG networks, simulations based on perfect compressible gas model, built on conservation of molar flow rate through each node, including linear pressure loss eqn. → display as graphics presently in development