PROJECT

SUD

Dynamic Urban Systems

Systèmes Urbains Dynamiques

Funding: National (France)
Duration: Jan 2014 - Jan 2018
Status: Complete

Background & policy context:
The consumption of energy is expected to increase by 2030 and 2050 because of population growth. As a consequence, daily and seasonal peaks in electricity demand will increase. These combined effects cannot be cross analysed with current general methodologies assessing environmental and energy consumption impacts.

This calls for a change in the analytical framework of urban systems in order to enable a cross analysis of urban structures on the medium and long term as well as their impacts in peak demand.

Objectives:
The SUD project (Dynamic Urban Systems) aims to remove these scientific and operational barriers, and will develop a highly integrated system-dynamics modelling approach based on the various flows that affect the urban system (transportation, energy in building sector).

The SUD model will enable the set-up of scenarios with a number of clearly defined assumptions and modelling parameters, including social and economic constraints. This will allow an accurate assessment of current environmental impacts and technological solutions. It will also assess the sustainability of urban systems and their capacity to smooth peaks in demand to match supply (for example, dynamic management of energy demand with the development of smart grids, energy storage, etc.)

Parent Programmes:
VBD - Sustainable Cities and Buildings

Institute type: Research agency
Institute name: Agence Nationale de la Recherche (ANR)
Funding type: Public (national/regional/local)

Partners:
- CITERES Laboratoire Cités, TERritoires, Environnement et Sociétés
- ARMINES CMA Armines Centre de Mathématiques Appliquées de MINES ParisTech
- ENERGIES DEMAIN Energies Demain
- ENIA Enia Architectes
- INNHOTEP INNHOTEP
- CNRS-LET Laboratoire d'Economie des Transports
- IFSTTAR Laboratoire Génie des Réseaux de Transports Terrestres et Informatique Avancée
- LEMA Laboratoire Local Environment Management and Analysis

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Organisation Website: Organisation website

STRIA Roadmaps: Other specified
Transport mode: Multimodal transport
Transport sectors: Passenger transport, Freight transport
Transport policies:
Decarbonisation, Deployment planning/Financing/Market roll-out, Environmental/Emissions aspects, Societal/Economic issues
Geo-spatial type: Urban