

RUGGEDISED



DESIGNING SMART, RESILIENT CITIES FOR ALL





SMART CITY PROJECT

RUGGEDISED tests and implements smart solutions, from energy, transport to digital technology, in three large-scale 'Lighthouse' city test-beds to pave the way towards a smarter, more sustainable Europe.

Working in partnership with businesses and research centres these six cities will demonstrate how to combine ICT, e-mobility and energy solutions to spur innovation, boost market uptake of smart solutions with higher energy and environmental standards and thereby reduce energy consumption, noise, CO₂ and pollutant emissions to create smart, resilient cities for all.



PROJECT AIMS



- 1 Improving the quality of life of citizens,** by offering them a clean, safe, attractive, inclusive and affordable living environment.

- 2 Reducing the environmental impacts of activities** by achieving a significant reduction of CO₂ emissions and a major increase in the investment and usage of renewable energy sources.



- 3 Creating a stimulating environment for sustainable economic development** by generating more sustainable jobs and inspiring community involvement in smart solutions.

32 SMART SOLUTIONS



SMART THERMAL GRID

Intelligent use of the thermal mass of buildings for thermal energy storage and exchange. This also includes peak load variation management using monitoring and governing platforms.

THERMAL ENERGY DISTRIBUTION

THERMAL ENERGY STORAGE

100% RENEWABLE ENERGY BUSINESS MODEL

THERMAL EXCHANGE & CONNECTED BUILDINGS



SMART ELECTRICITY GRID & E-MOBILITY

Smart interaction and integration of energy systems largely based on **renewable energy resources** at district level. **Integration of smart charging hubs** to balance the peak variation in the electricity network by charging electric vehicles in central places in the districts to facilitate electro-mobility.

GREEN PARKING

ELECTRIC BUSES

E-CHARGING INFRASTRUCTURES

RENEWABLE ENERGY STORAGE



ENERGY MANAGEMENT AND ICT

Integration and consolidation of low carbon and interoperable ICT systems at district level. Open 3D models, based on available open data of the districts, will contain a representation of the public spaces and buildings, making it possible to monitor and communicate all kinds of information.

ENERGY DATA MANAGEMENT

SMART OPEN DATA PLATFORM

DEMAND-SIDE MANAGEMENT

INTELLIGENT STREET LIGHTING

A complete overview of all the solutions and related technical factsheets are available at: www.ruggedised.eu



SMART SOLUTIONS LIVING LABS

3 LIGHTHOUSE CITIES



ROTTERDAM

Rotterdam, as the Netherlands' second-largest metropolis has a diverse, multiethnic community, and an important maritime tradition centred on Europe's busiest port. As coordinator of the RUGGEDISED project, the City of Rotterdam has at the heart of its regeneration programme the aim to spur innovation for new job creation, maximise energy efficiency and create a stable society ready to embrace the challenges of now and the future. Visit Rotterdam's Heart of the South to find out more.

WITH ENTHUSIASM ROTTERDAM WANTS TO INTRODUCE THE HEART OF SOUTH AREA AS THE ROTTERDAM LIGHTHOUSE DISTRICT IN WHICH IT WILL IMPLEMENT 13 SMART SOLUTIONS.

GLASGOW

Glasgow is undergoing the most important transformation in its history from an industrial city to a sustainable, resilient and low-carbon city focused on the future. Through RUGGEDISED, Glasgow will address the very real societal, economic and environmental challenges it faces from ageing infrastructure, fuel poverty and air pollution by integrating planned regeneration and development with smart city capabilities. Visit Glasgow's Smart Street to find out more.

THE SMART STREET'S 10 SMART SOLUTIONS WILL LOOK AT: DISTRICT HEATING, PV CANOPY, DUCTED WIND TURBINES, ENERGY ARBITRAGE, POWER STORAGE, EV CHARGING, AND SMART GRID CONTROLS.



UMEÅ

Umeå is a fast growing city in Northern Sweden of progressive and environmental-friendly citizens. Smart city thinking is at the core of the City of Umeå's overall vision of continued social, economic and environmental sustainable growth. In RUGGEDISED, Umeå will focus on creating local energy systems, smart open data platform and most importantly, neighbourhoods providing a safe, enjoyable and a creative living and working environment. Visit Umeå's University District to find out more.

RUGGEDISED WILL FACILITATE A UNIFIED 'SMART DISTRICT', WHICH IS UNDERPINNED BY PLANNED REGENERATION AND NEW DEVELOPMENTS, EXISTING SMART CITY CAPABILITIES AND COMMITTED PUBLIC AND PRIVATE SECTOR INVESTMENTS.

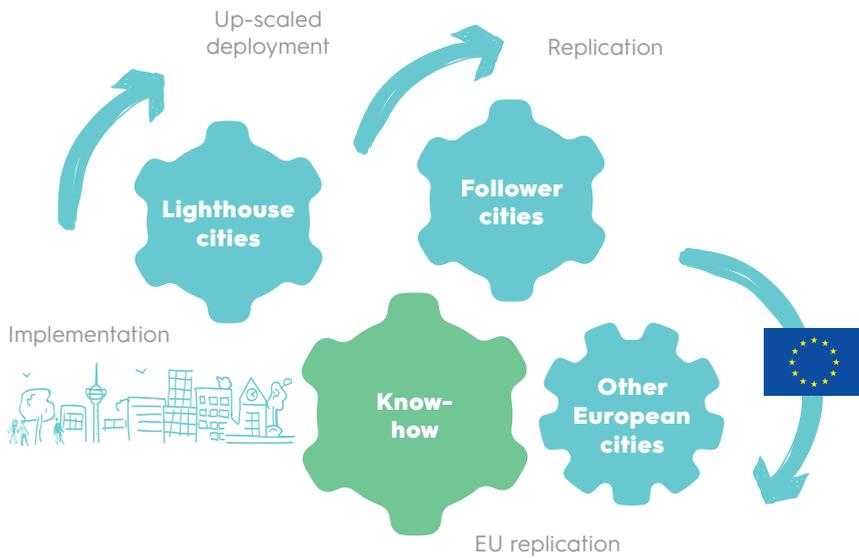


REPLICATION OF SMART SOLUTIONS

3 FOLLOWER CITIES

To support the smart city model uptake, three follower cities Brno, Gdansk and Parma will closely monitor the lighthouse cities to learn from their experiences, to identify measures suitable for their specific local context and build up a catalogue of learning which can be passed on to other cities.

RUGGEDISED will develop a guide on how to replicate the smart city model in practice, following the experience collected throughout the project. The guide will be accompanied by a toolkit of resources, such as a technical and thematic factsheets, teaching cases, and business models.



CAPACITY BUILDING

RUGGEDISED will run a host of capacity building events for policy makers and practitioners to reproduce the smart city urban model to their local context.

CONFERENCES
Knowledge exchange with city peers, businesses and EU representatives

THEMATIC WEBINARS
In-depth capacity building on thematic smart solutions

STUDY VISITS
Onsite hands-on learning experience

NEWSLETTER
Tri-annual progress update on smart solutions implementation in the lighthouse cities



JOIN THE RUGGEDISED CITY INTEREST GROUP!

Fill the application form: www.ruggedised.eu



CONTACT

E info@ruggedised.eu
W www.ruggedised.eu
T @Ruggedised
in Ruggedised EU



PARTNERS

RUGGEDISED is run by a project team of city, academic, and industrial partners that bring together a considerable wealth of expertise and experience with developing and implementing higher energy and environmental standards in cities.

City of Rotterdam	UMEÅ KOMMUN	Glasgow City Council	SP ENERGY NETWORKS	ISI INOVA	AIT AUSTRIAN INSTITUTE OF TECHNOLOGY	TNO innovation for life
RSM ERASMUS UNIVERSITY	UMEÅ UNIVERSITY	Strathclyde Glasgow	BRNO UNIVERSITY OF TECHNOLOGY	BRNO	Comune di Parma	GDAŃSK
Ballast Nedam	RET	Eneco	kpn	AKADEMISKA HUS	UMEÅ ENERGI	Upab
TRANSPORT SCOTLAND	T	SIEMENS Ingenuity for life.	> pictec <	UNIRESEARCH	INTOMOBIILITY	FUTURE INSIGHT
I.C.L.E.I Local Governments for Sustainability	GHA	RI SE	GIWK	County Council of Västerbotten		

AUTHOR ICLEI Europe - Local Governments for Sustainability European Secretariat, Leopoldring 3, 79098 Freiburg, Germany **DESIGN** unger+ kreative strategien GmbH



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731198. The sole responsibility for the content of this document lies with the RUGGEDISED project and does not necessarily reflect the opinion of the European Union that not responsible for any use that may be made of the information it contains.