

Hamburg KPIs

The Smart Energy City, as a core to the concept of the Smart City, provides its users with a liveable, affordable, climate-friendly and engaging environment that supports the needs and interests of its users and is based on a sustainable economy. The Smart Energy City is highly energy and resource efficient, and is increasingly powered by renewable energy sources; it relies on integrated and resilient resource systems, as well as insight-driven and innovative approaches to strategic planning. The application of information, communication and technology are commonly a means to meet these objectives.

KP1 Resource system integration

	Level 1	Level 2	Level 3	Level 4
Integrated energy planning	Development of Climate Action Plan		Development of Master Plan for Climate Protection	Increased use of district heating and distributed generation
Development of ICT use	Development and expansion of smart grids		Energy Plans based on "efficiency", networks", and "RE"	Hamburg established its Open Data Portal
Use of ICT tools in city planning and mgmt.	Development of Energy Atlases for Hamburg		Implementation of "Hamburg information management"	Establishment of virtual collaboration platform for city administration
Waste (integration with resource systems)	Innovative methods to recover energy from waste and waste water			
Transportation (integration with energy systems)	Installation of hydrogen filling stations	Hydrogen fuelled buses being tested	Integration of E-Mobility in Urban Planning	

KPI2 Access to energy services

	Level 1	Level 2	Level 3	Level 4
Access to affordable energy services	District heating covers 19% of heat requirements			
Level of energy services provided	Smart meter tariffs but no smart tariffs for private customers	High number of small scale RE, local subsidy programme	Pilot projects of smart end-use technology	

KP3 Resilience

	Level 1	Level 2	Level 3	Level 4
Self-sufficiency distributed generation	Many with with new RE technologies		And many new RE applications	

KP4 Energy efficiency

	Level 1	Level 2	Level 3	Level 4
Reduction of energy use	Hamburg offers an advisory program for in-plant EE for companies		It covers energy, water, chemicals and waste	
Increasing efficiency	Restructuring of Hamburgs power grid: grid automation			
Increasing efficiency in the supply system	Construction of an efficient combined cycle-plant for DH supply		Installation of heat accumulators for storage of RE	
Increasing end-use energy efficiency	Hamburg offers an advisory program for in-plant EE for companies		The city has established an eco-Renovation and retrofitting of building stock	
Reduction in primary energy demand	Specific energy savings are calculated			

KPI5 Renewable energy

	Level 1	Level 2	Level 3	Level 4
Production of electricity and heat from RES	The city strategy is to substitute finite resources with RE	Establishment of a city owned energy supplier	Initiatives within solar, deep geothermal energy and wind	
Level of public and private investment in developing RES	Realisation of a 10MW solar energy project	with participation of citizens via assets		
Penetration of RE in the city's energy portfolio	Restructuring Hamburgs power grid for integration of RE	Significant investments in wind-to-heat, solar atlas, solar energy and wind		
GHG emissions caused by energy production & transportation	Implementation of Master Plan for Climate Protection	emissions by 40% in 2020 and 80% in 2050	Plans for onshore electricity supply for vessels in the port	

KPI6 Active users

	Level 1	Level 2	Level 3	Level 4
Smart City-reflective behaviour	Nearly 500 projects have been realised in the Climate Action Plan 2007-12	The new Masterplan for Climate Protection offer a holistic approach to CO2	Targetting an ECO partnership, a JV between the city and commercial sector	
Formal& informal hubs and innovation centers	The ECO-partnership encourages companies to go beyond	KlimaCampus was established in 2007 is a network of climate	KlimaCampus includes experts from 18 different institutes	
Self-sufficiency by users	Hamburg has had a dynamic process over the last 10 years	The process covers planning, economic, social and ecological development	The process involved most of the city's stakeholders	
Engagement from users	emission reduction has been carried out by 11 industrial companies	The self-commitment has ben expanded to 15 compnies in a new target	Council Hamburg, with 110 member organisation tries to achive more sust dev.	
Investment	The city has invested 22 million Euro per year since 2007			

KPI7 Sustainable economy

	Level 1	Level 2	Level 3	Level 4
Investment in innovation (public&private)	The ECO-partnership has been joined by 1500 companies	The EEHH network is set up to strenthen and promote cooperation		
Availability and prevalence of green jobs in the city	It is estimated 25,000 people work in the field of RE in Hamburg	It is expected to grow with 40% by 2015		
Green initiatives	BAUM, N Klub, Umwelt-Stammtisch			

KPI8 Smart Governance

	Level 1	Level 2	Level 3	Level 4
Local stakeholders involved in investment and maintenance	Many stakeholders were involved in the dev. of the master Plan	50 external stakeholders were involved		
Governance				
e-Governance				
Standards for data collection and analysis				
Government engagement with users	A Climate Portection Fund and Energy Fund can co-finance projects	The Partnership Hamburg Port has almost 1000 environmental partners	An annual Environmental Industry Summit addresses SMEs	