Local Government Climate Roadmap

Strong and Comprehensive Post-2012 Global Climate Agreement

Copenhagen 2009
UNFCCC COP 15

Poznan 2008
UNFCCC COP 14

Bali 2007
UNFCCC COP 13

LOCAL ACTION FOR CLIMATE PROTECTION AND ADAPTATION – A SERIES OF LOCAL STORIES

Valga, Estonia

Reducing energy costs through smart renovation

STORY IN SHORT: The Valga Municipality implemented the first passive house building renovation pilot project in Estonia - utilising modern technologies and building design to achieve more than 90% energy savings in the Kaseke kindergarten. This project is drawing extensive attention due to its innovative approach, the huge reduction in energy demand in a cold climate where heating is typically required, and because it was initiated by a municipality.

Municipal leadership in renovating local kindergarten

The Valga Municipality identified the need to renovate and extend a kindergarten building constructed in 1966. This building had poor construction quality, insufficient insulation and heating systems that could not be regulated. Motivations to act were wide-ranging and included:

- reducing energy demand in this particular building;
- avoiding rising energy costs for the municipality;
- raising awareness of citizens on the importance of energy savings,
- drawing attention to the remote town of Valga.

The Municipality decided to refurbish the kindergarten to passive house standard in an area with an average temperature of 5 degrees Celsius (°C), showing that it is possible to renovate a building energy efficiently, creating a comfortable public space and drastically reduce primary energy demand - from 250 kilowatt hours per square meter per year (kWh/m2/p.a) to around 15 to 17 kWh/m2/p.a.

Passive house standard achieved
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Responding to a challenging environment

Despite general concerns about energy security and the impact of energy on the climate, there is still limited awareness in the country of the need to change energy consumption. The Estonian national energy conservation strategy is also not yet driving legislative enforcement to improve building standards. These standards need to be aligned with the European Energy Performance in Buildings Directive (EPBD). In general building and planning regulations, as well as procedures, are not sufficiently comprehensive or effective. There is also no national financial incentive scheme to support change.

Energy costs in buildings - where do we stand today?

Passive house 15 kWh/m² p.a.
3 litre house 30 kWh/m² p.a.
New homes 50 kWh/m² p.a.
Standard renovation 100 kWh/m² p.a.
Existing building stock 200 kWh/m² p.a.

Green environment of Valga
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Building concept and technologies

From a comprehensive survey, the actual project duration - from planning to tendering and construction – was just under two years. The aims were to use energy efficiency criteria, but also to create the best possible indoor climate, selecting technical solutions that were economically reasonable and that corresponded to the passive house standard.

An open public procurement process was used to identify the construction company. The building plans were reviewed by an independent technical expert, as part of the tendering criteria. Technological improvements included a new ventilation system with heat recovery units, excellent insulation, solar panels with accumulation tanks, and connection to a district heating system running on biomass.

Funding and project team

The project, initiated and managed by the Municipality of Valga, was funded by the European Regional Development Fund (ERDF) through the Investment Donations Programme for Local Municipalities (KOIT) of Estonia, with a grant of just over 1 million Euro. The total project cost, including technical design, assessments, construction, supervision and supply of equipment and furniture was about 1.45 million Euro.

The renovation design was handled by a local engineering company, OÜ K&M Projektbüro, with building plans reviewed by an external expert - OÜ IB Aksiaal. The technical assessment of the design was carried out by the Laboratory of Energy Efficient Building of the Technology Institute of Tartu University, using the passive house concept and PHPP 2007 software developed by the Passive House Institute Darmstadt.

Involvement in international climate initiatives

City of Valga has not yet made official commitments regarding international climate initiatives. Valga has started by local concrete actions for climate protection and energy saving. For more information please contact Meelis Linnamägi (meelis.linnamagi@valgalv.ee) or visit www.valgalv.ee/et/Linnakodanikule/Projektid-ja-arengukavad/Passiivmaja-ja-energiasaast

Valga is located on the border of Latvia and Estonia

City profile & contacts

Valga, with about 15,000 inhabitants, is situated in south Estonia, on the border of Estonia and Latvia. Valga has a cold climate with an annual mean temperature of 5.1 °C, 133 days without frost and an average rainfall of 711 millimetres annually.

The national plan 'Estonia 2010' foresees the development of one of the major international transport routes on the Valga-Tartu-Jõhvi-Narva route, so the town is likely to expand.

1 city, 2 states

VALGA • VALKA

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The local stories are produced by ICLEI – Local Governments for Sustainability in cooperation with the cities described. They shall enrich the knowledge on local action as contribution to the Local Government Climate Roadmap, a joint activity of local government associations and networks towards COP 15.

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