



Best praxis project for smart city

Energy consumption management in public buildings



Co-funded by the European Union

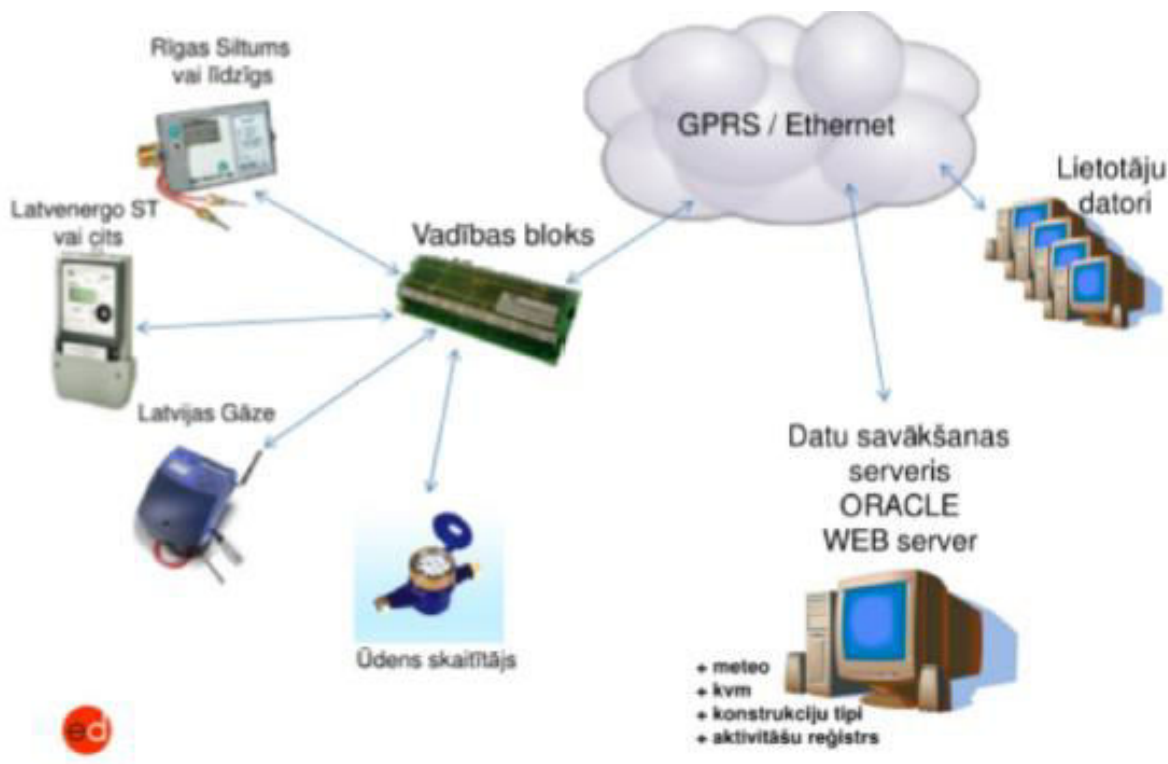


Energy consumption management in public buildings

Energy consumption in public buildings is largely dependent on whether or not a building energy management system with manager who is responsible for this system functioning. Even without major investments and under optimum energy consumption modes is possible to provide a tangible energy savings. The optimal solution to ensure the rational use of energy - ICT-based energy management system introduction.

Best practice project provides an innovative method of public buildings energy management implementation by use of ICT technologies. Energy efficiency improvement is achieved through change of building users behavior, the energy data collection and analysis, the optimal setting of consumption patterns and making remote control of building electronic unit.

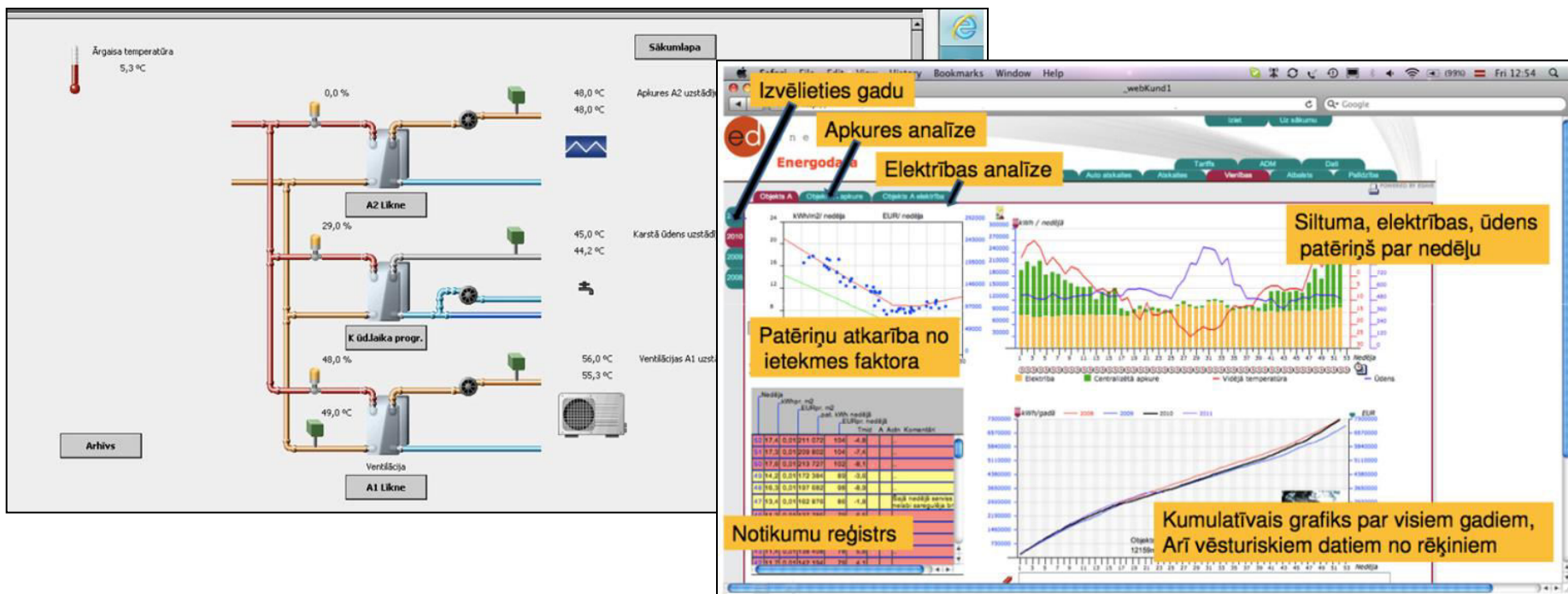
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Data collection layout

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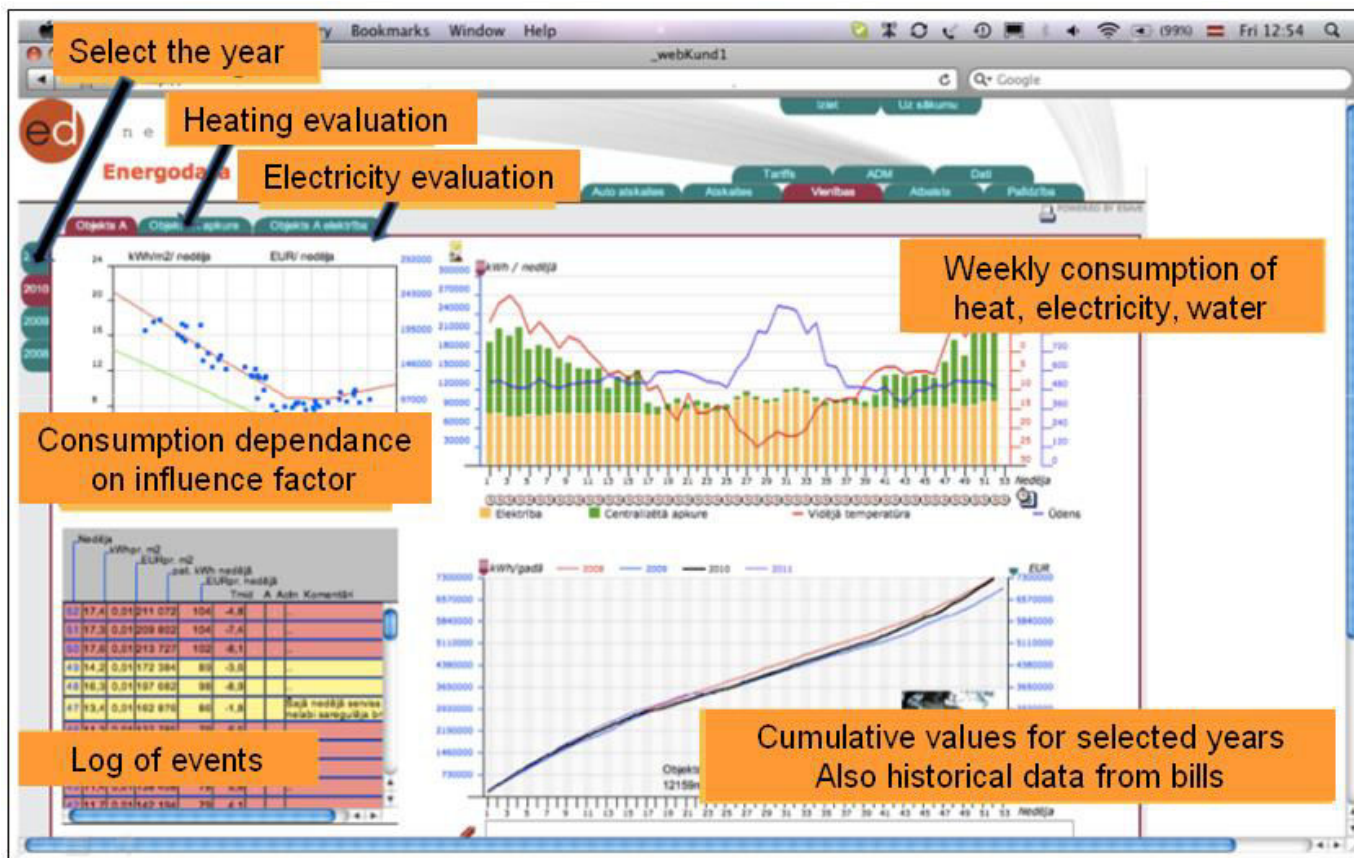
All commercial account devices of electricity, heat, water, etc. are connected to data analysis system of reference building. Control unit of building heat substation has Internet connection.



In order to evaluate energy effectiveness - mutual comparison of such measured max and min hourly values, weekly values, cumulative growth and also comparison of actual and budget consumption shall be performed

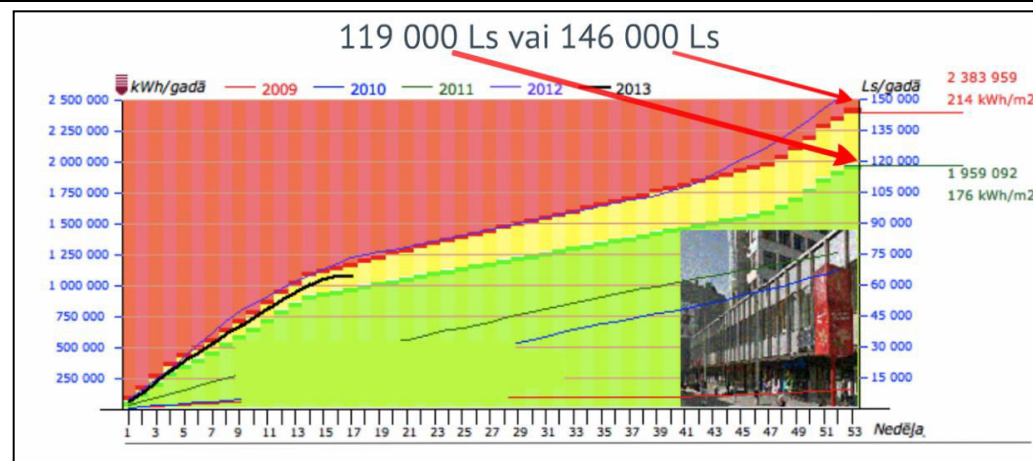
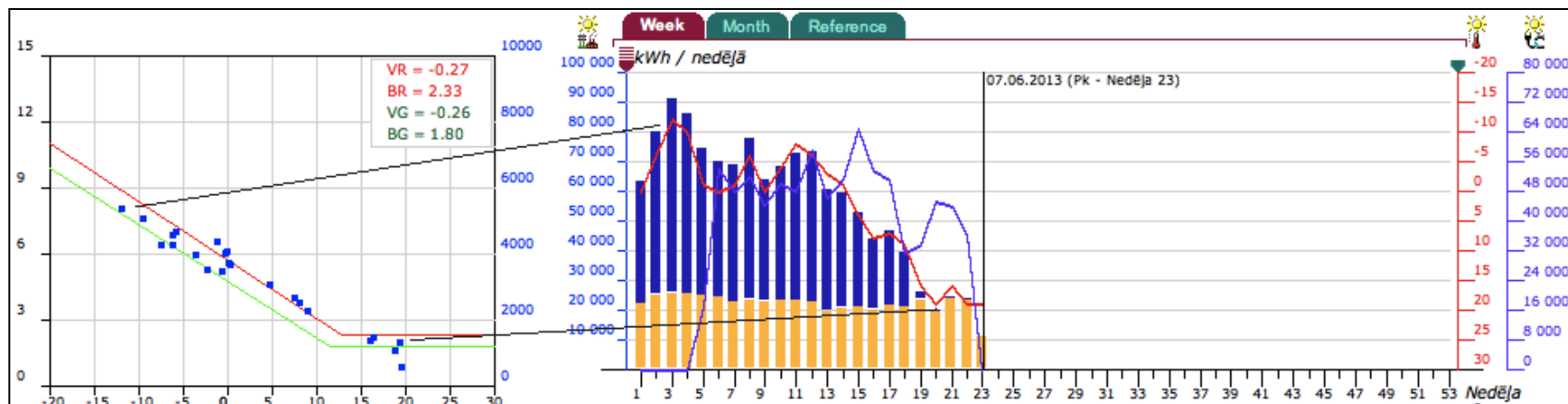
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After entering your password - Management system interface opens the building weekly data on electricity, heat and water consumption depending on the outdoor temperature, also the cumulative consumption compared to previous years and a comment section.



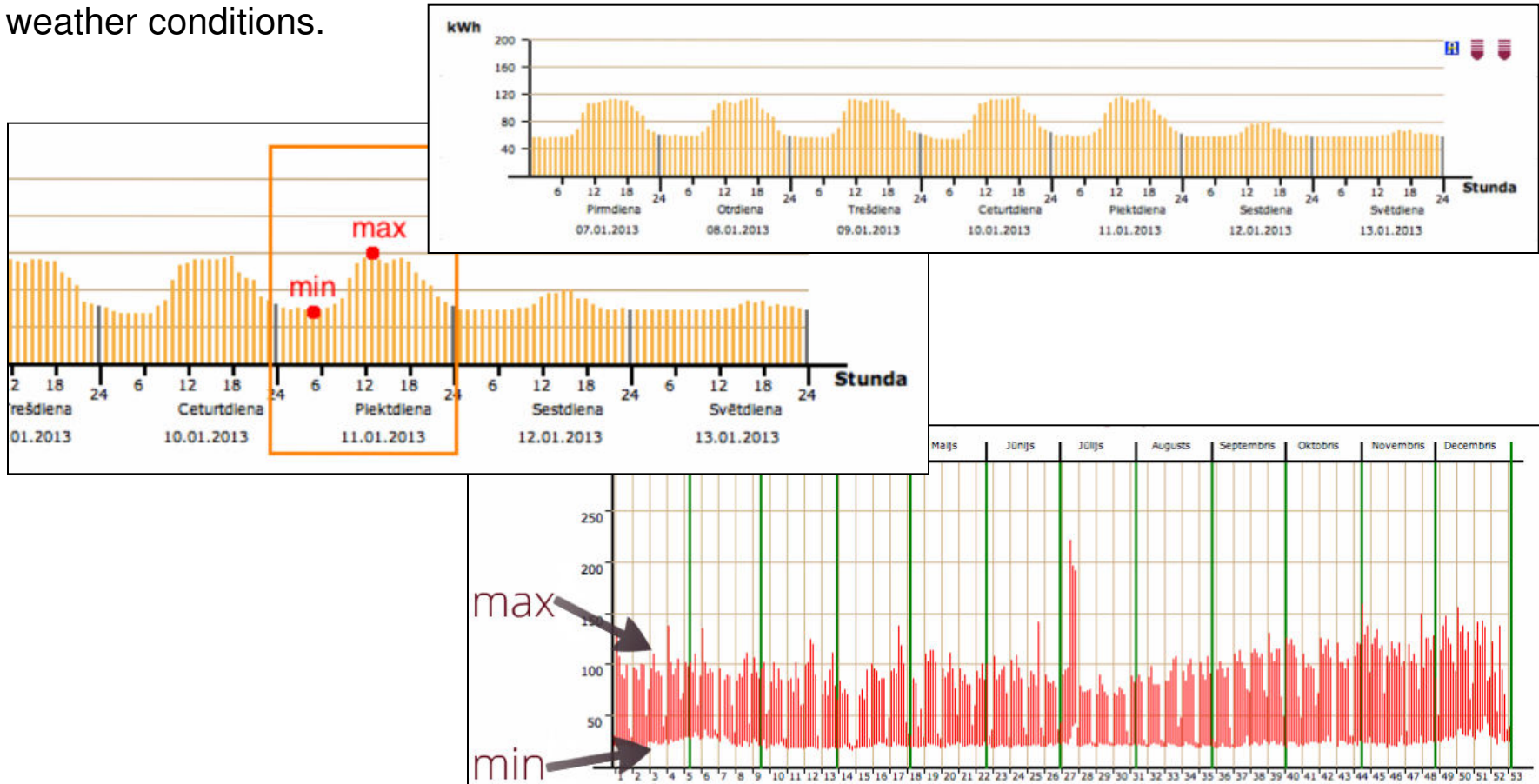
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Consumption forecast for the current year shall be determined by taking into account the existing consumption and outdoor temperatures over the last 20 years.



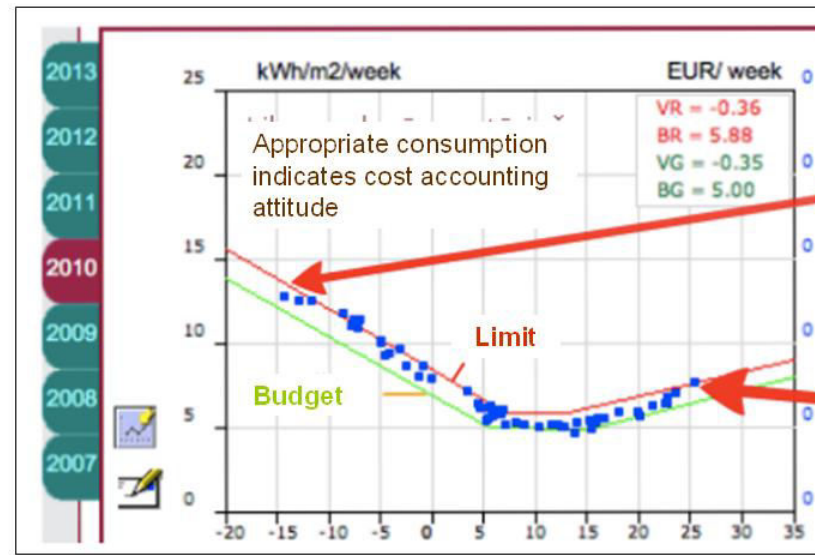
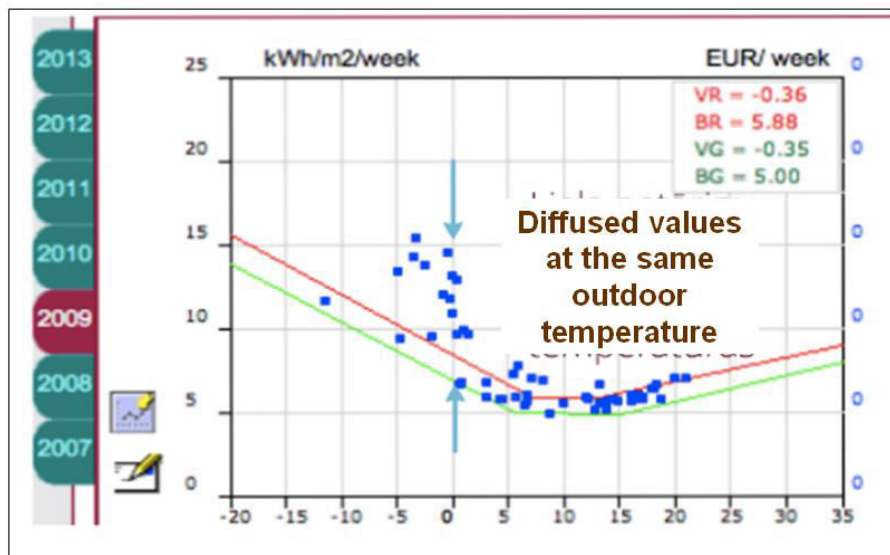
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Consumption data item is available online via internet and a wide range of professionals are able to make consumer data analysis and modeling for performance improvements under various weather conditions.



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More detailed data analyses



Integrated approach

Data collection are performed by use of smart meters, automatic readout of consumption data and remote data transmission systems, also feed-back to the consumer control unit in order to provide selected energy policy.

A special online programs are used for data analysis thereby long-term accumulation of data is provided.

Current measure - EM system - implementation is performed by the building owner or tenant, in close cooperation with specialized service companies.

Investment size and sources

Measure implementation costs are covered from the building owner or tenant budget or loan, and with attracting available co-financing of state assets or structural funds.

Energy efficiency improvement financing is possible and advisable from energy savings in a current year.

Energy management implementation cost for one of the public buildings of municipal building management company - "Rīgas nami" LtD was about - 2000 / 2846 LVL/EUR incl. VAT.

Results

- System implementation payback time depends on the amount of time that is consumed in data analysis and small improvements.
- For example implemented EM systems in the buildings of the municipal company “Rīgas Nami” LtD are under operation less than one year and energy consumption reduction reached 20-35%.

Measure enforcement issues and risks

- For permanent performance of Energy management it is necessary to establish energy manager staff who deals with data analysis and energy consumption adjustment on regular bases.
- Energy policy in the current building shall be selected either by building owner or tenant and shall be based on the results of data records and analysis.
- In order to achieve welcome results – all the staff shall be introduced with energy policy of a current building.



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More information

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