

## Energy management and sustainability

(Online short course – 10 hours)

Lecturers: István Dóry PhD. and Zsófia Molnárné Dóry

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Topics:

1. Sustainable development, definition and history. The three pillars of sustainability and main axioms. Greenhouse effect and its agents. Main measurements for the sustainable development. Key energy areas of traffic, buildings, tools and products.
2. Energy management, definition, issues, convergence of specialities. The value of energy, energy conservation, grouping of losses. Evaluation of energy bills, energy balance, forming base values.
3. Systems requiring matter and energy, their functions and analysis. Revelling possibilities to reduce energy and material consumption. Suggestions to reduce the energy needs. Renewable energy sources and the energy saving.
4. Energy economy analysis, ranking and evaluation of suggestions. Pros and cons of using renewable energy. Renewables and energy saving pilot projects. Drafting project sheets for measurements, viability, feasibility, time schedule planning.
5. Modern structural elements of buildings and engineering. Evaluation and audit and classification of buildings. Properties of new, low and near zero energy buildings. The ISO 50001 energy control system. The idea of Virtual Power Station – calculation and contribution. Changing and tendencies in regulation. Imperatives: to prepare, to know, to keep.