Energy Efficiency in Water Supply and Sanitation Utilities

**GAIN** practical experience on energy efficiency measures

**LEARN** from other practitioners in the sector

**BE UP TO DATE** on the latest trends in the sector

**BENEFIT** from regional and global experiences from other utilities and experts
Energy Efficiency in Water Supply and Sanitation Utilities

Get an introduction to water supply and sanitation system feasibility studies – what are the objectives and the required information.

Learn about the energy consumption in water and wastewater infrastructure.

Understand the drivers of energy intensity:
- Pumping 72%
- Compressors 9%
- Others 4%
- Lighting 7%
- Air conditioner 8%

The urban water cycle - energy nexus:
- Wastewater treatment: 0.9 - 10 kWh/m³
- Transport sewage water: 0.16 kWh/m³
- Domestic water use: >50 kWh/m³
- Transport to waterworks: 0.24 kWh/m³
- Drinking water treatment: 0.13 kWh/m³
- Drinking water distribution: 0.11 kWh/m³

Source: Olssen, 2012, Data from Sweden

Receive information on pump system field energy audit techniques and tools and experience live demonstrations of the equipment.
Gain knowledge on post field survey pump system energy analysis and measure identification.

Understand a feasibility study report and the development of a retrofit proposal.

Develop the financial structure of an energy efficiency improvement project.

**Cash Inflows**
- Fuel savings
- O&M savings
- Periodic savings
- Incentives
- Production credits
- GHG credits

**Cash Outflows**
- Equity investment
- Annual debt payments
- O&M payments
- Periodic costs
- Income Taxes

**Cumulative cash flows graph**
- Year
- Cumulative cash flows (G)

**Indicators**
- Net present value
- Simple payback
- Internal rate of return
- Debt service coverage
- etc.
High energy costs often contribute to unsustainable operating costs that directly affect the financial health of water supply and sanitation utilities and affordability of their services. This Program supports participating utility companies in collecting, auditing and analyzing data related to their energy use and developing investment programs based on that data to support the reduction of energy costs and increase energy efficiency. The Program also assists in securing the financial resources to match the investments needs for energy efficiency.

The Program has been developed at the regional level in cooperation with the Technical Partner Econoler and is delivered by national or regional Hubs in local language. The duration of the Program is one year, and it consists of workshops as well as hands-on exercises at the utilities themselves with support of the trainers. Participating utilities pay a registration fee, which is communicated by the Hub.

**Set-up of Program**

The Program is designed on learning-by-doing principles. It includes a mix of face-to-face training workshops providing tools and techniques to address the challenges faced and see them applied in practice, followed by on the job training, in which participating utilities apply the tools and techniques to their particular situation and develop concrete products (diagnostics, action plans etc.). The principles of blended learning are applied, i.e. face-to-face training is accompanied by e-learning material provided within the D-LeaP Academy.

For more information on the Program concept and design please visit [www.d-leap.org](http://www.d-leap.org).

**Learning goals**

- How to carry out an energy audit?
- How to develop an investment plan to address energy issues?
- How to find resources needed to carry out energy efficiency investments?