



International Association
of Water Service Companies
in the Danube River
Catchment Area



NOEE

Utility Management Training

MODULE 4: Network Operations and Energy Efficiency (NOEE)

Institutional Partners



NOEE Module Team

Module Development Partner:
Qubiqo

Trainers:
Dobromir Moldovanov, Radoslav Russev,
Albert Williams

Competence Partners:
Qubiqo, Siemens, s::can

Utility Partners:
Sofia Water

Thematic Support and Materials:
D-LeaP NRW Program, D-LeaP EE Program,
World Bank reports and selected case studies



NOEE Module Logistics

Format and Venue: One-week residential course, Sofia, Bulgaria

Module timeline: January to April 2024

Introductory webinar for the module: early March 2024

Core training week: 18 – 22 March 2024



NOEE Module Outline

Network Operations and Energy Efficiency (NOEE) provides a holistic view on network management from various perspectives – asset planning and investments, design, water-loss reduction, cost control. However, the key focus of the module is on operations techniques and structuring of proactive network functions. An integral part of the module is its Energy Management and Energy Efficiency component, as typically the largest energy users in water utilities are pumping stations that are part of the network functions.

The module starts with an introductory section on **Types of Networks and Key Aspects of Network Design and Operations**, which provides a broad understanding of the logic and types of networks (transmission vs. distribution), design criteria and key planning considerations. NOEE then delves into the types of **Water Supply Assets** – a topic that conceptually borrows a lot from the earlier module on Asset Management.

Once the types of networks and assets are well understood the module moves into process-related and control aspects – **Setting Up a Control Room** – features and functionalities, technology solutions but also links to other utility functions. Control rooms, effectively, manage operations events and this is the time in the module when a distinction is made between **Proactive and Reactive Activities** – another topic in the module which includes some practicalities of organizing in-house repair depots, etc. This part of the week also covers the popular

topics of **Zoning, Monitoring and Water Balances as well as Non-Revenue Water (NRW)** – a problem that could deserve a whole week itself.

Next, the NOEE module pays some attention to **Sewer Networks** – the sanitation aspect of water utilities with all their elements, monitoring and maintenance processes. And once both water and sanitation networks are covered as topics, the module moves into **Budgeting and Control** (in the specific context of network management). The emphasis here is placed on how network operations is structured as a cost centre, the key cost drivers (energy, salaries, materials) and how they can be effectively controlled.

The “energy component” is an integral part of the module. It includes a couple of complementary sub-topics – **Energy Management** at a wider utility level, **Energy Efficiency/Optimization** at technical (including the organization of a field measurement campaign) but also financial level and, not least, **Energy Purchasing and On-site Energy Generation**.

Throughout the residential week various technologies are described – from leak-detection to water quality monitoring to preventative maintenance and monitoring of assets. The developers of the presented technologies and solutions include Siemens, s::can, Qubiqo and others. Participants from various utilities share their experiences and technology providers demonstrate the latest trends and technologies.

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