

## Memo of the Workshop on Wastewater Treatment Technologies

Organisers: Dr. Sonja Otto, Dr. Andrea Roskosch (UBA), Mihai Severovan (APSP), Prof. Peter Hartwig (aqua consult), Hans-Gerd Spelleken (Spelleken Assoc.)

### Background

The workshop on “Advanced Wastewater Treatment Technologies” was held on 22<sup>nd</sup> of January 2015, 10:00 to 16:45 in conference room of Hotel “Regency”, Chişinău. This project was funded by the German Federal Ministry of The Environment, Nature Conservation, Construction and Nuclear Safety with means of the Advisory Assistance Programme for Environmental Protection in the Countries of Central and Eastern Europe, the Caucasus and Central Asia. It was supervised by Federal Environmental Agency (Umweltbundesamt, UBA), namely Dr. Sonja Otto and Dr. Andrea Roskosch who came to Moldova and assisted to the workshop and surrounding meetings in the capital of Moldova.

The seminar was organised by APSP (Association of Public Services) having as a main purpose the finding of tariffs and discussion of professionals from public and private sector about water and sanitation sector diagnosis and measures. The long term goal was to create a communication forum for wastewater treatment and its development in Republic of Moldova in the form of a professional dialogue and association (treatment club). This workshop / conference was supposed to be the first in such a broad way.

The conference brought together over 70 participants from the Republic of Moldova. The participants were represented by government ministries, policy-makers, mayors and vice-mayors, donors and other representatives of associations of water and sanitation utilities and local companies. For a transition country it was needed to attract the private sector, too, which is quite separate from the public one, traditionally. The participants had reviewed the results of a preparatory study on the framework for wastewater treatment, in Moldova, and started the dialog about technologies and project opportunities for WWTP in the country.

The workshop focused the attention of participants on the importance and urgency of taking action in improving the wastewater and sanitation sector, including to:

- Identify the basic principles, methods and strategies for developing national action plans in the field of water and sanitation services;
- Strengthen political commitment by encouraging macro-counterparts to develop and implement reforms;
- Share experiences, challenges and technical knowledge regarding the wastewater treatment considering the need to strengthen this sector.

### Opening Speeches

The introduction of the workshop was held by the president of “Association of Public Services” (APSP), Mihai Severovan who described the necessity of advanced wastewater treatment

technologies in the Republic of Moldova. The development of this sector is central to the economic and social development of the country, contributing to climate protection and health of citizens. Also, in the introduction, Hans-Gerd Spelleken, Spelleken Associates, drew attention to the responsibility of the government for the environment through establishing inclusive and transparent governance approaches and mechanisms in the water and sanitation sector. The greetings were given by the supervisors of the workshop, Dr. Sonja Otto and Dr. Andrea Roskosch from Federal Environmental Agency (Umweltbundesamt, UBA). They welcomed the event wishing a high quality and an active workshop. Dr. Otto used the opportunity to explain the program and portfolio of the agenda with special regard to Moldova.

In the first part of the seminar the national conditions for modern wastewater treatment plant with different topics were discussed. To this memo we attach the speeches of the four speakers, too:

**Dorin Dușciac**, Deputy Minister of Environment of the Republic of Moldova talked about the conditions for new stations in Moldova - planning and operating permits. He described how Republic of Moldova manages its water resources and the legal framework of water sector. Dușciac highlighted statistical datas regarding sewerage systems, distribution of wastewater, the average rate of connection to WSS systems. The deputy Minister of Environment sees Moldova as a European player. He emphasised the need for action and the importance of embracing advanced wastewater treatment technologies and promoting universal access to sanitation system in the context of Association Agreement witch was recently signed by Moldova. The phases of implementation of environment activities from this Agreement are 2014-2017 that acknowledges the need of transposition of 41 EU acts and 2017-2024 establishing the implementation of harmonised law with EU environmental Acquis.

**Veaceslav Vladicescu**, director of Agency "Waters of Moldova" provided details about the framework conditions for cities and corporations of urban operations and maintenance. Currently, the normative framework is in process of developing. It will be established a procedure for licensing of operators in the field of water supply and sanitation and determination of tariffs. This regulatory framework is developed by ANRE (The National Energy Regulatory Agency). Thus:

1. Tariffs will be approved by ANRE, to the proposal and arguments provided by the operator. This will give an independence to the operator. Namely, now the tariffs are set by decisions of the local councils and these rates are socially, the elected officials wanting to be liked by voters. After the above mentioned changes will be generated, tariffs being approved by ANRE will not have local councils or mayors influence.
2. Operators will have the right of developing their activities under the license issued by ANRE. So, will be established qualitative, financial criteria etc., according to which the operator must correspond in order to get the operating license.

In fact, these provisions are mentioned in the Strategy of Water Supply and Sanitation. Vladicescu expressed his confidence that this year ANRE will complete the development of the regulatory framework which should be approved by the Government, afterwards entering into

force.

**Vladimir Garaba**, head of Chişinău Territorial Organisation of Ecological Movement of Moldova drew attention to the solutions on sewerage and wastewater treatment in rural areas. Garaba spoke about the critical importance and challenges of establishing and enforcing promoting policies in the wastewater and sanitation sector. He emphasised the need to improve the legal framework for wastewater management in rural areas and regionalise the water and sanitation services. These actions could improve the situation in sanitation and wastewater treatment in rural areas. At the end of the presentation, Garaba expressed some proposals: changing the legal framework (Law No. 303) by introducing mandatory requirements to pay taxes for sewerage in case of existence of such systems; developing a regulation for wastewater management, with mandatory environmental approval in the case if the village doesn't have a centralised sewage system; elaboration of a communication strategy in the water sector, conducting national environmental awareness campaigns on rural sanitation; strengthening the control of the authorities in the field of construction activities and operation of sanitary pits.

**Prof. Peter Hartwig**, managing director of aqua consult spoke about the state of wastewater treatment technologies for climate protection. Prof. Hartwig expressed the commitment of his company in performing independent consulting and planning engineers for water, wastewater, solid waste and environmental protection technology in different countries. He explained different wastewater treatment strategies and showed that anaerobic technologies have advantages in climate protection because of the biogas production, less sludge and less space. Prof. Hartwig spoke about co-fermentation of organic residues as a process which increases the efficiency of the digester and gave examples for large scale application which are available internationally. The managing director of aqua consult highlighted the challenges faced by different countries and the achievements made in the field of environmental and climate protection.

## Working Groups

In the afternoon session of the workshop, the participants were divided into two working groups. They had covered issues upgrading wastewater treatment plants in Moldova. It took into account, in particular, how a new and modern sewage treatment plant can help to improve environmental protection and how cities can benefit and practice sustainable infrastructure solutions. Subsequently, there was an active chat session on the information presented and the preparatory study.

The first working group was entitled "Financial Strategies: how to build Wastewater Treatment Plants in the next years?". This working group was moderated by Hans-Gerd Spelleken. The resource persons were Anatol Saracuță (senior expert) and Ina Coseru (NEC). The main objective of this group was to identify key concepts, strategies and challenges for achieving effective funding ways of financing investment. The themes in the first working group covered ways for effective investment amortisation by fees.

In this context, there were argued different arguments which had led to the following *key recommendations and conclusions*:

1. Conduct an analysis of the legislation on the collection of tariffs for water supply and sanitation services in order to detect all the gaps which the sector is facing right now;
2. Consider the principle of regionalisation in the promotion of services of sewerage and wastewater treatment plants in order to establish attractive rates for the population;
3. Develop a guide for the authorities in this area (how the tariffs are established, how they are collected etc.);
4. Fix unique tariffs and to change (if necessary) LAW no.303 of 12/13/2013 on public water supply and sewerage for establishing a single tariff.
5. Prioritise the environmental policy in the government program and especially the policy concerning water supply systems, sewage and treatment of wastewater.
6. Create a smaller working group on fixing and designing a methodology of tariffs calculations for sewerage and wastewater treatment.

The second working group was called "Technical competence in the system: how to incorporate Know-how?". This working group was moderated by Prof. Peter Hartwig and the resource person, Iuliana Cantaragiu (NEC).

The key questions/issues which were discussed:

- The concept of technology and opportunities for rehabilitation due to the fact that most of wastewater treatment plants in Moldova were built in Soviet Union period;
- The case study of Briceni, Cimislia and Stefan-Voda town;
- The most convenient technology in terms of primary investment costs and operating costs;
- The role of the quality of the sludge from WWTP and the quality of the water which after is passing through biological lakes is worse than before its entry into the lakes;
- The weaknesses of wastewater treatment systems in Moldova such as political involvement and centralisation of Environmental Inspectorate;
- Identification of local investments, such as Ecological Fund;
- Preparation of tender documents and the evaluation of offers;

- The necessity of training the staff. With the coming advanced technology must come trained staff. Moldova has a lot of engineers but very few technicians.
- A proper implementation of modern technologies meets many impediments from old norms and standards. It is very hard to change norms and standards.
- The procurement process should be modified taking into account the impact population health, environment, operating cost, but now, in Moldova, procurement process only considers the primary cost.

During the working group, participants had discussed ways of restructuring and transition of water supply systems (existing or new forms of municipal operators).

After two hours of active discussions, there were highlighted the following *key recommendations and conclusions*:

1. Proposed to undertake action on some case studies, such as Cimișlia, Orhei, Leova, and to examine possible realisation of investment projects which will solve waste and wastewater treatment problems, based on the peculiarities of those places. Subsequently, to organise workshops for a smaller number of people in those towns, with interested persons, where to discuss the opportunities offered by the study.
2. Develop another seminar discussing criteria for attracting investment.
3. Promote the way of assessing the effectiveness of wastewater treatment plant.
4. Support training of ecological inspectors on how to check the quality of industrial wastewater at companies

The workshop culminated with a series of conclusions presented by the moderators of the working groups on the topics covered throughout the day.

As a result of the confirmed conclusions and the discussions during the event, the findings will allow the design of a complex program of seminars in 2015. For the preparation of such project, some voluntary participants were selected. The selected specialists will be invited for smaller working meetings. The long-term objective is a communication forum for wastewater treatment and its development in Moldova.