

Most important results

The following results have been achieved:

- For water supply 16 key energy efficiency related performance indicators and for waste water disposal 18 key energy efficiency related performance indicators to use them in an ‘energy check’ are identified.
- The key performance indicators that were chosen for the energy check deal with aspects of energy consumption, energy recovery and energy production. However, for an energy related benchmarking other aspects (procurement, reliability) also may be assessed.
- Assessment level for energy check is recommended to be on the component level and the plant level. However, in order to allow for a global appraisal a few indicators on utility level were added.
- The main energy consuming components used in the water supply as well as in waste water disposal of MENA countries were clarified –having a basis for recommendations of theoretical calculations in the energy analysis.
- Implementation difficulties for energy improvement are identified as lack of expertise, lack of awareness and commitment among the staff, data availability, data accuracy and reliability and lack of financial resources.
 - Overall prerequisite to overcome these difficulties are clear leadership and commitment of top-management.
 - But also additional solutions and best practice examples of the region are identified.
 - Related to the water supply, some definitional issues regarding the apportionment of energy along different processes were discussed. It was decided, that the guidelines should give some advice how to deal with energy apportionment.
- The ACWUA Energy Task Force has high interest in advancing the search for leading practices (e.g. to update and renew Energy Guidelines and document experiences made) as well as interest in building up a database of reference values. Benchmarking is seen as appropriate tool.
- Since definitions are the crucial part in any data collection exercise, aquabench has included exact definitions as well as some brief guidance for interpretation of results in the annex.

Based on the results of the workshop the following follow-up activities are agreed on:

- Integration of above results or part of above results in Energy Guidelines (led by Tuttahs & Meyer)



- Supplementing of best practice examples of data collection (by members of task force)
- Match ideas of energy benchmarking with work of ACWUA Benchmarking Task force (aquabench)