



Capacity Development – Practical experience in Brasilia

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Final Workshop - Project IWAS ÁGUA DF
Integrated Water Resources Management in Distrito Federal – DF
June 4-6, 2013





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General

Working group 10

- **Topic: Methods of management and decision support**
- **Members: CAESB, Sachsen Wasser**
- **Focus: transfer of operational experiences**
- **Form: practically orientated exchange of experiences and excursions**



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General

Phase 1

- **Duration January 2010 to December 2011**
- **Form: workshops focused on different topics of 1 business segment (water supply, wastewater disposal, administration)**

Phase 2

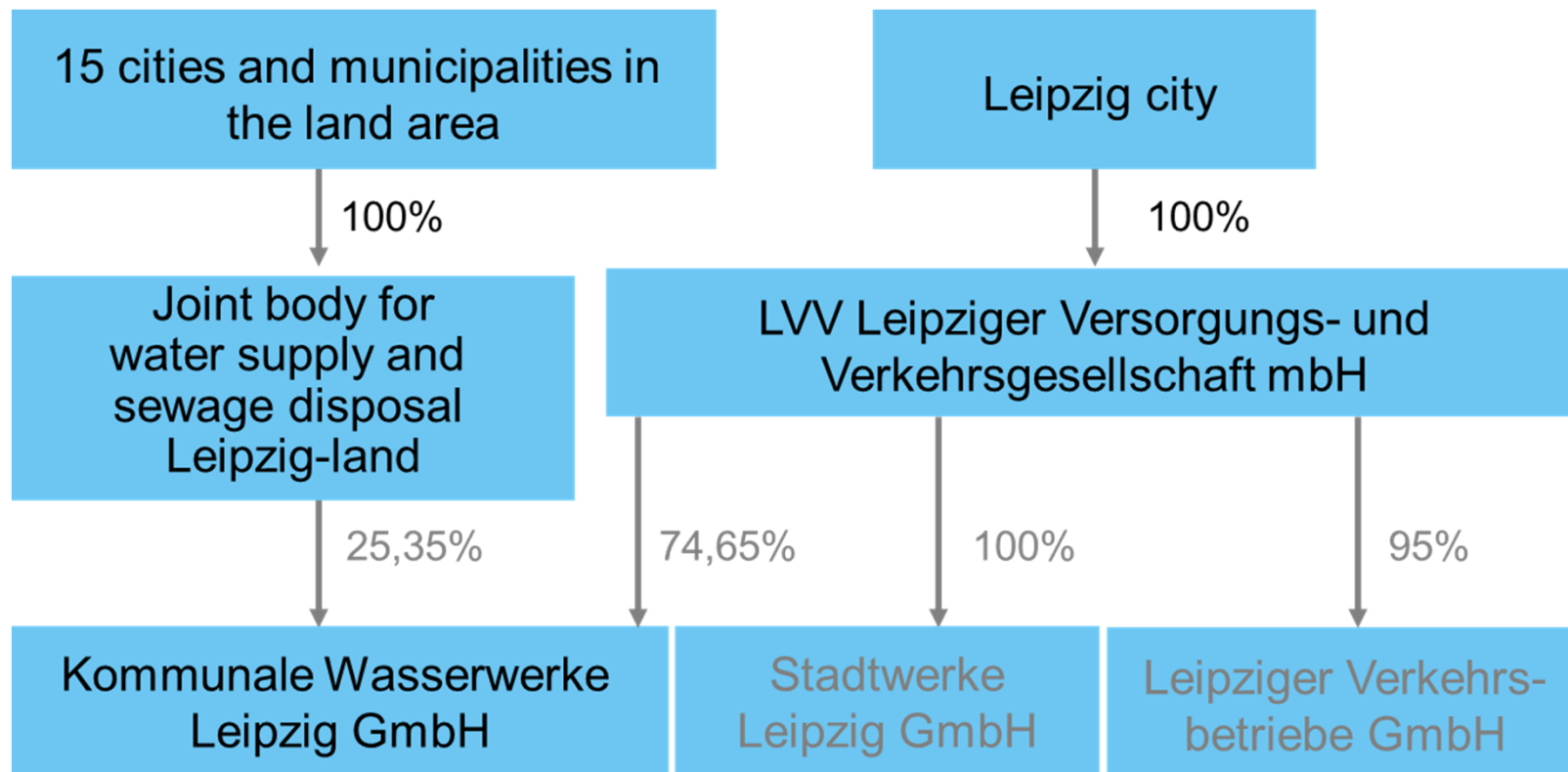
- **Duration April 2012 to June 2013**
- **Focused on special topics (see below)**



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Project partners: KWL

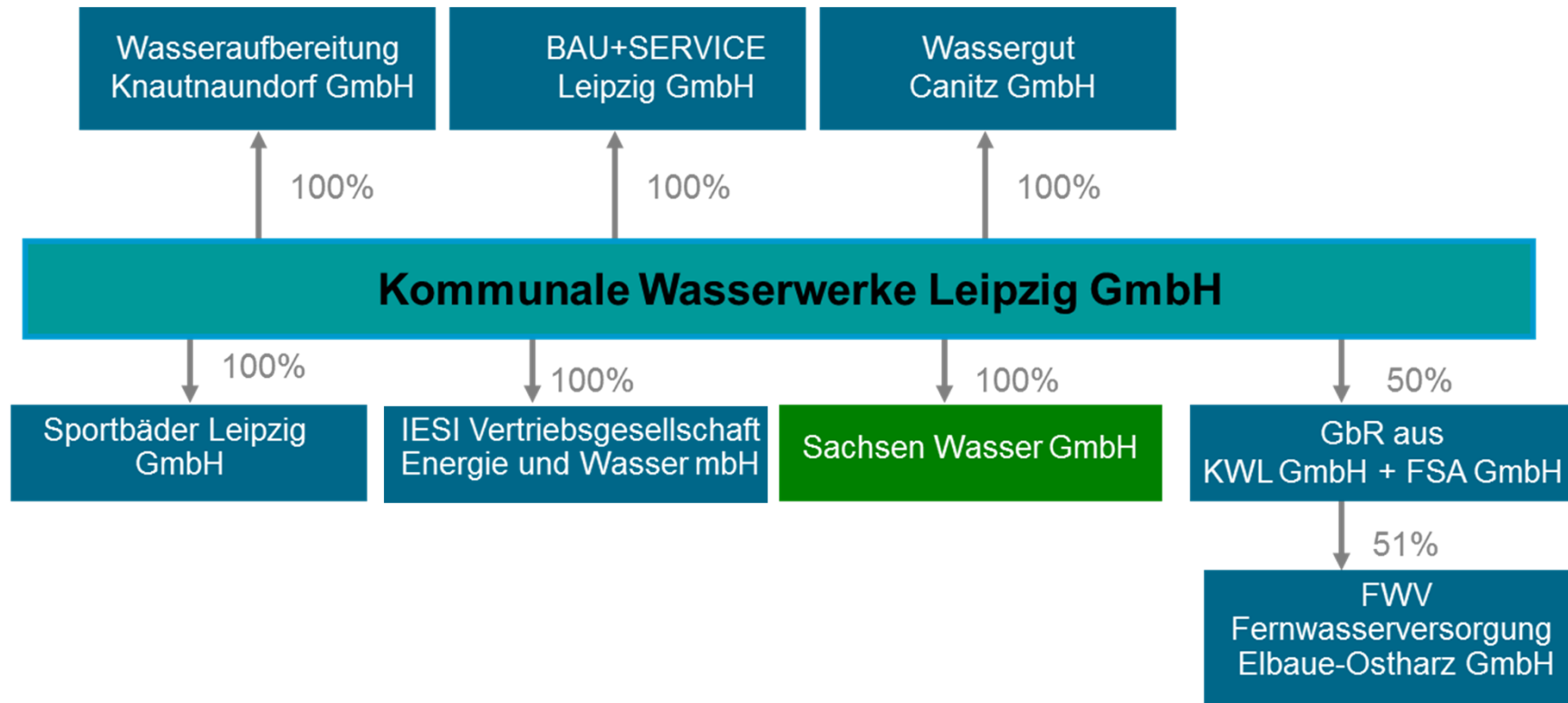
Association structure 2011





2 Project partners: KWL

Subsidiaries





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Project partners: KWL

Sachsen Wasser

- **Subsidiary founded to spread the know-how concerning water supply und wastewater disposal outside of Leipzig**
- **Business segments: consulting, operation, management (e.g. training), see: www.sachsenwasser.com**
- **Projects in (e.g.) Germany, Turkey, Montenegro, Georgia, Vietnam, Mexico**



2 Project partners: KWL

Overview potable water

		2010	2008	2006	2004	2002
Provided quantity	Mio m ³ /a	32,5	32,1	34,4	33,7	33,6
own extraction	Mio m ³ /a	24,5	23,9	25,2	24,4	23,7
Water works	units	5	5	5	5	6
Length of the pipeline network	km	3.304	3.234	3.188	3.049	2.939
Supplied inhabitants	in T	628	618	610	600	600



2 Project partners: KWL

Overview wastewater

		2010	2008	2006	2004	2002
Treated dry weather discharge	Mio m ³ /a	44,9	33,6	35,0	35,0	35,3
Sewerage treatment plants	units	22	18	20	28	29
Sewerage and rainwater pumping stations	units	205	162	152	140	121
Length of the sewerage network	km	2.751	2.597	2.466	2.408	2.300



2 Project partners: CAESB

Comparing numbers 2008 KWL/CAESB

- Supplied inhabitants:
- CAESB 2,3 Mio/KWL 0,6 Mio

- Length of network potable water:
- CAESB 7000 km, KWL 3200 km

- Provided water per year:
- CAESB 221 Mio m³/a, KWL 32 m³/a



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Project phase 1

Methodology

- **Exchange of experience between experts**
 - **Selection of dialogue partners according to workshop schedule**
 - **Presentation of existing structures, technologies and procedures**
 - **Discussion about differences CAESB/KWL**

- **Deepen the discussion in excursions**



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Project phase 1

Communication with CAESB

- Establishment of a protected access area on the website of Sachsen Wasser

Homepage print page A A A

CLEAR CONCEPTS, NEW IDEAS

ONLY FOR PROJECT PARTICIPANTS!

LOGIN

ÁGUA-DF / BRAZIL

Login
Name

Password

Contact Person

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Workshop wastewater disposal

Leipzig, October 2010, Topics

- **Presentation of sewerage network of KWL**
- **Presentation of WWTPs of CAESB**
- **Basics of sustainable investment decisions (example membrane WWTP Markranstädt)**
- **Operational procedures in the sewerage network**
- **Organization of maintenance at CAESB**
- **Introduction to the process control system of KWL**



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Workshop wastewater disposal

Leipzig, October 2010, visited locations

- **WWTP Leipzig-Rosental**
- **WWTPs Markranstädt and Markkleeberg**
- **Central steering control room**
- **Inspection of sewerage Network and rainwater storage basin**
- **Technology of sewerage network in use (high pressure flushing and TV inspection)**
- **Central wastewater laboratory**



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Workshop water supply

Leipzig, October 2010, Topics

- **Presentation of drinking water network of KWL**
- **Basics of sustainable investment decisions (example WW Naunhof)**
- **Maintenance procedures in drinking water network**
- **Introduction to the process control system of KWL**



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Workshop water supply

Leipzig, October 2010, visited locations

- **WWs Thallwitz and Canitz**
- **Pressure boosting station Grünau**
- **Water distribution facility Probstheida**
- **Central steering control room**
- **Leak detection in use**
- **Central drinking water laboratory**



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Workshop sustainable administration

Leipzig, March 2011, topics

- **Tariff calculation**
- **Holding concept, basis of decision-making for outsourcing of services**
- **Principle of Centre accounting**
- **Customer service, prepaid water meters**
- **Performance indicators for personnel**



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Debriefing workshop

Brasilia, September 2011

- **Topics based on the workshops in Leipzig**
- **Objective: getting in-depth with consideration of the situation in Brasilia**
- **Topic, among others:**
 - **Rehabilitation strategies in the Water network and the sewerage network**
 - **Establishment of a central steering room at CAESB**



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Evaluation workshop

Leipzig, October 2011

- **Objective:**
 - **Evaluation of cooperation so far**
 - **Comparison of objectives and expectations on joint activities in the future**
 - **Agreement of joint activities list in case of approval of phase 2**



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Project phase 2

Methodology

- **Exchange of experience between experts**
 - **Carry out workshops each focused on one specific topic**
 - **Selection of dialogue partners according to the specific topic**
 - **Presentations and discussions as close as possible to practice (ready to reuse = sustainable know-how transfer)**

- **Deepen the discussion in excursions**



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Implementation of LIMS

Laboratory information management system

- KWL has installed a LIMS (software collecting all results of analyses concerning one sample)

- CAESB is now implementing a LIMS for its labs

- Approach:
 - Description of the system at KWL
 - Offer of trouble shooting support during implementation



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Data Management

Actual situation at the Partners

- **KWL has installed a remote control system (including automation of plants, data management, reporting)**
- **This process started in the beginning 90s, ongoing**
- **CAESB is now implementing a remote control system**



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Data Management

Approach

- **Special workshop at KWL (February 2013)**
- **Participants from CAESB: specialists of Wastewater treatment, automation, reporting**
- **Schedule adapted to the actual needs of CAESB with focus on practical experience**
- **Sustainable know-how transfer**



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Data Management

Topics of the workshop

- **Design of the automation including remote control system**
- **Data collection, storage and distribution**
- **Operational routines on the plant and in the central steering room**
- **Generating/using of reports (operator, technologist, special occasions)**



4

Energy efficiency measures

Actual situation at the Partners

- **Due to the raising energy prices this becomes essential for both partners**
- **KWL and Sachsen Wasser have undertaken different investigations concerning energy efficiency**
- **CAESB has also experience on that field**



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Energy efficiency measures

Approach

- **Special workshop at CAESB**
- **Topic: joint investigation of WWTP Brasilia North concerning energy consumption**
- **Objectives were**
 - **Sharing experience with procedures in energy analyses,**
 - **Evaluation of installed equipment (machines and measurement)**



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Project phase 2

Further topics in this phase

- **Leak detection equipment and procedures**
- **Wastewater treatment by membrane technology**
- **Implementation of prepaid metering in special cases**



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Conclusions

Beneficial conditions

- **Communication “operator to operator”**
- **Experience in international projects beside operational routines**
 - **Role as mediator of Sachsen Wasser for KWL**
 - **Counterpart at CAESB: Department for Special Projects**
- **Status of development KWL/CAESB**
 - **Similar conditions in both companies**
 - **Experience in implementation at KWL and actual need of implementation at CAESB**



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Conclusions

Side benefits for the staff of the partners

- **Information about alternative techniques**
 - **Higher flexibility**
 - **Raise the awareness concerning advantages/disadvantages of procedures**
- **Staff proudly presents own experience**
 - **Raise of motivation on the job**
- **Internal communication**
 - **New contacts due to the project**



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Thank you!

Thank you for your kind attention!

sachsen **Wasser**
consulting + operations + management

