

# LCS



## Sustainable wastewater treatment plants in the era of climate change

**KWB**

As major energy consumers and direct emission sources of nitrous oxide and methane, *wastewater* treatment plants contribute significantly to greenhouse gas emissions. Reducing these energy-related emissions from *wastewater* treatment plants is particularly challenging because achieving climate neutrality can only be achieved *with* additional plant technology and higher energy consumption.

Do you need energy and greenhouse gas balances for your *wastewater* treatment plant? Are you looking for systemic solutions to increase energy and climate efficiency? Are you looking for advice regarding the new political requirements on the road to climate neutrality?

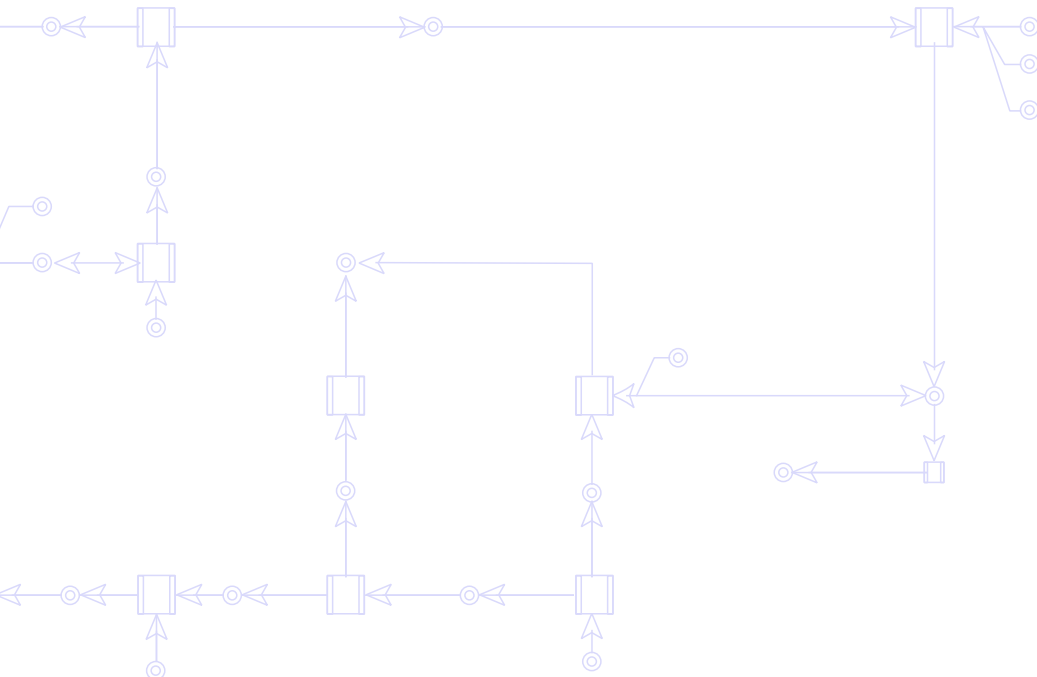
*With* our Life Cycle Solutions, you'll gain a comprehensive and detailed insight into the greenhouse gas balances of your *wastewater* treatment plant. Together, *we'll* develop strategies to make your entire *wastewater* treatment plant operation more climate neutral. *We'll* also develop concepts *with* concrete measures for you so that you can comply *with* new climate laws and thus contribute to protecting the environment.

## Our offer

We develop energy and greenhouse gas balances for your entire wastewater treatment plant operation, including sub-processes, considering all operationally necessary consumption of energy and chemicals and the disposal of waste (life cycle analysis).

We develop innovative systemic solutions for your wastewater treatment plant to increase energy and climate efficiency. Using characteristic values, we map your process in a static model and develop proposals for optimizing the energy and greenhouse gas balance.

We support you with process proposals to adapt your wastewater treatment plant to future requirements and advise you on selecting the most technically and energetically favorable process variants with a low CO<sub>2</sub> footprint.



## Your benefit

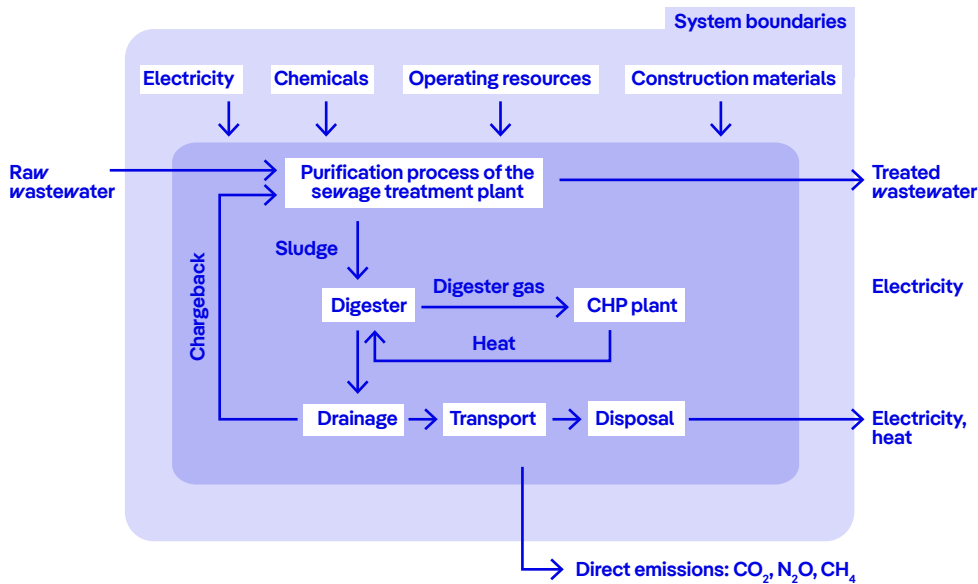
Our Life Cycle Solutions are grounded in our more than 10 years of experience and our scientific approach. With our deep understanding of wastewater treatment plant processes, we offer you analyses with a high level of detail, comprehensive balancing and precisely prepared data on material flows. Our methodology follows recognized standards of certifiable reporting for sustainability reports.

Our close cooperation with Germany's largest municipal water supply and wastewater disposal company, Berliner Wasserbetriebe, enables us to directly apply our knowledge of current research and technologies, so that we can develop customized solutions for you that have been tested in practice. As active networkers, we're also aware of the latest international trends and developments.

With our Life Cycle Solutions, you'll be equipped to meet the increasing demands on your energy and resource consumption and to achieve your strategic goals of climate neutrality!

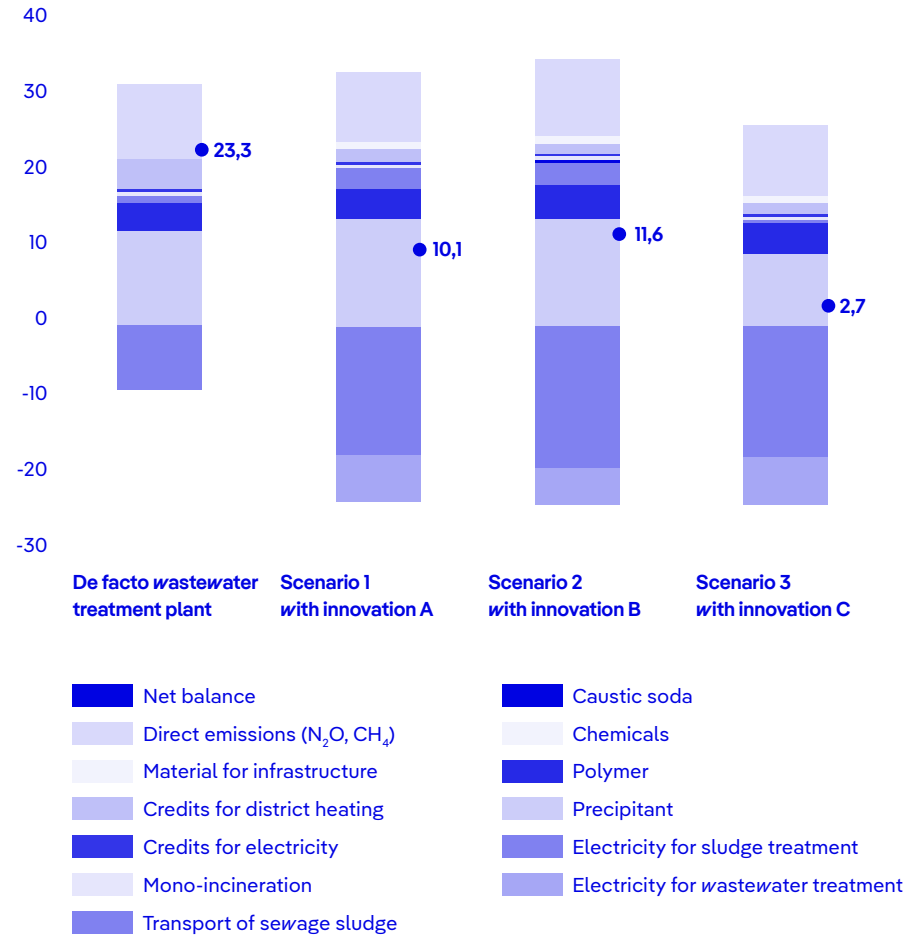
## System boundaries for balancing

In addition to wastewater treatment plant operations, our balance sheet also includes the upstream production of energy sources, chemicals and construction materials, as well as the disposal of waste, especially sewage sludge. This gives you a comprehensive overview of all greenhouse gas emissions associated with the operation of the wastewater treatment plant. By breaking them down into a process model, internal dependencies and conflicting goals („trade-offs“) can also be presented transparently.



## Greenhouse gas balance of a wastewater treatment plant: Comparing de facto operation with different planning scenarios

Greenhouse gas emissions  
[kg CO<sub>2</sub> equivalents per inhabitant value and year]



# Who we are

KWB is a non-profit research organisation specialising in applied research and innovation since 2001 and employing more than 35 people. We develop solutions with innovative processes and concepts for wastewater treatment plants of all sizes. As a specialist in life cycle assessment and energy evaluation, we also advise, among others, the Berliner Wasserbetriebe on the redesign and expansion of their plants.

Our expertise has been honed through many years of practical research projects, including pilot plants operated in Germany and abroad, as well as a growing number of consulting assignments.

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