

Assessing the Carbon Footprint of Urban Water Utilities

with the Energy Performance and Carbon Emissions Assessment and Monitoring Tool

Water and Wastewater Companies
for Climate Mitigation

WaCCliM

The “Energy Performance and Carbon Emissions Assessment and Monitoring Tool” (ECAM) offers unique capabilities for assessing greenhouse gas (GHG) emissions and energy consumption of water and sanitation systems. Gain greater insights by identifying areas to reduce GHG emissions, increase energy savings and improve overall efficiencies to reduce costs.



Based on IPCC

ECAM was developed to be consistent with the IPCC Guidelines for National Greenhouse Gas Inventories and peer-reviewed literature, incl. the IPCC 2019 refinement.



Free and Open Source

ECAM can be freely used, copied or changed. Its source code is openly available on GitHub to encourage water and climate professionals to get involved.



Secure

ECAM is secure and trustworthy. No information is stored on servers. All data inserted is processed locally and only stored on your computer during the assessment.

Background

Climate change is a global issue that will primarily be felt through water – whether greater variability and uncertainty in hydrological cycles, prolonged droughts, extreme weather events, increased evaporation or sea level rise.

As pledged in the Paris Agreement in 2015, limiting climate change to 1.5°C requires substantial reductions in GHG emissions in all sectors. The urban water sector has under-recognized opportunities to reduce carbon emissions that will contribute to the successful implementation and ambition strengthening of the National Determined Contributions (NDCs).

The water and sanitation sector is currently estimated to contribute up to 5% of global GHG emissions: carbon dioxide (CO₂) from energy consumption, as well as emissions of methane (CH₄) and nitrous oxide (N₂O) from wastewater handling.

About ECAM

ECAM offers a user-friendly solution for urban water utilities to quantify their GHG emissions and contribute to the NDCs through reducing indirect and direct emissions from energy use and wastewater management. It is the first of its kind to allow for a holistic approach of the urban water cycle to drive GHG emission reduction in utilities, even those with limited data availability.

ECAM promotes accuracy, comparability and consistency and is designed to assess the GHG emissions that utilities can control within the urban water cycle. It requires only data that is typically available in utilities in developing and emerging economies and prepares them for reporting needs on climate mitigation, which are becoming mandatory in many countries. In addition, knowing current emissions and mitigation potentials may help utilities in applying for climate financing.

- Assess GHG emissions
- Assess energy performance
- Identify opportunities to reduce CO₂ emissions and electricity costs
- Develop scenarios and model reduction impacts of measures
- Monitor and report GHG emissions



Landing page of ECAM 3.0, accessible via www.wacclim.org/ecam/

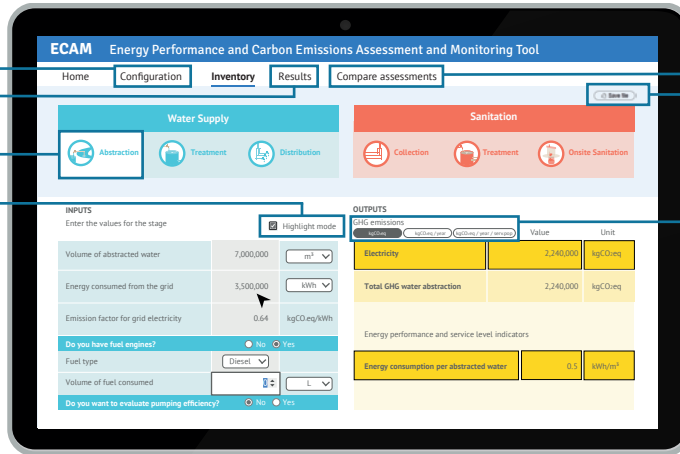
ECAM was developed by the Catalan Institute for Water Research (ICRA) within the scope of the project “Water and Wastewater Companies for Climate Mitigation” (WaCCliM).

Fundamentals of ECAM 3.0

Define various assessments under "Configuration" to compare or monitor GHG emissions within the course of time.

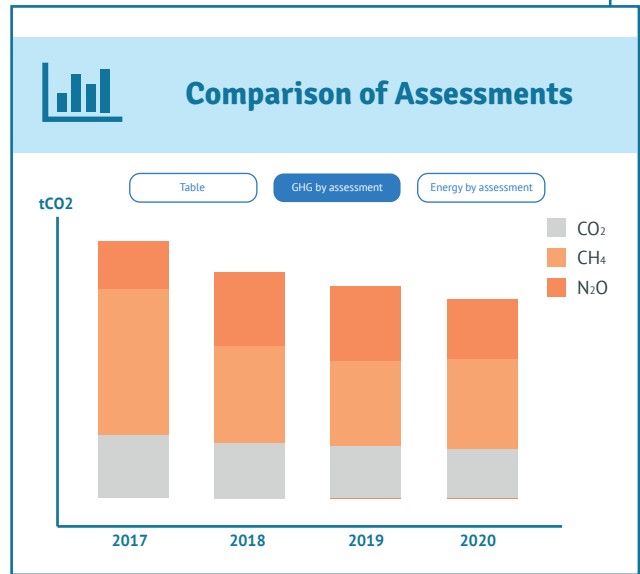
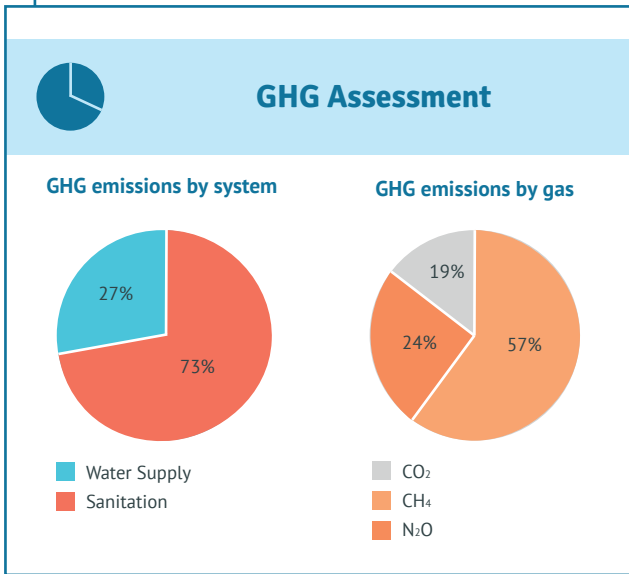
Select the process stage(s) that you want to evaluate.

Use the "highlight mode" to comprehend which inputs are used to calculate the outputs.



Use "Save file" to save your progress and to continue your assessment another time.

Display GHG outputs per assessment period, per year or per person.



GHG assessment results can be visualized per system, stage or gas.

ECAM 3.0 allows utility operators to compare assessments and monitor the development of GHG emissions and energy consumption.

What ECAM offers to the urban water sector?

- Transparent and sound approach for CO₂ emissions assessment within the urban water sector
- A tool for monitoring, reporting and verifying the urban water sector's contribution to the NDCs
- Facilitates national benchmarking and knowledge exchange between water and sanitation utilities

What stands out about ECAM is that it is EASY to operate [...] the results we get, give us the motivation to reduce GHGs and contribute to climate change mitigation.

Diego Dávila, Director of SITRATA

The WaCliM project is a joint initiative between the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the International Water Association (IWA). This project is part of the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag.

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