

Water Footprint Indicators: The process of selection & development

ENGIE's Context

- **Water stewardship** is a priority on ENGIE's sustainability agenda.
- The **energy value chain** requires a significant amount of water, for power plants' cooling processes, steam production, district cooling or heating, etc.
- By 2030, the world will face a **40% water shortage**. This water scarcity crisis will impact global systems, included ENGIE.
- ENGIE wanted to assess existing **water footprint metrics** and their relevance in order to support the building of action plans.

Quantis

Quantis' solutions



Co-organized a **workshop** to assess and benchmark existing water footprint metrics to choose indicators.



Delivered a roadmap for water footprint deployment.



Guided selection of **academic partners** to resolve methodological gaps and to ensure scientific application to business.



Operational **water footprinting tool** in development to be used as a decision-support tool for ENGIE's water stewardship agenda.

“Quantis’ solid technical expertise coupled with their in-depth knowledge of the industry made them the ideal partner to guide us along the process of identifying the relevant water indicators to the development of an operational tool.”

Elsa Favrot

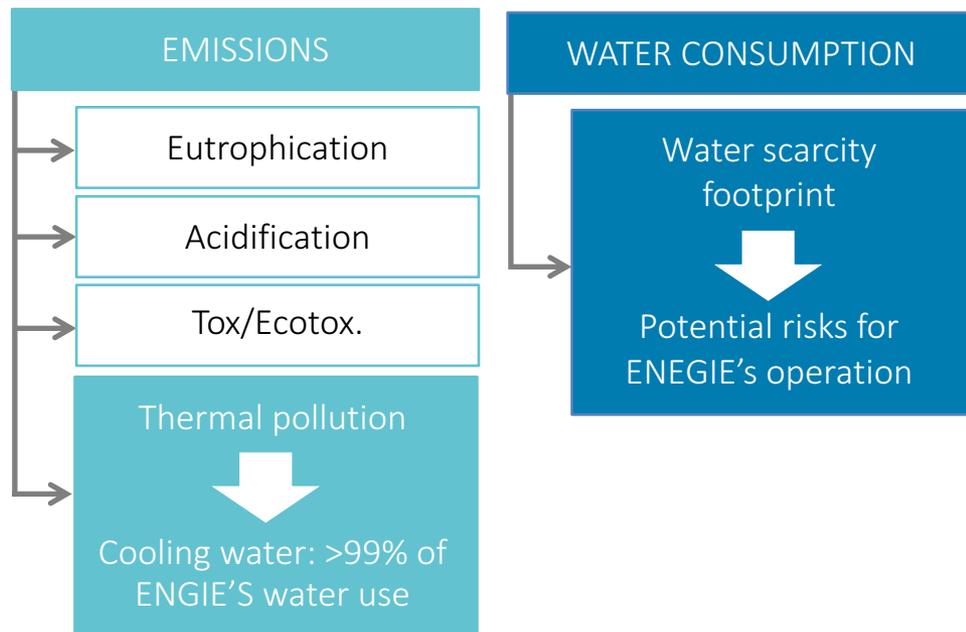
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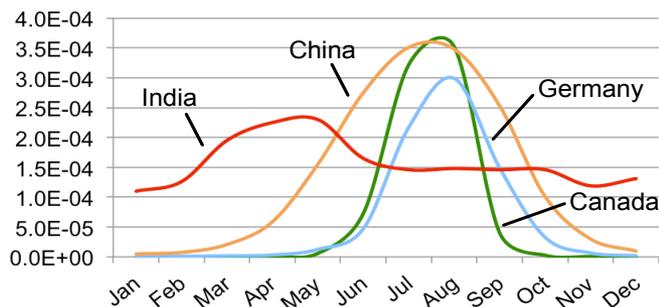
The logo for ENGIE, featuring the word "ENGIE" in a bold, blue, sans-serif font. Above the text is a blue, curved graphic element that resembles a stylized wave or a bridge.

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Characterization Factor
(PDF.m3.year/kWh)

- 1. Boreal (Canada)
- 2. Temperate (Germany)
- 3. Subtropical (China)
- 4. Tropical (India)



Key findings

- Water footprint should be able to address two critical issues regarding ENGIE’s activities: water scarcity which could be a potential risk for plant operation, and thermal pollution, since cooling water represents more than 99% of ENGIE’s water withdrawal.
- Thermal pollution was not well addressed within existing water footprint indicators, therefore Quantis and ENGIE decided to partner with ETH Zurich to develop a methodology to assess the impacts of thermal pollution on ecosystem quality.
- The methodology has been implemented within an tool that delivers a regionalized and temporalized assessment of of ENGIE’s plants. This tool is used to support the decision-making process regarding water management at the plant level.