

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.”

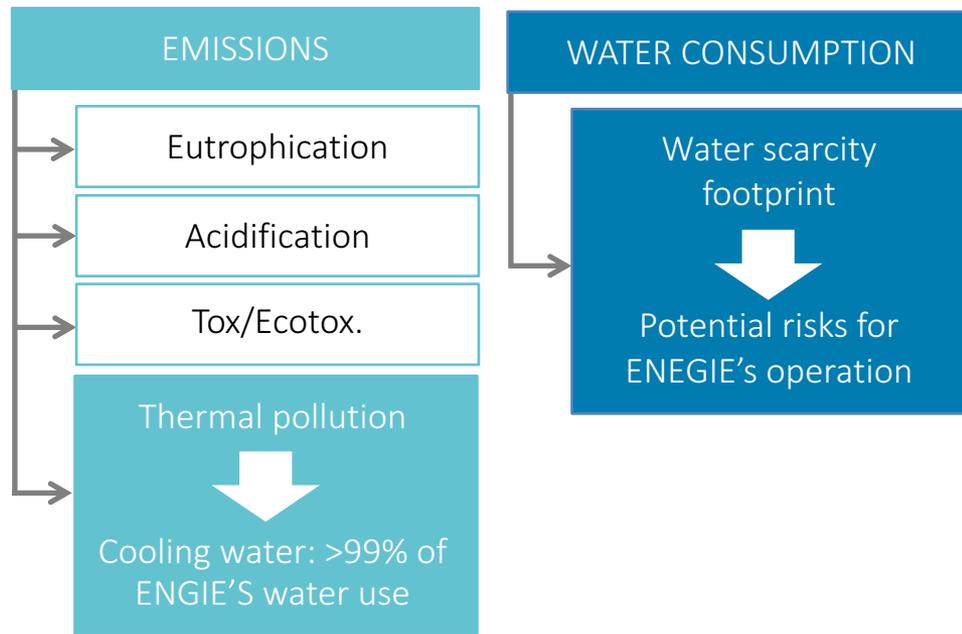
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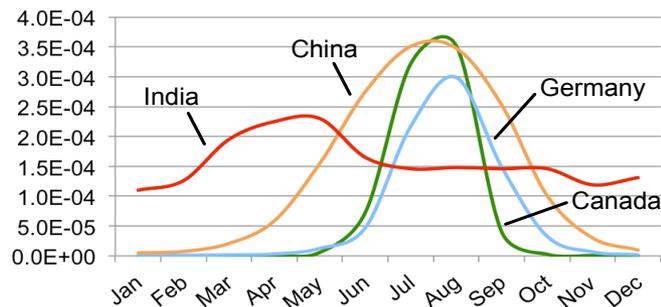
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Characterization Factor
(PDF.m³.year/kWh)

- 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.