



# Week 1: Water for Energy, Energy for Water

## FRAMING PAPER

- Freshwater demand risks outstripping sustainable supply by 40% by the year 2030
- The intricate relationship between water and energy poses both challenges and opportunities.
- Water and energy concerns must be central aspects at the highest level of all public and private policy making and development plans.

Global demand for freshwater is mounting. By 2030, in a business as usual scenario, humanity's demand for water could outstrip sustainable supply by as much as 40 per cent. Currently, water withdrawals for agriculture stands for the main share of global water extraction, but in growing regions of the world the energy sector is the largest user of water. Globally, energy consumption is projected to increase by almost 50 % over the next 20 years. Water is an essential resource in almost all types of energy production. At the same time vast and growing amounts of energy is used to operate and maintain water distribution and treatment systems.

This intricate relationship between water and energy poses both challenges and opportunities. Initiatives within either of these areas, that are fundamental for global well-being and development, will inevitably have effects on the other. The global recognition of the importance and urgency of wise management of water and energy is rising in both private and public sectors. Water and energy concerns must be central aspects at the highest level of all public and private policy making and development plans. The effects on water resources by all energy initiatives must be clearly projected, as well as the energy consequences of improving water services in agriculture, industry and households.





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# Water and energy - for a world we want!

### The Stockholm International Water Institute believes that:

1. The awareness of the central role of water for energy production and the role of energy in water management must be strengthened.
  - The level and rate of water appropriation for energy must be understood, recognized and accounted for in order for sufficient action to be taken. All energy producers must understand and recognize the value of water in their production processes as well as the impacts on local and regional water resources of their operations.
  - All water operators must report on the energy used to carry out its functions.
  - The intimate relationship between water and energy shows the need for coherent and complimentary approaches to mitigation and adaptation to climate change. The strong link between water use in energy production and its relation to successful implementation of climate measures must be recognized and addressed on all levels.
2. Water must be recognized in all energy development efforts.
  - Efforts to reduce greenhouse gas emissions favor increased use of renewable energy and/or less carbon intensive fossil fuels. As the water requirements of these options differ, the likely effects on local and regional water resources of changing energy mixes must be considered.
  - Water and energy assets are unevenly distributed. The impacts of their development will depend on specific situations at different spatial scales. Regional and transboundary cooperation on both water and energy development is essential for sustainable access to water and energy services.
3. Standardized accounting systems- and tools should be developed to measure the role of water in energy production to enable assessment of the relation between water resources and energy.
4. The economic value of water used for energy production must be explored and established. Water is a human right as well as an economic good. Energy can be provided to meet basic human needs as well as to generate profit. These distinctions are often difficult to make. As a consequence; water used for energy production is in most cases inexpensive in relation to its fundamental role in energy production even in areas that are water scarce and where availability for human need is limited. There is a need to understand when water for energy is used for different aims and how this can be reflected in the pricing of the water resources used in its production.
5. Increase water and energy efficiency. Incentives to promote energy- and water efficiency should be sought throughout production and distribution chains with regards to both supply and demand. Vast amounts of water are consumed unnecessarily due to wasteful production and consumption patterns. Whether these losses occur in poorly maintained energy and water distribution systems, outdated or ill-functioning production technologies or simply as a consequence of wasteful consumer habits the net result is the same; less resources to meet demands, higher long term costs and hampered development.

