UN WATER

Report

The United Nations World Water Development Report 2014

WATER AND ENERGY

Main Messages from the WWDR 2014

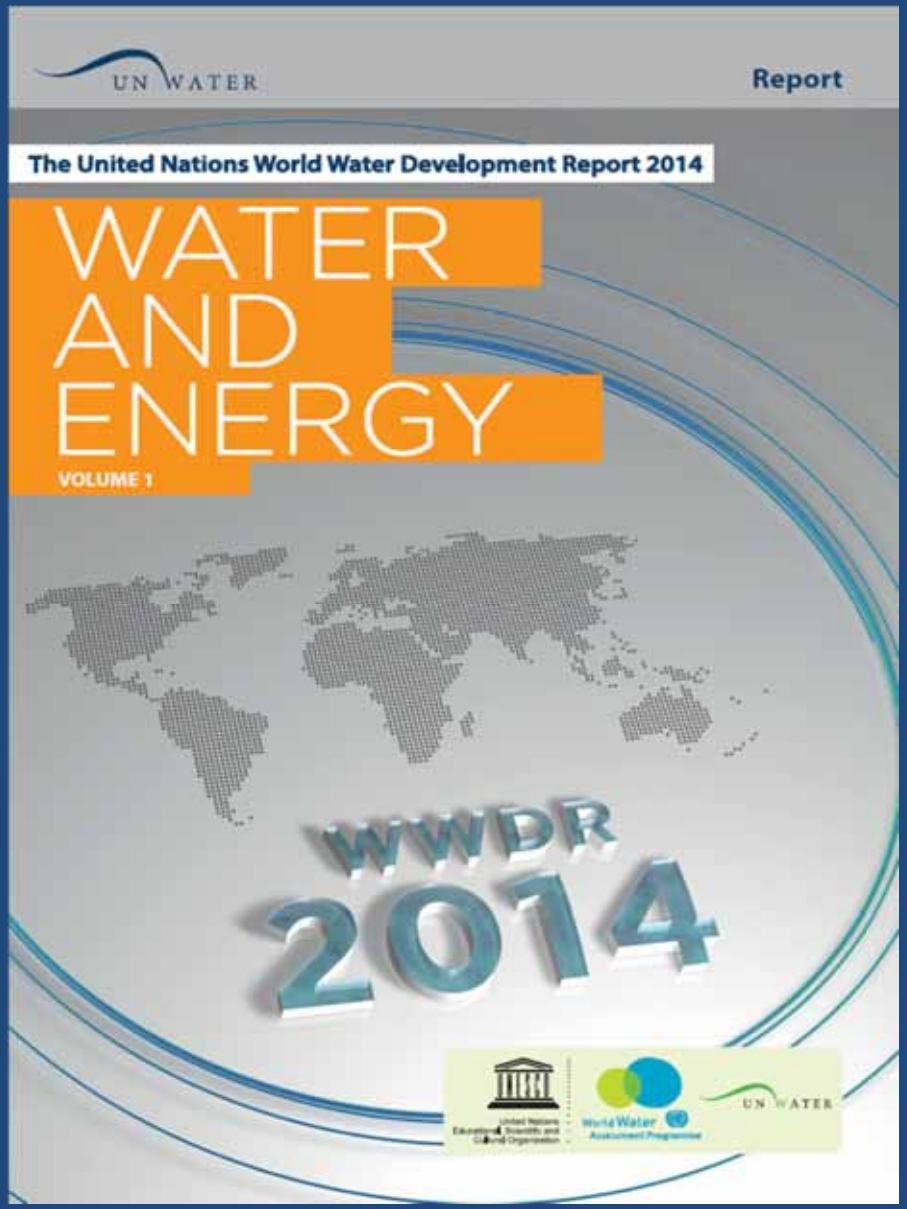
United Nations Educational, Scientific and Cultural Organization

World Water Assessment Programme

UN WATER

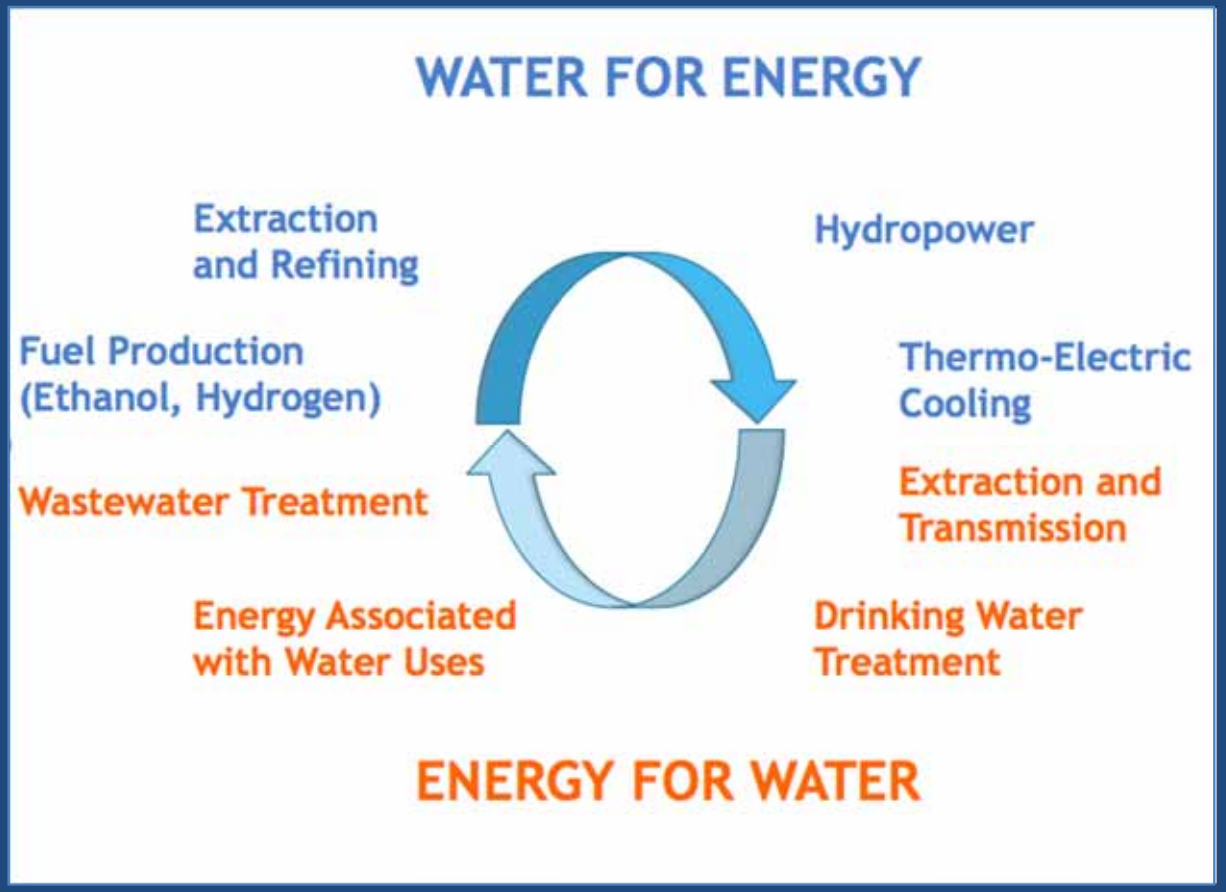
Main Messages

WWDR 2014



WWDR 2014

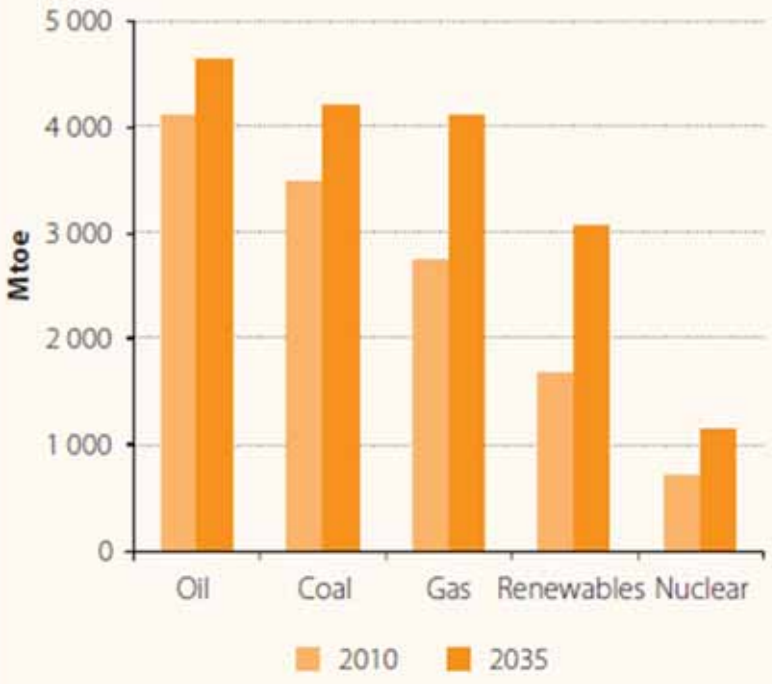
Water and energy are interdependant



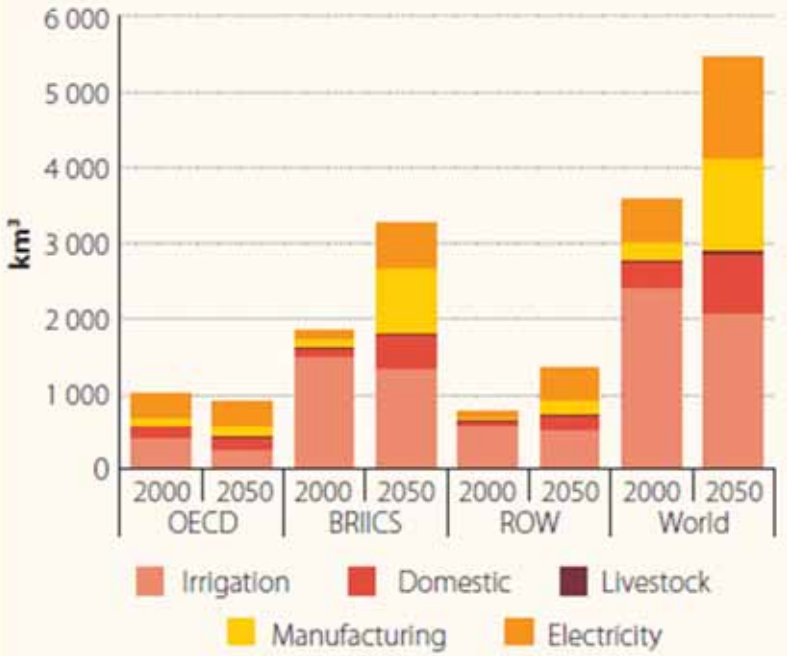
WWDR 2014

Demand for energy and water is increasing worldwide

World primary energy demand by fuel in the New Policies Scenario



Global water demand (freshwater withdrawals): Baseline Scenario, 2000 and 2050



Water where?

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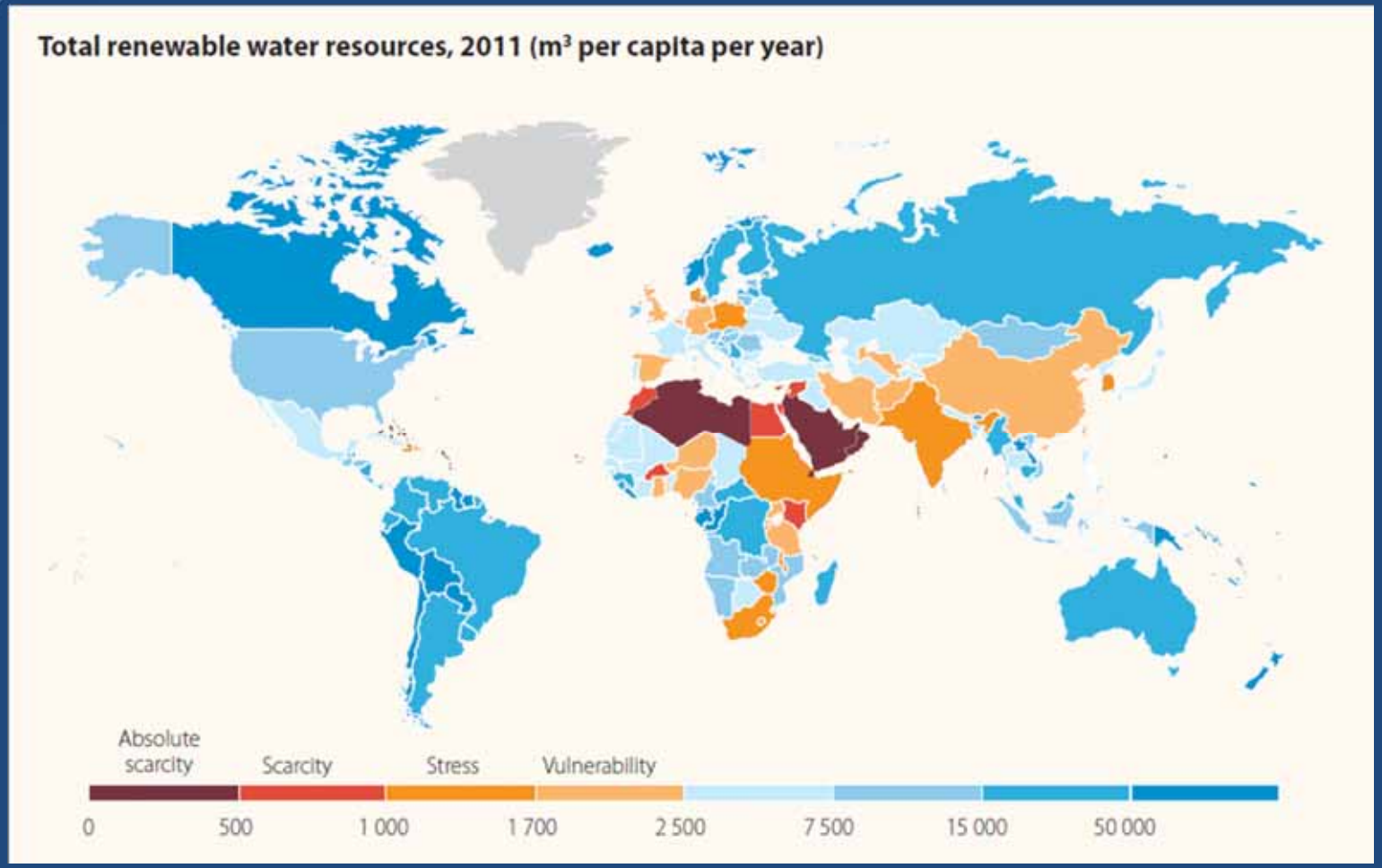
Water scarcity, stress and vulnerability



Thirsty electricity

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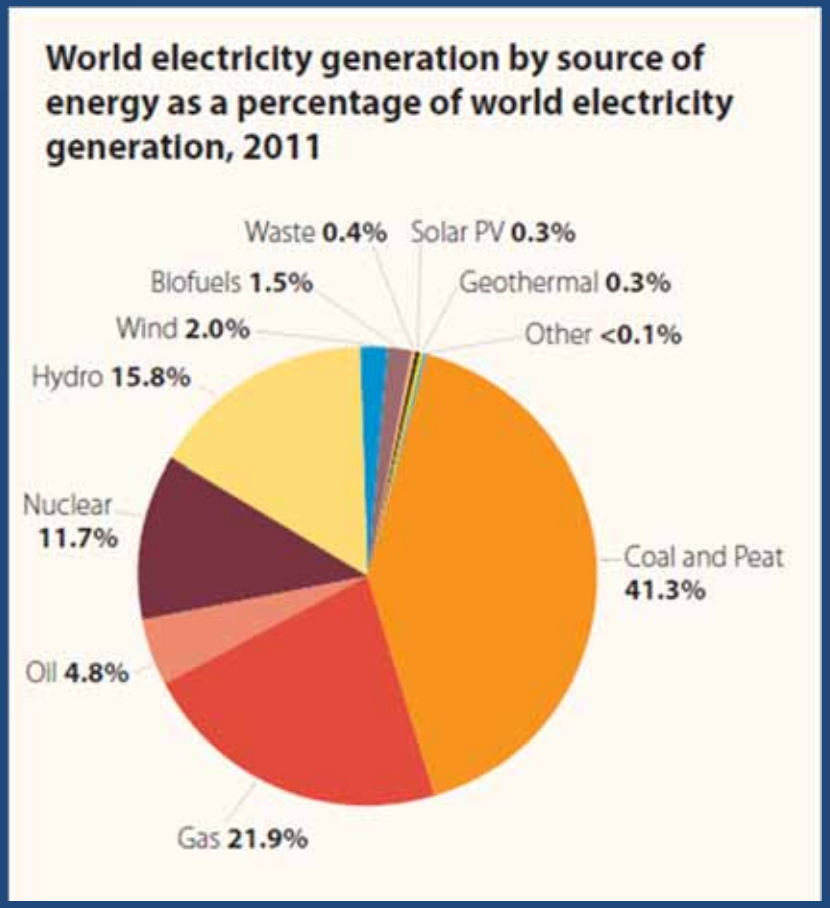
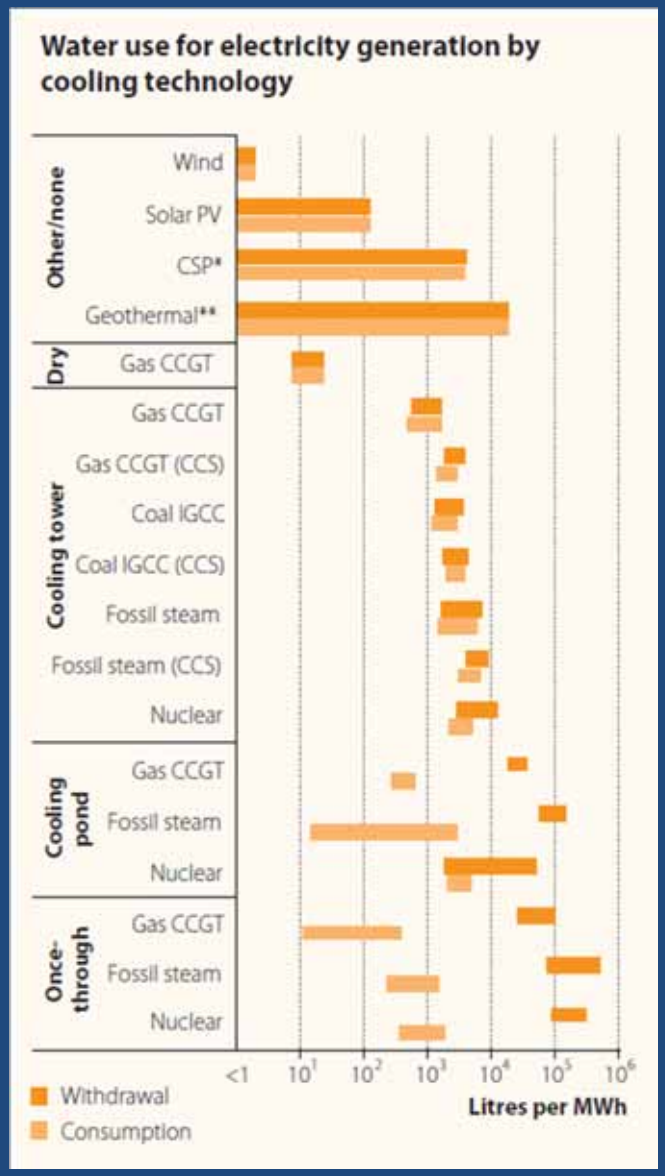
90% of global power generation is water-intensive





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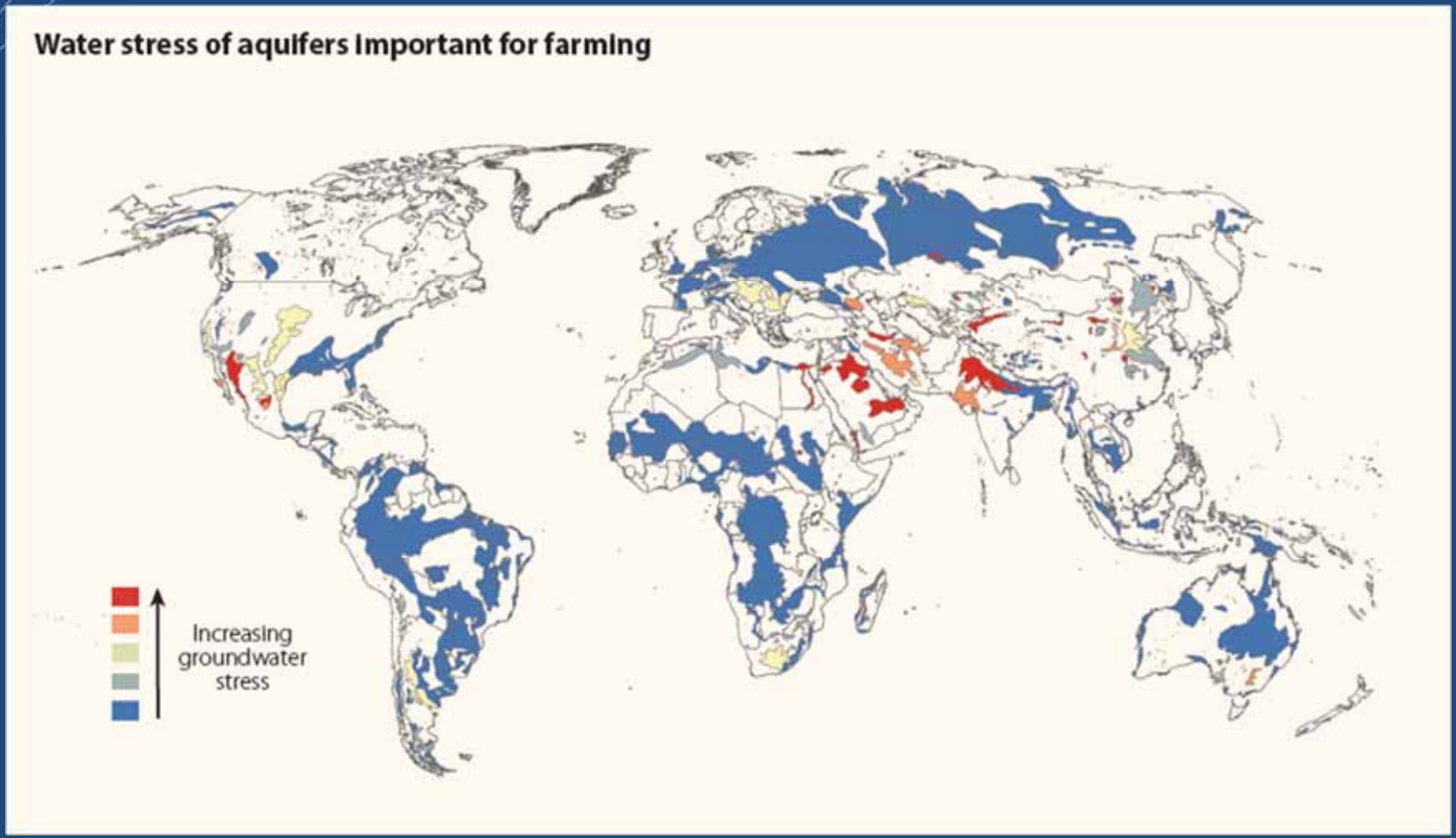
Groundwater under increasing stress



Access to water and energy

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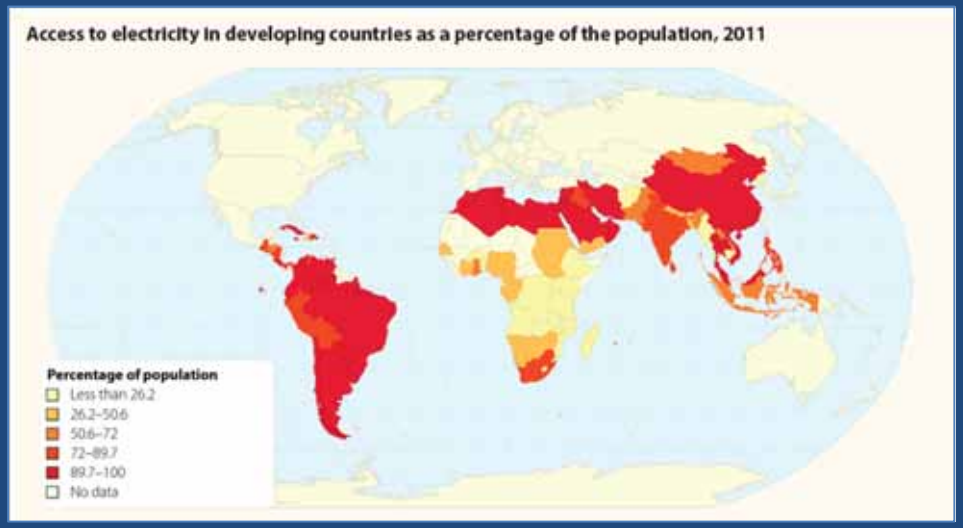
Freshwater and energy are crucial for human well being and socio-economic development

People without access to improved water	769 million
People whose right to water is not satisfied	3.5 billion
People without access to improved sanitation	2.5 billion
People lacking access to electricity	1.3 billion
People using solid fuels for cooking	2.6 billion



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POPULATION USING SOLID FUELS FOR COOKING AND WITHOUT ACCESS TO ELECTRICITY, IMPROVED WATER AND SANITATION

THE CASE OF SUB-SAHARAN AFRICA (selected representative countries):

Using solid fuel for cooking	No access to electricity	No access to improved water	No access to sanitation
78%	66%	31%	78%

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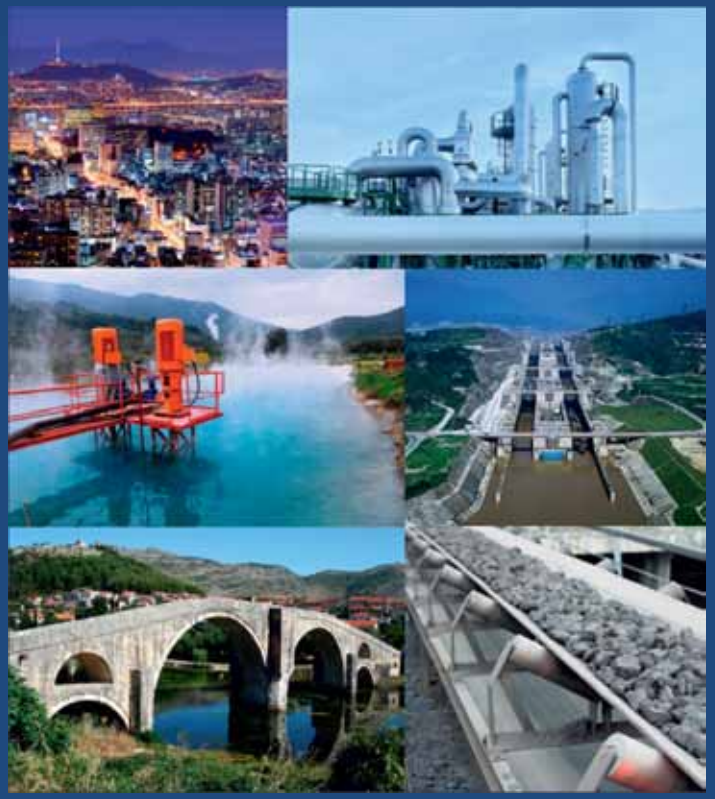
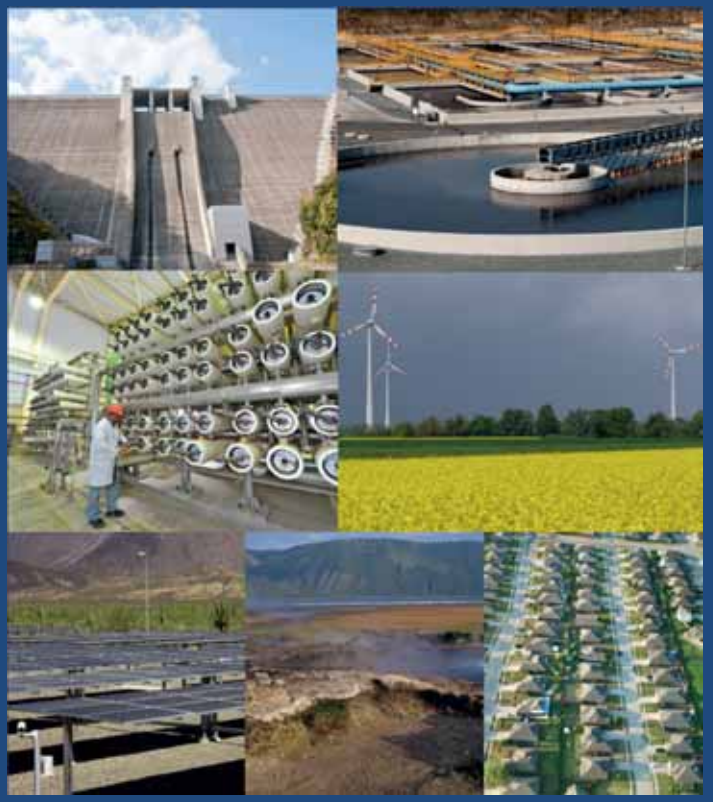
Overcoming the barriers between water and energy





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Appropriately pricing energy and water services

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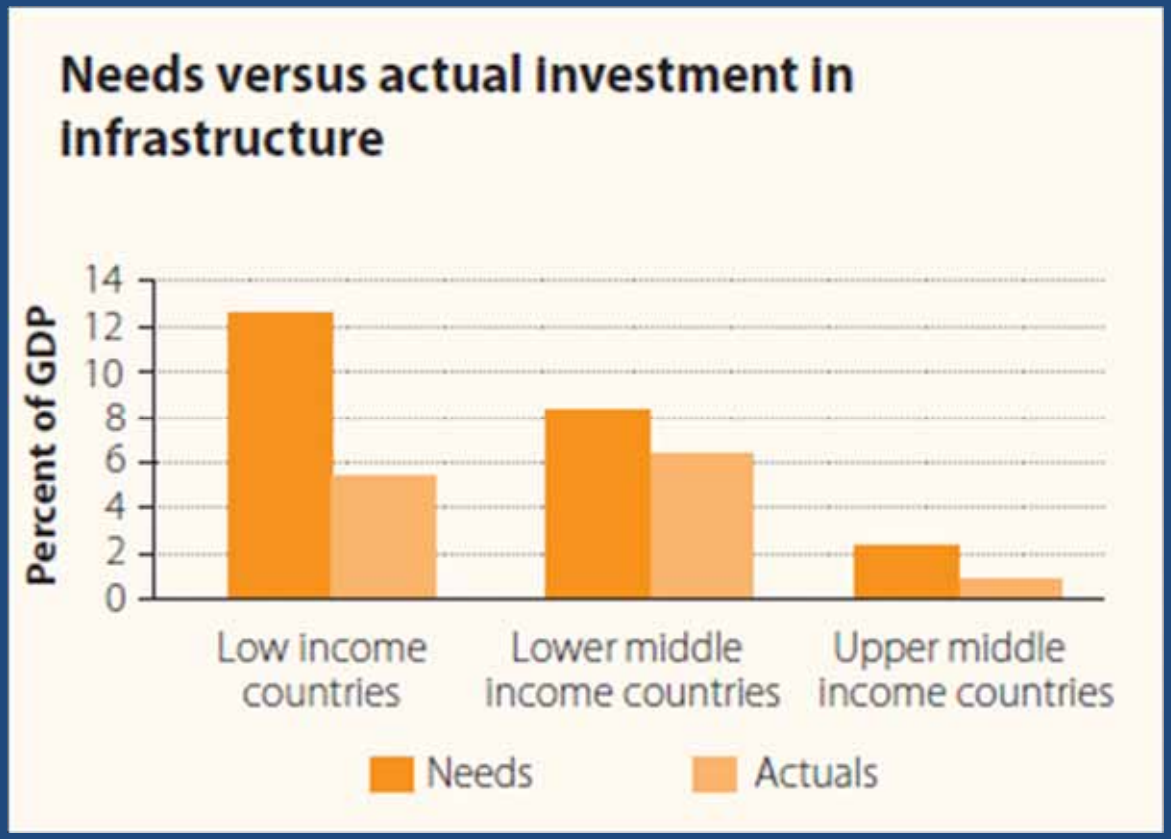
Room for private sector financing



Meeting the challenges

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Increase support for research and development

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Water and energy at the heart of sustainable development

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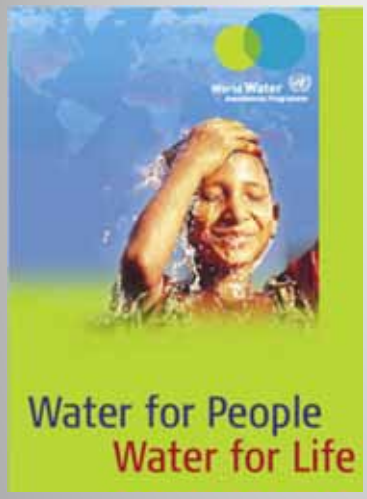
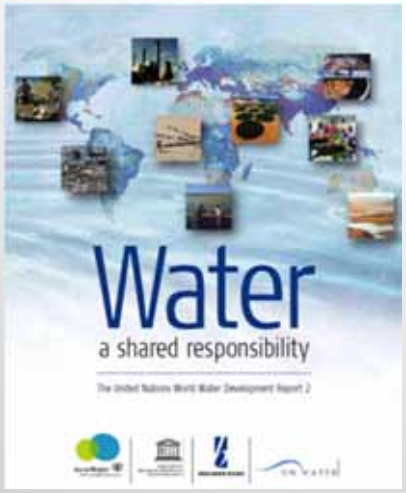
Addressing social and gender implications

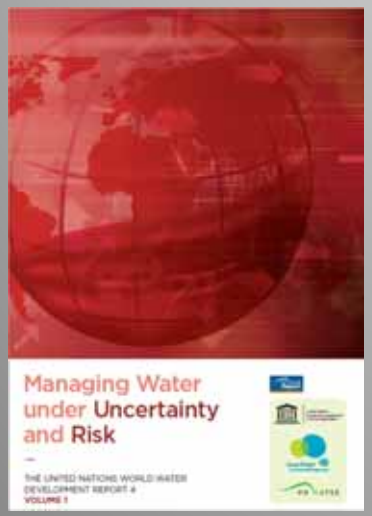


2003

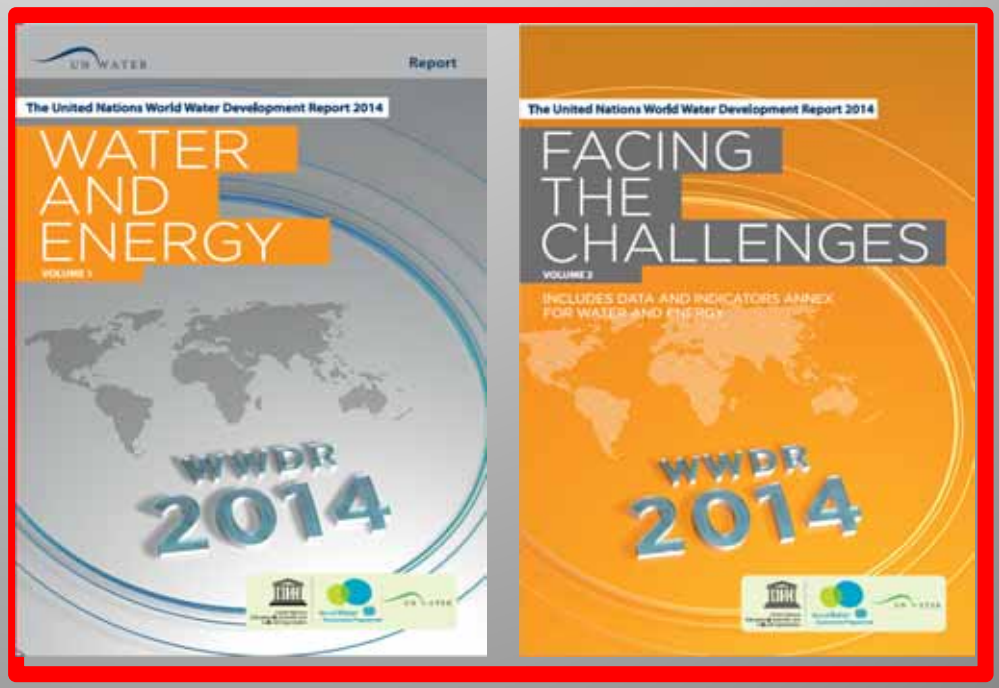


2006

2009

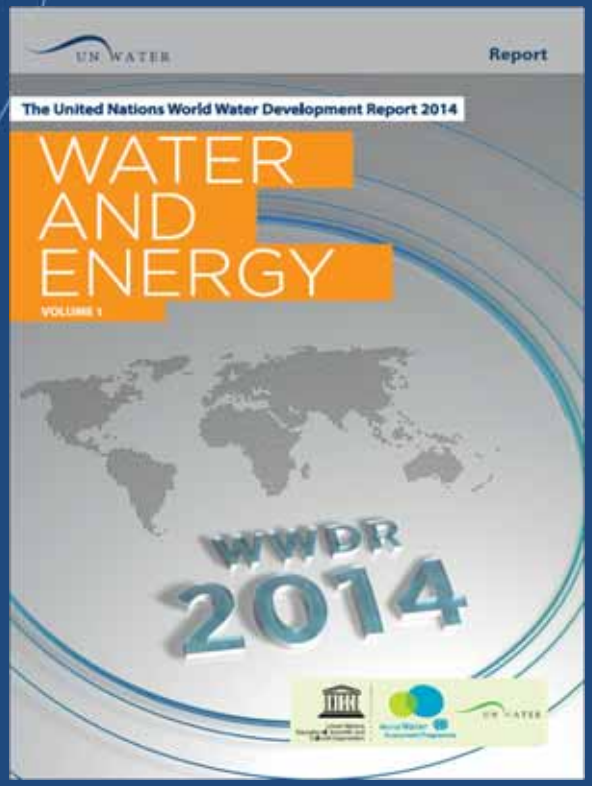


2012



Thank You

WWDR 2014

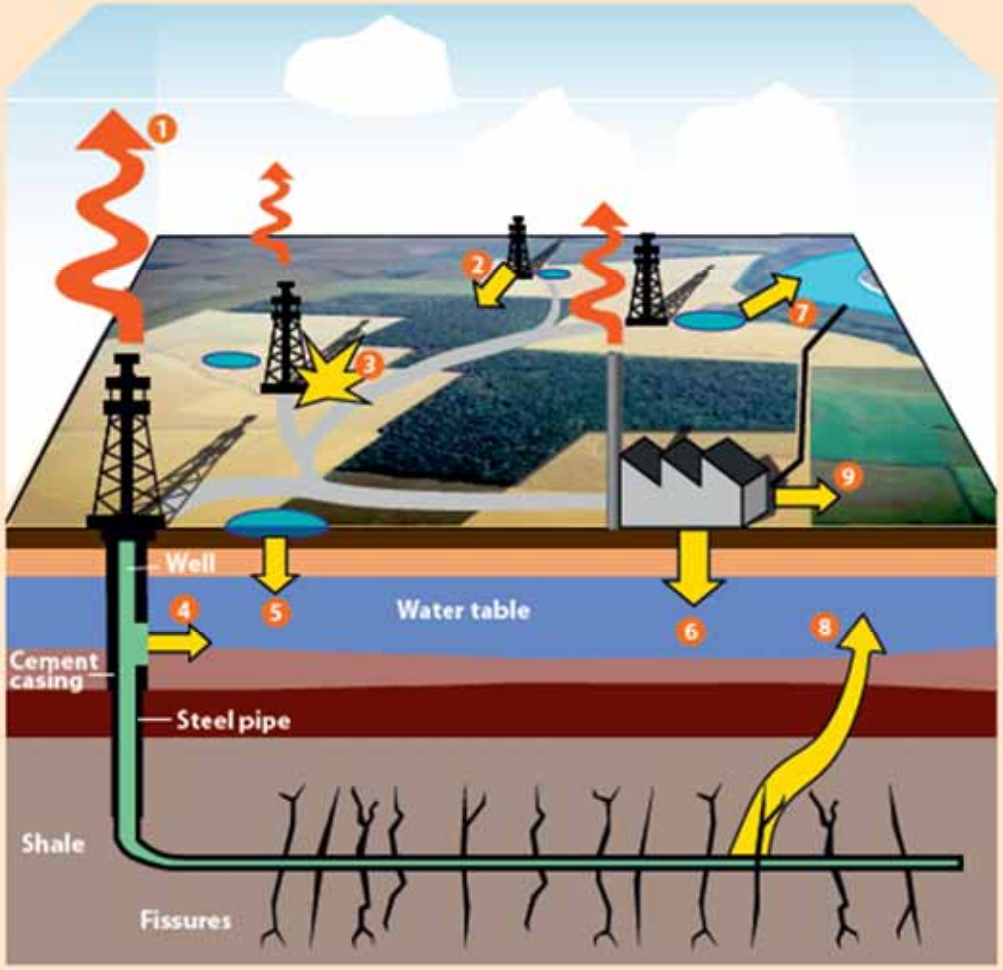


Free download at: www.unesco.org/water/wwap

Requests for interviews: s.gallese@unesco.org

Unconventional gas and oil: Oil-sands & Fracking

Schematic representation of infrastructures and potential impacts



Drilling towers

Water storages

Emissions

Power station

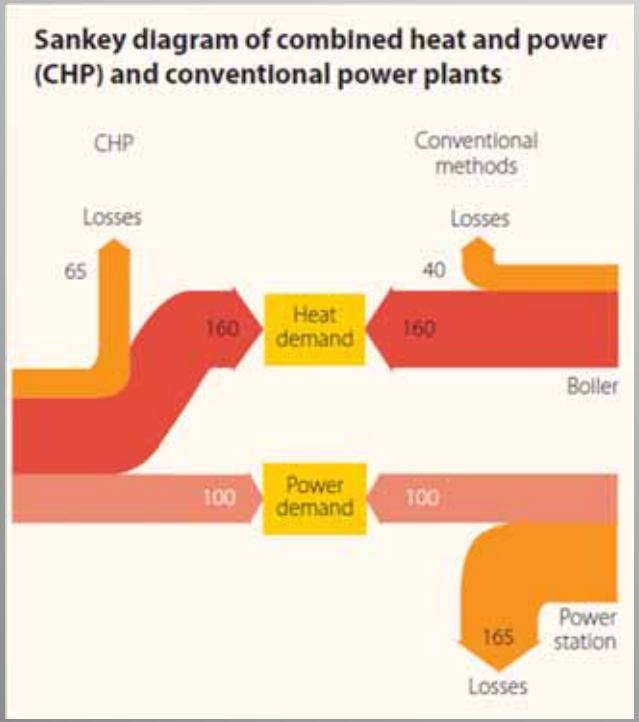
Potential sources of pollution

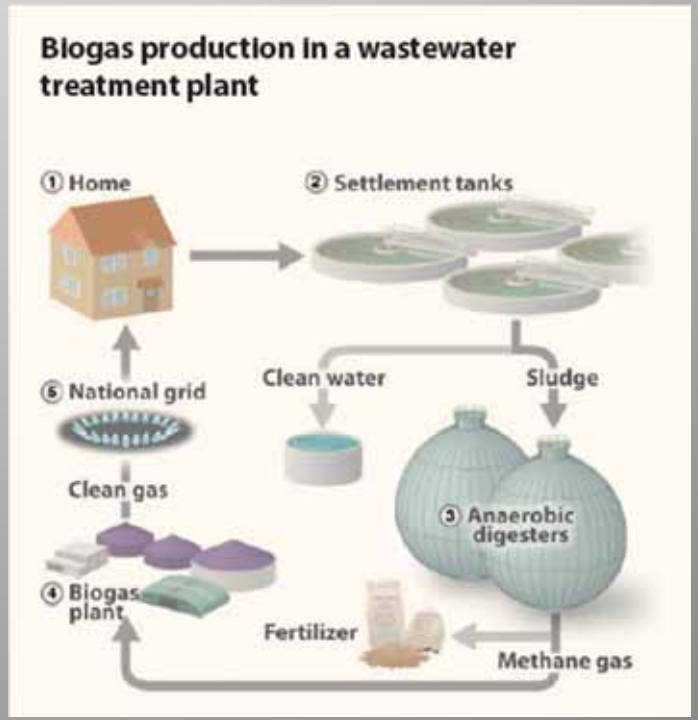
1. GHG emissions
2. Land footprint (on natural and crop land)
3. Risk of explosion (wells, pipelines, transport)
4. Risk of leakage from wells into the water table
5. Risk of leakage from fracking fluid or from produced water into the water table
6. Risk of leakage from improperly treated produced water and fracking fluids from flowback into the soil and water table
7. Similar to point 6, but into surface water
8. Risk of Infiltration of fracking fluid into the water table; risk of migration of naturally occurring toxic substances
9. Impacts from improperly treated produced water in crops

Source: Peduzzi (2012, fig. 4, p. 6).

Co-production of water and energy

- Combined power and desalination plants
- Combined heat and power plants (CHP)
- Using alternative water sources for thermal power plant cooling
- Energy (biogas) recovery from sewerage water

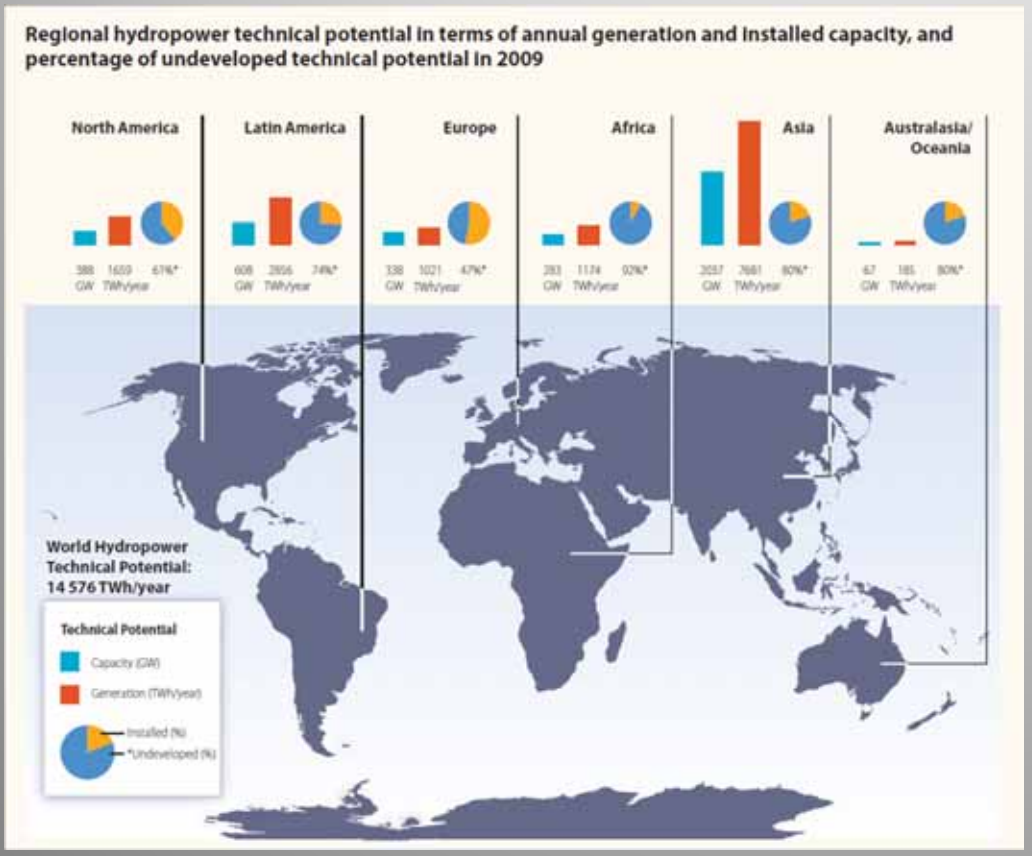


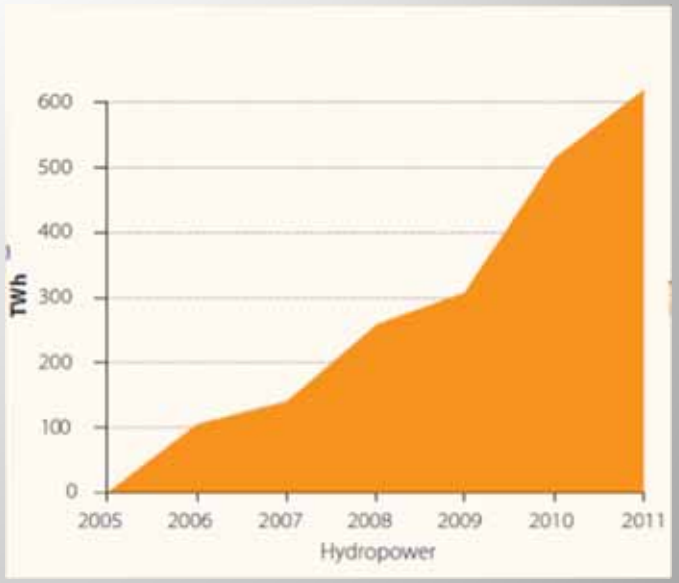


HYDROPOWER

MEETING THE CHALLENGE

90% of expected increase 2010-2035 would be in non OECD Countries

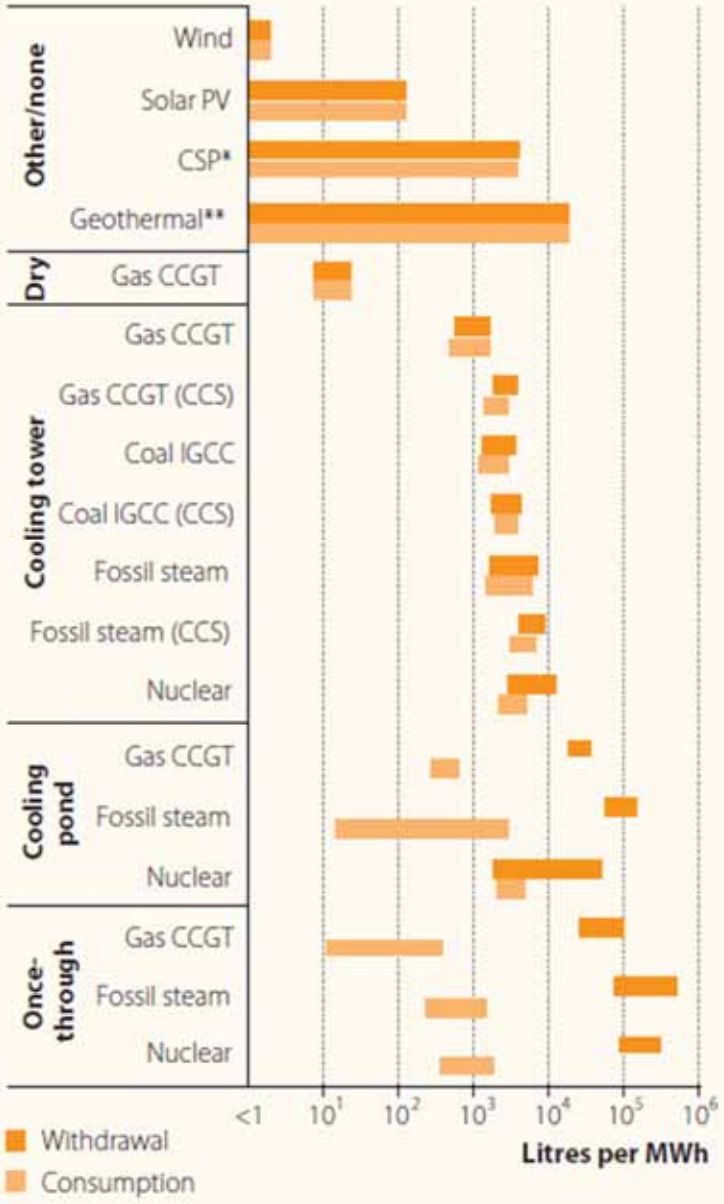




Hydropower undeveloped potential

Africa	92%
Asia	80%
Australia/Oceania	80%
Latin America	74%

Water use for electricity generation by cooling technology



Water withdrawals and consumption vary for fuel production