

World Energy Outlook 2016

Water-Energy Nexus: Key Findings

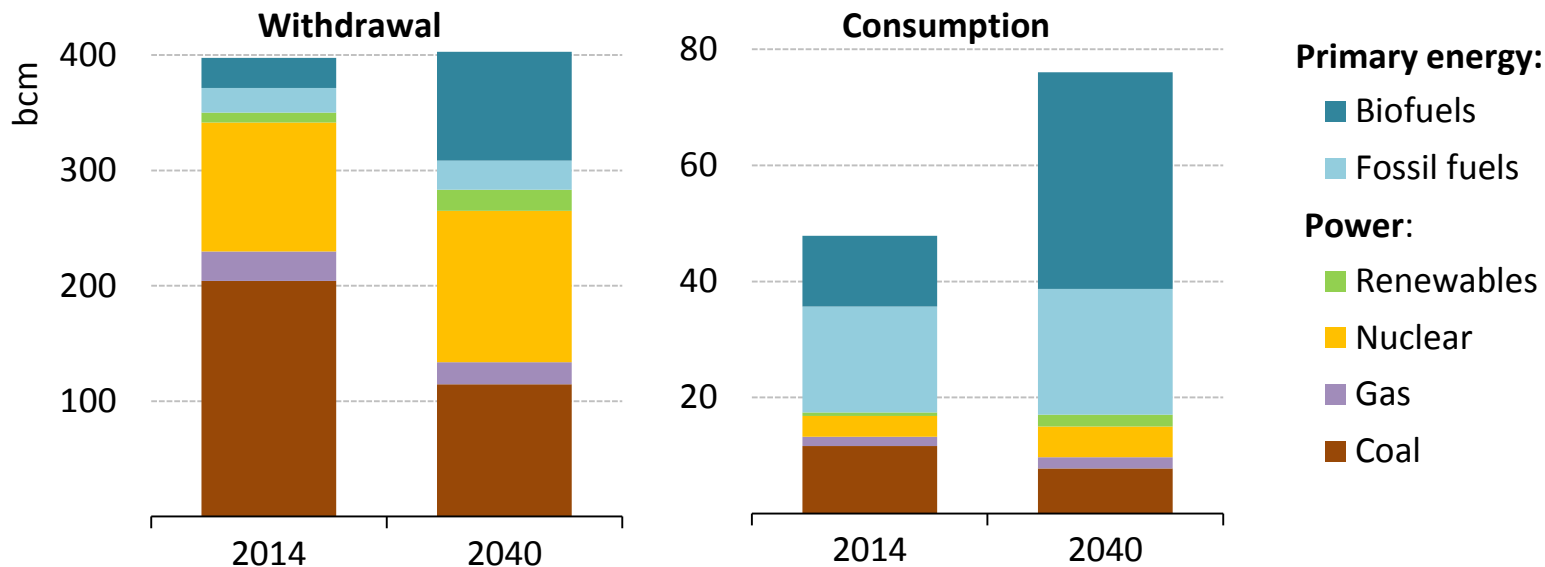
Paul Simons, Deputy Executive Director, IEA

CDP Global Water Forum 2016

15, November 2016

The energy sector gets thirstier

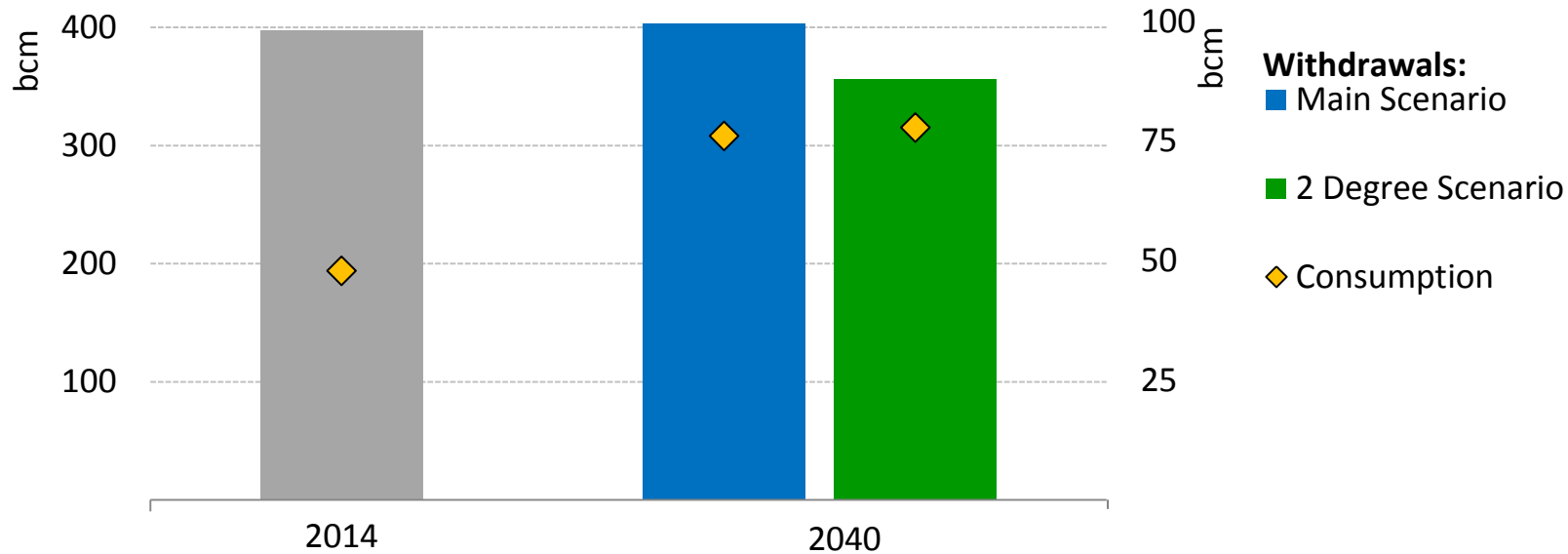
Global water requirements for the energy sector



A shift to higher efficiency power plants with advanced cooling systems lowers power sector withdrawals; a rise in nuclear & biofuels in transport drives up consumption

Low carbon does not necessarily mean low water

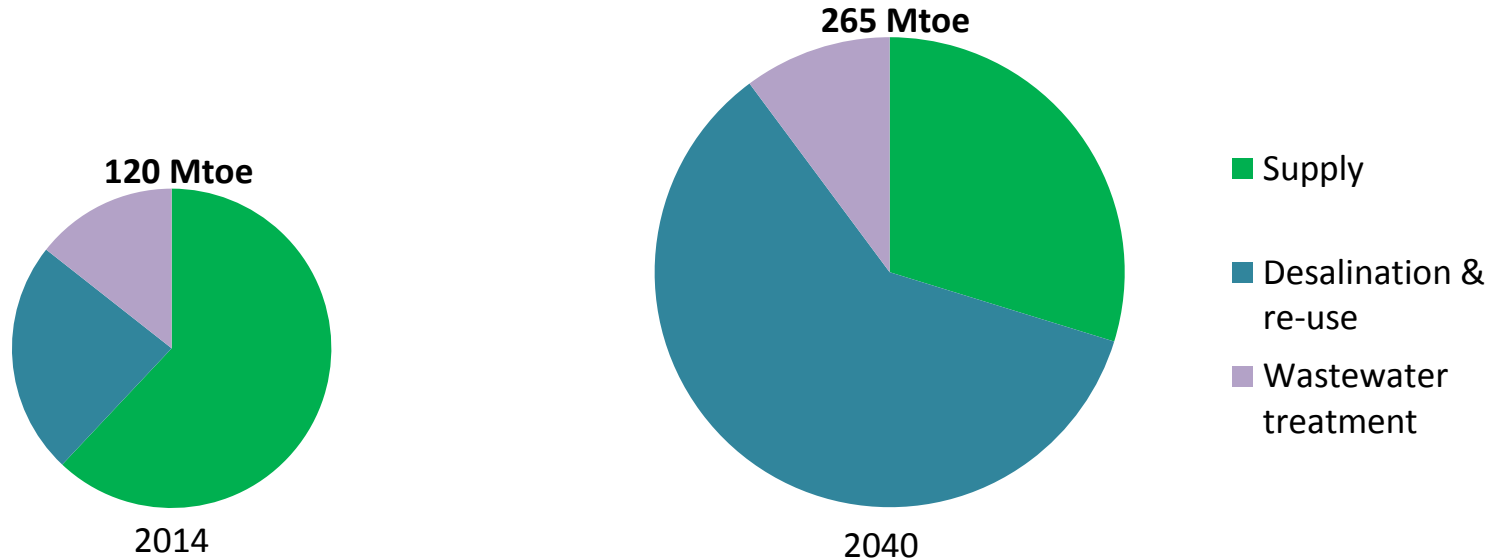
Global water requirements for the energy sector by scenario



The shift away from coal & natural gas in the power sector lowers withdrawals in a 2 degree scenario but increased shares of nuclear, CCS & CSP increase consumption

Water needs more energy

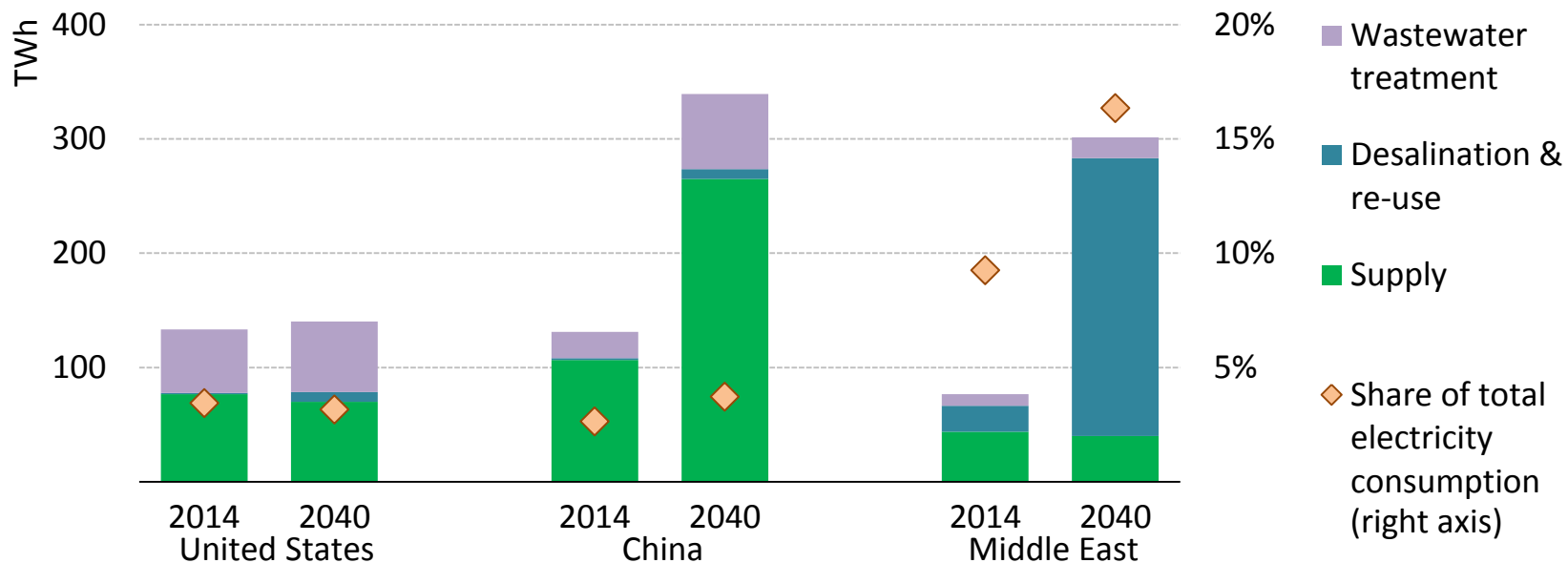
Energy consumption by the water sector by process



Exploiting the energy efficiency & energy recovery potential in the water sector would reduce 2040 energy consumption by 15%

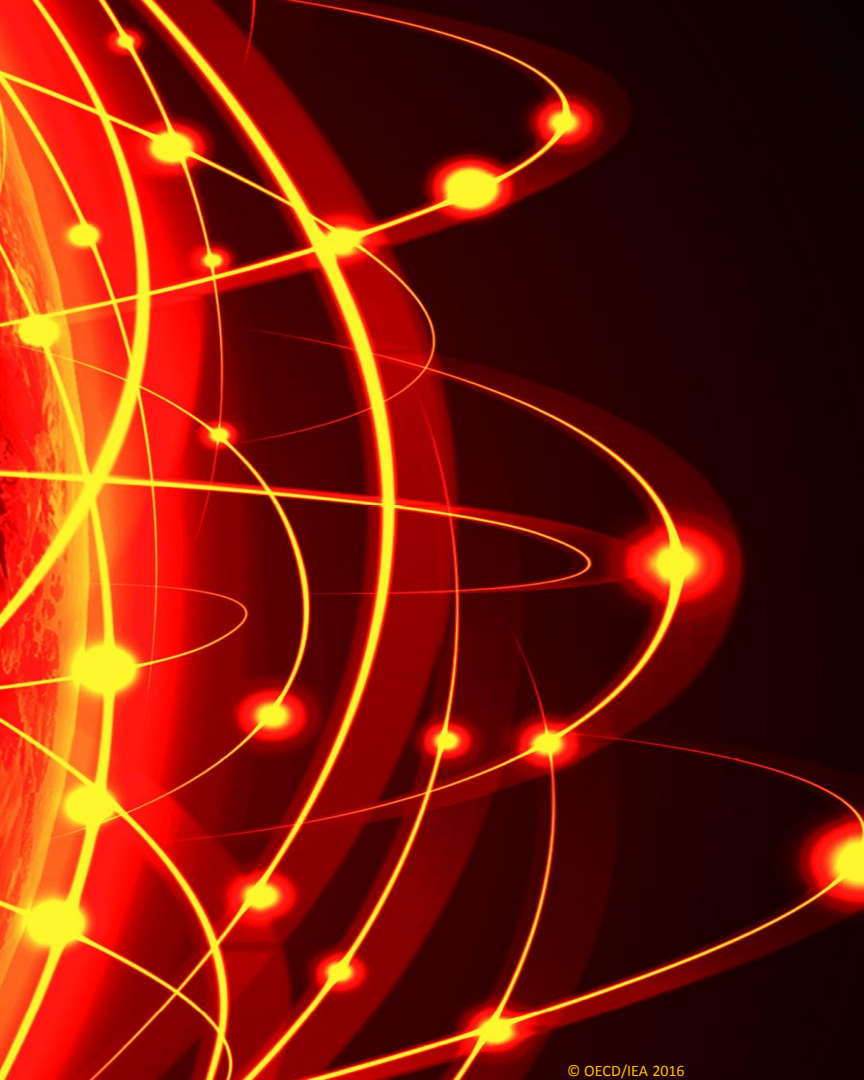
Outlook & challenges vary substantially by region

Electricity consumption by the water sector by process and region



Water continues to account for around 4% of global electricity demand in 2040, but large-scale water transfer in China & desalination in Middle East increase their share

- **Energy-water linkages are intensifying with the shift towards more water-intensive energy & energy-intensive water sectors**
- **Switching to a lower carbon pathway could, if not properly managed, exacerbate water stress or be limited by it**
- **There are huge untapped potentials to improve efficiency & reduce water losses, saving both energy and water**
- **Desalination is critical to close the water gap, especially in the Middle East, but has major implications for energy use**
- **Managing energy-water linkages is pivotal to the prospects for realisation of a range of development & climate goals**



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