

IWA WATER, CLIMATE AND ENERGY PROGRAMME

OVERVIEW





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THE IWA VISION, MISSION AND VALUES



- *Vision* The IWA's vision is the global source of knowledge, experience and leadership for urban and basin-related water solutions.
- *Mission* Our mission is to service the IWA members, the community of water professionals, external organisations and opinion leaders through:
- Knowledge and expertise
- Best practice based on science and global experience
- Innovation and the application of emerging technologies
- Pioneering and leading new solutions

Ambition

 We will achieve our ambition of changing the future of water management by putting inspiration into action as we connecting people, pioneering science, innovating technology and leading practice

GLOBAL CHALLENGES







WCE PROGRAMME RATIONALE

- Regulatory pressure is encouraging water and wastewater utilities to become energy and carbon neutral
 - 10 35% of operating expenditure are on energy bills,
 - Many utilities will need to reduce GHG emissions up to 90% compared to 1990 emission levels
 - Water and wastewater services are responsible for 5-8% total anthropogenic GHG emissions worldwide
 - Energy conservation and production can cover up to 80% 100% of energy demand.







Cities and their utilities are experiencing more frequent flooding and droughts due to climate change

- Creating local urban water storage in combination with adequate urban drainage
- Diversification of water supply options link to BoF programme

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GOAL AND OBJECTIVES



Goal: To explore pathways for water and wastewater utilities to achieve energy and carbon neutrality while adapting to changing water availability.

- 1. To facilitate improvement of utility water-energy efficiency and energy production
- 2. To develop a communication approach that will **inform decision makers on urban mitigation and adaptation**
- 3. To support cities to develop approaches for adapting to climate change through **urban water storage and a 'portfolio' of water supply options**.



MEMBER, PARTNER & REGIONAL DIMENSIONS



- Generate knowledge and moblise expertise (members)
- Influence policy and decision makers (partners)
- Have impact on the ground (Regions)



Working to respective strengths, pooling resources, engaging different constituencies

> Applying collective knowledge (best practices) and individual expertise

Globally relevant activities targeted to regional needs and opportunities

URBAN WATER-ENERGY NEXUS









Direct and Indirect Emissions

WATER AND WASTEWATER COMPANIES FOR CLIMATE MITIGATION







 Requiring less energy for the same service or product Reducing water losses by replacing pipes and using energy efficient pumps

Optimizing operations

- Producing and using renewable energy
 Producing biogas from wastewater (produce heat and electricity)
- Reducing or preventing direct greenhouse gas emissions
 Reducing GHG emissions from treatment tanks and sludge
- Substituting processes that would use energy elsewhere Recovering nutrients from wastewater instead of producing fertilisers



WHAT IS THE WATER AND WASTEWATER SECTOR'S BENEFIT OF REDUCING ENERGY USE AND GHG EMISSIONS?

- Reduced operational costs of utilities
- Less dependency of the water sector on fluctuations of energy prices
- Future smart grid integration
- More efficient use of water resources (competing less with other water uses such as energy production)
- Contribution to the country's climate mitigation goals

PARTNERS



A | Pilot Measures

Technology effect and viability demonstrated in 3 pilot utilities

B | Framework

Institutional / political framework favourable for GHG reduction in WWUs

Ministry of Natural Resources and Environment (MoNRE)



C | Multiplication

Experience on GHG reduction in WWUs disseminated

SEAWUN?







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COMISIÓN NACIONAL DEL AGUA



Dirección Nacional de Saneamiento (DNS) ANEPSSA, ADERASA?

ANEAS, ADERASA?

DEVELOPING A COMMUNITY OF PRACTICE

- Multidisciplinary group of experienced professionals, from academia and practice
- Provide guidance on how climate mitigation technologies and processes can be implemented
- Use of existing knowledge platforms
 - Sustainable Sanitation Alliance (SuSaNa)
 - Agriwaterpedia





EVENTS



 Water, Energy and Climate Conference, May 21-23 2014 | Mexico <u>http://wecmexico2014.org/</u>

- IWA World Water Congress Lisbon, Portugal Sept 21-26, 2014
 - Energy and Carbon Neutral Utilities –an opportunity for knowledge exchange on approaches that have been used to achieve and measure energy neutrality in utilities and industry.
 - Adaptation to climate change impacts: Urban resiliency

POSSIBLE BOTTLENECKS

- Access to data
- Enabling environment "NIMTIO" effect
- Local partner motivations
- Low value of Carbon









THANK YOU FOR YOUR TIME

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