Fact Sheet

Strengthening the Water-Energy-Climate Nexus for Green Recovery

Water and Wastewater Companies for Climate Mitigation

WaCCliM

Context

Defining Green Recovery

Green Recovery usually refers to the transformative restoration of societies and ecosystems towards decarbonization, resilience and environmental sustainability after experiencing a major shock, such as the financial crisis of 2007/08 or the COVID-19-pandemic. This includes the creation of green jobs and support for switching to low-carbon economic pathways.

The Green Recovery phase should start towards the end of the emergency response phase and largely exceeds it. Green Recovery differs from the emergency response phase in political, economic, health and social measures and priorities. However, emergency response strategies which consider green aspects can lay the foundation for the transition towards Green Recovery.

KEY MESSAGES

- **Water and sanitation are indispensable for sustaining healthy societies, in particular during pandemics.**
- **Nonetheless, water and wastewater utilities struggle to maintain their services during crisis due to a sharp decrease in revenue from tariffs.**
- **Financial challenges impede needed investments in infrastructure extension, operation and management including through the transfer of green technology.**

Challenge

Why should we focus on Water & Sanitation?

The relevance of water and sanitation systems for **securing health and hygiene** measures became obvious during the COVID-19-pandemic. The crisis also showed the vulnerability of the systems as many water and wastewater utilities have been facing **financial difficulties**. In many regions, the crisis has caused a sharp reduction in incomes from tariffs. Hence, utilities can´t buy chemicals, pay electricity bills (which sometimes add up to 35% of their operational costs) or must reduce their staff. Thus, supply of drinking water and treatment of wastewater is interrupted with adverse effects on public health and industrial production, which are particularly harmful during a pandemic.

Even without external financial shocks, urban water and sanitation utilities often struggle to undertake urgently **needed investments** for modern technology, facilitating the extension, operation and maintenance of low carbon infrastructure while improving energy and water efficiency. The current pandemic further impedes investment and transfer of technology, such as smart water technology. The respective **qualified jobs** in environmental engineering and water management are lost or do not even emerge. Due to a focus on emergency response and quick economic recovery, governments often do not prioritize climate-resilient water resources and **risk management planning** which would be indispensable to confront future health and environmental crises. Consequently, national and sub-national governments fail to combine economic recovery with structural reforms to become champions in the fields of sustainable urban development, energy and resource efficiency and greenhouse gas reduction.

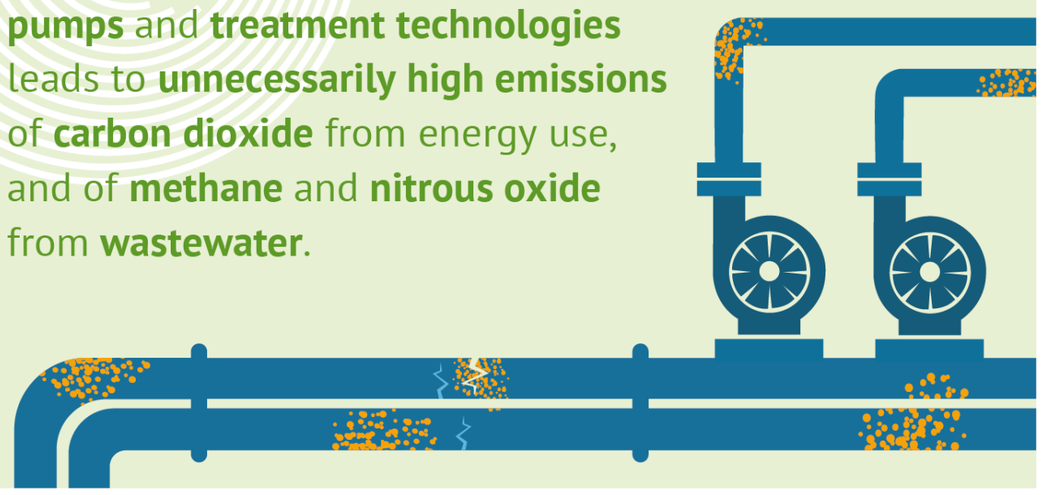
Solution

Designing Green Recovery Projects

Continuous and financially sustainable water and sanitation services are the backbone of resilient economies, particularly during challenging times. In addition to that, the urban water sector can lead the transition towards green recovery through targeted investments, embarking on a pathway towards **decarbonization and environmental sustainability**.

Besides securing continuous drinking water and sanitation for hygiene measures and industrial production, an investment initiative is needed to tap the full potential of combining water, energy and climate action. Implementing **low carbon energy projects** in the urban water and sanitation sector improves utilities services and financial sustainability, creates green jobs and local business opportunities, protects the climate and environment and increases resilience to face future financial, health and climate crises.

Widespread use of **outdated** or **inappropriate pumps** and **treatment technologies** leads to **unnecessarily high emissions** of **carbon dioxide** from energy use, and of **methane** and **nitrous oxide** from **wastewater**.

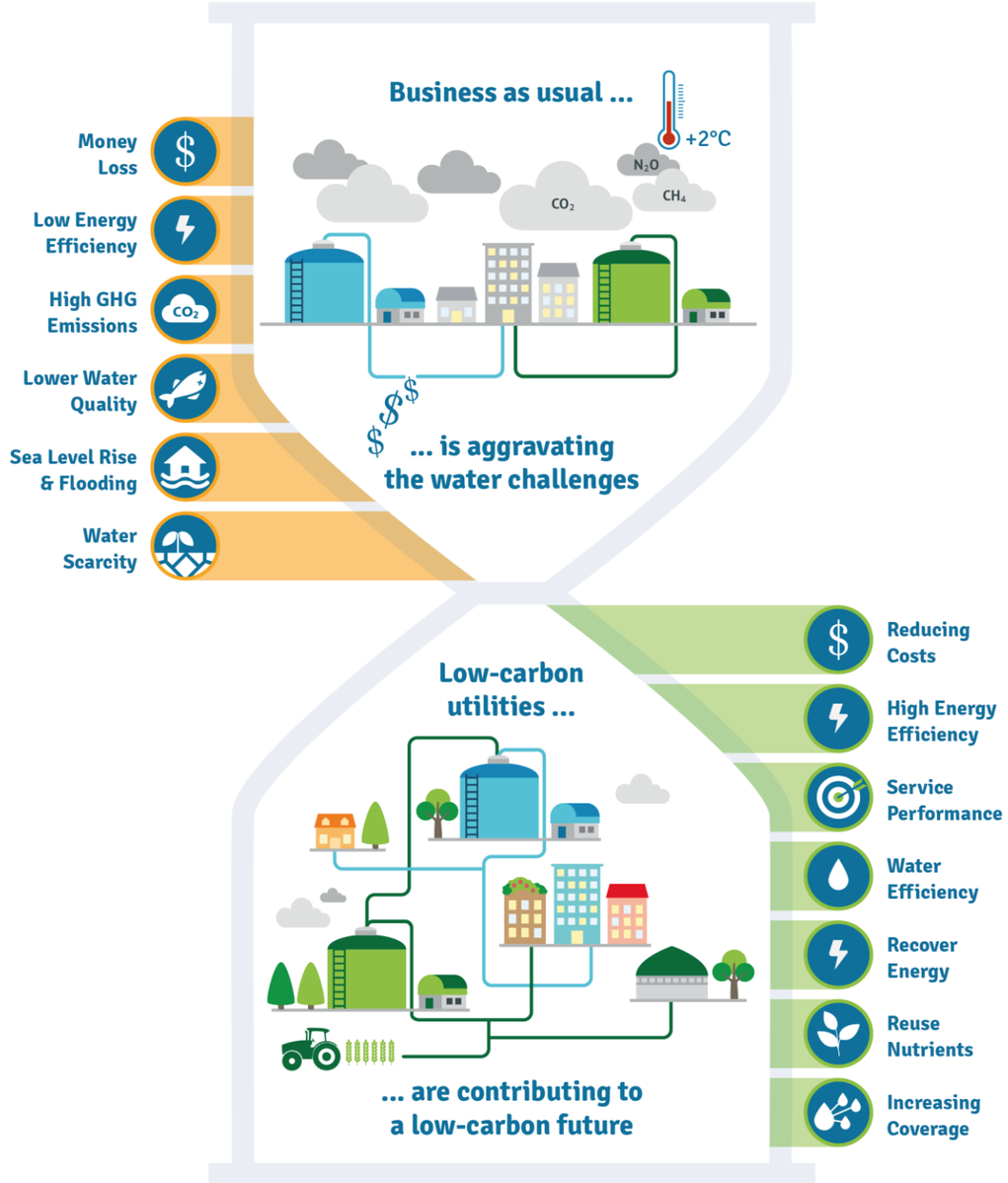


Approach

Recovering with the Water-Energy-Carbon Nexus

The following measures for water and wastewater utilities should be prioritized for achieving high impacts and supporting a green recovery:

- Improve **energy efficiency** in water supply and sanitation through assessing and enhancing water distribution networks, substituting inefficient pumps or optimizing wastewater treatment plants
- Generate **renewable energy** in water and wastewater facilities to secure water supply and wastewater treatment by production of biogas from wastewater and sludge and decentralized solar and wind energy production
- Support **resilience** in utilities' operations through developing climate and health risk management plans, improving analytic capacities in wastewater treatment plants and mainstreaming co-benefits for adaptation into mitigation activities.
- Accompany utilities on their **digital journey** by installing smart water technology for improving operation and efficiency, implementing preventive and corrective actions, as well as professionalizing customer service



Energy-efficient systems, water loss reduction and **energy capture** from wastewater can quickly **pay for themselves** while **delivering better services** and **resilience to climate risks**.

Measures should be accompanied by political advice on creating an enabling environment, including incentives for a transformative urban water and sanitation sector at the national, sub-national and local levels.

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