



INVISIBLE LOSSES, VISIBLE GAINS: STRENGTHENING APPARENT WATER LOSS MANAGEMENT IN ST. KITTS AND NEVIS

TECHNOLOGY DESCRIPTION

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Apparent water loss management refers to the reduction of water that is produced but not billed due to unauthorized consumption, metering inaccuracies, or data handling errors. This type of water loss occurs when water is used but not accounted for by the utility, leading to lost revenues and inefficiencies. The implementation of apparent water loss management includes various actions such as detailed water audits, strengthening metering systems, removing illegal connections, and upgrading billing and customer information systems. The goal is to increase water accountability and reduce unbilled water usage.

CLIMATE RATIONALE OF THE TECHNOLOGY

St. Kitts and Nevis is highly vulnerable to water scarcity, exacerbated by climate change impacts such as prolonged droughts and unpredictable rainfall patterns. Addressing apparent water losses will not only reduce pressure on scarce water resources but also improve the resilience of the water sector to these climate impacts. By minimizing wastage and improving system efficiency, the country can better manage its water supplies, ensuring availability even under adverse climate conditions. Additionally, reducing apparent water losses will contribute to the mitigation of greenhouse gas emissions by decreasing the energy required for water pumping and treatment.

AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIMELINE

The ambition is to achieve a **25% reduction in apparent water losses** over a 5-year period at a cost of **USD 2.43 million**.

Actions	Target	Timeline (Years)	Costs (USD)
<p>Action 1: Perform a detailed water audit on both islands to establish a baseline for water losses including detailed audits for top 100 large volume consumers.</p> <p>Action 2: Strengthen capacity and training for water loss prevention for water utility technicians.</p> <p>Action 3: Identify and remove or regularize illegal connections</p> <p>Action 4: Procure and install new (or upgraded) billing and customer information systems to improve data quality and facilitate accurate water loss tracking</p> <p>Action 5: Implement enhanced universal metering by replacing faulty meters and installing smart meters to monitor large volume users.</p> <p>Action 6: Develop public awareness and outreach campaigns focused on water conservation.</p>	25% reduction in apparent losses over 5 years.	5	2,430,000



EXPECTED IMPACTS OF THE TECHNOLOGY

- **Water conservation:** By reducing unaccounted-for water, the apparent loss management program will contribute to better water use efficiency, alleviating pressure on already limited water resources.
- **Economic benefits:** Reducing water losses will improve revenue for water utilities, enabling more investment in infrastructure and services. Enhanced metering and billing systems will ensure that users are billed accurately, increasing revenue.
- **Energy savings and emissions reductions:** With less water being lost, the demand for water production will decrease, leading to reduced energy consumption and associated greenhouse gas emissions from water pumping and treatment processes.
- **Increased climate resilience:** By securing water resources more efficiently, St. Kitts and Nevis will be better positioned to manage periods of drought or irregular rainfall, safeguarding water supplies.

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

The Government of St. Kitts and Nevis has set the framework for water use efficiency through policies like the **National Climate Change Adaptation Strategy** (2018), which highlights the need for better water management in the face of climate risks. Additionally, the **St. Kitts Water Conservation Plan** (2013) provides a framework for addressing water losses, though there is room for improvement and expansion to cover new technologies and strategies. More recently, the **SKN Water Utility Adaptation Plan** (2021) paves the way for future actions needed for this sector. The Plan is structured under six thematic programmes including water policy, legislation and capacity building, watershed management, climate resilient water supplies, water demand management, energy efficiency and renewable energy and disaster risk management.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

To enable the successful implementation of apparent water loss management, the following policy actions are proposed:

- **Adoption of a Federal Water Policy and Plan including climate resilience.**
- **Upgrade of the legislation which governs water to allow for modernization, strengthening of legal frameworks and institutional reform.**

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

The estimated cost for full implementation upgrading and modernizing the legal enabling framework and policies for the water sector was estimated at **USD 2 million** over three years in the **SKN Water Utility Adaptation Plan** (2021).



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USEFUL INFORMATION

CONTACT DETAILS

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LINKS TO TNA REPORTS

More information on the Technology Needs Assessment for St. Kitts and Nevis can be found at <https://tech-action.unepccc.org/country/st-kitts-and-nevis/>.