

Webinar on Non-Revenue Water  
Reducing Water Loss: Best Practices in Non-Revenue Water  
November 18, 2024  
9:00-10:30 AM CET | 4:00-5:30 PM PST

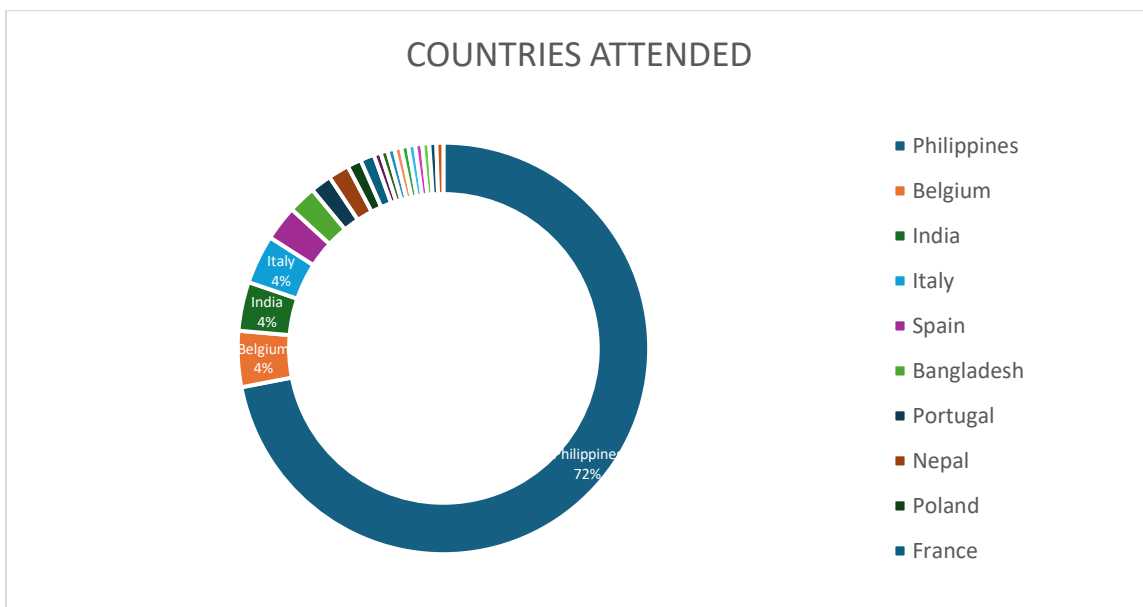
**Summary**

A total of 182 attended the webinar, the majority of whom were from Asia, accounting for 81% of the attendees. This is followed by participants from Europe at 17% and Africa at 2%. 10 questions were fielded in the chat box. Most participants participated in the polls. 98% said that the webinar either met or exceeded their expectations.

**Participants**

No. of Participants Registered	No. of Participants Attended	% Attendance Rate
303	182	60%

Out of the 303 registrants, a total of 182 attended the webinar, and garnered an attendance rate of 60%. Among the 121 registrants who did not attend, 76% were from Asia and 14% from Europe. A key factor contributing to this is that some offices in Asia opted to use a single device for multiple attendees despite individual registrations. In terms of representation by country, most participants who attended came from the Philippines, followed by Belgium, India, and Italy.

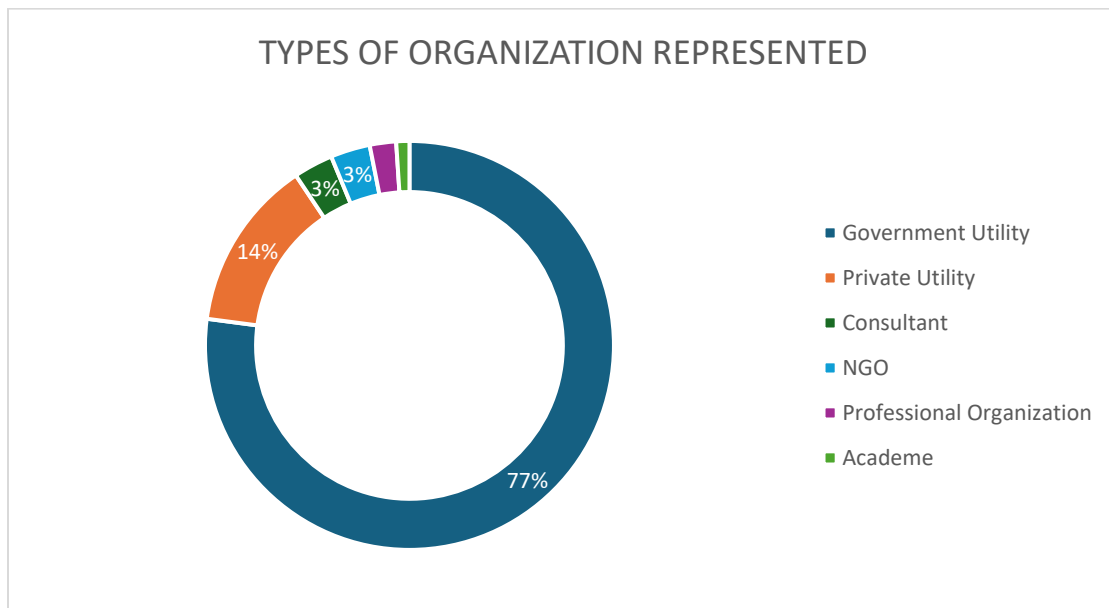


## Polling

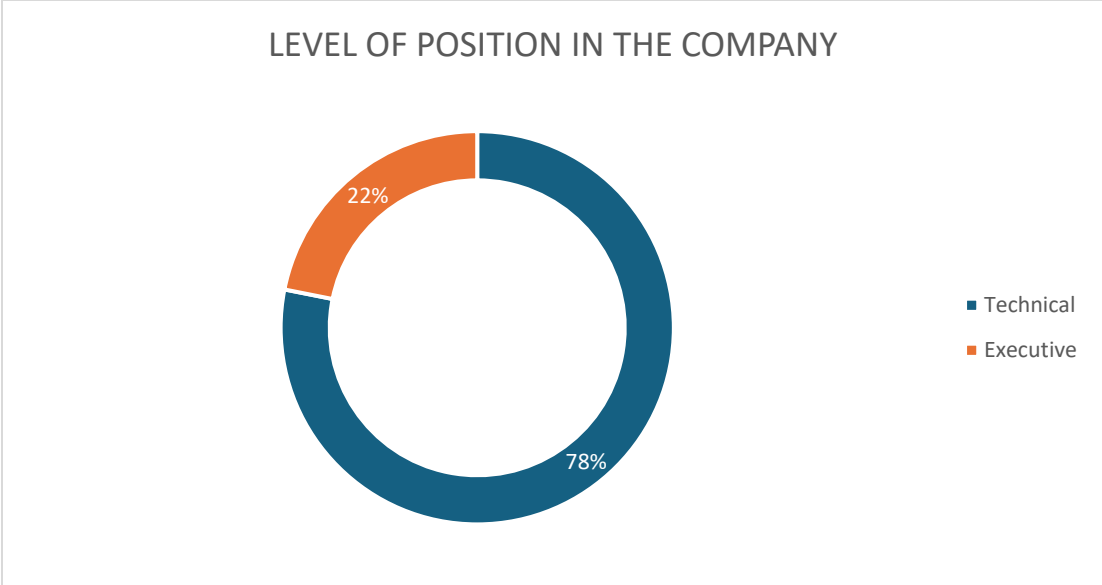
There were two polls that were conducted during the webinar. The first poll was held before the start of the webinar and covered the audience background. The second poll, conducted at the end of the webinar, assessed whether participants' expectations were met and solicited topics for future webinars.

### *First Poll*

The first set of questions aimed to assess and identify the participants, helping speakers tailor their presentations to the participants' interests, levels of understanding, and expectations. The initial question asked about the type of organizations the participants represented. Most participants were from government utilities, followed by private utilities, consultants, NGOs, professional organizations, and academic institutions.

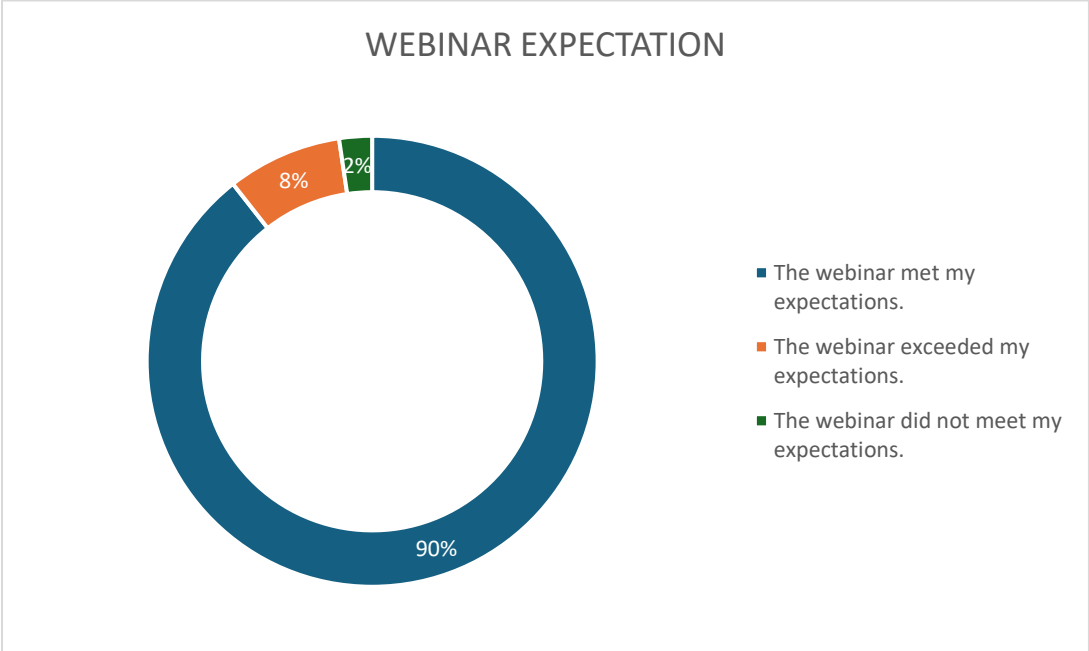


The second question inquired about the participants' positions within their companies. More than half of the participants are technical staff followed by executives.



**Second Poll**

The second set of questions aimed to assess whether the webinar met participants' expectations and to identify topics for future webinars. 98% of participants indicated that the webinar either met or surpassed their expectations, while 2% - particularly from Portugal and Belgium felt that their expectations were not met. Notably, many participants expressed interest in asset management, followed by digitalization, building climate-resilient utilities sanitation, and regulation.



## Summary of Presentations

The first presentation, titled "Water Loss Management Kolkata," was delivered by Prashant Raj, Project Director at Suez India. He showcased a case study on the Cossipore water loss program in Kolkata, highlighting Suez India's efforts in reducing Non-Revenue Water (NRW). The program identified a baseline NRW of 52% in 2017. To address this, Suez conducted extensive mapping and recorded approximately 3,500 spot measurements to analyze pressure variations across the project area. Through strategic interventions, including less pipe replacement, a remarkable reduction in water loss to 10.31% was achieved. Additionally, the System Input Volume (SIV) decreased from an initial baseline of 124 MLD to 111.8 MLD, achieving an average daily reduction of 12.2 MLD. Mr. Raj also emphasized the critical role of engaging local partners and the community in ensuring the program's success.

The second presentation, "Reducing Water Losses to Support Water Management," was given by Mr. Kim Belmans, a member of the NRW Taskforce in AquaFlanders, Belgium. He discussed the challenges faced by water utilities in Flanders and detailed the region's action plan to tackle water losses. The action plan includes comprehensive data analysis to detect leaks, proactive leak detection and quick repairs. It also emphasizes leak control through the structured implementation and adjustment of strategies. Mr. Belmans highlighted advanced leak detection techniques such as heat cameras, fiber optics, and digital water meters equipped with acoustic noise detection, showing their effectiveness in identifying and addressing water losses. He stressed that water companies in Flanders are committed to reducing leaks, treating it as a company-wide priority embedded in their daily operations and long-term decision making.

The third presentation, "Non-Revenue Water & Sustainable Water Management: The Way Forward," was delivered by Mr. Miguel Lemos Rodrigues, President of Águas de Gaia, Portugal. He highlighted Águas de Gaia's innovative digital service application, H2ON!, designed to empower customers by enabling them to monitor their water readings and consumption patterns. This free service provides personalized updates on water supply, sanitation, and rainwater services, as well as timely alerts about abnormal consumption that could indicate leaks. By addressing these issues promptly, customers can avoid excessive bills and contribute to reducing water losses. This initiative not only supports consumers but also promotes environmental sustainability by minimizing waste and conserving resources.

Annex A contains copies of the speakers' presentations.

## Discussion

During the discussion, participants raised a total of 10 questions. While most were addressed directly by the speakers, the remaining queries were thoughtfully answered through the Q&A box and chat box during the webinar. One key question focused on the pressure specifications within the network, ranging from 0.5 to 11.5. Mr. Raj explained that the variation in pressure depends on the distance from the source, with higher pressure closer to the source and lower pressure farther away.

A query about the Infrastructure Leakage Index (ILI) in Flanders and the viability of addressing Non-Revenue Water (NRW) through cost-benefit analysis prompted Mr. Belmans to elaborate. He shared that Flanders invests €240 million annually, with €11 million dedicated to leak detection. Their average ILI stands at 0.5, which reflects a high standard but remains challenging to maintain.

Another question asked how ILI is defined in Flanders since they report an ILI of 0.5 which is surprising since the lowest attained should be 1. Mr. Belmans clarified that they calculate ILI using current annual real losses without factoring in the SEF (Systematic Error Factor).

Participants also inquired about project financing mechanisms. Mr. Belmans noted that Flanders covers costs through water pricing, while Mr. Lemos Rodrigues highlighted the use of internal funding supplemented by limited EU grants (less than 10% of project costs) and bank loans, including green financing tools. In contrast, Mai Flor observed that in Asia, where water tariffs are generally low, utilities often do not pay for raw water itself, making NRW an indirect financial loss<sup>1</sup>. This differs from Europe where, in compliance with EU law —most notably the Water Framework Directive— operators are required to pay for water abstraction, either directly or through a bulk water supply provider. Mr. Belmans and Mr. Lemos Rodrigues suggested that utilities should tailor their strategies to available resources, such as creating appropriately sized DMA zones and leveraging green funding. When asked about ideal DMA sizes with limited funds, Mr. Raj recommended a range of 3,000 to 5,000 connections as manageable and cost-effective.

Regarding the ideal NRW level, Mr. Belmans stated that in Flanders, this is a political decision. Their target is an ILI of 0.5 by 2025, with some utilities already meeting this benchmark. For Flanders, maintaining NRW below 10% is considered ideal.

The discussion also touched on addressing sudden surface leaks, particularly in regions like Nepal, where obtaining permits to dig roads often causes delays. Mr. Lemos Rodrigues noted that in Portugal, regulations allow for urgent repairs without permits, a practice mirrored in Flanders.

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<sup>1</sup> NRW represents an indirect financial loss for operators in Asia only if the water is lost before reaching their treatment plants—that is, before it is treated.

Finally, a participant asked about the practice of shutting down pump stations to reduce line pressure. Mr. Belmans explained that while lowering system pressure can reduce water loss during bursts, fully shutting down pumps is inadvisable as it risks contamination in the pipelines.

## **Conclusion and Summary**

The webinar concluded with several key points delivered by Mai Flor, the Executive Director of WaterLinks.

Suez, operating across Asia, faces numerous challenges, including insufficient data, limited funding, low tariffs, and weak regulatory frameworks. Despite these obstacles, their case study demonstrated that reducing NRW is achievable. A crucial first step is collecting data to thoroughly understand the network's condition. Suez's approach in India, which actively involved the community – particularly women – proved instrumental in understanding customer needs and fostering collaborative solutions.

In contrast, AquaFlanders and Águas de Gaia operate within robust regulatory environments that drive utilities to surpass baseline requirements. Both organizations have successfully used digitalization as a central element of their NRW reduction strategies, showcasing the transformative potential of innovative technologies.

These examples highlight the possibilities for adopting approaches across Asia in the future.