

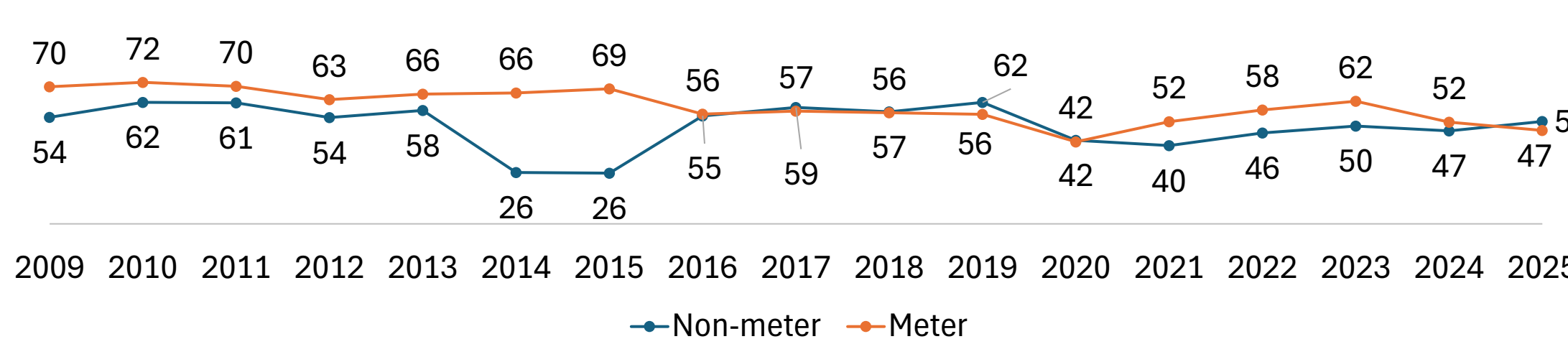


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National initiatives such as AMRUT and the Smart Cities Mission promote water metering as an important intervention to **improve water use efficiency.**

Does installing water meters alone improve water use efficiency and service delivery in cities?

Per capita availability of water (lpcd) - Service level benchmark is 135 LPCD



- The average NRW in metered cities from 2009 to 2025 has been around 30%. Reduction in NRW requires complementary interventions such as leak detection programmes, pressure management, district metered areas (DMAs), rehabilitation of ageing pipelines, regular water audits, and effective monitoring of the distribution network. These interventions take time, so the reduction in NRW will be visible after 4-5 years of interventions. There is a clear case of steady reduction in NRW from 2021 to the present
- Metered cities show better service delivery than non-metered cities, with higher LPCD, longer supply hours, and more supply days.
- Overall, metering is associated with improved water supply performance, but requires effective O&M and management to sustain the benefits.

Case Studies: Pune & Malkapur



- Pune Municipal Corporation and Malkapur Nagar Panchayat demonstrate that metering can improve service delivery in cities of different sizes.
- Pune's use of smart meters, bulk metering, DMAs, pressure monitoring and SCADA, supported by institutional reforms and utility management, strengthened performance.
- Malkapur's universal metering, volumetric tariffs and citizen participation supported the transition to 24x7 water supply.

- In some ULBs, fixed tariffs despite installed meters further limit their effective use. Sustained metering requires O&M, technical capacity, volumetric tariffs, political commitment, and public acceptance.

The findings suggest that while water metering is an important intervention for improving water use efficiency and urban water supply performance, its benefits can only be fully realised when supported by complementary measures such as water auditing, pressure management, regular maintenance of metering infrastructure, and capacity building of ULB staff.



The paper concludes that consumer water metering should be viewed as a key component of a broader water demand management strategy rather than a standalone infrastructure investment. Strengthening data-based monitoring and institutional capacity alongside metering can help cities improve service delivery, optimise water use, and move towards sustainable urban water resource management.

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