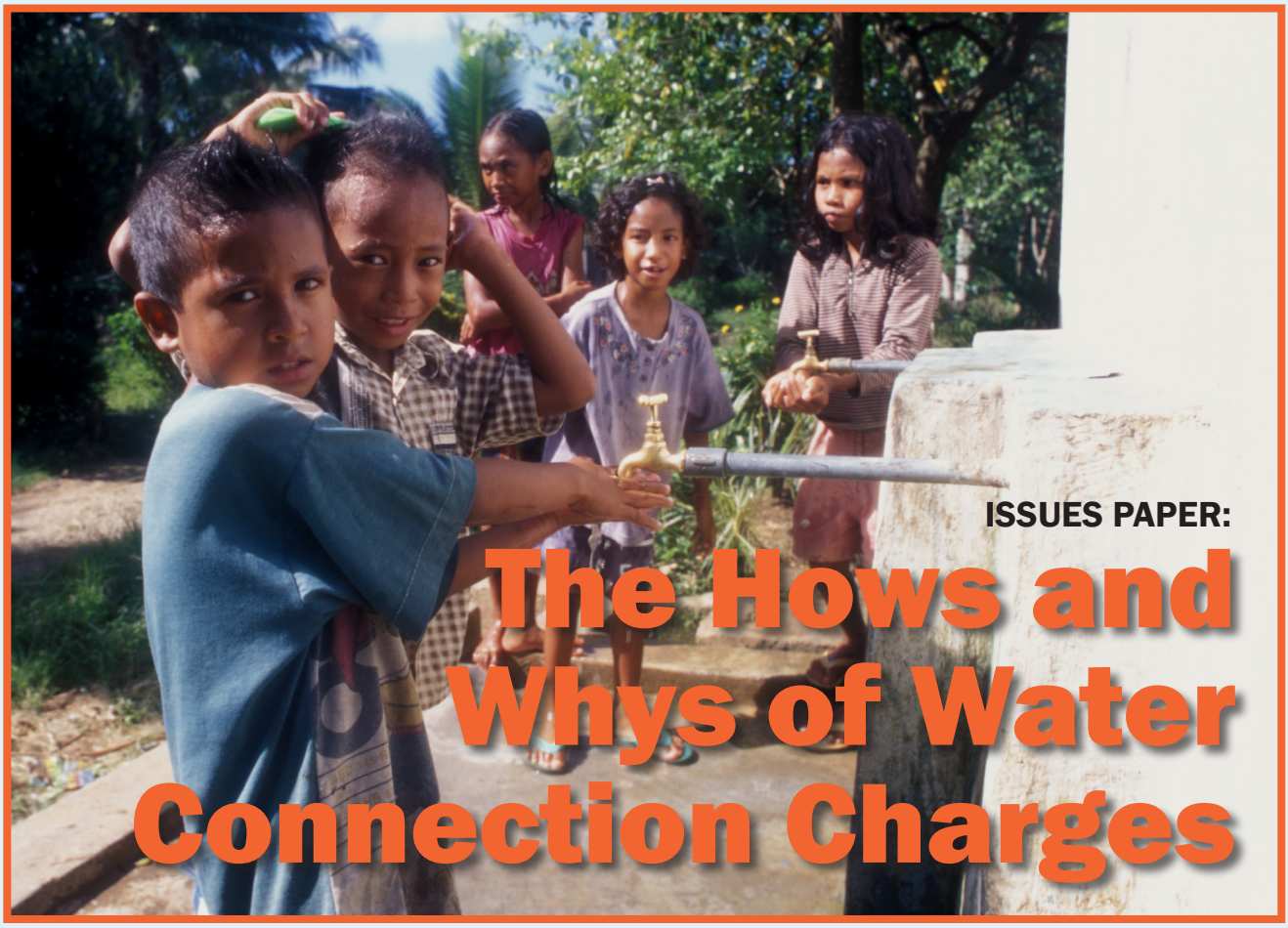
ADB Asian Development Bank



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ISSUES PAPER:

The Hows and Whys of Water Connection Charges

Abstract

Water connection charges often act as a major barrier to connecting the poor. So why charge for a connection? Mobile companies provide free phones to attract subscribers. Supermarkets do not charge entrance fees to potential shoppers. Why can this not be applied to water services?

There are several answers—from tradition to requiring proof of creditworthiness and willingness to pay, availing of a cheap funding source, and creating artificial bottlenecks to cater to vested interests. Whatever the utilities' reasons are, one thing is clear—connections should be paid since installing them involves legitimate costs that need to be covered.

This paper discusses the water utilities' need to charge for new connections, why such charges are often high, and why the prevailing practice of upfront payment of full connection charges should be reexamined.

Lead Author: Rudolf Frauendorfer
Contributors: Amy Leung; Ellen Pascua (Consultant); Katsuji Matsunami; and K.E. Seetharam
Writer: Ma Christina Dueñas (Consultant)
Researcher: Marilen Mariano (Consultant)

ISSUE:

High and upfront connection charges pose a significant barrier to connecting the poor.

PROPOSED ADB POSITION:

Legitimate costs are involved in getting connected to the water system; hence, it cannot be free. But the prevailing practice of collecting fees upfront is now being challenged by innovative solutions that reach out to the poor, while simultaneously giving utilities good business. Governments, municipalities, water utilities, and funding agencies—including ADB—should explore these alternatives when designing water supply and sanitation projects, and pursue the elimination of upfront payment of full connection fees through other options, including an all-inclusive water tariff.

A Barrier to Connecting People

ADB's water policy advocates "water for all," which means providing a 24-hour safe and sustainable water supply at affordable costs.[1] A widely used benchmark for measuring affordability is that the monthly water and sanitation bill does not exceed 5% of the average household disposable income. However, this does not account for the initial cost of a water connection that is sometimes in the range of $100 and above, often equivalent to 100% and more of urban poor households' monthly income.

Poor households in many places either are not able to afford the upfront payment of the full connection charge or to comply with additional administrative requirements, most notably a land title. Prohibitive connection charges present a real barrier and are being blamed for more people—particularly the poor—not being connected to piped water systems.

The issue of connection charges is sometimes overlooked in the design of a water supply project, sandwiched as it is between larger issues of cost recovery, regulation, private sector participation, and more. Despite apparently affordable water tariffs, subsequent project implementation can be delayed due to the bottleneck created by affordability issues resulting from high connection charges, and targeted benefits of a water project may subsequently not materialize as initially planned.

Anatomy of a Connection Fee

Connection charges are usually based on the size of the connection (i.e., the water meter); user category (e.g., domestic, industry); location of the property (i.e., within/outside city limits); and distance of the property to the nearest water main. Connection charges usually include a basic connection fee plus various add-on charges for physical facilities, labor, administrative fees, and other costs. Table 1 presents typical water connection fee components.

The levels of connection charges span a wide range, with the differences sometimes difficult to explain. A 2006 study,[2] for example, provides global and regional comparative range of domestic water supply connection fees (see table 2).

Table 1: Water Connection Fee Components

Physical Facilities	Labor	Administrative Fees
• Ferrules/main tapping tees, • Pipe from water main to individual meter, • Meter, and • Stop taps and appurtenances.	• Pre-installation inspection, • Road cutting, • Connection work, • Plumbing, and • Installation inspection.	• Application fee, • Availability fee, • Plumbing permits, and • Deposit against future charges.

Source: Cranfield University. 2006. *Charging to Enter the Water Shop*.

Table 2: Domestic Connection Fees, 2006

Region	Highest	Lowest
World	782	15
Asia	321	24
Africa	595	23
Latin America	462	15
Europe (East and Central)	782	181

Source: Cranfield University. 2006. *Charging to Enter the Water Shop*.

The study also revealed a wide range of extra costs that utilities need to recover, including meter stands, hose taps, support over trenches and ditches, road signboards during excavation, transport and supervision, estimation fees, tax clearance certificates, and more. Most utilities will also charge a reconnection fee in cases when a customer is not able to pay the service charge and becomes disconnected.

A 2007 ADB study of 20 water utilities in India[3] reveals a similarly wide range in the level of connection fees—Ahmedabad reported the least expensive at $2.40, while Vijayawada had the highest at $132. The average connection fee was $38. Another benchmarking study of 47 water utilities from Southeast Asia[4] shows cost for a domestic connection ranging from $20–283, with an average cost of $68. In a 2001 ADB study of 18 water utilities in Asia,[5] New Delhi had the lowest connection fee at $2, while Osaka had the highest at $1,506. The average connection fee was $200 per connection. It may be noted that while a $2-connection fee logically should not stop a poor household from getting connected, this may hide a

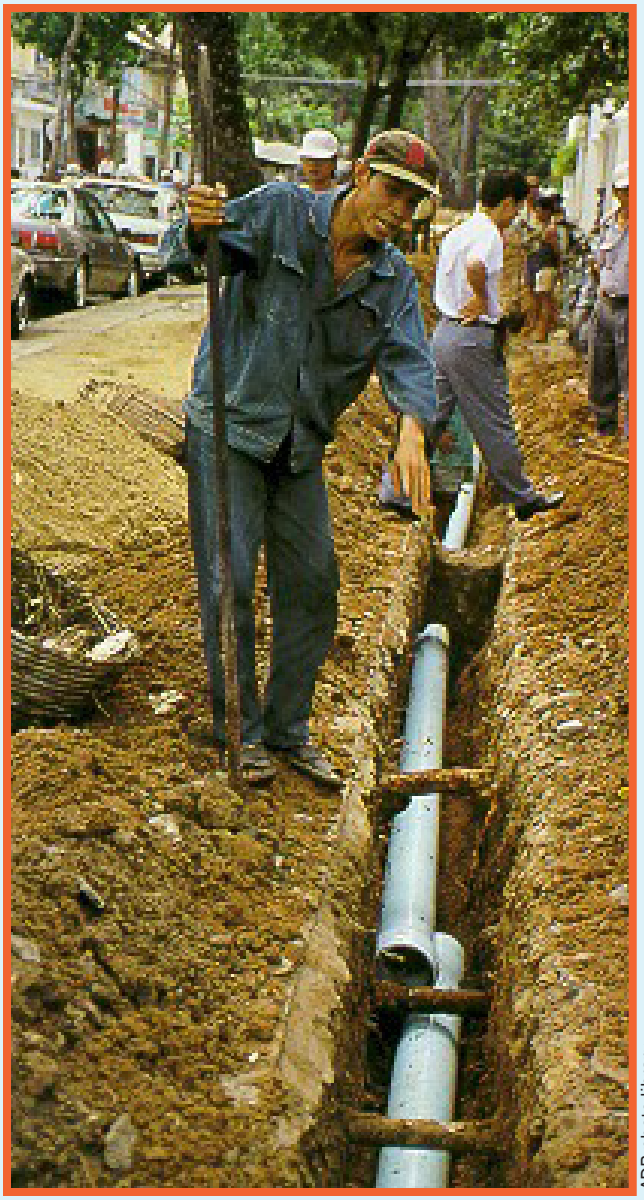
[1] Asian Development Bank (ADB). 2001. *Water for All–The Water Policy of ADB*. Manila.
[2] Department for International Development (DfID). 2006. *Charging to Enter the Water Shop*. United Kingdom; Cranfield University. The study is based on an online survey to determine the extent to which connection charges are a deterrent to low-income households gaining the public health and economic benefits of a household connection.
[3] ADB. 2007. *Benchmarking and Data Book of Water Utilities in India.* ADB.
[4] Southeast Asian Water Utilities Network (SEAWUN). 2005. *Data Book of Southeast Asian Water Utilities*. Hanoi.
[5] Andrews, C. and C. Yñiguez, eds. 2004. *Water in Asian Cities: Utilities' Performance and Civil Society Views*. ADB.

utility's inability to extend the distribution lines, in effect preventing access to the system by new customers.

Comparing the different figures is not so easy since utilities vary in what they consider basic and add-on charges. For instance, some utilities include the cost of pipes and meters in their connection charges; some rent the meters out, which involves recurring monthly charges; and still others require customers to purchase their own materials.

In addition to the formal costs mentioned, connection charges also involve informal costs—such as the opportunity costs of the time spent in visits to apply for a water connection or the giving of "tips" or "speed money" to facilitate successful applications.

Once connected, customers have to pay a fixed monthly service fee, usually based on the cost of the first 5–10 cubic meters (m3) water at a subsidized rate. This monthly fee must be paid whether that amount of water is consumed or not, and despite service interruptions.



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Why Pay for Connections?

New connections represent added demand on the water supply infrastructure, so new customers are asked to contribute to its expansion. This is one common justification for connection charges. The argument initially seems sound although the amount in question sometimes appears low compared with the overall cost of a utility's investment program. Still, for many utilities, it may serve as cheap funding source which reduces the amount the utility may otherwise need to borrow.

Another rationale often stated is that water utilities need to prove the creditworthiness and willingness to pay of their prospective clients. But if one is willing and able to pay much higher water tariffs to private vendors, would it not follow that one is equally willing and able to pay for the utility's often better quality and much cheaper water? That is, if there would not be an unaffordable one-off connection charge and other steep requirements such as a land title.

The long-standing tradition of charging for connections also prevents many utilities from questioning this practice. In Metro Manila, for example, two private concessionaires have been contracted to operate and maintain all water and sewerage services in the city since 1997. One item under review in the current rate rebasing for the concessions is the lowering of connection charges, mainly to facilitate access for poor communities. Charging connection fees is in line with tradition prior to commencement of the concessions. It is a practice written into the concession agreement, the amendment of which requires a comprehensive review and negotiation process.

However, utilities may have a point in stating that charging for the connection is necessary so that customers would value the water service and look after the meter. Anecdotal evidence is found in reports of customers damaging water meters, claiming to be victims of vandalism, and hoping they may escape payment of the water bill because of incorrect readings. In many cases, such incidents stopped quickly when the utility billed the customer for the replacement of the meter.

Shop owners do not charge a fee every time a customer enters the shop. Instead, they incorporate all capital costs of buildings, equipment, and services into the price of their goods. Mobile companies not only waive connection fees, but also provide free cell phones to attract customers. Why can water utilities not do the same thing?

This is not to say that water connections should be free. Utilities incur legitimate costs in installing a connection, and these must be recovered. But why should these costs be treated differently from the costs of laying pipes and building other infrastructure? And why should they be recovered only through upfront fees that are often unaffordable to the poor?

ADB's water policy calls for providing water for all. This does not mean water from public taps, intermittent water supply, or expensive supply affordable only to middle- to high-income households. ADB's vision is for each household to have safe and affordable water supply in their houses 24 hours a day, 7 days a week. This means getting everyone connected. Therefore, removing the barrier of high connection charges is urgent and essential.

High Cost of Connection

If one accepts the argument that there is a need to charge for a connection, then perhaps the better question would be: "How much should utilities charge for a connection and should the amount be paid fully upfront?" If the cost of connecting to piped water equals several months worth of a household's income, is this not tantamount to ensuring that the household could not get a connection?

Connection charges can be very high compared to the spending capacity of low-income households. They can equal up to a 3-month income of a poor household in Metro Manila, 6-month income in Kenya, and more than a year's worth of income in Uganda.[6]

Connection fees undoubtedly pose major barriers to connecting the poor, which is also highlighted by a 2004 case study on the experience of Cebu City, Philippines.[7] Rapid economic growth has put a great strain on the city's water supply, such that piped water connections covered only 32% of the population. To cope, residents turned to various schemes for piped water operated by private vendors (see box 1). Despite higher water tariffs—but comparably low connection fees—Cebu's private vendors continue to experience an increase in their customer base, suggesting that high connection fees rather than high water tariffs pose the bigger barrier to connecting to the water utility network.

To find out why connection charges are so high, one may want to understand who gains most from the practice. Sometimes, even when utilities want to lower connection fees by incorporating some installation costs into the tariff, they may be prevented from doing so by government officials who cling to the idea that maintaining low tariffs translates to higher acceptance by voters. Such vested interests contrive to create an artificial bottleneck that finally limits the poor's access to utility connections.

Various studies over the years have suggested that high connection charges prevent not only rapid expansion of service coverage but also poor households from getting a connection. Assuming that sufficient water production is readily available for distribution, the logical assumption is that water utilities would want to connect as many customers as quickly as possible, in the process, rapidly increasing revenues and reducing illegal connections.

Alternative Approaches

Governments and water utilities worldwide are already exploring different ways of financing connections costs without marginalizing the poor. Alternatives to upfront connection fees include installment

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[6] Watkins, Kevin, et al. 2006. *Human Development Report 2006*. United Nations Development Programme.
[7] ADB. 2004. *Water for All Publications Series # 8: Bringing Water to the Poor*. ADB.

Box 1: Cebu City, Philippines
Piped Alternatives to Utility Connections

Cebu's rapid economic growth has put a great strain on the city's water supply, such that piped water connections covered only 32% of the population in 2004. The water utility's requirements for a domestic connection included a $100-connection fee, evidence of land title or tax declaration, and other administrative requirements. In areas not served by the water utility, residents have access to small-scale private service providers that typically offer water supply for a higher tariff with a lower connection charge.

Type	Description	Connection Fee ($)	Tariff/m^3 ($)
Utility		100	0.24
Private system 1	In addition to the connection fee, households pay for plumbing services, a water meter, and galvanized iron pipes.	60	0.50
Private system 2	Provider adopts the technical standards of the water utility for low-income areas, but not the legal requirements.	66	0.80
Private system 3	Providers supply water to households 3 or 4 days a week using flexible polyethylene hoses. A caretaker, who records their consumption, serves customers upon their request.	20	1.00–1.50

m^3 = cubic meter, US = United States, $ = US dollar.
Source: ADB. 2004. *Water For All Publications Series # 8: Bringing Water to the Poor*, 57.

payment schemes; significant reduction of connection fees; subsidies from government or funding agencies for poor households; shared connections; and introduction of holistic, pro-poor reform packages.

INSTALLMENT SCHEMES

Assuming that the cost of connection cannot be reduced, the likely alternative would be to secure payment on installment. In 2006, ADB tested new models of the small-piped water network[8] idea in selected low-income areas of Metro Manila, Philippines using this option.[9] In cooperation with the two concessionaires—Manila Water Company, Inc. (MWCI) and Maynilad Water Services, Inc. (MWSI)—the project helped connect roughly 1,600 households in 10 urban poor communities within 4 months.

For one pilot project, MWCI installed several bulk meters to supply water to four homeowners' associations, covering some 1,000 households. These associations are billed based on the bulk meter reading every month. They then work with leaders from each street within the network to record the household meter readings, bill, and collect monthly payments. As a concession, MWCI charges the community a regular domestic rate rather than the more expensive commercial bulk rate.

In the past, MWCI offered its customers installment schemes for the payment of connection fees but with only 12 months as the maximum term. With the pilot project, MWCI introduced a 3-year installment scheme. ADB made this possible by advancing the connection fee through an interest-free loan, which customers then repay to MWCI on installment. MWCI then deposits the community's repayments into a revolving fund that will be used to connect other low-income areas in a similar way. This pilot project connected the community to piped water in only 4 months, which considerably reduced their monthly water bill compared to what they were paying private vendors.[10] MWCI has since adopted a 2–3 year installment scheme for its programs in other urban poor communities. The system is not yet perfect, given that some households moved to other places without completely settling their obligations. However, according to the water company, these households account for a very small percentage of its customers.

[8] RETA 6265: Implementing Pilot Projects for Small-Piped Water Networks.
[9] ADB. 2007. *Delivering Piped Water on a Small Scale: Results of ADB's Water Supply Service Market Survey in Manila*. (A Water Brief). ADB.
[10] Before the project, residents paid an average of 300 pesos (P) monthly for 6 m3. After the project, residents pay an average of P165 a month for 13 m3. The connection fee is paid in monthly installments of P182 for 3 years.

While installment schemes ease the poor's burden, one must qualify that this will work only if the utility does not start with a very high connection fee. Otherwise, repayment in installments could just mean extending the poor's economic hardships resulting from the combined high installment fees and monthly water bills.

PRO-POOR CONNECTION FEES AND TARIFFS

While high connection fees and low tariff appear common among many Asian water utilities, projects that combine low connection fees and affordable tariffs for the poor are already under way.

ADB's Harbin Water Supply Project includes such a pro-poor program.[11] Harbin City is the capital of Heilongjiang Province and is the seventh largest city in the People's Republic of China. The project targets around 3 million people, of which 32% have income below the urban poverty line. The program includes adopting lifeline tariffs for poor households, waiving future tariff increases for the poorest households, and connecting the poorest households to tap water in Harbin's five poverty districts. The poor are not charged connection fees and are provided with a free water meter.

In Port Vila, Vanuatu, similar pro-poor biases can be observed in the 40-year concession agreement with Union Electrique du Vanuatu.[12] A structured fixed-tariff system was established to ensure affordable water rates for poorer sections of society, and a special fund was set up from part of the tariffs to finance free connections for poor households. Not only did the new scheme reduce nonrevenue water considerably, but it also provided Port Vila with uninterrupted and affordable water supply.

CONNECTION FUNDED BY DEVELOPMENT PARTNERS: THE OUTPUT-BASED AID APPROACH

Output-based aid (OBA) is an approach promoting effective use of development fund to support the delivery of public services in developing countries through the use of targeted performance-related subsidies. One application in water services is where utilities get a subsidy from the government for every poor household they connect. Various permutations of this approach are already being piloted in a number of countries that include Brazil, Cambodia, Honduras, India, Indonesia, and Uganda.[13]

OBA application to expand water supply coverage in Cambodia is one example. Being one of the world's poorest countries, only a third of Cambodians have access to safe water supply, and coverage tends to be worse in rural and peri-urban areas. In an effort to connect the poor, the Government piloted the OBA approach in four towns.[14] Under the scheme, private operators received a subsidy payment for connecting targeted poor households, while they charged other customers directly.

Although still at an early stage, the OBA scheme is considered generally successful, particularly because of participatory consultations about fees and payment options and strong involvement of communities in deciding who receives the connection

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[11] ADB. 2003. RRP: PRC 33177– *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Harbin Water Supply Project*. February.
[12] UNESCO. 2006. *2nd United Nations World Water Development Report: Water, A Shared Responsibility.*
[13] Global Partnership on Output-Based Aid (Available: www.gpoba.org).
[14] Footnote 13.

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subsidy. OBA clearly eliminates the connection fee barrier and serves as a legitimate option for connecting the poor, although it is probably not a long-term solution given the limited availability of grant financing from funding agencies.

HOLISTIC SCHEMES: LOW CONNECTION FEES, INSTALLMENT SCHEMES, LOW TARIFFS, AND LESS BUREAUCRATIC APPLICATION PROCESS

A different approach was used by the Bangalore Water Supply and Sewerage Board (BWSSB) in India. Bangalore is a fast-growing metropolis with a population of around 7 million. About 30–35% belongs to the urban poor, who live in slum communities. These communities generally rely on public standposts, bore wells, water vendors, and BWSSB water tankers. Illegal tapping of the system is common.

To connect the poor and dissuade illegal connections, BWSSB launched a pilot project from 2000–2002. The pilot project sought ways for the utility to deliver water supply and sanitation services to three slums. The project paid off, and over the next 5 years, BWSSB managed to significantly improve access to piped water supply in 43 slums.

The reform package introduced by BWSSB included the following:

- Reducing connection fees for poor households and allowing payment on installment;
- Accepting proof of residence, such as ration card or voter's ID, in lieu of land titles;
- Simplifying application procedures;
- A pro-poor tariff structure that includes lowering the minimum consumption range; and
- Introducing shared connections for groups of 5–10 households as another option for the very poor and for those living in extremely congested settlements.

BWSSB's relaxation of the land title requirement for slum communities is especially significant given that more than a billion people in developing countries live in such communities. Given the positive results, it could also serve as good example for many other utilities in the region.

Conclusions

High and upfront connection charges act as a major barrier to uptake. This fact tends to be eclipsed by the more controversial issues of tariff reform and/or private sector engagement, but its impacts are just as grave. Despite various studies positively showing the willingness and ability to pay of households—including those in slums and poor communities—and despite utilities' efforts to lower water tariffs, many remain hampered by the often high connection fee that they have to pay upfront, and comprehensive administrative requirements.

While high and upfront connection charges have a long history, it is fortunate that an increasing number of utilities and governments are not solely relying on this concept anymore. They are exploring alternatives to upfront charges designed to create win–win situations for utilities and consumers. These alternatives are beginning to show positive results.

Governments, municipalities, water utilities, and funding agencies—including ADB—should consider alternative options as outlined above when designing water supply and sanitation projects. There is no one-size-fits-all solution, but an ever-expanding menu of options is now available. Exploring these options will enable water experts to further innovate. To completely eliminate the barrier of connection charges though, solutions are required. Among them are incorporating the connection fee in an all—inclusive tariff or payment in installments that will allow access for poor households, are manageable for utilities, will cover connection costs, and are sustainable and affordable. ■

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For further information, contact:
Rudolf Frauendorfer
Senior Urban Development Specialist, ADB
rfrauendorfer@adb.org

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