OUR GOAL:
TO REACH 2 MILLION PEOPLE BY 2022.

Introduction
CityTaps was established in 2015 to solve a global issue: nearly 1 billion urban people live without access to running water at home. CityTaps developed CTSuite, which leverages innovative technology - a smart and prepaid water meter (CTMeter) and software - with existing mobile money systems to connect more people to water utility networks.
CityTaps and the local Veolia subsidiary, Société d’Exploitation des Eaux du Niger (SEEN), first piloted CTSuite in October 2016 in Niamey, Niger. Two years on, the project is expanding from 20 to 1,325 CTSuites and CityTaps continues to collect important qualitative and quantitative data to determine the social and commercial impact on the water utility and its subscribers.

Niamey, Niger: Two Years On
CityTaps’ first pilot directly impacted 201 individuals, living on 20 plots. Impact survey results showed that after the installation of CTSuite:

- 90% of women and girls reported time savings as they no longer needed to spend hours waiting for water delivery.
- 61% of respondents reported a perceived improvement in their health.
- Households experienced 94% savings in their water budget.
- Households also reported that they were able to better manage their water budget, freeing resources for other uses, such as food purchases. In addition, SEEN and Orange Niger experienced commercial benefits from expanding their customer base and increasing the number of subscribers. After this successful pilot, SEEN decided to expand the project to 1,325 CTSuites to impact more than 13,000 people living in the capital.

This expansion, done in partnership with SEEN and Orange Niger, is partially funded by the Mobile for Development Utilities Innovation Fund (300,000 GBP). As part of this expansion, CityTaps and GSMA collect data for analysis. This document is a brief update on the project and a report of baseline survey results. A comprehensive social impact report will be published later in 2019.

CityTaps’ vision is running water in every urban home.
A Look at the Demographics

Niamey, Niger is a city of 1.2 million people. According to 2017 World Bank data, the per capita income is $378.06 US and 44% of the population lives below the national poverty line. People living with irregular incomes have the most difficulty making monthly payments and staying connected to water utility networks. As a result, many of these subscribers accrue arrears and are at risk of being disconnected.

CityTaps works with SEEN and Orange Niger in Niamey to connect new subscribers who have never lived with water at home, to re-connect subscribers who have accumulated debt and been disconnected, and to provide flexibility to existing clients who appreciate the convenience and transparency afforded by Pay-As-You-Go (PAYG).

The full baseline survey was administered to 201 heads of household comprising 932 individuals who were either new subscribers or previous SEEN subscribers. In addition, a mini baseline was conducted to collect demographic information from 8 additional heads of household who were recently re-connected to the network after being disconnected due to arrears and 18 heads of household who were new subscribers. By gathering these data, CityTaps can develop a more accurate picture of SEEN subscribers, determine the impact of the CityTaps system, and use this information to continually improve the CityTaps service and product.

Baseline results show that...

- 2 households on average use each CTMeter, with up to 8 households reported for some meters
- 5 people on average make up one household
- 83% of household members over age 13 have a mobile phone
- 15% of households are female-headed

Full Baseline Survey: Interviewed 201 heads of household comprising 137 SEEN subscribers and 64 new subscribers.

Mini Baseline Survey: Interviewed 26 heads of household comprising 8 SEEN subscribers who had arrears and 18 new subscribers.

Total Number Surveyed: Interviewed a total of 227 heads of household comprising 145 SEEN subscribers and 82 new subscribers.
The Triple Tax on Poverty

HEALTH

Water from alternative sources (tankers, delivery services, standpipes, or unimproved sources) is treated, but can easily become contaminated after being stored in dirty jerrycans. In the pilot impact study, respondents reported a perceived improvement in health after the installation of the CTMeter. Health issues reported from untreated or contaminated alternative water sources included intestinal issues and skin irritations. In addition, respondents suffered from fatigue and back pain due to carrying heavy jerrycans over long distances. In the ongoing expansion impact study, the goal is to gain more insight into how many people are affected by waterborne and water-related illnesses. Before the installation of the CTMeter, the most common alternative sources of water for new subscribers were:

- **85%** garoua (water delivery service)
- **8%** SEEN tapstand
- **3%** neighbor
- **4%** other

In Niamey, water delivery service via garoua, is the most common source of water. Water delivered by the garoua is stored in large jerrycans and can become contaminated during the storage process, where it sits in containers for long periods of time. In addition, the **cost of water sold by garouas is 15 times more expensive than the social-tiered tariff offered by the water utility (2000 vs. 127 FCFA per m3).** SEEN currently operates 1,208 tapstands in Niamey.

One of the goals of this study is to determine how many indirect beneficiaries - calculated as the number of people outside of the plot or household - use the CTMeter. Initial results show that there are **3 indirect beneficiaries on average, with up to 25 reported**

**5%** of household heads reported that they reuse water; for example, using it to wash their hands and then later to do the dishes.

New subscribers’ top 5 most cited health benefits of CTSuite after the pilot were...

- less fatigue
- **improved** well-being
- fewer gastric symptoms
- more strength
- less skin irritation

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- more strength
- less skin irritation
Without running water at home, household members spend hours waiting for the water delivery service, in line at a tapstand, or hauling heavy jerrycans back to their homes. Those who were already connected SEEN subscribers spent hours queuing at the office to pay their monthly bills. The convenience of having water available at all times in the home frees up subscribers’ time as they no longer need to wait in long lines at the tapstand or wait all day at the home for the water delivery service.

Two of the main reasons cited for the long delays by households without access to running water were the wait for the garoua water delivery service or the long line at the SEEN tapstand. In addition, 90% of previous SEEN subscribers who were paying monthly bills described having to wait in line at the SEEN office. On average, previous SEEN subscribers spent an extra $1 US when paying the SEEN bill and up to $10 US. These incurred extra costs are primarily associated with transportation to and from the SEEN office - a cost eliminated with CTSuite.

66 women reported on how they will use the extra time afforded to them by CTSuite. Top responses were taking care of household chores (laundry, watering the garden, sewing, etc.), pursuing an economic activity or getting to work on time, taking care of their children, and getting a chance to rest.

Findings show that of those who were connected to SEEN’s network, 55% of the time household heads were responsible for paying the bill at the SEEN office and 23% of the time it was the children who were responsible for making the trip to the office to pay the bill.
The Triple Tax on Poverty

MONEY

CityTaps' October 2016 pilot’s impact survey results showed that 41% of the respondents impacted by CTSuite lived below the poverty line. Updated baseline survey results show that 73% of households who are using CTSuite earn less than $300 US monthly. In addition, 70% of households spend on average less than $5 USD on telephone communication credit per week. On average, respondents spend $3.70 US per week on water (averaging $14.90 US per month).

Average earnings per month for all subscribers:

- less than $100: 22%
- $100-$200: 35%
- $200-$300: 16%
- $300-400: 9%
- more than $400: 18%

Over the course of 27 months, new subscribers saved an estimated $16,730. Without CTSuite, they would have paid an average of 2000 FCFA per m3 - nearly 16 times more than SEEN regulated tariffs.

Disconnection from water service was primarily due to:

- 83% unpaid bills
- 5% bills not received
- 10% a mistake on the bill
- 1% work on the pipe
- 1% other

Of connected SEEN households surveyed experienced a shut-off in the last year due to arrears.

Of those that had used mobile money before the CTMeter, 30% said they made more than $40 US in transactions each month.

Of respondents reported that they do not know how much money they have left after completing household expenses because it is too difficult to monitor irregular expenses, they cannot do the calculation, or have no planned budget.
AFFORDABLE RUNNING WATER FOR ALL
POTENTIAL FOR IMPACT

Baseline survey results give a perspective on the SEEN subscribers who benefit from running water at home.

38% of household heads surveyed had made a mobile money transaction before the installation of the CTMeter.

Of those who had used mobile money before the CTMeter, they had used it to...

- Pay a post-pay water bill: 75%
- Pay an electricity bill: 63%
- Pay a prepaid card: 47%
- Send money: 23%
- Receive money: 16%
- Pay for a Canal+ plan: 9%
- Save money: 3%
- Repay a loan: 1%

Highest level of education achieved in SEEN subscribers using CTSuite:

- 31% of household members have only a primary school education
- 23% have a high school education
- 14% have a college education or are in college
- 11% have a Koranic school education
- 5% have no education
- 1% have only literacy classes
- 15% are under 6 years old
SCALING UP TO 10,000 CTSUITES

By 2020, CityTaps expects to impact nearly 100,000 people in partnership with SEEN and Orange Niger through the installation of 10,000 additional CTSuites. Currently in production, these CTSuites will be deployed and installed in 2019 and 2020 with the goal of re-connecting households who have accrued arrears or are at risk of becoming disconnected.

2016 deployment and pilot of 20 CTSuites

2017/18 GSMA Mobile for Development Utilities Innovation funding for 1,325 CTSuites

2018 began deployment of 1,325 CTSuites

2019/20 deployment of 10,000 CTSuites
CityTaps is grateful for the continued support of its partners who have helped to make this project possible. First, CityTaps would like to thank the GSMA for their support of the Niger expansion through a Mobile for Development Utilities Innovation Fund grant. The GSMA Mobile for Development Utilities programme is currently funded by the UK Department for International Development (DFID), the Scaling Off-Grid Energy Grand Challenge for Development and supported by the GSMA and its members. SEEN has provided crucial support and has installed and deployed the CTMeters, publicized the project, and recruited subscribers interested in CityTaps’ PAYG system. Orange Niger has provided vital technical support and has integrated PAYG service into the Orange Money payment menu. Additionally, the Orange Social Entrepreneur prize provided financial support for this project.