



QUICK WIN PROJECT – SILIGURI ACOUSTIC WATER LEAK DETECTION

About Siliguri

Siliguri city is strategically located in the Siliguri corridor, an important link connecting mainland India with its neighbouring countries. The city is located at 26° 42' 57" N latitude and 88° 25' 24" E longitude. It stretches across the floodplains of the Mahananda River at the foothills of the Eastern Himalayas in the Darjeeling district of North Bengal, surrounded by dense forests. Traditionally the settlement of Siliguri developed as a tea plantation and trading centre and it continues to be one.



CapaCITIES Project

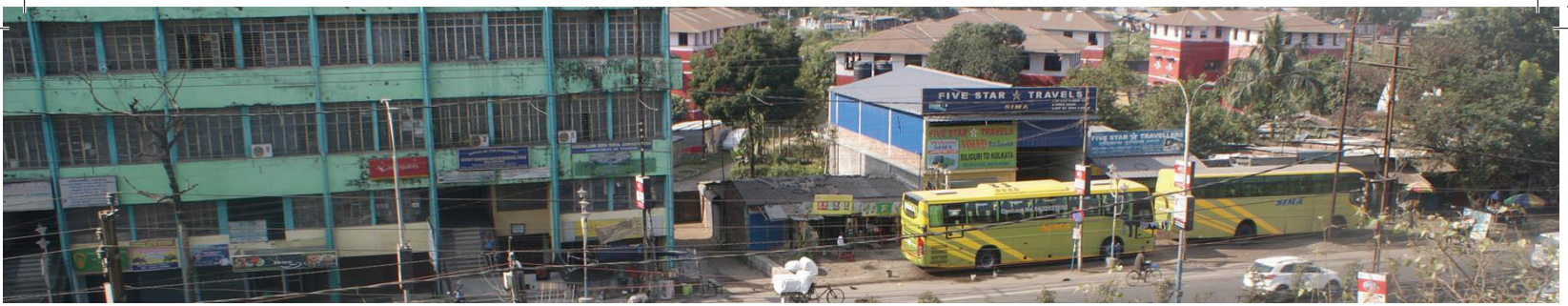
Cities account for approximately two-thirds of global energy use and over 70 percent of energy-related greenhouse gas (GHG) emissions that drive global climate change. In India, increased demand for energy, infrastructure and services is putting city systems under pressure. This will be accentuated further by growing risks caused by climate variability. Poor and vulnerable segments of the city populations will be affected most. Through the Capacity Building for Low Carbon and Climate Resilient City Development project (CapaCITIES), SDC's Global Programme Climate Change will support and accelerate the Government of India's efforts for sustainable urbanization.

Acoustic Water Leak Detection

Currently, there is no mechanism in Siliguri for detecting leaks in the water distribution mains. A leak in the water distribution mains is identified by a puddle on the road's surface, which is created by the leaked water after the soil in between the water distribution mains and the surface has been saturated. The process of plugging this leak involves, first digging vertically downward to the distribution pipeline. If the leak is found, it gets plugged. However, not always does the leak happen vertically below the puddle. Often, digging vertically downwards leads only to more accumulated water from the leak. In such a case, the authority identifies the leak by a trial and error method, ie, digging the ground on either side of the puddle in fixed lengths.



An acoustic water leak detection machine can reduce the excessive wastage of water from the leaks by pinpointing the leak even before a puddle is formed on the surface. Two acoustic leak detection machines have been provided to the Siliguri Municipal Corporation through the project. Training in the use of the same has been provided to engineers and officials of Siliguri Municipal Corporation. As a pilot study, these machines have been used to conduct a water audit in water zone 1 of the city.



GHG Emission Reduction / Adaptation Impact

Presently, at 70 lpcd, the per capita water supply is insufficient. The water supply in Siliguri is characterized by a high degree of unaccounted for water (UFW), and as a result considerable amount of water is wasted every day aside from increasing the operating costs. Thus, an inefficient system is creating a stress on the water source. As a result of climate change it is estimated that the average daily temperature would increase by 2.2°C by 2050. With an increase in temperature, the demand for water would further increase. In addition to extracting the amount of water in demand, more water has to be extracted to adjust for the UFW through leakages. Thus, the water supply source which is already stressed to cope with the current demand, would be rendered further inadequate due to climate change.



It is estimated that reducing the wasted water through leaks could reduce the stress on water source. The project would help in minimization of the excess water being supplied, thus, reducing water extraction and stress on the water source. Furthermore, reduction of water being lost through leaks, would save it for other purposes, especially supplying water to areas/pockets of low supply. The project will help in pinpointing the exact location of the leak, and hence, the process of identifying leaks on a trial and error basis would be

eliminated. Consequently, the cost of reconstructing the additionally excavated road stretch would also be reduced. Furthermore, a total of 5.4 million units of electricity has been wasted, from 2012 to 2016, in pumping water that eventually went to waste, ie, UFW. This has consequently led to an emission of 4.44 million tonnes of CO₂ equivalent of greenhouse gases in the atmosphere. This project would help in reduction of energy being lost due to pumping UFW, thereby reducing greenhouse gas emissions for pumping water that eventually goes to waste.



Beneficiaries

Project beneficiaries include Siliguri Municipal Corporation, Public Works Department (Government of West Bengal), Public Health Engineering Department (Government of West Bengal), and the citizens of Siliguri.

Potential for Replication

The pilot project could be scaled up for conducting regular water leak detection and water audit in the city.

Project Investment

The total project investment is CHF 34'000

For more information, please contact:

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