

# Water Circularity

## SUEZ case studies in Mexico

Stockholm Water Week

August 30<sup>th</sup> 2017

Water

ready for the resource revolution



# Overview

**127M**  
Inhabitants

**105**  
aquifers  
overexploited

**67%**  
Territory arid  
or semiarid

**70%**  
Collection  
Efficiency  
(PIGOO)

**3,692**  
m<sup>3</sup>/inhab/year



Sources: WorldBank.org, CONAGUA, PIGOO

**2.3%**  
GDP Growth  
2016

**44%**  
Global  
efficiency  
(CONAGUA)

**96%**  
Has access to  
improved sources  
of drinking water

**57%**  
wastewater  
is treated

# SUEZ in Mexico

## 40 years of presence in water management



**300** drinking water and sanitation plants built



**10 M** inhabitants benefit from water services



**>500 000 m<sup>3</sup>/d** of wastewater treated



Nearly **700,000** communicating water meters



**2,200** employees (JV and PPP included)



**€57 M**



Tijuana

Rosarito



Ciudad Juárez



Culiacán



Saltillo

Monterrey



Tamaulipas



San Luis Potosí



Guanajuato

Querétaro

CDMX



Tabasco

-  Consulting services
-  Water distribution
-  Water & wastewater treatment plants
-  Desalination plant

# Solutions to water problems in Mexico with Circular Economy

## ○ Waste Water Reuse

El Tenorio, San Luis Potosí

## ○ Physical efficiency

BPO ASIM in CDMX  
and AGSAL in Saltillo.



## ○ Industrial Water Treatment:

Grupo México, San Luis Potosí

## ○ Reuse and Recharge

PTAR Chapultepec, CDMX



# Reuse- San Luis Potosí

A major BOT project in the middle of the desert.

## Challenges

- Fast-growing region (1.3 M people)
- Semi-arid region with limited resources
- Securing water supply for the population while supporting the development of agriculture and industry

## Solutions

Building and operating (20 years) the Tenorio plant that **recycles 100% water** for:

- 43% Industrial use - High quality water for the cooling system of the local electricity power station
- 57% Agricultural use - water to irrigate 400 ha



## Key figures

- A collection rate of wastewater increase from 32 to 85% in 6 years
- 80,000 m<sup>3</sup> of treated wastewater recycled per day

# Industrial Water Treatment – Grupo México

Alternative sources for industrial needs

## Challenges

The customer is the most important mining player in Mexico and decided to use waste water which comes from a gray water canal as an alternative of the use of well water.

## Solutions

An O&M contract for WWTP from Zinc Refinery located in San Luis Potosí to treat **180 m<sup>3</sup>/h**.

Duration: 1 year

**Reduction of 100%** in the consumption of water from wells through the collection and use of water from alternate sources for the needs of the refinery.



## Key figures

- **80%** of the treated water by SUEZ in WWTP is used in the **process production** of the refinery
- **20%** of the treated water by SUEZ in WWTP is used the **services** of the refinery.

# Physical Efficiency – Saltillo

Delivering water with great efficiency

## Goals

In 2001, Aguas de Saltillo received a concession to manage the water services for a total of 562,587 habitants with a 45% physical efficiency and 65% of commercial efficiency. It was a challenge for the first mixed company in México, currently with a population of 845,000 habitants.

## Benefits

**247,627 customers** are benefited with the service from the nearly 418 employees that reduce leaks to achieve a 73.5% of physical efficiency in a region that is mostly desert, improving the water production. Currently, Agsal counts with an action plan that guarantees a 3% annual improvement in the physical efficiency. The drinking water coverage achieves a 99%.



## Key figures

- Physical Efficiency: 73.5% in 2017
- Water volume produced: Increase of 0.3% vs 2016
- Invoiced volume: 5% more than 2016





# The case of Mexico City

**Mexico City's population: 8 833 415**  
(CONAPO 2016)

Is located in a place naturally benefited by water but with serious **problems of distribution and efficiency**

The **water consumption** is one of the **highest in world**, with 312 liter per day (UNAM studies)





# Reducing Water Losses, BPO- ASIM

8 of the 16 delegations of Mexico City are served by our companies

## Goals

Since 1993, SUEZ has been supporting the public operator of Mexico City in the improvement of water distribution services in 8 of the city's 16 districts.

## Benefits

**4.6 Inhabitants** are received service from the nearly 900 employees that **reducing water losses in the networks** (network rehabilitation, search for leaks), and **improving customer service** (customer center, meters installation and reading, delivering water invoices)

As an additional activity, we built the Santa Catarina Aqueduct, making it possible to conduct **350lps additional** to the area with the greatest deficit in the city.



## Key figures

- Nearly **700,000** water meters were installed
- Rehabilitation of over **1,662 km** of secondary networks
- **>20,000** leaks identified, **>30,000 leaks** repaired
- **11** customer agencies

# Re Use and Recharge: Chapultepec Project

A project to build the sustainable Mexico City of the future

## Challenges

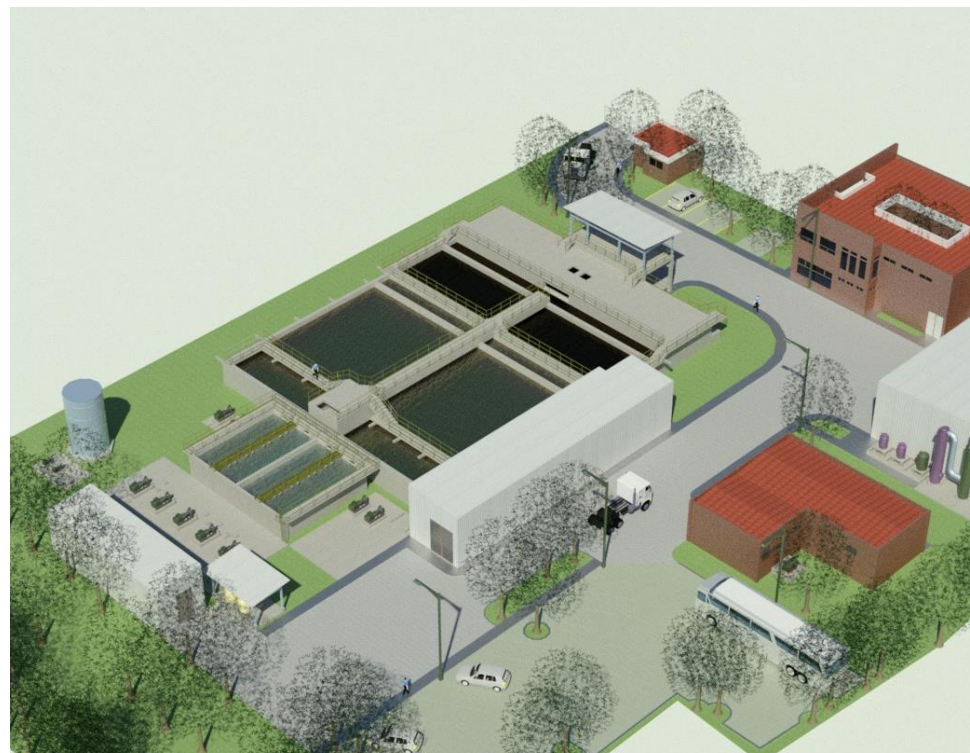
- Today, Mexico City, as a part of Valle de Mexico Basin, faces a shortage of 1 billion of m<sup>3</sup>
- Beside the scarcity problem, there's a sinking phenomenon
- Only 46.9% (weighted average in 2012) of sewage is treated.

## Solutions

SUEZ will treat the wastewater **170lps**, focused on 3 different water reutilizations:

- Lake filling
- Irrigation of green areas and
- Aquifer recharge: **1<sup>st</sup> municipal reuse project in Mexico**

Estimated Start up by 4<sup>th</sup> Q 2017- 1<sup>st</sup> Q 2018



As a **sub product of the water treatment**, we will contribute to maintaining & enhancing the recreational attractiveness of the Chapultepec park, which is 2X Central Park, and favor the cultural & economical activities.



**Thank you for your attention**

**Contact: [pierre.achard@suez.com](mailto:pierre.achard@suez.com)**