

P&G



BAFWAC

Water reduction and reuse in a P&G Beauty Care manufacturing facility

a Procter & Gamble case study

August 2017



Company details

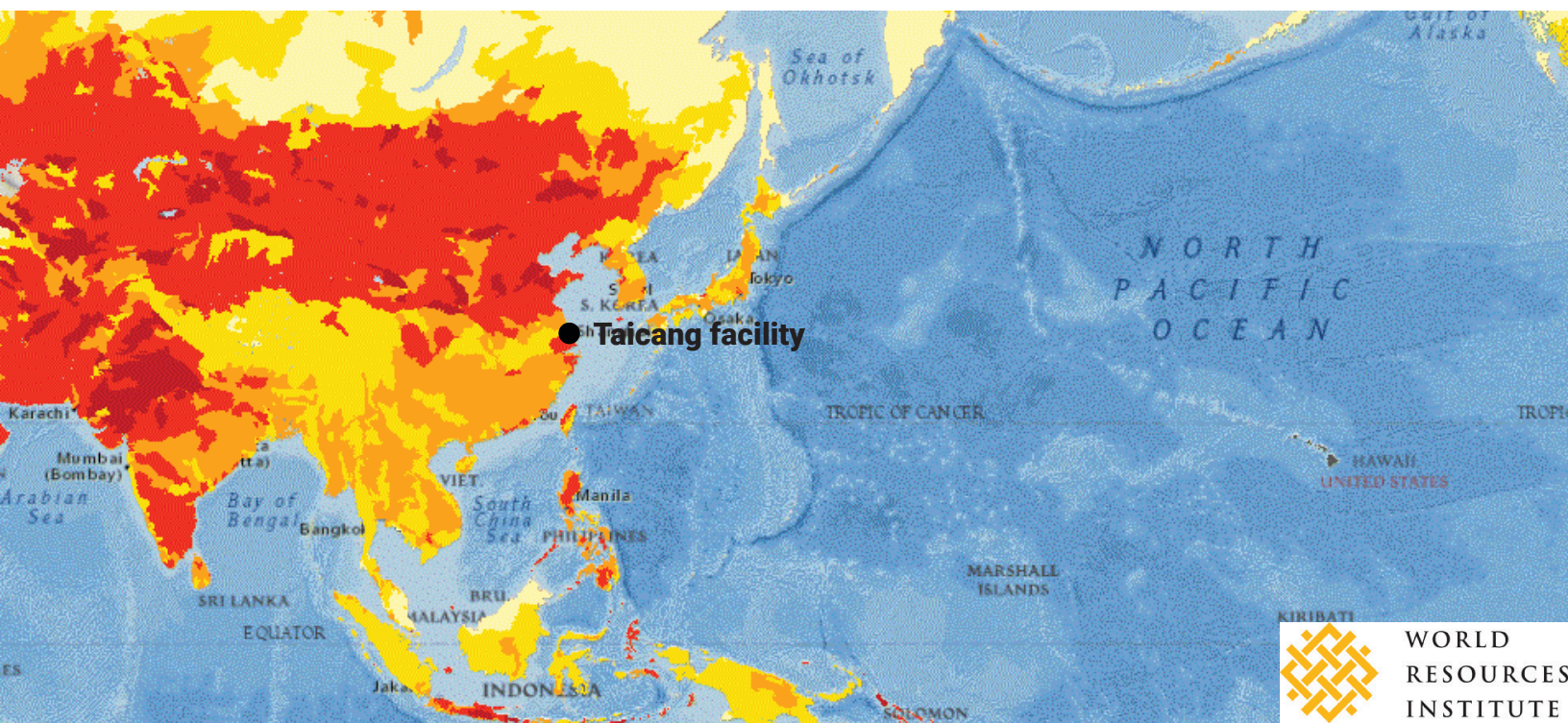
P&G serves consumers around the world as a multinational producer of family, personal, and household care products, including brands such as Always®, Ambi Pur®, Ariel®, Bounty®, Charmin®, Crest®, Dawn®, Downy®, Fairy®, Febreze®, Gain®, Gillette®, Head & Shoulders®, Lenor®, Olay®, Oral-B®, Pampers®, Pantene®, SK-II®, Tide®, Vicks®, and Whisper®. The P&G community includes operations in approximately 70 countries worldwide.

Summary of action

The Taicang plant in China is located in a water stressed area with strict water withdrawal and wastewater permit requirements, and the site requires large amounts of water to clean equipment. To ensure the longevity of operations in the region, enable compliance with permit requirements, and exceed P&G sustainability targets, Proctor & Gamble decided to reduce their water risk at the site by focusing on both the water intake and output.

Program rationale

The Taicang facility is located in a region where water stress is high, according to the World Resources Institute (WRI) Baseline Water Stress Score. Demanding permit requirements combined with retailer/consumer demands for a more flexible supply chain led the company to focus on reducing water use. Since cleaning and sanitization (C&S) activities were identified as the main contributors to overall wastewater discharge and chemical oxygen demand, the



site decided to focus on reducing or completely eliminating (where possible) the impact of C&S on water input and output. A key objective was to meet the legal requirements to reuse the wastewater generated during C&S activities.

Program approach

From the beginning, sustainability was at the core of the Taicang site development and operation. The design for the facility was inspired by the design of a traditional Chinese Garden, which includes a strong emphasis on water systems.

The first step was to develop and complete a detailed water map for the site to monitor project development and design. The second step was to reduce the quantity of water used at the site. To do this, the core process was designed for easier cleaning (e.g. flange to flange concept) and a new medium (steam) was used to decrease the amount of water needed to clean and sanitize. The third step was to develop an effective way to reuse the water and thus reduce water intake from the municipality.

Results & Benefits

Today, the site is the company benchmark for water reuse, since it reuses most of its C&S water.

- By optimizing C&S in the core process, Proctor & Gamble was able to **reuse 60% of its treated water** for cooling towers and 12% could be reused in the core process itself.
- At the same time, quality and safety requirements were maintained and the operation became less reliant on municipal water supplies.
- When compared to the baseline for similar sites, this facility uses 40,000m³/year less water through core process optimization and an additional 20,000m³/year reduction through reuse for **a total of 60,000m³ in annual water savings**.
- Moreover, the project also delivered financial savings from cost reduction of purified water, heating water, and purchasing steam, as well as cost reduction of C&S water treatment and concentrated water disposal.

Lessons learned

There were several challenges during the development of this project. It was difficult to develop a sustainability scope parallel to the core process development. Ensuring adequate water reuse with a new team and local chemicals was also an issue, as well as the increase in treatment costs as the water became more concentrated. Having firm go/no-go success criteria helped define the business need for this project.

Some key lessons learned have been:

- It is crucial to understand the local basin in order to design a sustainable manufacturing site for long term success.
- An integrated approach with the multi-functional project team (including R&D, Engineering, QA, and Manufacturing, for example) to accomplish the objectives and address issues is also very important.
- It is essential to start with sustainability factored in as a core aspect of the design - otherwise it is not affordable.

What next?

The C&S and water filtration/reuse processes developed at this site are now being benchmarked and reapplied for Beauty Care process optimization. The site is implementing additional measures to reach 95% water reuse.

Source:

<http://www.wbcasd.org/Clusters/Water/Circular-Water-Management/Resources/Case-studies/Water-reduction-and-reuse-in-a-P-G-Beauty-Care-manufacturing-facility>





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BAFWAC was jointly launched by CDP, CEO Water Mandate, SUEZ, and World Business Council for Sustainable Development (WBCSD) in December 2015. The initiative commits companies to analyze and report water-and-climate-related risks and impacts, and to implement collaborative response strategies along the value chain.

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