Water Management in Collaboration with External Organizations/Entities and Stakeholders

The Company engages in various environmental conservation activities, especially in water resources management through projects in collaboration with external organizations, agencies, and stakeholders. These activities include:

- River Cleanup and Tree Planting: Bangchak organizes river cleanup and tree planting activities along the Chao Phraya River in collaboration with local communities.
- Oil Spill Response Vessel: Bangchak has partnered with the Marine Department to procure the Sri Thararak 8, an oil spill response vessel, to help maintain the cleanliness from garbage and oil spill in the Chao Phraya River.
- Used Cooking Oil Collection Project: Bangchak collects used cooking oil from households and markets around the refinery and Bang Nam Phueng Floating Market to prevent oil from being discharged into the Chao Phraya River and public water sources.
- ECO School Project: Bangchak collaborates with the Department of Environmental Quality Promotion, Phra Khanong District Office, and Bang Na District Office to promote environmental education in 11 schools around the refinery. The project focuses on training school administrators, science teachers, and environmental teachers on integrating environmental education into the curriculum. This year, Banpithwitthaya School has implemented a project on “Wastewater Management in the Cafeteria” to reduce or eliminate wastewater from the school’s cafeteria from entering public water canals near the school, which eventually flow into the Chao Phraya River.
- Project Citizen: Bangchak collaborates with the King Prajadhipok’s Institute to enable students to propose public policies related to water, including preventing water pollution in schools and communities.
- Canal Clean-up Awareness: Bangchak partners with The Krung Thep Thanakom Company Limited to raise awareness among youth about the impact of canal waste on the environment and communities.
- Fry to Fly Project: Bangchak promotes and collects used cooking oil from households and food businesses to prevent oil from being discharged into public water sources.
- The Beautiful Khlong, Clear Waters Project: Bangchak collaborates with Phra Khanong District Office, Bangkok Metropolitan Administration, and Chulalongkorn University to improve the landscape of Bang O canal and the water quality in the canal to make it a clean and beautiful water source. This will have a positive impact on the ecosystem and biodiversity.

Water Pollution Management

Water is a vital factor for the livelihood of living organisms, serving as the habitat for a diverse range of aquatic animals and plants. Additionally, water has benefits in agriculture, household use, and industry. The distillery business of the Company also relies on water for production processes. Therefore, reducing water pollution is crucial, and the Company must take responsibility to minimize its impact on natural water sources.

The Company manages water pollution through an efficient wastewater treatment system, resulting in treated water quality that exceeds legal standards. Moreover, the Company reduces wastewater volume through the principles of 3Rs (Reduce, Reuse, Recycle). Treated water is recycled back into the production process to reduce natural resource consumption and minimize environmental and community impacts around the distillery. The wastewater treatment process of the distillery is divided into three parts.

Physicochemical Treatment Process:
Reducing the contamination of oil and heavy metals in water

Biological Treatment Process:
Reducing the contamination of water-soluble organic substances

Tertiary Treatment Process:
Filtering out small solid particles and absorbing water-soluble organic substances remaining to ensure that the water meets appropriate quality standards before entering the recycling system.

The Company conducts internal controls to regulate the quality of wastewater treatment units according to the Company's control standards. Regular analysis of water quality after treatment is performed at the Company's laboratory, including pH and dissolved oxygen measurements, to ensure the wastewater treatment system remains efficient. Additionally, an online COD monitoring system has been installed to measure COD levels in real-time and provide results to nearby government agencies and communities surrounding the refinery area.

In addition to controlling the quality of wastewater from the Bangchak refinery, the Company also pays attention to the environment and the surrounding community. In 2013, the Company initiated the "Khlong Suay Nam Sai" project in collaboration with the Phra Khanong District Office, Bangna District Office, Phra Khanong Police Station, and Chulalongkorn University. This initiative aimed to conduct research on the water quality of Bang Aor Canal, which would serve as a prototype canal for development and rehabilitation of public water sources from the origin. The Company's focus on initiatives like "Fry to Fly (Todd Mai Ting" emphasizes reducing household oil waste into public water sources.

Goal for water recycling in 2023

= **170,000** cubic meters
(only includes RO recycle units from the wastewater treatment system).

The RO recycle units from the wastewater treatment system
can recycle water for reuse
= **181,093** cubic meters.

Total water reused and recycled in the production process
in 2023 = **1,318,052** cubic meters
(including all units in the process).

The amount of wastewater discharged from the production process into external water sources
in 2023 = **944,862.49** cubic meters
(combined from settling ponds 1 and 3).