

BRAVE BLUE WORLD

# Lighthouse Awards

Google

ABInBev

Bac<sup>o</sup>s  
Unidos por un Perú mejor

DUPONT

Carlsberg  
Group

love every drop  
anglianwater



TOTEM  
GAMES

## LIGHTHOUSE LEADERSHIP AWARDS 2021

The Lighthouse Awards were launched by the Brave Blue World Foundation in December 2020, following the release of its documentary Brave Blue World, which highlights the urgency of the global water crisis and the pioneers who are building sustainable solutions.

The winning Lighthouse organisations, named so because they are shining a light for others to follow, have developed new ways of utilising technology, finance or partnerships, including circularity in their practice, to reduce their impact in water stressed regions, or build resilience of their local water systems. We honour these pioneers and visionaries, both corporates and utilities within the water sector.

Using our platform to honour them enables us, as a water community, to celebrate each other's successes and to learn from the challenges encountered along the way. It is also an opportunity for us to raise greater awareness of the remarkable work happening globally, to ensure the world's population has access to clean water and safe sanitation services.

The achievements of our 2021 recipients show us what is possible when bold ambitions are supported and enabled. We are proud to celebrate the stories of these visionaries who are showing us the way to a sustainable water future.

**The recipients of the Lighthouse Awards 2021 are:**

- **CEPT Rayapuram**  
Zero liquid discharge at Tirupur textile factory, India
- **AB InBev**  
Amunas: revaluing ancestral heritage to protect water in Peru
- **Carlsberg**  
The world's most water efficient brewery
- **Google**  
Seawater cooling system, Hamina Data Centre, Finland
- **Anglian Water**  
Low-carbon sustainable agriculture

**Honourable Mention:**

- **Totem Games**  
Water 2050 video game
- **Isla Urbana**  
Rainwater harvesting in Mexico City's informal settlements



## CEPT Rayapuram and DuPont Water Solutions

### Project: Zero liquid discharge at Tirupur textile factory, India

The city of Tirupur, is known as India's leading cotton knitwear centre and textiles capital, accounting for over 90% of the country's exports in this sector. In 2011, water issues reached a critical level in this region. The city's inhabitants could tell which shades were in fashion from the colour of the river. The groundwater in the region was tainted and farmers were causing salinisation of the land from irrigation.

As a result, the High Court of Tamil Nadu shut down 60 textile plants due to environmental concerns. CEPT Rayapuram partnered with 12 others and embarked on a long hard road to solve water issues from the textile sector. They worked with DuPont Water Solutions to achieve zero liquid discharge to the environment.

Textile wastewater is extremely difficult to treat and today CEPT Rayapuram meet 90% of their water needs from recycled water, while salts are also recovered and reused in the dyeing process. This has led to savings on the volume of water used to wash and dye textiles and is relieving rivers of dye-polluted discharge, while protecting agricultural interests. This project has slashed the cost of environmental compliance and is a forerunner in setting a positive example in the region.



## AB InBev

### Project: Amunas - revaluing ancestral heritage to protect water in Peru

Over the past two years multinational drink and brewing company AB InBev has begun the restoration of ancient water channels in Lima, Peru. These amunas, as the channels are called, are pre-hispanic water harvesting systems that may have been used by the Andean Wari culture as early as 700 AD. AB InBev has undertaken this project to revalue the knowledge and legacy of Peruvian ancestors and ancient water systems.

The company's ambition is to restore 67km of amunas which have been mapped out across the Lima highlands, a region with high water stress. In 2020, AB InBev successfully restored more than 4km; throughout 2021, they have completed restoration of another 10km, which is currently generating more than one million cubic meters per year in the Rimac basin, a critical potable water source for the Lima and Callao regions. The project also contributes to the hydraulic recharge of a local aquifer and is protecting the ecosystem by avoiding soil erosion, enhancing the soil profile and recovering native vegetation.

The restoration of the amunas is done hand-in-hand with the community, creating jobs and strengthening its capacities in operation, maintenance and monitoring, as well as enhancing economic activities, such as agriculture, livestock and tourism. This project has taken a very holistic approach to water issues by contributing to Lima's water security, economy and guaranteeing fresh water for future generations.



## **Carlsberg**

### **Project: The world's most water efficient brewery - Frederica, Denmark**

Carlsberg, the world-renowned brewer, has recently opened a water recycling plant which has made its Fredericia brewery in Denmark the most water efficient brewery in the world. In the Fredericia brewery 90% of the process water is recycled, this will halve water use from 2.9hl per hl of beer to just 1.4 hl/hl, saving around 500 million litres of water a year. By processing the water to generate biogas and recirculating hot water, the plant is also expected to cut brewery energy consumption by around 10%. The learnings will support Carlsberg to reach its target to virtually eliminate water waste globally by 2030.

This project is a moon-shot example of circular economy in food production where recycled water is used to clean production facilities and biogas is produced. Carlsberg understands that without water there is no beer, this brewery is now coined the world's most water efficient brewery and is without doubt the model of the future.



## **Google**

### **Project – Seawater cooling system, Hamina Data Centre, Finland**

Tech giant Google is using seawater in the cooling system of its Hamina Data Centre to reduce potable water use. The Finnish site was originally a papermill, built in the early 1950s. For this initiative, raw seawater is taken directly from the Gulf of Finland and run through a repurposed seawater tunnel – built for the original papermill. It then goes through heat exchangers which use direct exchange to dissipate the server load heat from the data centre.

The seawater is then returned to a tempering building, which takes in fresh seawater mixes it with the outgoing warmer water, returning it to the Gulf at a temperature similar to that at the inlet. This process enables the site to use 100% natural seawater cooling, making it one of Google's most advanced and efficient data centres globally. The project is one of several examples of Google analysing unique characteristics of data centre sites and looking at the geography, existing infrastructure and local climate to design a custom solution to ensure the most efficient cooling and power infrastructures possible.

## Anglian Water

### Project: Low-carbon sustainable agriculture

In a world-first, UK utility Anglian Water partnered with Oasthouse Ventures business developers to use warm water, the natural by-product of the water recycling process, to heat two of the UK's largest greenhouses. Together, the two greenhouses are capable of producing 12% of the UK's tomatoes.

Through extracting heat from final effluent discharged from water recycling centres, the glasshouses emit 75 per cent less carbon in heating and cooling in comparison to using traditional fossil fuels. The project is a remarkable engineering feat and provides a blueprint for sustainable, low carbon food production to meet the challenge of achieving net zero.

Generating heat is one of the biggest factors of greenhouse gas emissions, with natural gas a hugely carbon-intensive resource. The reuse of waste heat from the water recycling process to support sustainable agriculture is an innovative and renewable low carbon alternative to the traditional gas-fired boilers which would be the conventional choice to heat a glasshouse on this scale, and a great example of the circular economy in action. There is huge potential to replicate what has been achieved here in other areas of the UK.

## Honourable Mentions



### Totem Games

#### Project: Water 2050 Video Game

Video game developers Totem Games are currently in the process of developing the world's first video game which aims to educate children on the universe of water technologies and on the importance of valuing and preserving water.

The video game will take players on a journey which will start in 2050, where the last city in the world with clean water reserves faces the challenge of recovering a planet where all the water is polluted, and the land is dry and cracked. The player will have to manage scarce resources, face difficult decisions, and keeping people alive is just one part of the job.

The player must secretly develop the technology to travel to the past to avoid the water crisis by acting on the city of 2020. Utilizing expert water knowledge and based on real data and technologies on the care and efficient use of water the player will learn to discover and value this vital resource while embarking on an experience as captivating as it is challenging.

The focus of the game is on the dissemination of practices and technologies that allow the sustainable use of water, as well as a credible simulation of the relationship of causes and effects in relation to the water crisis and the scientific forecasts in this regard. We believe that Water 2050 will have a great appeal to audiences outside of the standard demographics of the genre, or even video games and is a fantastic communications tool for education with the general public on water.



## **Isla Urbana**

### **Project: Rainwater harvesting in Mexico City's informal settlements**

Water security in Mexico City is complicated by the many informal settlements that have mushroomed across the city as a result of urbanization. Some 59% of water utility CDMX's population is below the poverty line, and an estimated 22% of the population lives in informal settlements, or slums, which are usually located in areas of higher elevation, thus beyond the reach of the centralized water supply system.

Rainwater harvesting and purification systems have been installed in households across Mexico City's informal settlements. The installation of rainwater harvesting systems by Isla Urbana in informal settlements has decreased dependence on overexploited aquifers and increased access to affordable potable water for citizens living in marginalized communities. Each rainwater harvesting system guarantees the supply of up to 40,000 litres of drinking water per year, which amounts to an annual saving of approximately \$200 per family.

To date, Isla Urbana have installed approximately 21,000 rainwater harvesting systems in total, currently one system serves approximately 4.5 people. Currently there are between 90,000 to 100,000 people using household systems and a further 80,000-100,000 students utilising these systems in schools. Over the next five years Isla Urbana aim to increase their installations greatly utilising government support.

Whilst rainwater harvesting will not address the full scale of water insecurity in the megacity's informal settlements, Isla Urbana has made a substantial start on the roll-out of such systems in Mexico City.