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MODULAR, COMPACT, AND CHEMICAL-FREE WASTEWATER SYSTEMS

 SUSTAINABILITY

The technology is more affordable than traditional systems and can treat heavily polluted water

Spotted: The World Wildlife Fund (WWF) estimates that in 2021, the total quantifiable economic value derived from water amounted to around \$58 trillion (around €53.9 trillion), which is equivalent to all the GDPs of the US, China, Japan, Germany, and India combined. Yet access to freshwater is increasingly volatile, leading to historic drought in some locations while other areas are inundated by catastrophic flooding. And right now, wastewater treatment is a highly energy-intensive, complex process, making it difficult for regions to find the space and financial support for large-scale plants.

Indra, a Mumbai-based water treatment company, is helping bring water reuse to the masses with its modular, highly efficient system that cleans polluted water without using chemicals. Designed explicitly for use in densely populated urban areas, Indra's three systems use electro-coagulation (EC), electro-oxidation, disinfection, two-phase solids separation, and more to remove pollutants of all kinds – from industrial toxins and heavy metals to textile dyes, fats, and residential wastewater.

The company's 'Indra Flow' system treats residential water. Its 'Activated Flow' system, meanwhile works with heavy sludge and high levels of industrial toxins, while the 'Electrox' system adds oxidation to the process for multi-stage treatment of wastewater with high levels of carbon. Each system is plug-and-play and designed to make water reuse as easy as possible, particularly for organisations with minimal additional space to work with.

The systems recover up to 95 per cent of the water being treated and reduce operational costs by around 40 per cent compared with other treatment technologies. Each system uses Indra's Smart monitoring platform for automating processes and tracking efficiency. For larger operations, the Spectrum analytics platform integrates networks of sensors with artificial intelligence (AI) for real-

tenance optimisation. Indra is already working with organisations
tment from Swiss Emerald Technology Ventures, it plans to
ndustries. These include food and beverage production, steel
manufacturing, pharmaceutical production, and additional residential and commercial applications.

From [microbes](#) cleaning wastewater to [beer](#) brewed from wastewater, the innovations in Springwise's library spotlight the many ways in which the use of water is being extended.

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8th February 2024

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Takeaway:

The UN Environment Programme ([UNEP](#)) highlights that with the right policies in place, wastewater could prove an invaluable resource, providing alternative energy to half a billion people and supplying over 10 times the water currently provided through desalination. Indra's modular, low-energy system makes industrial wastewater treatment a possibility in locations where the high level of toxicity in the water, and the lack of available capital for investment, mean that traditionally large and emissions-intensive plants are unfeasible.