

Across China there are significant and concerted efforts from the Government to tackle the issue of water pollution.

Reports from 2016 stated 80 percent of China's shallow ground water was already polluted, and this explains the severity of the increasingly stringent discharge limits being enforced...

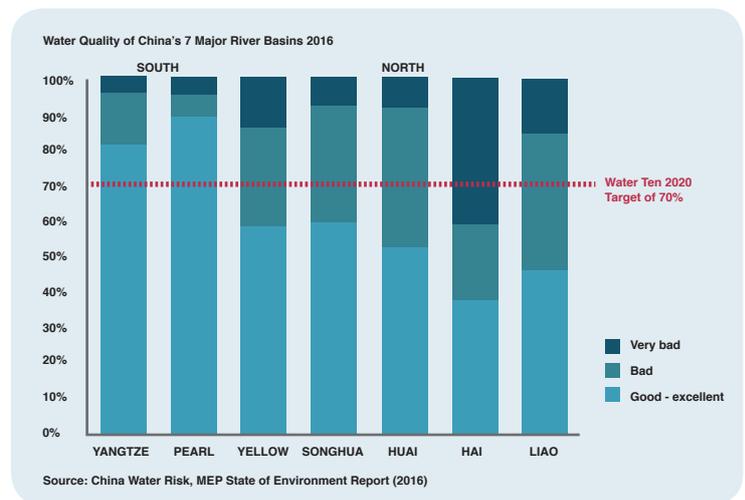


Industrial Wastewater

Protecting your business and the environment in the wake of Water Ten

Environmental Impact

The latest intelligence available on water pollution paints a mixed picture for China's river basins. River basins in the south of China fare considerably better than those in the north. The Yellow, Songhua, Huai, Hai and Liao all fall below the Water Ten 2020 target of having 70 percent of surface water graded good to excellent quality. While progress is being made, there is still a key focus on industry to contribute towards the water pollution challenge if targets are to be met.



Regulation

Polluted water supplies pose an immediate threat to public health and the environment, and it is because of this that the Water Pollution Prevention and Control Action Plan, or Water Ten, were introduced in 2015. Regulatory effluent limits vary across China and per industry. However, in order to meet the Water Ten targets, compliant limits of as low as 30 mg/L chemical oxygen demand (COD) are often stipulated.

While some companies have embraced the challenge of the water pollution crisis, and the consequent Water Ten regulations, as an opportunity to devise, and achieve, their own internal sustainability goals, there remains a huge opportunity for many more to do so. The latest available statistics show fines collected for breaching regulations in 2016 totalled four billion yuan. 50,000 companies were forced to shut down or halt operations.

Ensuring compliance through the adoption of sustainable solutions to water treatment offers a prime opportunity for key players in Chinese industry to positively contribute to the protection of the environment.

Future-Proof Treatment

Many companies have turned to AOPs, such as Ozone and Fentons which use chemicals, to treat wastewater to meet the new discharge limits. These methods are not necessarily cost-effective and generate a hazardous waste that is heavily taxed and requires specialist disposal. In addition, AOPs can often create degradation by-products, which can be more harmful than the original contaminant requiring treatment.

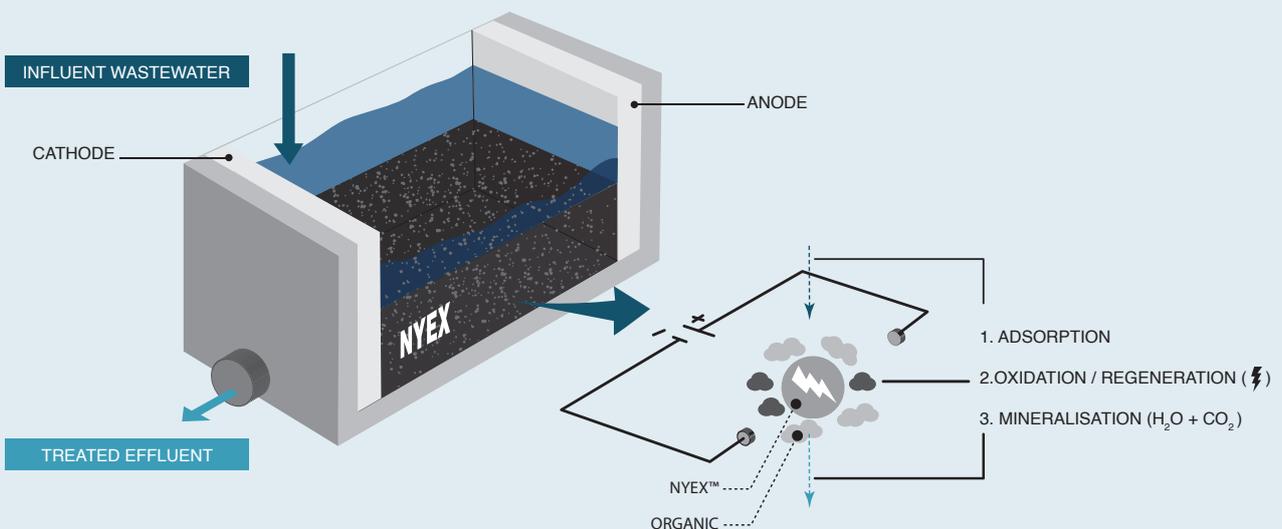
At Arvia, we are focused on the need for industry to tackle water pollution in a cost-effective way. We are also strongly committed to environmental protection. This is why we have developed an innovative **modular solution, free from chemical dosing**, to challenge traditional AOPs to treat water **without the generation of sludge**.

Below you can see how our system compares with the use of Fentons in a tertiary application.

	Fentons	Arvia	Notes	Saving with Nyex Treatment (Assuming full flow 300,000 m3/d)
OPEX (Operational Expenditure)	2.5 RMB/m ³	1.4 RMB/m ³	Electricity cost 0.2 RMB/kWh The 2.5 RMB/m ³ OPEX is expected to rise further in response to increase in levies on chemicals	~330,000 RMB/d (~£37,000/d)
Sludge disposal	5000-7000 RMB / ton (Current cost 200 RMB/ton)	Nyex™ treatment does not generate sludge	To be implemented in the months ahead Current cost is 200 RMB/ton	Current cost = 18000 RMB/d (~£2000/d) Potential future cost (~£50,000/d)

Our solution combines adsorption and electrochemical oxidation in a single, scalable unit. Contaminants are concentrated on the surface of our proprietary adsorbent Nyex™ media, which is non-porous with high electrical conductivity. A low electrical current is passed through the media bed, which allows for targeted and continuous oxidation. This continuous process reduces the chemical oxygen demand (COD) of wastewater streams to compliant levels of 50-30 mg/L COD at a vastly reduced cost when compared to traditional AOPs. Our low maintenance solution can be scaled to respond to shifting regulations and requires minimal manpower and training to operate.

Nyex™ Treatment Process



For more information about how we can help you, speak to our team of leading water treatment experts.

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arvia
Safer water for future generations