



Future of Water

→ Introducing Off-Grid and Distributed

Ageing systems vs mounting pressures

In many parts of the world, infrastructure is ageing — and too often failing — at a time when the stakes could not be higher. Vulnerabilities in these existing networks and assets, often built decades ago, are becoming increasingly evident as extreme weather events become more frequent and demand levels increase, driving-up maintenance requirements and costs.

In response to this challenge, 'off-grid' and 'distributed' technologies offer a thought-provoking alternative as we look to reimagine our current systems to become more agile against uncertainty and change. These emerging solutions offer an opportunity to address the mounting risk of older, larger networks by decentralising water, wastewater, and energy systems, while also introducing greener, more sustainable choices.



The time for radical change

New, unprecedented challenges require new, unconventional thinking. Traditional thinking argues that larger, centralized systems of plants, distribution and collection networks provide better economies of scale. New thinking challenges that position, suggesting that smaller, decentralized systems that harness emerging technologies could provide a more resilient, sustainable, robust and ultimately efficient solution.

To lead this change, our water and energy experts are working together with our clients to pioneer new solutions in the 'Off Grid and Distributed' space. Through this offering, we are harnessing our deep domain knowledge and digital smarts to realise new solutions that meet the future needs of communities in urban, regional, and remote settings.

For example, early applications of Off-Grid & Distributed solutions are emerging in the greenfield, infill and precinct development sector. For these developers, applying our Off-Grid & Distributed approach will enable them to translate decarbonisation, emissions reduction, and water/energy efficiency goals into on-the-ground action. Ultimately, the added 'green premium' that comes with improved environmental performance and an enhanced lifestyle for residents will also support the commercial success of these progressive "off-grid by choice" developers.

Harnessing the 'smaller and smarter' revolution

The potential of decentralisation is vast. In time, we envision Off-Grid and Distributed solutions helping to rebuild communities after natural or humanitarian disasters and providing isolated places, lower socioeconomic communities, island nations and developing countries with better access to more affordable, reliable and sustainable water and energy.

We know that the application of these technologies won't always be easy, given the entrenched nature of existing, centralised infrastructure, large-scale power grids and utilities, and we expect to meet regulatory and policy hurdles along the way. However, by starting small and working with early adopters, we will be well-placed to help clients better serve their communities in the future. This means harnessing technological disruption and emerging methodologies to stay at the forefront of the smaller, smarter green revolution that Off-Grid and Distributed solutions promise.

“This is the time for us to think different, to be bold, to challenge the status quo. We see huge potential in smaller, greener, decentralised solutions... ‘Off-Grid and Distributed’ is our commitment to unlocking this.”

– Don Holland, Water Market Lead, Canada

At the forefront of innovation, together

Adopting an Off-Grid & Distributed approach will demand radical collaboration. Together with our private and public sector clients, we will forge trusted partnerships grounded in innovation. Using the technology available to us today, we will incubate the resilient water, wastewater, and energy services of tomorrow.

**Find out more:
ghd.com/FutureofWater**

Our philosophy

It's time to move away from treating water as a commodity to be controlled to instead, recognising its intrinsic value as a natural, balanced cycle. To shift to integrated, system-wide solutions, embracing a broader understanding of water's whole, circular picture. To combine engineering and artistry — inventive approaches, original ideas — to deliver truly elegant outcomes.

That's where GHD comes in; where we can make a meaningful difference, together with our clients. And that's where the Future of Water lies; a future that's ours for the taking.

→ The Power of Commitment