

A Decade Later — An Update on TIME Magazine’s 2010 Best Invention in Green Energy



Figure 1. Underwater kite. Reprinted from Create, <https://www.createdigital.org.au/underwater-kites-tidal-energy-potential/>.

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The urgency for change has never been felt more than now as significant and rapid solutions for the imminent and irreparable damage of climate change are needed. What the Paris Agreement in 2016 crystallized was that in order for there to be long-lasting and effective change to rising temperatures in our atmosphere, global cooperation is necessary. But while many countries woke up to the urgency of our planet’s environmental crisis, the Paris Gap — the distance between the time it takes to implement change and the time that change needs to occur — became equally apparent.

January 2020 marks a time of reflection over a decade’s worth of innovation in the field of green energy around the world. We thought it would be interesting to take a closer look at one company — **Minesto** — whose invention qualified as *TIME*’s best invention of 2010 in green energy in order to see where the company is today, ten years later. What goals did they set out to accomplish when they were recognized for their groundbreaking innovation, Deep Green Underwater Kite, and how have they evolved over the span of time that followed?

While Minesto was recognized by *TIME* for its Deep Green Underwater Kite in 2010, the company’s journey started four years earlier in 2006 when the inventor, former Saab engineer Magnus Landberg, wrote his master’s thesis on the viability of the technology behind the Deep Green concept. In a nutshell, Landberg theorized that since seawater is 800 times as dense as air, the small kite-like turbine designed to be tethered to the ocean floor could generate 800 times more energy than if it were in the sky. In 2009, the prototype produced electricity for the first time, and by 2011, its developers

claimed that the kite’s relatively light weight and ability to function in low-velocity currents gave it advantages over other tidal and ocean current power plants. The technology was then recognized and granted funding by **Carbon Trust**, an important milestone for Minesto, and by 2014, it was awarded an agreement for the lease of a 10 MW installation in Holyhead Deep, the world’s first low-flow tidal stream project.

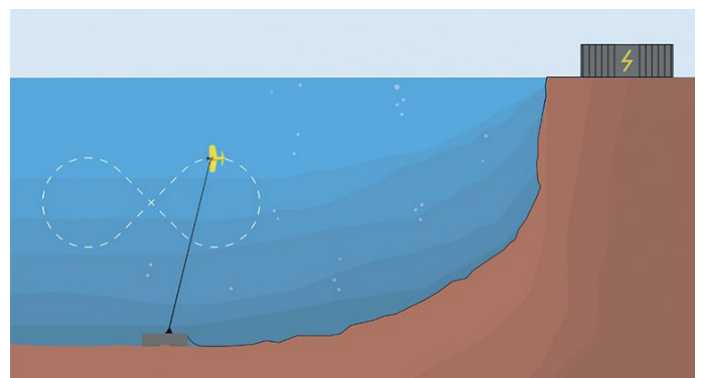


Figure 2. How it works. Reprinted from *Minesto*, <https://minesto.com/our-technology>.

One of the strengths of Minesto’s Deep Green invention is that it is designed specifically to produce energy from consistent and low-velocity streams of tidal currents typically found in almost all deep waters around the world. Unlike many other renewable energy sources such as wind and solar that are dependent on unpredictable weather factors, tidal currents are a very reliable and predictable source of energy. The company currently has a functioning prototype off the coast of Wales and is now at the phase of producing a new and more effective version of the original Deep Green Underwater Kite design called DG100. Minesto plans to begin operating two of them in 2020 on the Faroe Islands about halfway between Norway and Iceland.

The Promise of Tomorrow — A Pragmatic Approach

When it comes to combating climate change, the role of tech companies as vehicles for change has significantly grown over the past ten years with many in both private and public sectors looking to big companies such as Google, Facebook, and Amazon for solutions. Companies such as these have in many ways replaced the role once exclusively assumed by the government in shaping everything from how we think to how we behave and how we prioritize our time and energy. In ten years, Minesto has continued to grow, meet milestones, and secure capital. It has plans to expand its production and meet its potential. But the pace at which it has grown also serves as a humbling reminder that change doesn’t happen overnight.

According to Bernt Erik Westre, Minesto’s chief technology officer, with the existing technology, you could install 600 GW globally, which would be 1.5 times the world’s current nuclear capacity, making the potential of this technology extremely promising. But perhaps the company’s most promising characteristic as far as we are concerned is the way in which it can be implemented within a framework that already exists. Dr. Martin Edlund, Minesto’s CEO, stresses the scalability potential for his company’s technology due to its unique ability to complement technologies that are more established, better funded, and further along in the process of wide-scale implementation.

A look at the list of *TIME*’s Best Inventions for 2019 celebrates General Electric’s Haliade-X and further solidifies Edlund’s reasoning for focusing on the complementary nature of Deep Green’s marine technology. General Electric’s foray into the production of sustainable energy resulted in Haliade-X, the world’s



Figure 3. General Electric’s Haliade-X. Reprinted from *Power Technology*, <https://www.power-technology.com/features/haliade-x-look-ges-supersized-new-wind-turbine/>.

largest offshore wind turbine. It is considered the most efficient turbine in the industry due to, among other things, its ability to produce energy from wind that isn’t strong enough to drive other turbines.

If 2010’s Best Green Invention was an underwater turbine hailed for being able to produce energy in some of the most unpredictable weather conditions, and if 2019’s Best Green Invention is an above-water offshore wind turbine that can produce wind even when conditions are less than optimal, it is time to consider doubling up on technology as a way to secure a faster and more efficient turnaround of our planet’s current trajectory. As we look forward to the next decade of innovation, the key to closing the Paris Gap is perhaps finding ways not only for countries to team up but for companies to do the same. And here is the silver lining of our climate crisis. It is calling on us to be the most creative collaborators that are impartial to a traditional, private-public divide. Coming together locally, nationally, and globally with our decarbonization party hats on is the only trajectory worth pursuing in this dawn of a new decade.