

Dutch Windwheel draws energy innovations

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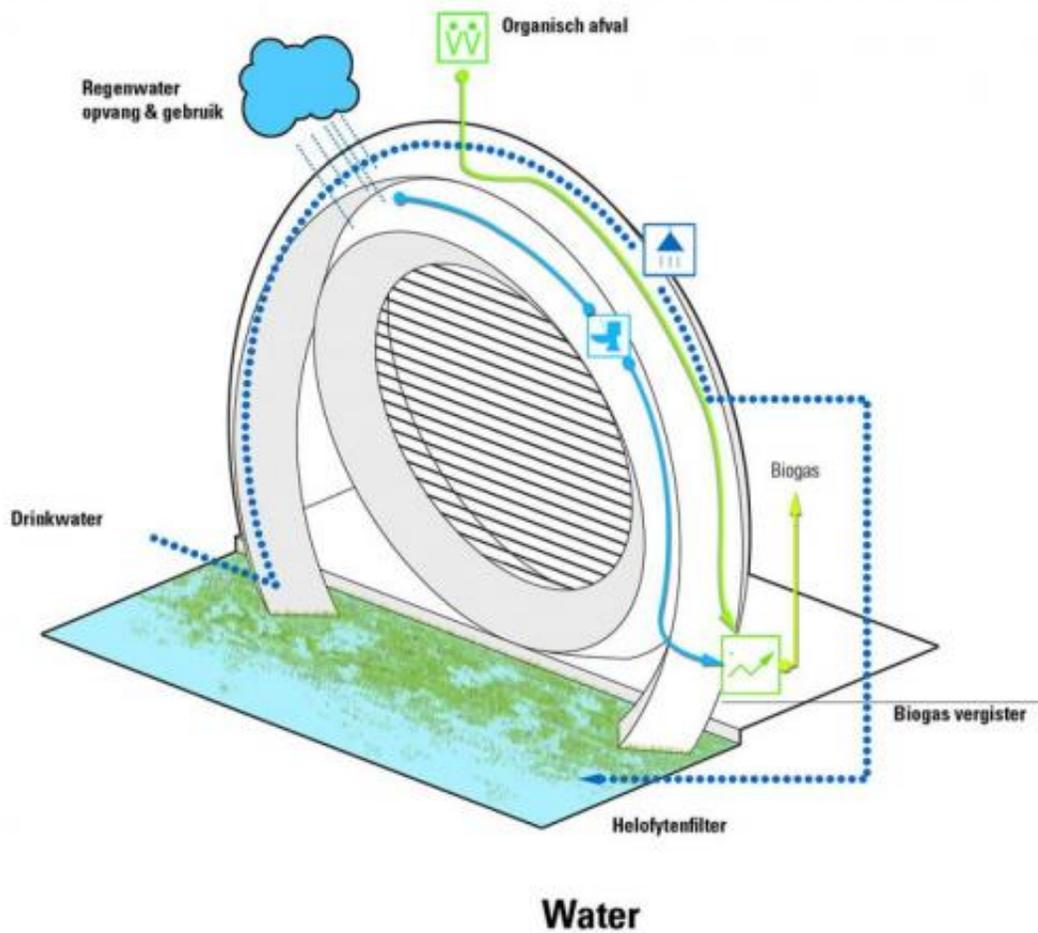
The backers of the Dutch Windwheel leave few superlatives behind. The most innovative 'windmill' in the world. A [showcase](#) for clean technology. Accelerator for renewable energy. A future icon for The Netherlands and future landmark in Europe's largest port city, Rotterdam. A presence in the architectural capital of the Netherlands making the skyline even more spectacular. Superlatives may be in order for the Dutch Windwheel, an ambitious idea under the umbrella of the Dutch Windwheel Corporation, a consortium of Rotterdam based companies. The wheel makes use of EWICON (Electrostatic WInd energy CONverter) technology. In this construct, a wind turbine converts wind energy with a framework of steel tubes into electricity without moving mechanical parts. No noise. No moving shadow.

Inhabitat, covering work on the wind turbine technology back in 2013, said this was a bird-friendly wind turbine. The bladeless turbine was described as using "the movement of electrically charged water [droplets](#) to generate power. It can be installed both onshore and offshore, or mounted on a roof." The design consists of a double-ring construction with a light, open steel and glass construction. The foundation is underwater, and it looks as if the wheel is floating. *Inhabitat* said the two rings built on an underground foundation are surrounded by wetlands. The outer ring houses 40 rotating cabins on a rail system, while the inner ring, a windmill, houses a panorama restaurant, apartments, hotel rooms, and commercial outlets. Rainwater is captured atop the structure. Tap water is fed into the wetlands that surround the Windwheel. Biogas is produced from the residents' waste.

Beyond this wind turbine's technology features, its innovative design is also being promoted as one that will attract many people, from tourists to local visitors to potential residents. Or, as Charley Cameron said in *Inhabitat*, "how cool would it be to tell people you live [inside](#) of a wind turbine?"

The technology was earlier explored at Delft University of Technology. Researchers at TU Delft reported on letting the wind move charged particles against the direction of an [electric](#) field. The researchers said that "Charged particles have been created using two spraying methods, electrohydrodynamic atomisation and high pressure monodisperse spraying. Using both methods, [wind energy](#) has been converted to electric energy and delivered to an electrical load with positive efficiency." Writing in *Gizmag*, Jonathan Fincher in 2013 explained: "The current design consists of a steel frame holding a series of insulated tubes arranged horizontally. Each tube contains several electrodes and nozzles, which continually release positively-charged water particles into the [air](#). As the particles are blown away, the voltage of the device changes and creates an electric field, which can be transferred to the grid

for everyday use." Fincher said at the time that energy output would depend on wind speed, number of droplets, amount of charge placed on the droplets, and strength of the [electric field](#).



More information: thedutchwindwheel.com/en/index

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