

Dutch company launches new-generation urban wind turbines

28 May 2014, by Nancy Owano



Could a new generation of wind turbines on residential rooftops be on the way? Saying no might be easy when imagining blade noise, if nothing else. The idea of wind turbines for generating energy in households may draw several arguments against the idea. One may argue the yield from current-generation turbines would be too low, along with having to put up with the noisy blades. A group based in Rotterdam which describes itself as an "R&D" company "built on the re-invented formulas, drawings and principles of Archimedes" is out to change minds. On Tuesday, the company, also called The Archimedes, unveiled its Liam F1 Urban Wind Turbine. The Liam, according to the company, ushers in a "totally new generation of wind turbines for domestic use."

The company said that the turbine easily fits on the roof of a house just as would solar panels. The Liam F1 generates an average of 1,500 kilowatt-hour of [energy](#) at a wind-speed of 5m/s, which resembles half of the power consumption of a common household. In combination with solar-panels on the roof, a household could be totally self-supporting for its own energy needs. The Archimedes CEO Richard Ruijtenbeek said, "when

there is wind you use the energy produced by the wind turbine; when the sun is shining you use the solar cells to produce the energy."

Because of its design, the Liam addresses limitations of efficiency and noise. The inventor, Marinus Mieremet, company CTO, created a type of turbine that is virtually soundless. The Liam is based on "the laws of nature and the theoretics of the Greek mathematician Archimedes." The form of the Liam is a Nautilus shell. The Liam automatically like a pennant goes for the optimal position of the wind, pointing into the wind for maximum yield. According to Mieremet the yield is 80 percent of the maximum that is theoretically feasible.

Explaining the design, according to the company, "Most today's [wind turbines](#) require that a difference in pressure between the front and the rear side of the rotor blades be maintained in order to be effective. However, this difference in pressure also has a negative effect called 'drag'. Our turbine rotor captures the kinetic energy of the wind due to its speed, and, by reversing the wind and reducing it to almost zero Beaufort converts it into mechanical energy. By doing this the wind speed's effect (in kinetic energy) on the rotor is maximized and 'lift' is obtained by the wind's acceleration over the rotor plane."

The Archimedes started in 2006, founded by Mieremet and Ruijtenbeek. The announcement on Tuesday also noted that the company has started developing relatively small turbines for use on boats, on lampposts and in water.

More information: The Archimedes: dearchimedes.com/

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