



FREQUENTLY ASKED QUESTIONS



FAQ

What is Ogin?

Ogin™ is a cleantech innovation leader driven by the mission to make affordable, clean energy available to everyone. With breakthroughs in turbine design, manufacturing and construction, Ogin has developed a cost-effective way to deliver the benefits of wind energy – more efficiently and more widely than ever before.

What product does Ogin make?

Ogin's first product is the Ogin Turbine. It is a smaller, high-performance wind turbine that can be deployed where others can't. The Ogin Turbine opens up new markets, bringing clean wind energy production closer to consumers than was previously possible.

How is the Ogin Turbine different from utility-scale turbines?

The Ogin Turbine is inspired by the latest advances in the aerospace industry. It features a unique, shrouded design that changes physical airflow patterns through and around the turbine. Standard open-bladed propeller-type rotors divert a large fraction of available energy around the rotor. By drawing energy from a larger column of wind, the Ogin Turbine dramatically improves turbine efficiency – yielding up to three times more energy output per unit of swept area.

Ogin's differences from conventional turbines go even further. Modular manufacturing and construction help to simplify and expedite project development. The low-profile Ogin Turbine is also suitable for compact wind arrays scaled to connect directly to local grids, without the need for new long-distance, high-voltage transmission infrastructure.

What are the cost benefits of Ogin Turbines?

The Ogin Turbine is the most efficient wind turbine of its size. Its simple direct-drive and self-yawing design translates into a dramatic reduction in O&M costs per MWh, as well as increased profits for wind farm operators. Annual energy output per unit of rated capacity is increased by 50%, while peak energy output from the ultra-compact rotor is increased by up to three times per unit of swept area. The result is a quiet, compact turbine that outperforms any other midscale turbine. For the first time, utility-scale economics are available in a 100kW-class machine.

How does Ogin's design and construction process affect project timelines?

Wind energy project development and construction is always a complex process. Ogin's unique design and approach can shrink the timeline by years. By siting projects within distribution grids, developers can sidestep the lengthy process for high-voltage interconnection. Ogin's low, compact design and quiet operation resolve common siting objections, speeding up permitting timelines. Standardized manufacturing and sub-assembly enable production of turbines within weeks of initial order. On-site assembly can be completed in a matter of days per turbine, compared to the weeks it may take for the construction of other types of turbines.



What is required to interconnect Ogin Turbines to the power grid?

Ogin Turbines are suitable for a wide range of applications, from repowering of legacy turbines to greenfield wholesale utility projects, as well as on-site power for government, commercial and industrial customers. Repower projects can make use of existing grid facilities, while greenfield projects can connect to lower-voltage networks – eliminating the time and cost of building high-voltage substations or long-distance transmission lines.

Where can Ogin Turbines be sited?

The size and unique design of the Ogin Turbine enable much more flexible siting than is possible with other wind turbines on the market. Project sites may be profitably developed in areas with class I, II and even, in some cases, class III winds. Legacy wind sites, as well as large commercial sites and industrial plants, can all benefit from the Ogin Turbine's distributed generation capabilities. Modular turbine design allows components to be transported to a broad range of installation sites in standard 40-foot flatbed trucks, without the need for special roads, permits or police escorts. The turbine's compact size and low profile make it community and airport friendly, and allow it to be erected without costly oversized cranes.

Is the turbine avian friendly?

The Ogin Turbine has been designed with wildlife safety concerns in mind. Its shroud poses both a visual and physical obstacle to prevent birds and bats from entering the rotor zone. To verify wildlife impacts, Ogin is currently underwriting a major multi-year study at a California site that has been well-studied for wind-avian impacts over the past twenty years.

How much space does each turbine require, and how close together can they be?

The Ogin Turbine's design rapidly mixes out wake turbulence. As a result, less buffer space between turbines is required. While conventional turbines are generally spaced at least eight rotor diameters apart to allow for wake recovery, Ogin Turbines can be spaced as close as four diameters apart without major performance degradation. The result: more compact arrays, lower wide-area visibility impacts and less costly land requirements.



About Ogin

At Ogin, we are driven by the mission to make affordable, clean energy available to everyone. Everything we do flows from this simple premise. To fulfill our mission, we have assembled a world-class leadership team that is at the forefront of innovation in aerodynamic science, turbine design, manufacturing processes and supply chain development.

The new Ogin Turbine makes this goal achievable now. It harnesses power from clean, inexhaustible wind energy at a cost that is highly competitive at many locations in today's market environment. But this first new turbine is just the beginning of our long-term commitment to meet the world's pressing need for clean energy. Ogin will be the company that continues to innovate, invent and improve wind technology for the era of clean energy. Our vision is that soon clean energy will no longer be a niche, but the standard. This is the new shape of energy.



Ogin

THE NEW SHAPE OF ENERGY

**CONTACT OGIN TODAY TO
FIND OUT MORE ABOUT
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