

Introduction to Wind Energy Generation

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REU presentation
June 8, 2011

Type-1 turbine

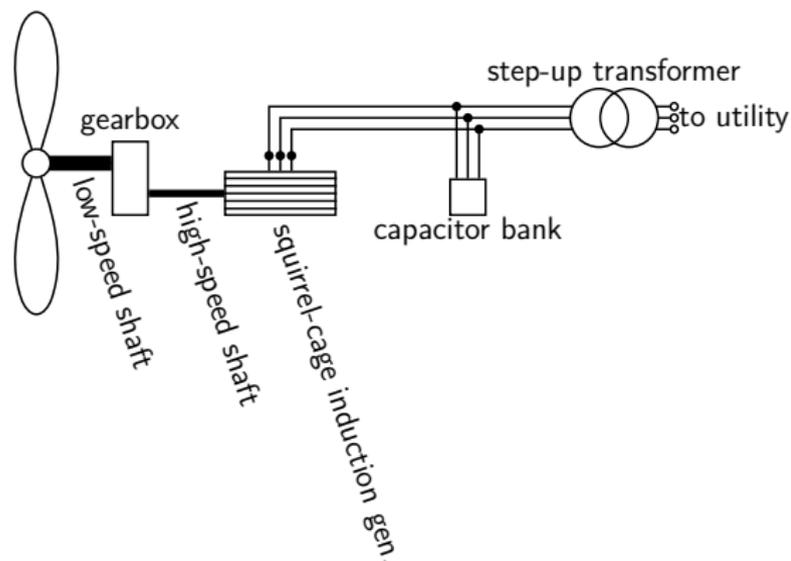


Figure: Topology of a Type-1 wind generator. (Note: A thyristor-based “soft-starter” power electronics converter is sometimes used, which is not shown here. Also not shown is the brake.)

Type-2 turbine

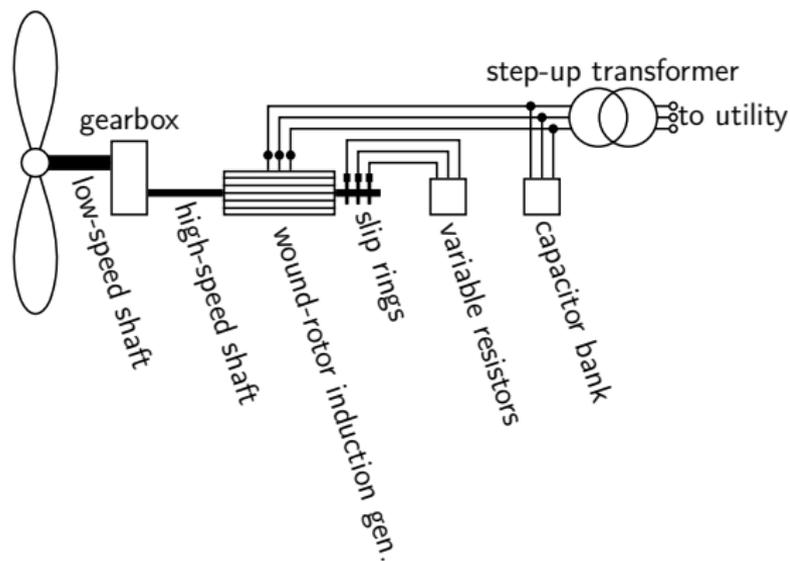


Figure: Topology of a Type-2 wind generator.

Type-3 turbine

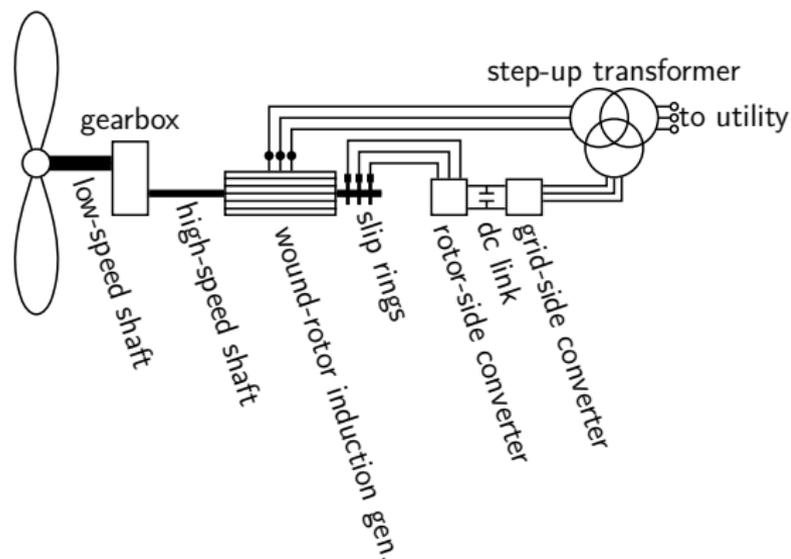


Figure: Topology of a Type-3 wind generator. (Note: Not shown is an auxiliary *crowbar* circuit that is used to protect the power electronics during power system faults.)

Type-4 turbine

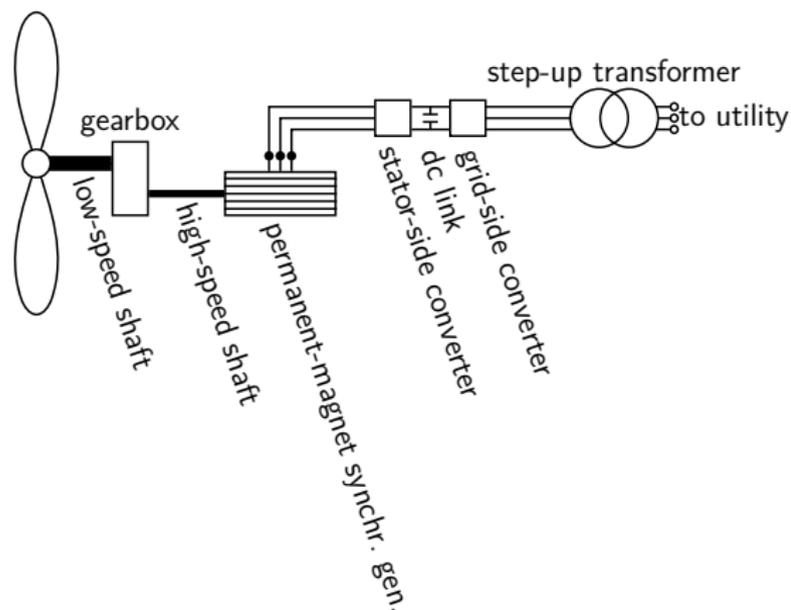


Figure: Topology of a Type-4 wind generator. (Note: *Direct-drive* designs do not have a gearbox; the low-speed shaft is directly connected to a machine with large number of poles.)

Thank you! Questions?

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