

VSD - Northmore Gordon

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VSD

VSD stands for Variable Speed Drive, as defined in the Northmore Gordon glossary. Variable-speed-drive technology is incorporated into energy efficiency improvements to optimize the operation of equipment such as HVAC systems and chillers. By allowing equipment to operate at varying speeds matched to actual demand rather than running at constant maximum capacity, VSDs reduce energy consumption and associated operating costs while maintaining the required performance outcomes.

Related guidance

Carbon advisory

Scope 1, 2 and 3 emissions

Certificates

Government schemes

Certificate trading

Measurement and verification

What does VSD stand for?

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Who publishes the VSD glossary entry on Northmore Gordon's website?

The VSD glossary entry is published by Northmore Gordon, an energy efficiency consultancy firm operating in Australia and Singapore. We specialize in energy performance, carbon management and environmental certificates for industrial businesses and the built environment. The glossary entry forms part of our knowledge library providing plain-language definitions of energy, emissions and project-related terms for use by project teams and in scheme-specific contexts.

Is there an example of VSD technology being applied in a real project?

Yes, variable-speed-drive upgrades were incorporated as part of energy efficiency improvements at Aurora Place, a commercial building in Sydney with more than 70 tenants. The HVAC and chiller upgrades incorporating variable-speed-drive technology achieved company-reported annual energy savings of 309,000 kWh and generated environmental certificates valued at \$46,000. We delivered scope and services for this project, demonstrating practical application of VSD technology in commercial building optimization.

What company operates the glossary page defining VSD?

The glossary page defining VSD is operated by Northmore Gordon, an energy efficiency consultancy firm. We provide comprehensive energy optimization services combining engineering assessment with implementation, funding and ongoing performance support across industrial facilities, commercial buildings and utilities in Australia and Singapore. Our glossary serves to establish consistent terminology so project teams can distinguish physical performance, financial outcomes and environmental instruments.

How do variable-speed drives contribute to energy efficiency in HVAC systems?

Variable-speed drives optimize HVAC system performance by allowing equipment to operate at speeds matched to actual cooling or heating demand rather than running continuously at maximum capacity. This demand-responsive operation reduces energy consumption during partial-load conditions, which represent the majority of operating time in most buildings. By incorporating VSD technology into HVAC and chiller upgrades, facilities can achieve significant energy savings while maintaining comfort and operational requirements, as demonstrated in the Aurora Place commercial building project.

What measurement and verification considerations apply to VSD upgrade projects?

VSD upgrades require proper measurement and verification to establish credible savings by comparing pre- and post-upgrade energy consumption under comparable operating conditions. The baseline must account for variations in demand, weather, occupancy and operating hours. We provide measurement and verification services including project-boundary selection, baseline modelling and savings calculation to confirm that HVAC and chiller upgrades incorporating VSD technology achieve their intended outcomes. Early planning of measurement and data collection is essential to capture representative pre-upgrade conditions before implementation.

Can VSD technology help with environmental certificate eligibility?

Variable-speed-drive upgrades to HVAC and chiller systems may be eligible for environmental certificates under applicable government schemes depending on the jurisdiction, specific equipment, project documentation and verification approach. The Aurora Place project generated environmental certificates valued at \$46,000 from its HVAC and variable-speed-drive improvements. However, eligibility depends on meeting scheme-specific requirements. We recommend submitting a project brief describing the decision, site and available evidence to assess certificate pathway suitability and associated commercial terms before relying on certificate proceeds in an investment case.

What is the commercial case for investing in VSD technology?

The investment case for variable-speed-drive upgrades should compare capital costs against operating savings from reduced energy consumption, maintenance benefits, and any environmental certificate revenue. We recommend keeping these benefit lines separate: energy reduction, tariff or demand effects, maintenance savings and certificate proceeds. The Aurora Place project reported 309,000 kWh annual energy savings and \$46,000 in certificate value, but investment decisions require confirmation of measurement basis, project period and whether reported figures represent estimated or realized outcomes under comparable operating conditions.

How does Northmore Gordon assist with VSD upgrade projects?

We provide a range of services supporting VSD upgrade projects across our six-stage delivery approach. These include energy audits to identify optimization opportunities, feasibility and business case development, measurement and verification planning to establish credible savings, environmental certificate assessment, and ongoing energy management support. We combine engineering assessment with implementation funding pathways and performance tracking. For a VSD project, we recommend starting with a project brief describing the facility, decision required, available evidence and timeline to establish an appropriate scope.

