

The Australian Experience: Works of an Australian Electrical Supply Entity

澳洲的經驗：澳洲電力公司的供電設施

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Abstract

In Australia, electrical entities cover power generation, transmission and distribution. Australia has around 200 generators producing 266 billion kilowatt hours of electricity, 8 transmission entities with 50,000kms of lines transmitting 250,000 GWh and 16 distribution entities covering 860,000kms of lines.

All electrical entities have an obligation to ensure that its works are electrically safe, are operated in a way that is electrically safe and that they are inspected, tested and maintained. Works of an electrical entity means the electrical equipment, and electric line associated equipment, controlled or operated by the entity to generate, transform, transmit or supply electricity. Entities must comply with rules contained in legislation, regulations and codes of practice and all entities are required to implement a documented Safety Management System that details all hazards and risks and how they are to be managed. Failure by an electrical entity to comply with its electrical safety obligations carries substantial penalties.

Some of the issues confronting electrical entities include protection of supply lines from unauthorised access; damage to overhead lines from cranes, trucks and agricultural equipment; damage to underground lines from excavation work; damage to electrical assets from severe storms; and electrical assets causing bushfires. In 2009, Sydney suffered major power outages because of damage to underground cables and in Victoria a bushfire caused by a conductor failure because of fatigue resulted in 119 deaths. In addition, over the last 8 years, there have been 77 fatalities in Australia involving electricity supply assets with the majority being non-electrical workers.

In Australia there are moves to increase the supply of energy from renewable sources such as solar, geothermal, biomass, wind and hydro and various technological advances are being trialled with a view to improving safety and reliability.

摘要

在澳洲，電力公司包括發電公司、輸電公司及配電公司。澳洲約有二百多家發電公司，發電量達二千六百六十億度。輸電公司有八家，共有五萬公里的輸電線路，輸送電力達二千五百億度，而配電公司則有十六家，共有八十六萬公里的配電線路。

所有電力公司均有責任確保其供電設施安全，並要安全操作、檢查、測試及保養這些設施。電力公司的供電設施是指電力公司所控制及操作，用以發電、變電、輸電及供電的電氣設備、電線及相關設備。電力公司必須遵守有關法例、規例及守則的規定，並要實施以文件記錄為本，詳述所有危害、風險及如何作出管理的安全管理系統。電力公司若未能履行其電氣安全責任，會引致巨大罰款。

電力公司所面對的問題，包括保護供電線，以防止未受權進入電線範圍；吊機、貨車及農業設備對架空線所造成的損壞；挖掘工程所導致的地下電纜損壞；強烈風暴所引致的電力資產損壞；及因電力資產而導致的山火。在2009年，雪梨曾因為地下電纜被損壞引致嚴重的停電事故，而在維多利亞省，由於架空線的金屬疲勞而造成的導線故障曾引致一宗山火，造成119人死亡。另外，澳洲過去8年間，涉及供電資產的意外而死亡的共有77人，當中大部份死者不是電力工人。

澳洲正推廣增加使用可再生能源，例如太陽能、地熱能、生物質量、風能及水力發電，以提供能源供應，而且亦嘗試使用各種先進技術，以改善安全及可靠性。

Biography

Peter Lamont is the Executive Director of the Electrical Safety Office in Queensland, Australia, a position he has held for some six years. For the last five years Peter has been chair of the Electrical Regulatory Authorities Council of Australia and New Zealand which consists of all the electrical safety and supply regulators. Peter also chairs the APEC Electrical Equipment Joint Regulatory Advisory Committee. He has also been a representative on Australia's National Occupational Health and Safety Commission OHS Committees. Peter has previously held a number of senior Government positions in the areas of Electrical Safety; Workplace Health and Safety; Industrial Relations; and Economic Policy.