

Medium voltage harmonic filters

Nestled amongst rolling hills in sunny Australia is a very large solar farm that had a problem: non-compliance with harmonic emission limits caused curtailment of power generation, resulting in a significant loss of revenue.

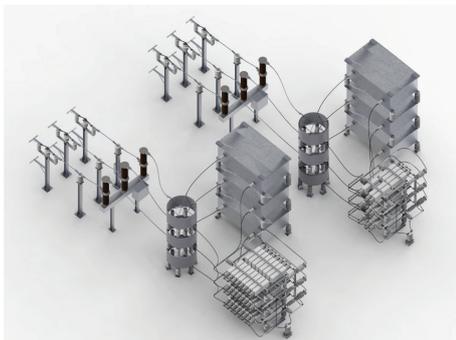
ONE modelled the solar farm, correctly predicted measured harmonic issues and then designed, supplied and installed harmonic filters for the solar farm, allowing full generation to resume.

Study

The nature of the point of connection, and specifically the wide range of possible frequency dependent complex impedance the network can present at the point of connection together with the internal characteristics of the solar farm required careful investigation of all operating modes, including different combinations of solar farm stages in service and night time operation. The best-in-class approach to studies and filter design used by ONE ensures robust, future-proof and reliable outcomes.

Supply

ONE successfully tendered for the filter bay equipment and with strong support from GE, produced detailed design drawings for the complete solution, including harmonic filter banks, cable termination structures with surge arresters, line current transformers and circuit breakers suitable for the application.

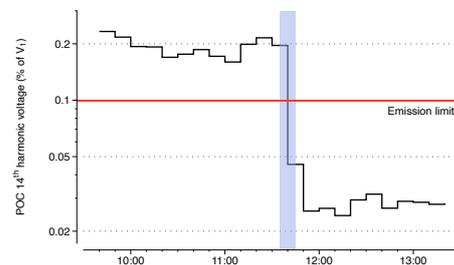


GE manufactured, tested at works and shipped the filters that were then installed on site by ONE within an aggressive schedule amidst challenging conditions on site, and to the satisfaction of the customer.



Performance

Upon connection of the harmonic filters the voltage total harmonic distortion at the connection point reduced by a factor of two, and key previously non-compliant harmonic orders reduced by factors of up to ten.



The network service provider has subsequently verified compliance with emission limits and the solar farm output is no longer curtailed.

Contact us

ONE can assist you in feasibility analysis, project scoping, application engineering, design, delivery, installation and commissioning of any aspect of your reactive power or power quality project. Talk to us about your harmonic filter, capacitor bank, series and shunt compensation, whether dynamic and passive, low or high voltage.

Reach out to us at www.onegrid.com.au/contact to get reliable assistance with your power quality or reactive power solutions.