



Impacts of wave energy conversion devices on local wave climate: observations and modelling from the Perth Wave Energy Project

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As demonstrated by the Australian Wave Energy Atlas (AWavEA), the southern and western margins of the country possess considerable wave energy resources. The Australia Government has made notable investments in pre-commercial wave energy developments in these areas, however little is known about how this technology may impact local wave climate and subsequently affect neighbouring coastal environments, e.g. altering sediment transport, causing shoreline erosion or accretion. In this study, a network of in-situ wave measurement devices have been deployed surrounding the 3 wave energy converters of the Carnegie Wave Energy Limited's Perth Wave Energy Project. This data is being used to develop, calibrate and validate numerical simulations of the project site. Early stage results will be presented and potential simulation strategies for scaling-up the findings to larger arrays of wave energy converters will be discussed. The intended project outcomes are to establish zones of impact defined in terms of changes in local wave energy spectra and to initiate best practice guidelines for the establishment of wave energy conversion sites.