

Investigation on Small Pumped Storage Installations for Load Balancing and Back-up Water Storage Application

Prepared by: Sean Michael Moore Flynn

ABSTRACT

Pumped Storage Installations are build all over the country to help with power generation and storage. In Malaysia there are yet to be any pumped storage plants built. This could be due to the high initial capital costs usually associated with pumped storage installations. This paper produces a design of a modular pumped storage power plant based in Malaysia that could potentially be beneficial to the country. The methods used to do this involve using PAT, or pumps as turbines in order to reduce the overall costs of these facilities. This paper also provides a cost prediction based on the main components of a pumped storage plant which are the reservoir, pumps, turbines, motors, generators and pipelines. The final result produces a pumped storage plant design which is suitable for the location chosen. The plant was then optimised to the locations conditions and an operation schedule made.