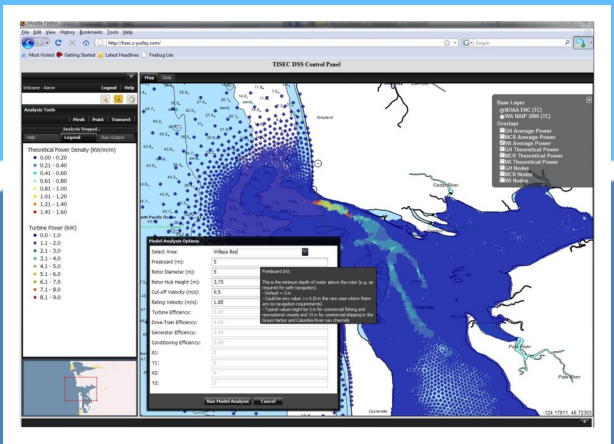
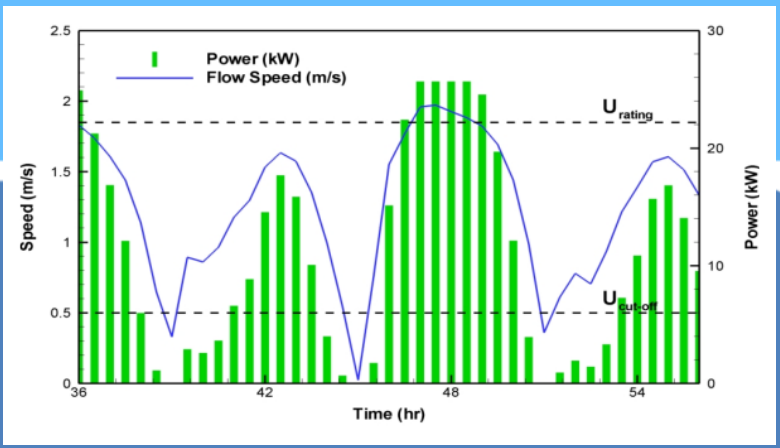
PROJECT Decision Support Tool for Tidal Power Development





CLIENT
Bonneville Power
Portland, OR

LOCATION
Washington State

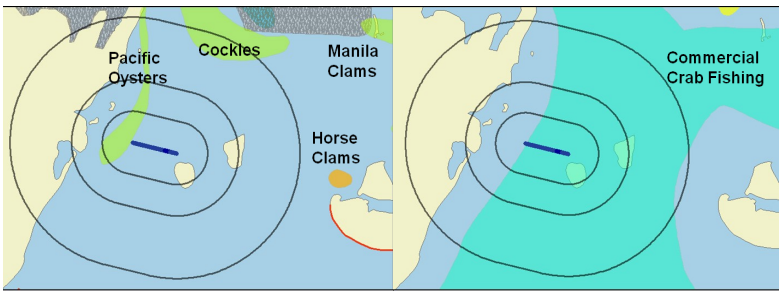
DATE
2007-2009

PROJECT DESCRIPTION

Coldwater Consulting Ltd. was part of a multi-disciplinary team that developed an integrated decision support system (IDSS) to assist with the selection process for tidal in-stream energy conversion (TISEC) projects. The aim of the system is to provide developers and regulators with a tool to assess proposed sites and devices across a broad range of issues (e.g., tidal resource potential, social and cultural issues, land use and regulatory considerations, environmental considerations, infrastructure, and engineering considerations).

PROJECT APPROACH

The IDSS is built around a web-based open source geographical information system (GIS). Coldwater's contribution to the project was the design and construction of the tidal energy evaluation tools used in the system. Coldwater's tools allow the user to specify the type, number and location of turbines and to develop quantitative estimates of the tidal power potential from a large tidal resource database derived from long-term, high resolution tidal model simulations. All data used in the system is contained in a number of centrally-located databases. Output includes: time series and mapped estimates of the mean or maximum power density for two-dimensional horizontal areas, two-dimensional vertical cross-sections, or specified points or arrays of points. Estimates of tidal power potential can be coupled with other geospatial data to assist users with efficiently and effectively identifying, visualizing, and communicating the physical, technical, ecological, and economic relationships needed to develop or licence TISEC projects. The system, while specifically developed for TISEC projects in the State of Washington, can be adapted to provide a support tool to other types of renewable energy development or for other locations.



The system accesses a series of data bases to assess a location including fishery, ecological, navigation, etc.

Coldwater Consulting Ltd

5510 Canotek Road, Suite 203, Ottawa, ON K1J 9J4
(613) 747-2544 info@coldwater-consulting.com