Wave Analysis for Long Island Offshore Wind Park

CLIENT:

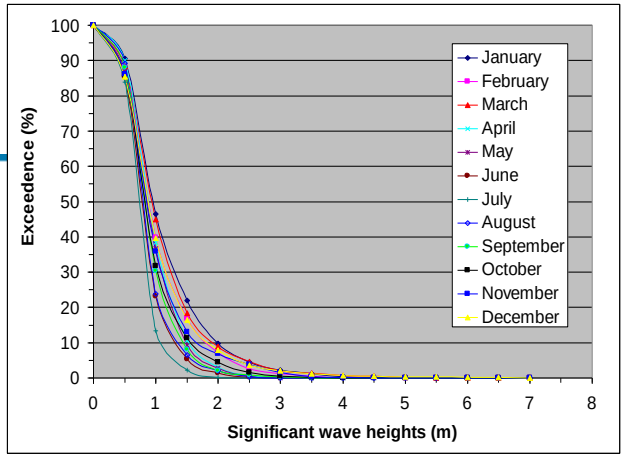
Florida Power & Light (FPL)

PROJECT #:

2005-051

PROJECT ELEMENTS:

- Alternative Energy Development
- Environmental Data Analysis



PROBLEM. PURPOSE.

Florida Power and Light (FPL) have proposed to build an electrical generation wind turbine park for the Long Island Power Authority to be located south of Fire Island, Long Island, New York. ASA was retained by FPL to evaluate the wave climate at the proposed wind park that the turbine piles would be subject to. Analysis of potential wind energy and context over long time periods to the information predicted for the site was also required.

SCIENCE. SERVICES. SOLUTIONS.

The analysis presented results for three tasks identified by ASA to evaluate the wave climate at the proposed offshore wind park. These tasks involved using the NOAA wave measurements collected from buoys ALSN6 (Ambrose Light) and 44025; wave hindcasts prepared by the US Army Corps of Engineers Wave Information Studies (WIS) database; and use of a parametric model predicted wind data set for 2003 used for analysis of potential wind energy that was received from FPL.

The approach used for wave hindcasting from the FPL wind data set included:

- Identifying the limiting wave height and period
- Wave equations for limited fetch conditions
- Calculation of fetches
- Wave equations for fully developed wave conditions

PRODUCTS. RESULTS.

- Data collection
- Analysis of NOAA and WIS wave data
- Analysis results report

This information allowed FPL to plan maintenance schedules based on the wave environment expected at the park during each month.