Issues to review as part of the Environmental Assessment

**1. Ocean Windmills' Upwelling Effect**

As detailed below, reputable researchers on both sides of the Atlantic Ocean have confirmed that the operation of ocean windmills has measurable impacts on the kinetic energy, temperature, chemistry and biodiversity of the water column beneath them, and that, due to the dynamic nature of the ocean environment, these changes also result in offsite, direct, indirect and cumulative impact.

It is of utmost importance that a determination be made as to the significance of the "upwelling effect" of both the prototype windmill proposed for the Deepwater Test Center *and* the fullsized utility scale floating turbine that would also be funded by this

significant impacts to water bodies

Lobster larvae flow images

http://rocky.umeoce.maine.edu/lob-02/02stage15-1m.htm

http://rocky.umeoce.maine.edu/synthesis\_lobster.html

**Visualization of lobster larvae migration in the Gulf of Maine**

Natasha Kellaway, Dept computer science Wellesley College Mass.

Steve Cousins, Dr Fei Chai, Dr Huijie Xue Ocean Modeling Group, UMaine

<http://arch.eece.maine.edu/superme/images/7/79/Mid-report-final.pdf>

nkellawa@wellesly,edu cousins@umit.maine.edu hxue@maine.edu fchai@maine.edu

**Abstract**. A valuable tool in assessing migration of a large amount of creatures is to visualize simulation data. Simulation data has already been collected for the migration of lobster larvae in the Gulf of Maine. The visualization of this data will provide a way to see the effects of the currents on the lobster larvae in different regions of the Gulf of Maine. This paper outlines a methodology and series of code developed to visualize this simulation data

BDN story October 2009

By comparison, the entire U.S. coastline has about 1,500 gigawatts of offshore wind potential in waters deeper than 60 meters within 50 nautical miles of its shores, Dagher has said.The Department of Energy has a stated goal of achieving 20 percent of the nation’s electricity from wind power by the year 2030. Gov. John Baldacci said Thursday Maine’s goal is to generate 5 gigawatts of power by 2030.

Dagher said 1 gigawatt is roughly equivalent to the energy output of one nuclear power plant. Five gigawatts of power, which is 3 percent of the energy potential of the Gulf of Maine within 50 miles of shore, would be enough to attract roughly $20 billion in related investment, according to Dagher.The Department of Energy grant is also expected to lead to job growth in Maine, Dagher said. Initially, UMaine will hire students, scientists and some faculty for research, development, production and deployment of the technology.

Page 15 of this is about Maine task force plan.

<http://www.necanews.org/dev/documents/100303_labelle_robert_3.pdf>

<http://www.pnas.org/content/101/46/16115.full>

**Fish and sessile assemblages associated with wind-turbine constructions in the Baltic Sea** Mathias H. Andersson A B and Marcus C. Öhman A. A Department of Zoology, Stockholm University, S-106 91 Stockholm, Sweden. B Corresponding author. Email: mathias.andersson@zoologi.su.se

**Offshore Windmills and the Effects of Electromagnetic Fields on Fish**

Marcus C. Öhman, Peter Sigray, Håkan Westerberg AMBIO: A Journal of the Human Environment 36(8):630-633. 2007 http://www.publish.csiro.au/?paper=MF09117

**Request for Interest in Renewable Energy Leasing Offshore Maine**

<http://www.boemre.gov/offshore/RenewableEnergy/PDFs/stateactivities/ME_meeting/METFmeetingRFIIntro.pdf>

**Coastal Impact Assistance Program (CIAP)**

Part of the Energy Policy Act of 2005 (Public Law 109-58 Coastal Impact Assistance Program (CIAP) Part of the Energy Policy Act of 2005 (Public Law 109-58

<http://www.boemre.gov/offshore/CIAPmain.htm>

**OCEANA**

<http://green.blogs.nytimes.com/2010/09/28/never-mind-oil-group-says-think-atlantic-wind/?hp>

**Offshore wind Wire**

<http://www.wind-watch.org/news/2010/10/04/offshore-wind-faces-uphill-climb/>

**Offshore Wind Wire: Report says offshore wind**

<http://offshorewindwire.com/2010/09/29/roundup-offshore-wind-could-supply-half/>

**Wind Power Maine**

<http://www.windforme.org/>

**CLIMATE**

“Potential climatic impacts and reliability of very large-scale wind

farms” by C. Wang and R. G. Prinn

<http://www.atmos-chem-phys-discuss.net/9/C6936/2009/acpd-9-C6936-2009-print.pdf>

**UPWELLING**

<http://www.gmri.org/community/seastate/Churchill_Jim/Churchill_Jim.pdf>

**Large Upwelling Systems of the World**

<http://www.eur-oceans.info/EN/education/malette/eng/fichiers_pdf_anglais/mate/Upwelling%20ecosystems.pdf>

**CABLES IMPACTS**

[Magnetic Attraction for Fish, Crabs?](http://www.newswise.com/articles/magnetic-attraction-for-fish-crabs)

<http://www.newswise.com/articles/view/568602/?sc=swhn>

**ATLANTIC STATES**

<http://www.thefreelibrary.com/International+efforts+to+protect+marine+biodiversity+through+marine...-a081829319>

<http://www.nero.noaa.gov/hcd/10highlights/MayJune10.pdf>

Experts to discuss future of wind energy next week in Atlantic City

<http://pressofatlanticcity.com/news/press/new_jersey/article_6a67809a-cd9b-11df-9227-001cc4c002e0.html>

<http://www.mdcoastdispatch.com/article.php?cid=37&id=9646>

**PLANKTON**

Exploring Fine Scale Ecology for Groundfish in the Gulf of Maine and Georges Bank

<http://www.gmri.org/community/display.asp?a=5&b=14&c=160>

http://www.gmri.org/community/seastate/Industry\_Panel/Integrating\_GIS\_and\_Qualitative\_Research\_Methods.pdf

<http://www.gmri.org/community/seastate/Churchill_Jim/Churchill_Jim.pdf>

<http://penbay.org/wind/ocean/gom_currents.jpg>

**BIRDS** <http://sites.google.com/site/mainebirdrecordscommittee/About-ME-BRC>

**FOREIGN**

UK policy shift may hit offshore wind boom: Statoil

<http://www.reuters.com/article/idUSLDE68R1RF20100928>

Wind Liberation

<https://sites.google.com/site/windliberation/>

**EUROPE**

**Horns Rev**

<http://www.vattenfall.com/en/file/horns-rev-offshore-wind-farm_8459975.pdf>