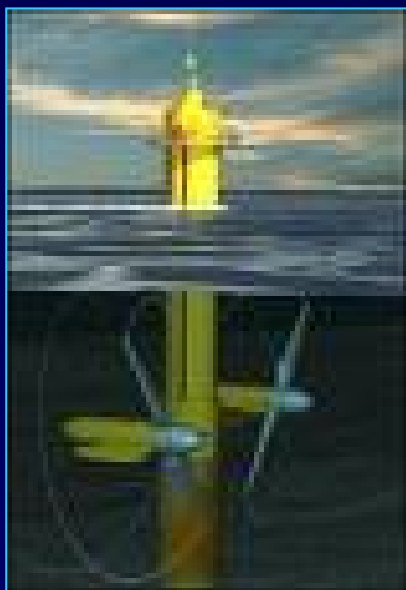


NOAA's Data Holdings, New Energy Sectors, and a Changing Climate

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**“NOAA Data and Information for a
Changing Climate”**

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and

NOAA Seminar Series

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Assumptions

- **Climate is changing**
- **NOAA's responsibilities are shifting**
- **Expectations of others are evolving**
- **NOAA must anticipate new roles**
- **NOAA must develop programs to collect, analyze, distribute, and apply new knowledge**

General Outline

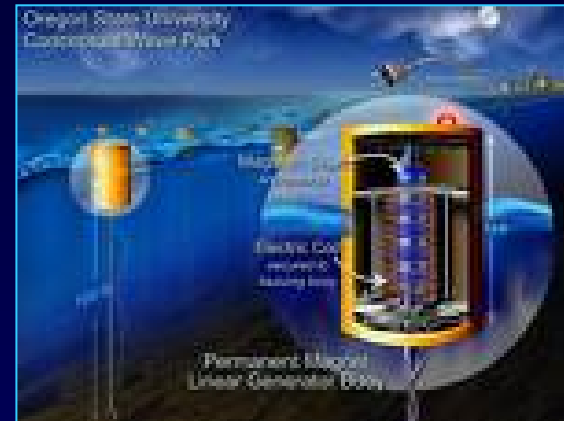
- **Ocean/riverine energy sectors**
 - *Traditional/conventional*
 - *Alternative/renewables*
- **Trends**
 - *Expanding sectors/roles*
 - *New environments/challenges*
- **Information needs**
 - *Existing knowledge*
 - *Important gaps*
- **Implications of changing climate**
 - *Shifting business plans*
 - *Adaptive management*



Selected Energy Sectors

➤ Alternative/Renewable Energy

- *Wind*
- *Hydrokinetic*
 - *Wave*
 - *Current*
 - *Tidal*

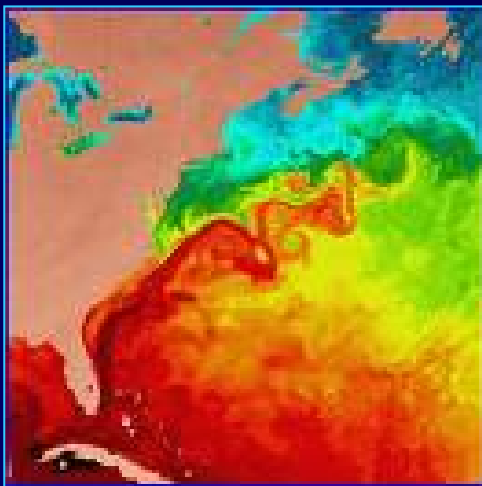


Selected Energy Sectors (cont'd)

➤ Traditional hydropower dams

➤ Other

- *LNG facilities*
- *Oil and gas*
- *Methane hydrates*
- *Ocean thermal energy conversion*



Trends

- **Sectors** – *heightened interest in all renewables; expanded search for oil and gas*
- **Scope** – *~70 projects; 100s of turbines, etc.; more growth to come*
- **Policy** – *Regulatory uncertainty; evolving technology; shifting climatic backdrop*
- **Issues** – *Urgency; balance of trades; serve the grid; engineering systems; pilots to test technology; environmental questions*



Information Needs

- **Range of issues** – *species, environment, users, physical resources*
- **Multiple scales** – *baselines, monitoring, predicting; pilots → commercial → cumulative*
- **Policy backdrop** – *Workshops in 2004-2005, with public-private reports*
- **New mandate** – *EISA of 2007*
- **Challenging issues** – *Navigation/passage, habitat, best available information*

Implications of Changing Climate

- **Shifting baselines and opportunities – *changing “resources”***
- **“Green energy” – *public policy and demand likely to increase***
- **Science – *observations, monitoring, and research for social and natural sciences***
- **Business implications – *patience during testing, development, and adjustments; plan for risks***



Trends and Observations

- *Key energy sectors are emerging*
- *Number of proposals increasing*
- *Public pressures increasing*
- *Regulatory agencies working together and with industry*
- *Many major data gaps on effects and mitigation*

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