



Marine Renewables in the New Energy Economy



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Energy Solutions are Enormously Challenging

Energy Security

- Secure supply
- Reliability

Economic Productivity

- Global financial crisis

Vulnerability
Or Opportunity?

Environmental Impact

- Carbon mitigation
- Land and water use

Must address all three imperatives

NREL Conducts a Broad Portfolio of Technology Research Towards Carbon-Neutral Electricity and Transportation Systems

NREL R&D Portfolio



Efficient Energy Use

- Vehicle Technologies
- Building Technologies
- Industrial Technologies



Renewable Resources

- Wind
- Solar
- Biomass
- Geothermal
- Marine Energy



Energy Delivery and Storage

- Electricity Transmission and Distribution
- Alternative Fuels
- Hydrogen Delivery and Storage

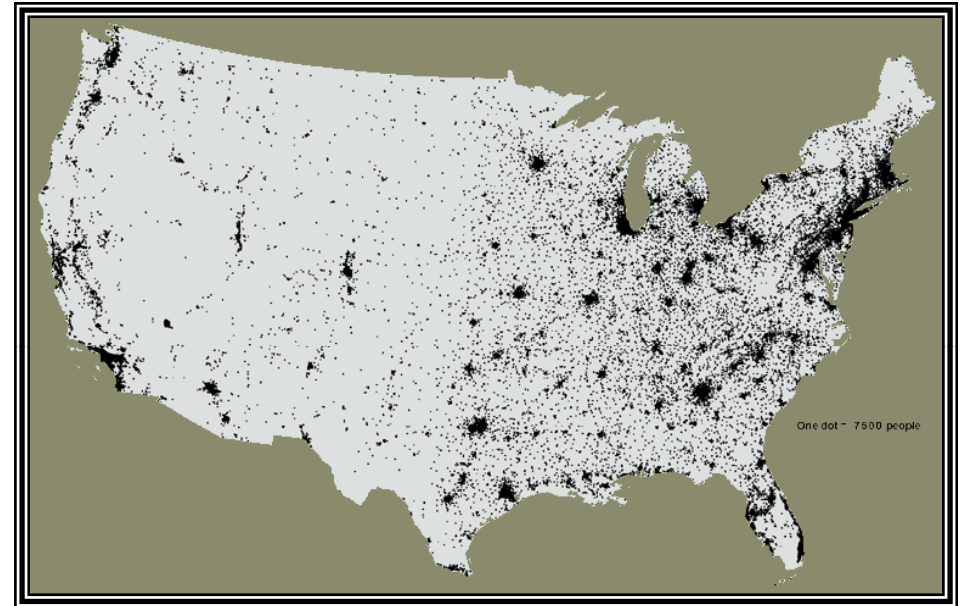
No Silver Bullet – Multiple Renewable Sources are Needed

Marine Renewable Energy:

Can provide up to 2% of our energy needs by 2025



- Carbon-free electricity
- Close to population centers for easy delivery.
- Predictable
- Possibility for base-load power delivery.
- Local renewable resources
- Globally distributed

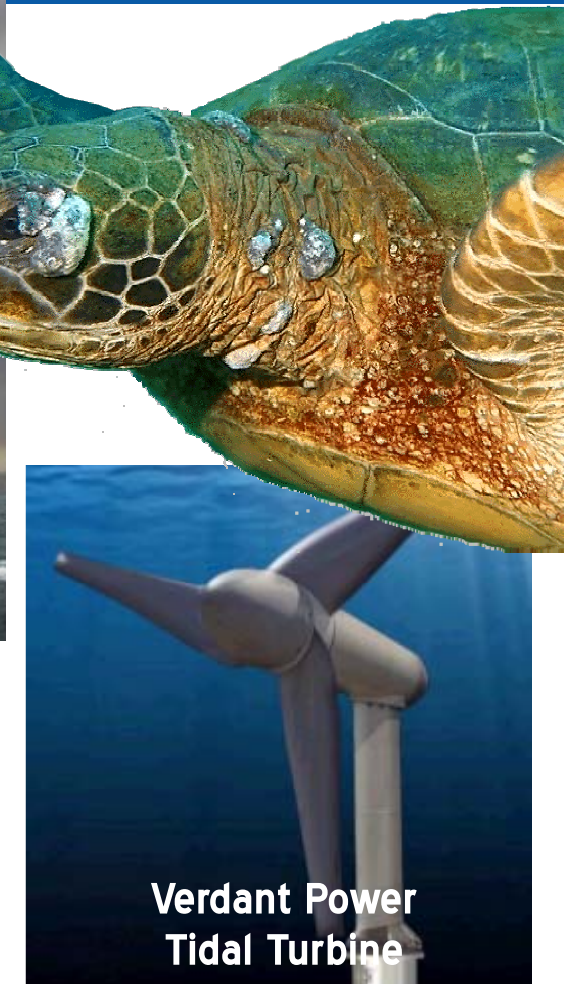


Marine Energy Technology Challenges

- Innovation and maturity will come through experience.
- New technology deployments have been hindered by regulatory uncertainty.
- R&D solutions and technical leadership will accelerate technical maturity.
- A strong technical basis for evaluation, design, and assessment is needed.
- Environmental and regulatory impacts must be carefully considered.
 - Impact assessments of a rising sea level and other climate change scenarios on the resource availability must be addressed



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