



Wind Template and Bylaw

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Abstract

Wind Energy Solutions by Michael Votruba, John Brunelli, Brendan Harris, and Brendan McLoughlin students at Worcester Polytechnic Institute for Power the World. In Massachusetts wind turbine development for residential homes is limited. In order to make it easier to install wind turbines a template and model bylaw were created. The template includes basic information on wind resources, testing, land and safety evaluations, and financial costs. The bylaw covers a wide range of areas including design, environmental, and safety regulations, monitoring, maintenance and abandonment.

Background

Despite potential for growth in privately owned wind farms thanks to available wind resources and state tax incentives Massachusetts fails to see much growth in this sector. This is caused by:

- Lack of local bylaws regulating wind tower construction
- NIMBY(Not In My Backyard) Attitude
- Environmental Concerns
- Safety Concerns
- Lack of knowledge about the installation process

It is our hope that this project will help address some of these problems by providing a model bylaw which can be adopted by towns that lack regulations for wind towers. Our template will be an informative source of information for anyone looking to install a wind farm on their property.

Project Objectives

- Produce an easy to follow template to determine weather a specific sight is suitable for small wind development.
- Produce a bylaw to be used by towns in Massachusetts to fill the absence of a bylaw dealing with wind turbines.

Bylaw

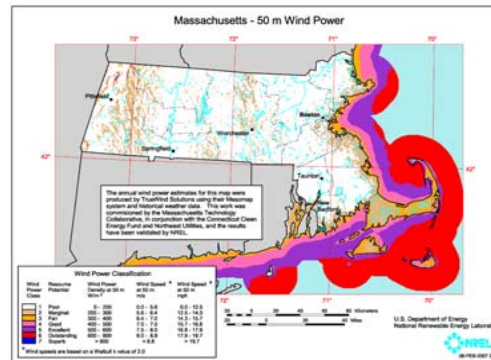
Designed to be easy to adopt and contains:

- Purpose
- Design Regulations
 - Zoning
 - Wind monitoring towers
 - Dimensions
- Regulations
 - Design , Environmental, and Safety Standards
- Use by telecommunication companies
- Abandonment

Template

Designed to educate the reader about the necessary steps for installing a wind turbine. Includes information on:

- Wind Resource Evaluation
 - Testing Towers
 - Wind Maps
- Land and Safety
 - Size Requirements
 - Protected Wildlife
- Financial Costs
 - Installation Costs
 - Maintenance Costs
 - Tax Incentives



Results/Outcomes

- Small Wind Feasibility Template and Model bylaw available at:

www.wpi.edu/~bmcoughlin/powertheworld/windenergysolutions.html



A 10kW wind turbine in OAK HILLS CA

Conclusions

Massachusetts has huge potential for future wind development. The main factor limiting growth of wind power are: a NIMBY or Not In My Back Yard attitude, lack of established bylaws in towns and lack of awareness about the benefits of wind technology. We attempted to resolves these potential problems by creating a template to raise awareness about the potential benefits and obstacles of wind development. A model bylaw was also developed to which can be submitted to towns that do not already have one.

Acknowledgments

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References

- <http://www.bergey.com/Examples/Sansome.html>
- http://www.eere.energy.gov/windandhydro/windpoweringamerica/images/windmaps/ma_50m_800.jpg