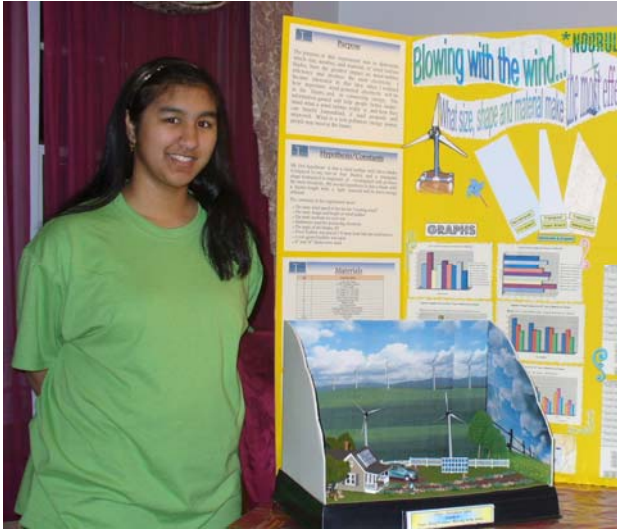




2010

## MASSACHUSETTS CLEAN TECHNOLOGY AWARDS

A Program from The Foresight Project Inc; [www.theforesightproject.org](http://www.theforesightproject.org)



Region IV: Northeastern  
Massachusetts

Noorulaine Iqbal: The Islamic  
Academy for Peace

Clean Tech: *Blowing with the  
Wind: What Shape, Size, and  
Material Make the Most  
Effective Wind Turbine?*

### About Me

My name is Noorulaine Iqbal, however, I prefer that everyone calls me Noorie. I am 14 years old and about to finish eighth grade at The Islamic Academy for Peace. I have two brothers, two wonderful parents and two cats. I love to read and write stories. Currently, I am writing a sort of sci-fi series with shorter stories branching off. I think clean technology is a very fascinating subject and I am psyched that Massachusetts got its recent approval for an offshore wind farm.

In a few weeks, I am going on to high school and leaving my school that I have been in for almost 8 years. I am going to miss everyone, like my best friends Rabia and Shannon, and my teachers. Thank you so much, my parents, teachers and friends. Also for my special friend Sarah Ijaz, thank you for always being there for me. You all made everything possible for me! Thank you!

### My Project

I became interested in this project when I realized how important wind-power will be in the future, since it is a non-polluting source of electricity. I have always been interested in saving the earth, from clean technology, conserving energy, to just planting trees. The information gained from my project will help people better understand what a wind turbine is and how they can be improved to benefit humankind.

I had three different light materials (coroplast, balsa wood, and foam board), in three different shapes (rectangle, triangular, and trapezoid). I also had two sizes of blades: eight inch blades and sixteen inch blades. My hypothesis was that most voltage would be produced by the system with smaller triangular blades, coroplast material.

Using a fan as wind and measuring the voltage using a multi-meter, I conducted over 72 tests. After graphing these results, I found out that it was a system with two blades of balsa wood that was the most effective; the trapezoid shape was the best, but I was correct that the smaller blades were better.

I found that the lighter material generates more voltage, and that the surface area contributes greatly to how the wind moves the blades. The fewer blades, the more speed the blades have in order to make more electricity. With one blade however, there is an imbalance. I was wrong in my hypothesis, but I learned a lot about wind turbines.