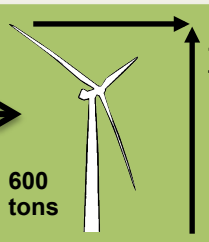
Are Wind Turbines Too Big?

This is a modern scale wind turbine.



Is it too big? We don't think so! And here is why:

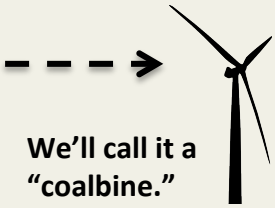
This turbine provides clean electricity and powers about 600 homes a year. That's why the vast majority of Americans support wind power. Just 4% have "strongly unfavorable" opinions of wind energy. One of their most commonly used arguments against wind energy is that wind turbines are too big. Compared to what?

Let's pretend wind turbines were replaced in the shape and form by another energy source.

How about coal?

This is a fictitious turbine made out of coal. It weighs 600 tons (the same weight as a wind turbine).

We'll call it a "coalbine."



The comparison?

One wind turbine generates more electricity than 130 "coalbines."

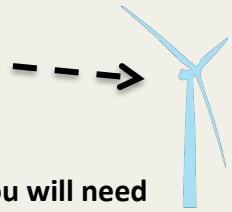
One wind turbine generates more electricity than 6.5 "coalbines" per year. Wind turbines have a lifespan of about 20 years, but "coalbines" are gone after you burn them. Over 20 years, one wind turbine generates more electricity than about 130 "coalbines."

But there is something else we have to consider. Unlike wind turbines, coal fired power plants require water.

Lots of water.

Let's build some turbines out of water.

This is a fictitious "waterbine." Just like the "coalbine" it weights 600 tons.



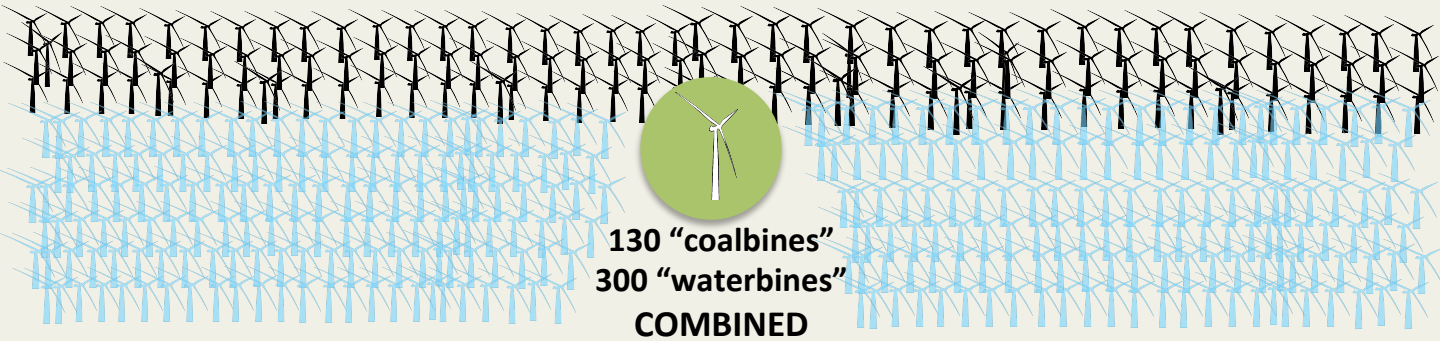
With each "coalbine" you will need additional "waterbines." How many?

In order to produce the equivalent amount of electricity as a single wind turbine, it would take 2.3 "waterbines" to power each "coalbine."

Over 20 years? About 300 "waterbines!"

That's 331,560 gallons of water per year or 43 million gallons over 20 years!

So, over 20 years, a single wind turbine generates an equivalent amount of electricity as…



130 "coalbines"
300 "waterbines"
COMBINED

Source: Navigant (2013). Energy and Environment Consumer Survey

For more information, contact Allie Brown, Renewable Energy Associate, Southern Alliance for Clean Energy: allie@cleanenergy.org

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