

THE ROTATING RING WIND ENERGY TRANSFER CONCEPT

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The first question that arose out of this discussion was ‘where would you put such a machine’ My answer is on disused coastal airfields, then in remote places like Dounreay and Dungeness and thereafter on selected isolated windswept places where such machines would in no way spoil our way of life but in the right circumstances might add quality to it. The machine will be very like a ship in many ways and should be exciting to watch. Any one of them might make a tourist attraction.

The second point raised was ‘It is big.’ My answer is that big things are made up of little ones. My thinking started from considering the sail on Ellen MacArthurs B&Q vessel. It dwarfed all the boats around and yet Ellen had single handed sailed the boat round the World and brought herself and the boat, safely home. For initial discussion purposes, starting with Ellen’s two sails on a 100 foot mast made sense. Then came the question of how close could one sail follow another sail in line. Next if we are trying to get some sort of equality or better than a 125 wind turbines power station why not chose 200 sails as about right? Then if 100 foot masts are at the edges and we are aware that turbine wings are about 150 feet tall why not have a second ring of sails inside the first with that extra fifty feet to catch a higher level of wind?

It was not my original intention to design the machine but one line of thought is to make a twin track circular railway with no physical connection to the centre of the circle. Such a railway is not big nor is it something new. If one goes on to think in terms of running the undercarriages of long coaches around the rail lines; but so linking them that they become as one ring the result is the basis of a large machine made up of small well tried parts.

It goes without saying that the two lines would be accurately concentric and I suggest under the outer and inner masts. The outer lines might be higher than the inner ones and both sets would be cambered to counteract the changes in direction of the trains above and to react to the forces downloaded from the moving trains. All the under carriages might usefully be connected to a smooth inner tube to keep them in register. That tube could form the base for a ring gear or similar means of transferring the movement of the ring to generating systems. New under carriages might usefully be formed of tubes curved to the general circumference giving the end result as a total curve rather than straight sections moving around a curve. The deck to be horizontal, smooth skirted and solar panelled?

This working floor possibly covered in light metal flooring panels will have bogies at four corners, curved inner and outer faces joined by straight sides parallel to radials and a guard rail all round. Each unit will be complete in every way and so made that it may be moved radially out of station and immediately replaced with a fully serviced unit. To do this one might have in mind the very low tugs used to move aircraft and large forklift machines

For discussion purposes the machine might usefully have a target speed of 14mph equating to around 11 knots for a cargo ship

The third point was that the wind is not powerful enough to produce sufficient electricity and nuclear energy is the only way forward. Firstly on the subject of power in the wind. To deny it is not powerful is to ignore what has happened recently in New Orleans. It is to deny that wind turbines work and ships sail. One needs to be pragmatic, no method of energy production is fully developed and all have good aspects and bad. What we must do to is improve all the methods of energy extraction whether it be coal, gas, oil, nuclear and wind, wave and solar.

On the subject of Nuclear energy and possibly Fusion energy later. We are not at the moment building any nuclear stations so with the best will no extra energy is about to be immediately available. On the good side it has been pointed out to me and I await a recent paper on the subject, that waste from nuclear energy sources is no where near as bad as from military sources and a lot of the energy waste is re-useable and still the residues have short half life.

Then came the question of how might we build a test rig for this 600 metre machine. I suggest one twin track set of standard railway lines properly curved and cambered. The pair would enable a wide machine to be stable with two sets of sails and the wind blowing along a radial. Plus one complete two mast four sail power unit. The energy which might be electricity or pumped oil to be taken from generators or pumps built around the rotating axles or from the ring gear wheel. The outer wheels of the undercarriage might usefully be a different diameter from the inner sets to give one axle speed throughout the unit. The electricity power pick up lines will need to be safe and might be not unlike present power lines to trains but larger. Oil lines would be placed underground in service tunnels with the electricity generators being driven by oil motors in a separate power generation station

The final machine will need a tall control tower as at Heathrow with a sailing master and his crew at the top, a radio station controlling the power units and a computer control room. There will need to be an underpass to give access inside the ring and also means of transferring people onto the ring safely by something like a traveling roadway.

Last but not least so far. What will such a machine cost? The answer has to be many millions of pounds. Given that a 125 wind turbine station with a limited life of 25 years and miles of roads will cost at least £M156 may I suggest that about £M600 as a target figure for a prototype with many times the potential in a tenth of the space and greater choice of sites. The payback time would still be under four years and the likely construction time for the first machine say three years.

The accurate answers could be determined by calculation from well known data. These figures should not take more than six months to collect. Firms like Arup and Partners come to mind as designers as do Balfour Beatty and Jarvis. Any of them would make short work of putting down the rails and we are not short of sail makers and boat builders. It may well be that the railway industry already has the rest of the know-how. Such as Sir Richard Branson and his tilting trains. It is all straight forward stuff and most of the equipment is readily available. All I am suggesting is that we gather the goods into one place and put them to work.