

Resource Stock Update - V15 #13.2 – Wind Energy, VWDY, WND, WWPW - Aug 26, 2009

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The Facts about Wind Energy

Whenever a new technology arises, there is always resistance, questions, misinformation and disbelief. Certainly wind energy and turbines are not new in Europe but they are in North America. Just two or three years ago there was very few wind turbines in North America, but in these past few years they have started to spring up in many locations and most people now see them and talk about them, so it is a new technology for most of us in North America. It has certainly spawned a lot of debate and discussion in the past two years.

Probably the most important point and misunderstood one is the economics that are driven by technology advancements. There is a lot of belief that wind power requires subsidies. I will show you proof below that the amount of energy that can be extracted from the same wind has increased 15 times or 1,500% over the past several years.

I decided to do this in a form of comments from one of my subscribers and my response as I think this is quite typical to a lot of the debate and discussion you might hear.

Ron,

So-called “green” energy sources such as solar and wind power have enjoyed considerable press, investment dollars and government subsidies lately, but I am beginning to wonder if this energy bubble is about to pop.

It may seem on the surface that wind and solar power are one of the great next investment sectors, but this story is not new and may still be years from becoming economical. I recall similar hype during the ‘70s after OPEC hiked oil prices and then put an embargo on sales to the U.S. Then oil prices collapsed in the ‘80s, and suddenly the interest in solar and wind power evaporated leaving investors high and dry.

Hello Patrick, thanks for your comments and you put forth many good points, but for the most part - much of this is based on B S and misinformation that is put forth and funded by the coal industry (fighting to survive) the nuclear industry and NIMBYs (not in my back yard).

I have researched and done my due diligence on the facts and they are far different than what you hear in many circles. I live in an area close to wind farms and have been researching into wind power for about 2 years. I am looking at putting a wind mill on my own property and since I live in an area where wind power has seen rapid development I have been doing some consulting work for wind companies, mostly private companies but also public, like Wind Works.

I have heard all the negatives and looked into them

I agree that certainly wind or other alternatives were not economic in the 1970s. And remember we are talking electricity costs and only part of these costs are directly related to coal, gas&oil etc. Electricity costs are much higher than the 1970s and they will not come down in price no matter what happens to energy prices, especially in Canada that has seen heavy subsidy in the past for electricity of all types

The major problem with solar and wind power is that neither is 100 percent reliable and must be backed up by some other power source in the event of dropouts and brownouts. The backups are often provided by fossil fuel power plants thus negating any “green” benefits.

That is not a fair statement. If the wind blows 80% to 95% of the time and that is where they locate wind farms, I think it is well worth while to take those green benefits for that percent of the time, although not perfect – well worth it.

As far as reliability, this really only becomes an issue when wind reaches the 20% level of overall production. At that point it becomes hard to manage the gap when the wind stops blowing, but this is more of a problem in a small country (Europe). In the U.S. or Canada, the wind does not stop blowing all across the country at the same time. And most often this is not the case across a province or state either.

The National Energy Research Labs has done extensive research to determine how much wind power could be integrated into the existing U.S. grid before running into major problems. The answer: 20%. Denmark's experience confirms that this was an accurate prediction.

On our present trajectory, it will be several years before wind power reaches 20% of the U.S. Or Canadian grid.

The root of this issue is that hydro transmission up until recent years has been a closed system, especially Canada and they did not want or accept power from outside sources. However this is changing and transmission networks are becoming more flexible and manageable. This provides a lot of the solution. When the wind stops blowing in one area, power can be delivered or obtained from a more distant area where the wind is blowing.

The electric car could also be part of the balance down the road. Normally, there is more wind resources at night, the time electric cars would be plugged into recharge. Denmark is exploring this angle.

The cost of power from these sources is at least twice that from more traditional power plants, and the manufacturers of wind equipment require constant government subsidies to make a profit. We are now seeing some of these wind turbine companies fold in the EU because government subsidies were withdrawn.

Wind power costs are not twice, this is misinformation - wind costs are becoming competitive, see below. The major reason wind manufacturers ran into trouble was the credit crisis that killed long term funding on numerous projects and also a big factor was the high demand for turbines. This resulted in long lead times for orders and large inventory costs as manufacturers accumulated a lot of inventory to build out all the demand. When credit ceased up, many development companies could not fund, pay for the turbines and the manufacturers could neither get the financing for their inventories. There is no Just in Time Inventory in the wind industry and these factors combined proved too difficult for some companies. It was not a withdrawal of subsidies. Since the credit crisis has subsided and credit is flowing again to economic endeavors, the long pipeline of back orders and strong growth for turbines is starting to come back. Some companies could not manage the short term problem when the credit markets ceased.

From Vesta's last qtr. Report of Aug. 18th

““Since the autumn of 2008, the credit crisis has impacted the wind power industry, causing limited order intake during the past nine months and keeping it well short of the level of the same period in 2007/2008. Many customers have been unable to finance scheduled projects either due to increasing funding costs or an actual lack of funding. Moreover, some of the banks that were previously key players in the wind turbine market are no longer active. ““

The global recession will undoubtedly put more pressure on governments to cut back on such subsidies thus threatening the existence of more of these companies. Additionally, the recession will curb demand for electricity and sales of equipment.

As the following article indicates, wind power development is not necessarily everything that environmentalists and producers of wind turbines hype it to be:

<http://network.nationalpost.com/np/blogs/fpcomment/archive/2009/04/08/wind-power-is-a-complete-disaster.aspx>

Negative health related claims from people living close to these turbines are now supported by new research:

<http://www.independent.co.uk/environment/green-living/are-wind-farms-a-health-risk-us-scientist-identifies-wind-turbine-syndrome-1766254.html>

The links you provided are a bunch of BS and full of misinformation. I could pick these articles further to pieces they are so poor – suffice to say a comment by another reader re the first article

by Denis Pakkala Apr 09 2009 7:50 AM

“This article is misleading and factually vacant.

Why is a Professor of Law and Economics writing about the Environment? Shame on yourself.

P.S. I'm a Professional Engineer and a Consultant in the Power Industry”

To say building wind mills has not resulted in any fossil fuel plants from shutting down is a half truth. Up until 1.5 years ago the global economy seen it's biggest boom in history. Energy consumption was rising strongly every year. The question should have been how many fossil fuel electrical plants would have been built if there were no wind mills erected. That part of the article is pretty idiotic !!

They site electricity costs in Ontario at 0.06/kwh that is BS, Ontario publish a \$0.06 rate but on top of that they charge a delivery charge, infrastructure, debt retirement and line loss. The actual cost is about \$0.12/KWh and I have everyone of my monthly bills to prove it. Even still at 0.12/kwh it is one of the cheapest in North America where costs in most locations range from 0.11 to 0.21 with a few places lower and a few higher.

Hydro Quebec surveys pegged Ontario last year around \$0.11

<http://www.iti.gov.nt.ca/publications/2009/energy/FSelectricityratesinNA.pdf>

Why would the article site the electrical cost in the cheapest jurisdiction they could find and at that- misinformation? Only to try and make their argument work.

The article does not state that Ontario pays over \$0.20/kwh to buy from neighboring jurisdictions in Michigan and New York at times of high demand??

I agree that solar is not economic and the Ont Government for example should not be subsidizing at over \$0.50 a Kwh and it is not economic in equator areas that see the most sun. But technologies are improving, maybe someday?

What most fail to realize with wind - it is economic. Even at \$0.12/kwh in Ontario, the real electricity costs are higher and are being subsidized. The true cost for electricity in Ont. without wind is probably \$0.15/kwh or higher.

Previous to the recent government incentive to buy wind power at 0.135 they were buying it at 0.12, right about the current and actual (subsidized) cost of electricity. And not much above the \$0.11 rate Quebec Hydro quoted (that excludes taxes and the basic monthly charge). One could argue that wind is about 10% away from economic in some jurisdictions? Wind farms are and have been generating IRR of 15% to 20% and yes they have to pay any costs to build new transmission (more misinformation in the article). In Ontario a 100MW farm must pay a \$1 million application fee for a connection. They cannot build until their application is accepted in the Que. There is a long waiting list, then on top of that they have to pay to build any connection infrastructure. If they put electrical rates to real cost around \$0.15 then the utilities would be making money buying wind at 0.135. Again, Ontario often ends up paying north of 0.20/kwh to buy power at peak times, although the recession and cool summer has probably negated that this year. For this reason utility companies are happy to buy at \$0.135 and this cost is also locked in for 20 years. They know perhaps the economics might be thin at this time, but not years down the road, I would bet their \$0.135 contracts in 10 years are going to look very, very attractive.

Electrical rates outside of Ontario are for the most part higher. What do you pay in Alberta, probably one of the lower energy cost areas in N America? The Quebec Hydro survey says 13.45 cents/Kwh,

excluding taxes and the basic monthly charge.

What most fail to realize is that wind power technology has been doubling about every 7 to 10 years. Meaning they get twice the power from the same wind. Wind will only get more profitable. The 2MW turbine is the reliable turbine of choice now but they are already testing turbines of 4MW to 6MW.

The wind is almost free, producers only pay a lease cost to have the turbine on the land. Wind has no depletion rate like oil and gas wells. Drilling, recovery and mining (coal) costs will not be increasing for wind – but actually decreasing with improved technology.

A key to economics is having enough wind and near transmission (location, location, location)

As far as noise and health, these negative articles are BS and funded by the coal and nuclear industry.

I have visited many turbines and land owners

There is very little noise. You can measure it with complicated devices and you can simply go listen. A car coming down the road at a much farther distance makes a lot more noise slicing the air than a turbine. I guess people living near a highway would all be sick too.

A study by an engineering firm on noise

<http://www.windrush-energy.com/Update%2015-1-08/Skyway%208%20Wind%20Project/Environmental%20Screening%20Report/Appendix%20C%20-%20Acoustic%20Study/CANWEA%20Infrasound%20Study.pdf>

A turbine is an electrical device and there is a magnetic field around electricity, but this is no different than current electrical generation. Sure there is a field around the transmission lines and if you are very close to the generator or transformer, I am talking a few meters.

There is more of an magnetic field from a hair dryer

<http://www.windrush-energy.com/Update%2015-1-08/Flesherton%20Wind%20Project/Environmental%20Screening%20Report/Appendix%20B%20-%20Natural%20Resources%20Report/Magnetic%20Fields%20Report.pdf>

All large moving structures exhibit some vibration as they move in the wind. However studies have proven there is more vibration in the downtown area of Toronto with the large buildings swaying in the wind than standing next to a wind turbines

With the environmental issues it is the 3% to 6% making all the noise. The vast majority of people are in favor of wind power including those living around the wind farms.

Some say they look ugly, but those same people have accepted far more uglier communication towers strung all over the country side with guide wires all around them - now those look ugly

Such findings can only force wind farm builders to locate their turbines well away from any population centers no matter how small they might be thus compounding the costs of getting the power and maintaining transmission lines to the nearest tie-in to electrical grids.

Not true, in fact the opposite. In Ontario and elsewhere the government has set legislation and wind turbines can be located within 550 meters of residential homes (Ontario). In fact the environmental debate and resulting government legislation has improved costs because it has removed the issue on how far away turbines have to be built from residence, along with numerous other criteria. The whole environmental issue has been streamlined with new legislation that will reduce development costs.

Recent so-called “green” power development likely would not have occurred without the market distorting effect of misguided governments trying to override the markets’ normal cost/benefit reasons, which are not much better today than they were 30 years ago.

I agree that there as been some distortion but it is much different then 30 years ago as electricity costs have double to tripled. Solar is still not cost effective and some other alternatives are not either, but wind has truly come of age and is competitive.

There is still no convincing reason to pay two to three times or more the price for “green” power today when conventional fossil fuels, especially coal, are still in abundant supply and not likely to run out for many decades.

I agree in many cases this could be true, but again wind has become price competitive. As per the Wealth Daily article:

In the panel titled *Global Financial Markets*, the heads of the largest investment banks in the world lined the stage and praised renewable energy for its business sense, not for its environmental stewardship.

Curbing the production of “greenhouse gases” such as CO₂ is based on a false premise and junk science that man-made emissions are causing runaway global warming.

The IPCC is coming under severe criticism from a growing body of international scientists, who are now discovering the panel’s AGW theory is not supported by empirical evidence but is part of a deliberate con game to swindle billions of dollars from gullible governments and the public.

The recent rejection of the Australian government’s cap-and-trade bill by its Senate suggests that some politicians at least are questioning the rationale behind the global

push for mandatory cuts in CO2 emissions. Most likely the Waxman-Markey bill in the U.S. will follow a similar fate if it isn't modified considerably

I think you have some very valid points here. There has been no global warming for a number of years now. I believe climate change probably has more to do with sun spot activity. This theory explains the recent global warming and also the more recent cooling change.

However, like I said with wind it is going to happen because of the economics and business sense no matter if there is global warming or not. Clean fuels with less pollution will always be preferred, gas over coal and wind or hydro over all of them as long as it is economic as I believe it has become.

There are thus enough warning signs that the stampede to develop uneconomical "green" power may have run its course. Resumption in the long-term downward trend in stock markets will in turn be followed by a resumption of the global recession notwithstanding any "green shoots" and official indicators of the recession's end in some countries.

Nothing has changed to alter the global markets' desire to expunge the mountains of debt and malinvestments built up over the past several decades. That job has barely begun and is being hampered by constant misguided interference from governments and central banks.

Governments and central banks can feed all the credit they want into their respective economies, but all they will discover is that you can't correct a problem caused by excessive credit by pushing more credit into the system and by subsidizing and bailing out businesses the markets have already deemed uneconomical and expendable. In this respect, the "green" power bubble is just another one ready to burst. Investors beware.

I agree with most of your comments here and there will be strong opposition in developing uneconomic energy – but wind does not fall into the uneconomic category unless a government subsidy is supporting a development in an uneconomic location and there is some of this happening. There is plenty of economic locations in North America and other countries where wind power is a clear winner in all aspects by far, such as the Carri bean Islands and Hawaii that import oil for electrical generation but have prevailing trade winds that never stop blowing. These same factors are present in coastal areas of North America and near the Great Lakes where I live, as well as other areas. Just like certain areas are prone to have oil&gas deposits, there are areas prone to wind resources.

You can almost relate wind to the oil& gas industry. Shale gas and deep sea oil drilling were not very economic 30 years ago, but with improved technology and higher prices it became economic.

This is where wind energy is at, it is just recently become economical. I think we are a long way from a bubble in alternate energy, I see valuations in these companies that are below conventional energy companies. I do see some of what you see in that uneconomic alternatives could be dead in the water. But wind energy and the industry will see explosive growth.. In fact it will see stronger growth than practically an other sector. This may indeed result in a bubble and in fact I expect we could see a bubble but we are no where near one yet.

Following is a brief description of “Say's law” which unlike Keynesian economics believes that corporate profit drives growth, not consumption.

“””In a classical view, as exemplified by "Say's law" and reinforced by Schumpeter, corporate profitability is the cause, not the consequence, of economic growth. Thus, Schumpeter would see the current cycle as the destruction phase in the creative-destruction processes that propel the economic cycle. Capital and labor are currently moving from the sectors in decline (e.g., McMansions) to the sectors in expansion (e.g., tech, alternative-energy infrastructure, etc.). Once momentum in the growth sectors overwhelm the decaying ones, then macro growth resumes””””

This may well be underway today – a change is occurring but it will take a long time to happen, but investors will catch on to it before it has fully run its course.

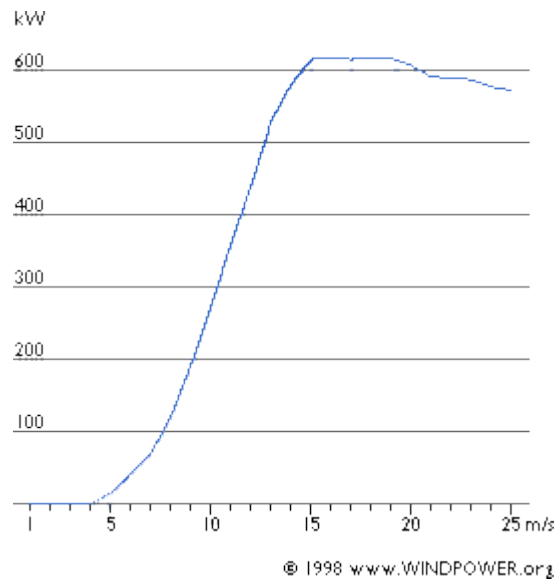
Understanding Wind Farm Capacity

<http://blogs.wsj.com/environmentalcapital/2009/03/02/wind-power-subsidies-are-nice-but-strong-winds-are-nicer/>

Another huge piece of misinformation and misleading commentary is wind mill efficiency. Many nay sayers will comment how inefficient wind mills are because they only run at fractions of their capacity compared to other electrical producers. Wind mills do operate at a fraction of their capacity but they are purposely built that way. You see the wind speed will vary at any location. The trick for the wind mill is to capture the most power it can from the average wind speeds, both the high winds and low winds. A wind mill is designed to run at the slowest wind speed as possible so it captures some energy from low winds. But doing so it is running at fractions of its capacity because it is also designed to capture a lot more energy should the wind speed be higher. It is the average wind speed that determines the economics of a wind mill and that number is now around 6 meters/second in Ontario.

The Power Curve of a Wind Turbine

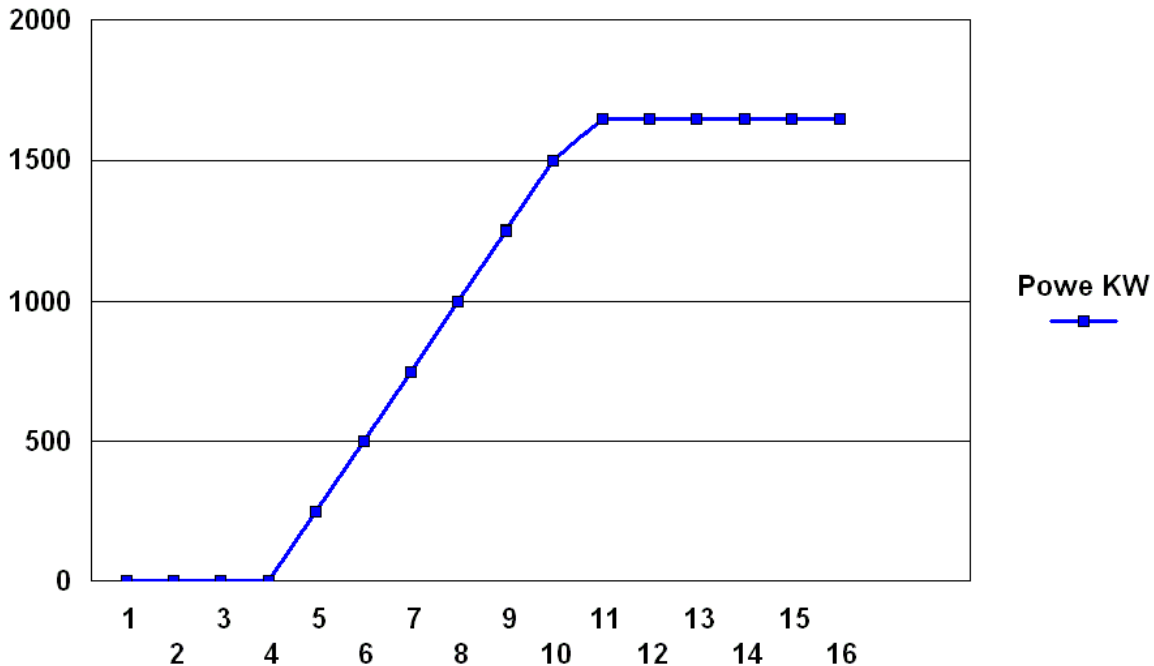
The power curve of a wind turbine is a graph that indicates how large the electrical power output will be for the turbine at different wind speeds.



The graph shows a power curve for a typical Danish 600 kW wind turbine.

Now when you look at this – You might ask how can this be economic at 6 m/s wind speed, it is hardly putting out any power. And you are right, this is older turbines and older technology. So now lets look at a power curve for a new turbine with the latest technology.

Vesta 1.65 MW Turbine



Source: <http://www.vestas.com/en/wind-power-solutions/wind-turbines/1.65-mw.aspx>

What we see right away here, at a wind speed of 6 m/s the turbine is producing about 500 Kw or about 1/3 of its full capacity and it is at pretty much full capacity at only a wind speed of 10 m/s compared to about 14 m/s with the older Danish turbine.

These new turbines were not available 3 or 4 years ago and when the Danish Wind Mills were installed. Another way to look at the technology advancement is to assume the wind blows at 7 m/s at the location of the Danish 600 Kw turbine – it would only produce 50 Kw. Now lets just replace that turbine with the new Vista 1.65 MW turbine – **the same location and the same wind at 7 m/s will generate 750 Kw. That is a stunning 15 times increase or a 1,500% increase because of technology advances.**

It is also noteworthy that wind speeds and wind mill efficiency is 2 to 3 times higher in the U.S and Canada compared to Europe and Asia because of generally stronger winds.

I hope this helps explain some of the myths about wind energy and the importance of technological change.

The Fastest Growing Sector on the Planet

Investing in wind energy today is like investing in the Cell phone or Internet industry 15 years ago – the highest growth rates are still ahead.

On February 12th, the Global Wind Energy Council released wind industry statistics for 2008--the most up-to-date and authoritative numbers available.

Despite a global recession, the wind industry turned in its best yearly performance ever. Over 27,000 megawatts of new wind installations were put in place. . .delivering an unheard-of 28.8% annual growth rate during the most uncertain market times in decades.

But here's where it really gets good.

According to the GWEC, "the global wind market for turbine installations in 2008 was worth \$47.5 billion." With 27,000 megawatts installed, that works out to about \$1.76 million per megawatt!

By 2014, global installed capacity is expected to grow to 246,193 MW for 104% growth in the next five years. Put another way, there will be an additional 125,000 MW installed in the next five years.

Our wind stocks:

Vesta Wind NASDAQ VWDRY

Recent Price US\$ 23.95

Entry Price \$16.30

Opinion - Hold

We are doing well with Vesta and I think it has room to go a lot higher. It is still well below the \$40 area it was at before the meltdown.

Vesta generated second-quarter revenue of EUR 1,211m, an increase of 11 per cent, realizing a decline in EBIT of 15 per cent to EUR 78m relative to Q2 2008. In general, quarter-on-quarter fluctuations are due to changes in the activity level and variations in the contract types. Net working capital stood at 11 per cent of expected annual revenue, against (1) per cent the year before. The order backlog of firm and unconditional orders amounted to EUR 4.0bn at 30 June 2009. In spite of the weak order intake since the onset of the credit crisis, Vestas retains its forecast for 2009.

Additionally, Vestas' corporate Contract Review Board will be evaluating several contracts with a total value of more than EUR 4.4bn in the upcoming period

It should be emphasized that the gross margin will always be marked by quarter-on-quarter fluctuations, among other things due to changes in the contract types. The declining gross margin in the second quarter was also attributable to severance payments in Northern Europe and the intensified increase in production staff at the new facilities in China and the USA. Half-year revenue increased by 29 per cent and EBIT rose by 22 per cent relative to 2008. The increase in employee headcount over the past 12 months, from 17,370 to 21,153, leads to a natural increase in costs. Under the "People before megawatt" principle, Vestas hired 5,524 new employees, net, in 2008 as part of the build-up to "10 in 10" – Vestas has the factory capacity to manufacture, ship and install 10,000 MW in 2010.

Furthermore, the Group built up its production capacity and increased its staff in order to be capable of handling revenue growth in 2009 of more than 40 per cent relative to 2008.

Outlook for 2009

Vestas retains its revenue and EBIT guidance for 2009 as initially announced on 6 November 2008 and most recently reiterated on 28 April 2009. In 2009, revenue is expected to rise by 20 per cent to EUR 7.2bn, whilst the EBIT margin is expected to be 11-13 per cent.

Web site - <http://www.vestas.com>

http://www.stockhouse.com/comp_info.asp?symbol=VWDRY&table=LIST

Western Wind TSXV:WND Recent Price \$1.40
Entry Price \$1.20 Opinion – sold at \$1.30

As per my last update, I sold WND off the Millennium Index and my intent is to buy it back later, probably in a market correction. I would then list it in the energy section of the newsletter. In the mean time I have a much better wind energy stock to buy – at least better in terms of stock appreciation potential.

It is already on our list and has been restructured

http://www.stockhouse.com/comp_info.asp?symbol=WND&table=LIST

Wind Works Power NASDAQ OTC: WWPW Recent Price \$0.40
Entry Price \$3.50 Opinion – strong buy, average down \$0.70

Wind Works was AmMex Gold and competed a 10 to 1 roll back. That is why I have the entry price as \$3.50 which was the old \$0.35 price adjusted for the 10 for 1 roll back. This resulted in about 5.7 million shares outstanding. Management/insiders owned over 50% of the stock previously so they would still own about 3 million shares leaving about 2.7 million in the public float with a cost base that is probably \$3.00 and higher.

The company has done a small financing of about US\$300,000 at \$0.10 so that would add another 3 million shares but that stock is restricted for 6 months.

The company completed their name change and restructure about 2 ½ months ago and I would expect they would soon be announcing new corporate/project developments.

What we recently just witnessed with Linear Metals and I see it all over the market now - is stocks are moving and gapping higher on news so it makes sense to go back to some degree to our old habits of speculating and buying stocks before we see a move or break out. We may not get the timing perfect and have to wait a while to see a gain, but overall our risk is lower if we buy at a lower price. WWPW seen 17 trades yesterday and a volume of 48,000 – the most trades and volume in over 4 months. Maybe something is coming down the pipe?



The chart shows a volume spike in June, but that has to be some bad data as the most it traded in June was 17,000 shares when it popped to \$0.49. We can see that the stock has been dead or asleep for almost a year. Many technical analysts call this a Stage 1 basing pattern and is required before you move into a Stage 2 bull phase. This basing pattern has contained the stock in a range between \$0.18 and \$0.45 with a few minor spikes outside this range. A break above \$0.50 would confirm a move into Stage 2 and there is some mild resistance around \$0.50.

With that in mind, I would not chase the stock above \$0.50. It may take some patience to buy as the stock has been trading thin and I have no idea if much stock will come out at what levels or what the market makers might do.

The stock has been trading above the 200 day moving average for about 3 months now and looks like the 200 D Ma is starting to turn up, more bullish technicals. The MACD has also been positive all year.

Web site <http://www.windworkspower.com>

http://www.stockhouse.com/comp_info.asp?symbol=WWPW&table=LIST

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