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Equity Research
European Technology/Hardware / Rated: Market Overweight
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The Future of Power Equipment

Key Points

*** Today we are publishing an in-depth thematic report (144pp) on the global outlook for power equipment - for both power generation and transmission and distribution. We have also analysed the strategic positioning of all European players in this context, including Siemens, ABB, Alstom, Areva, Gamesa, Vestas, REpower, Nordex and VA Tech.

*** Our research has produced some surprising conclusions. Consider this: all major industrial powers (but the US) are about to ratify Kyoto (and their obligations under it); oil and gas prices have doubled; the west's power infrastructure, long neglected, urgently requires an overhaul; and wind power has grown up, and is expected to become a strategic part of the future global power generation mix.

*** Our analysis also reveals that many national governments are going to have to rethink their aversion to nuclear power, which can be expected to see a large-scale revival – even in countries that are now committed to closing nuclear power stations.

*** We expect growth in global power equipment to double over the next few years, driven by the need to upgrade the generating mix in the west and install generating assets elsewhere. We see the key growth areas as the US and Europe, where we expect a massive replacement cycle to build up. We expect China and the west to invest €180bn and €280bn, respectively, over the next 10 years.

*** We are also bullish on the transmission and distribution (T&D) market, where we estimate annual growth rates will more than double from the current 4% to about 8%-10% in the second half of the decade. While China is a straight growth market in this space, we expect the US to turn into a massive replacement market, once the pending Energy Bill is passed.

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PLEASE SEE PAGE 4 OF THIS NOTE FOR IMPORTANT DISCLOSURES AND ANALYST CERTIFICATION.

The Future of Power Equipment - Summarised

The global power generation equipment market is set for major change over the next three to ten years, which we believe should result in accelerated investment growth rates. Consequently, we are very bullish on this market and also, to a lesser extent, on the power transmission and distribution (T&D) market. The factors we expect to influence growth in the power equipment market in the next ten years are:

- changes in the generation mix due to market liberalisation, environmental regulation and policies regarding energy independence
- a massive upgrading/replacement cycle in developed countries
- the ramp-up of capacity in less developed geographies, e.g. China and India
- accelerated growth in the T&D market due to: equipment demand in countries like China; the need to replace obsolete equipment, predominantly in the US and some other western markets; the liberalisation and interconnection trend in Europe; and a trend toward wind power in remote areas (e.g. offshore)
- high oil and gas prices, although we expect these to decline again in the medium term
- wind power on the ascendant, now mandated by Kyoto and in our view the only renewable energy source capable of becoming a strategic component of the power generation mix
- the long-term revival of nuclear energy (four to five-year horizon)

Future Power Sources – Oil and Gas on the Wane

We believe that national governments should feel some sense of urgency in determining the future of their overall generation mix. This is because with the current outlook for oil and gas prices, current policies will need some legal modification over the next few years to enable a generation mix that is both practical and competitive. At the current rate of consumption the world's known (estimated) oil and gas reserves are projected to deplete over the next 30-40 years. In effect, this means that oil and gas prices will have to go up over the long term, although in the near term we think they could stabilize, or even decline, in the event of a stabilizing global political situation. At the same time, the alternative of more coal power has been severely limited by the Kyoto agreement, apart from the US (although it has introduced a voluntary programme to limit its carbon dioxide emissions). This means the rest of the world will now have to consider alternative power sources, which is why we think that the nuclear option will have to be seriously reconsidered, even by those governments that have decided to phase out nuclear power.

In this respect we note particularly the German government's current policy to phase out nuclear power over the next 20 years. Nuclear power currently represents a 30% plus share in the German power generation mix, and to replace this closed capacity with renewable energy sources such as wind power, as they intend, cannot in our view guarantee a reliable power stream at a competitive price. Hence, we believe the current political framework in Germany is unrealistic and will need to be modified, probably in favour of nuclear power, for which we expect to see a revival globally as well. We expect the same to be true for Belgium and Sweden, which have also signed nuclear phase-out deals.

Furthermore, we believe that the UK needs to take a similar decision (probably in favour of nuclear power), as in our view it is currently overly dependent on gas. We believe a lack of inexpensive alternatives and the willingness to reduce energy dependence on politically unstable regions are the key drivers for a possible revival of interest in nuclear power. Although this is not likely in the next two years, we believe this could begin to emerge over the next four to five years.

Looking at the unconventional energy sources (the possible alternatives to nuclear and conventional thermal power), we believe that wind power is the only realistic renewable energy source (RES) so far. While wind power has been an expensive alternative under low oil and gas prices, at current prices wind power is a much more compelling alternative as it can be brought in for as little as €0.04 per kWh, while GE has recently said it could produce wind power as cheaply as 2.5 US cents per kWh (about in line with coal power) – vs around €0.045 per kWh (5.85 US cents per kWh) for gas.

Nearer term, we expect the conventional power market to drive most of the going (predominantly related to gas-fired power plants), but we also expect the wind power market to continue growing in double-digits. Although we are confident that Asian growth markets such as China and India will drive most of the near-term growth in the power generation equipment markets, we believe western markets are about to see a massive upgrading cycle, which should start during the next two to four years.

Currently, about 9% of European conventional thermal generating assets are more than 40 years old, and this will rise to 46% over the next decade. In absolute terms, this means about 146GW of conventional power generating equipment needs to be exchanged over the next ten years in Europe – implying an investment of €100 billion. This compares to the current average annual power equipment revenues of €7.0-€8.0 billion in Europe (we have estimated this market volume from geographical sales numbers for Siemens, Alstom and General Electric, as well as from Platts data), of which only about €3.6-€4.0 billion is for new equipment, with the remaining €4.0-€4.5 billion spent on service and maintenance revenue. Hence, the average annual investment amount over the next decade should be more than twice the current annual market volume.

The picture in the US is very similar. Currently, about 13% of the generation mix is older than 40 years, but this figure will rise to 37% over the next ten years. On this basis, we estimate that about 261GW needs to be exchanged over the next ten years – equivalent to an investment of €183 billion. In the US, annual power equipment sales (excluding service and maintenance revenue) have been running at about €13 billion, but we expect this to shrink to about €9 billion in 2006 (our estimates are based on power generation data from Platts). However, we project growth rates in the US power equipment market to turn positive again in 2007 – and the need for a massive upgrading is virtually inevitable, in our view. We estimate that the average annual investment after 2006 will be about twice the level seen in 2004.

In Europe, investment in conventional power generation assets is flat at the moment while US power equipment sales are still falling following a 'gas turbine bubble', which peaked in 2002. At the moment, virtually only wind power enjoys solid high growth rates in the US, running at about 15% year over year on average. Global investment in wind power assets is currently running at an annual level of about €8 billion, which we expect to grow by about 15% per annum over the next ten years.

Stock Market Conclusions

Our top picks among the companies we have under coverage in the sector are **Siemens** and **ABB, both rated Outperform**. We estimate these offer attractive five-year (2003-2008) earnings growth potential of 12.4% and 40.1%, respectively. With power equipment activities generating an estimated 24% and 36% (which could rise to 40% for ABB over the next five or so years) of their respective total earnings in 2004, we believe Siemens and ABB are well placed to benefit from the accelerated growth we expect in this market. We view positively Siemens' gearing towards all major turbine types (including gas, steam and wind), its activities in nuclear power (through a 34% stake in the Framatome JV) and its No.2 position in the T&D market. In this end-market, ABB holds the No.1 slot, which should provide a non-cyclical, structural growth element to ABB's business portfolio over the next two to ten years.

We recently downgraded Vestas to Peer Perform from Outperform to balance its 100% exposure to the high-growth wind power market with the entrance of Siemens into the arena. We view the wind power market as highly attractive, as we believe it will enjoy the highest growth rates in the power equipment market over the next ten years. However, with this growth profile and the wind turbine market's significant size – annual volume of about €8 billion – the space is now attracting heavyweight competitors. This is evidenced by GE's takeover of Enron Wind in 2002 (forming GE Wind in North America) and Siemens' acquisition of the Danish wind turbine manufacturer Bonus Energy, with a global share of about 8%, in October 2004, to form Siemens Wind in Europe – both good strategic moves by these companies, in our view. GE's track record in wind power is very impressive: it has managed to grow its global market share from about 8% to roughly 18% over the past two years. We believe that Siemens could double its current market share of about 8% over the next few years. Consequently, the competitive environment is significantly more challenging for Vestas and **Gamesa** (not rated), causing us concern about their global market share development and prompting our Vestas downgrade.

Nordex and **REpower** (neither rated) also operate in the wind power market but lack significant balance sheet strength and have only a limited global presence due to their strong focus on the German wind power market.

Of the remaining European companies that we do not cover, **Areva** has a market leadership role in nuclear power, for which we expect a long-term revival. We also believe the market environment is improving for **Alstom**, especially in steam turbines. The price of gas has more than doubled – in the US gas costs have shot up from an average $3.34/Mbtu in the past few years to almost $8/Mbtu – at which price level the balance now swings back in favour of coal-fired power plants, and hence steam turbines. At these prices, the generation costs of wind energy at top sites are about the same as the generation costs of power from a state-of-the-art CCGT (Combined-Cycle-Gas-Turbine), which also implies that wind power has become more attractive relative to traditional conventional energy sources.

OTHER COMPANIES MENTIONED:
Alstom (ALSO.PA, €0.52, Not Rated)
Areva (CEPFi.PA, €278, Not Rated)
Gamesa (GAM.MC, €10.43, Not Rated)
Nordex AG (NDXG.DE, €0.71, Not Rated)
REpower Systems AG (RPWGn.DE, €14.28, Not Rated)
VA Tech (VATE.VI, €58, Not Rated)

Companies Mentioned

ABB LTD. (ABBZn.VX - CHF 6.92) - Outperform
SIEMENS (SIEGn.DE - EUR 60.58) - Outperform
VESTAS (VWS.CO - DKK 76.25) - Peer Perform

ADDENDUM

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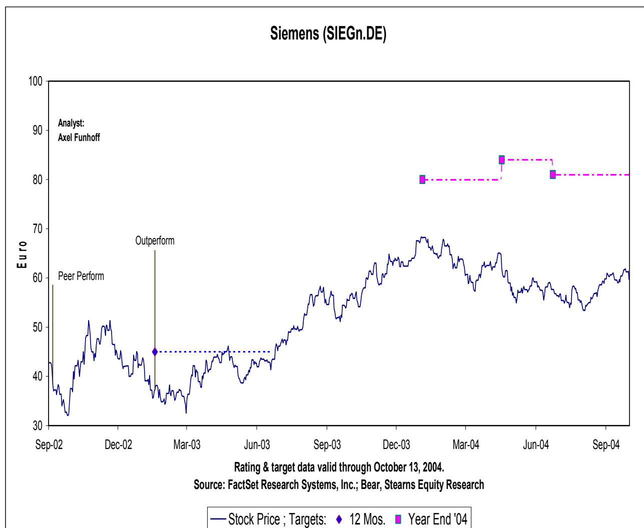

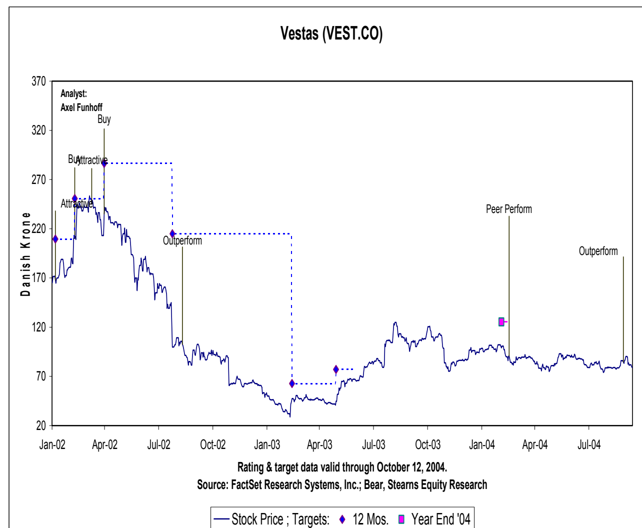

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