CANACCORD Adams

Sustainability Update

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ROS Index performance stats

Quarter's best performers:	
Solar Integrated Tech	+236.8%
Climate Exchange	+107.8%
TEG Group	+62.7%

Quarter's worst performers:	
AgCert	-60.8%
CleanAir Power	-50.2%
Biofutures	-50.0%

Trailing 12months top performers:	
ReneSolar	+466.7%
Plant Healthcare	+215.5%
Climate Exchange	+197.6%

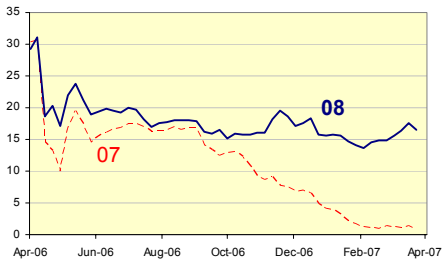
Trailing 12 months worst performers:	
Biofuels Corp	-89.2%
ReEnergy Group	-80.9%
AgCert	-71.2%

Inside

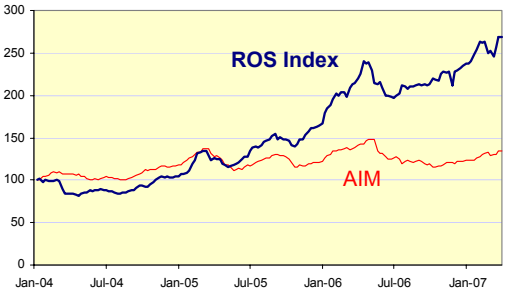
Resource Optimisation and Sustainability

AN INVESTMENT TIPPING POINT? – Q1/07

EU ETS for 07/08 - €/t



ROS Index



Source: Bloomberg and Canaccord Adams

This quarter saw intense coverage of climate change and the environment, which turned environmental policy into as much of a political battleground as health, education or immigration. We believe the sector has reached an investment tipping point as many of the long-term policies were put in place to make large scale investment a reality: the US Supreme Court decided that CO_2 is a pollutant that the EPA needs to regulate, OPEC discussed climate change and carbon capture, the US Sate of the Union continued its clean energy theme, the US Presidential candidates proposed climate strategies, British politicians clamber to be the greenest and the EU agree commitments out to 2020 for emissions trading. In our view, all these point to environmental technologies moving into the mainstream investment community. While valuation and growth rate questions remain, we believe only the most naïve investor can now afford to ignore the sustainability sector.

Our index of small cap sustainability stocks listed in London continued its growth and added three new companies to end the quarter with 78 constituents. Over the quarter, the index rose 12.9% compared to AIM's 7.9% gain. Within this, there was a wide range of performance, although in our view almost all stocks were driven by company specific news, apart from ReneSolar (SOLA LN, Not rated) and Climate Exchange (CLE LN, Not rated), which benefited from the headline interest in renewable power, climate change and China. However, both appear to be fully valued and we believe ReneSolar is looking particularly vulnerable on a 12-month view.

Along with our usual updates, this quarter we welcome back Eric Prouty as a publishing analyst and he kicks off a review of the opportunities in the largely unappreciated recycling sector.

FINANCE AND FUNDING

Primary markets over the quarter were relatively quiet, as funds focussed on the large cap arena. However, secondary activity continued strongly and deals that caught our eye over the quarter included:

Windpower

- **Repower** (RPW GR, Not rated) is currently being bid for by Suzlon (SUEL IN, Not rated) and Areva (CEI FP, Not rated). Areva offered €105/share to access technology and speed up development, especially in off-shore projects. Suzlon topped the offer with €126/share, although its resulting 5% share price drop on the news suggests to us that the market cannot see the synergy. However, with Repower shares sitting at €157/share as we went to press, it would seem the market is expecting further bids and Suzlon obliged by raising its bid to €150. At this price, Repower has an EV of €1.16 billion and an F07E EV/sales ratio of 1.45, which does not seem expensive in the context of the sector's growth or compared to the relatively new Clipper Windpower (CWP LN, Not rated), which has an EV of €0.96 billion. An obvious pairs trade?

- **Energias de Portugal** (EDP PL, Not rated) announced the acquisition of **Horizon Wind Energy** for US$2.15 billion (EV after tax credits) from Goldman Sachs (GS US, Not rated), with the deal expected to close by the end of Q2/07. Horizon is one of the main US wind power developers with 559MW of generating capacity, a further 997MW due on-line before the end of 2007, and a project pipeline of 9,000MW across 15 states. The project pipeline is understandably ill-defined, in our view. This should make EDP the third-largest owner of wind generation in the US, with more than 3,800MW by the year end. The total transaction cost will be adjusted upwards for capex estimated at US$600 million. The price looks reasonable relative to the existing installed capacity (US$1.95 million/MW for the net capacity of 1,324MW), while the valuation of the pipeline (~US$800 million, or ~US$89,000/potential MW) should offer potential upside, if the company can execute effectively.

- **Canadian Hydro Developers** (KHD CN, Buy) acquired privately held GW Power Corporation, which owns 50% of the 70.5MW Soderglen Wind Plant in southern Alberta, as well as 145MW of wind development prospects in Alberta and Ontario. The company exchanged three common shares and one warrant for each GWP share for a total purchase price of C$87 million, including the assumption of a working capital deficit and acquisition costs.

- **Theolia** (TEO FP, Not rated) raised €50.4 million in a placement in Paris. It also swapped 165MW of GE's European wind farms for an equity stake of up to 22%. GE received 5.3 million new shares and will subscribe for 1.2 million new shares in return for €20 million in cash and hold warrants for an additional 3 million shares.

- **Ventus Energy** (Private) raised C$25 million through an initial public offering of C$10 units in Ventus Energy West Cape Windpower (871666Z CN, Not rated). The proceeds will be invested in West Cape Wind Energy, the company that will own, construct and operate the 99MW West Cape wind farm on Prince Edward Island. Construction of the project's 19.8MW test phase, made up of 11 turbines, is underway and should be completed in Q2/07.

Hydrogen

- **Protonex** (PTX LN, Buy) raised US$27.6 million in a secondary issue to fund an acquisition of a SOFC technology and for general working capital.
- **FuelCell Energy** (FCEL US, Buy) completed the placement of 9.0 million shares at US$7.50/share to raise US$62.8 million after expenses and help fund its substantial win in the Connecticut RFP.
- **AFC Energy** (Private) announced its intention to list on AIM and raise £5 million. It makes alkaline fuel cells with a new balance of plant design that eliminates the stack and uses an integrated electrode assembly, that should reduce the number of components and precious metals have apparently been almost eliminated. Its initial market is expected to be industries producing hydrogen as a waste, such as the chlor-alkali industry, which the Directors believe could support ~3GWh/year of generation. We believe the chlor-alkali market offers an attractive source of hydrogen, but would prefer to access the investment potential via QuestAir (QAR CN/LN, Buy), which already has a chlor-alkali operation.
- **Acta (ACTA LN, Not rated)** looks like it will be raising a substantial sum from a strategic investor in the near-term, following comments in its results presentation.

Solar power

Two solar companies revealed mixed results for 2006. Suntech Power (STP US, Not rated) trebled its net income, and was one of few companies reporting higher sale prices for modules in Q4/06 than in Q3/06. Canadian Solar (CSIQ US, Not rated) posted a net loss of US$9.5 million despite higher revenues, citing falling module prices and higher costs of raw materials. Much of Canadian Solar's raw material supply was purchased in Q3/06, and it believes that it may be able to get supply contracts at lower prices in the first half of 2007, suggesting that the falling module prices are already having an effect upstream in the value chain.

- **JA Solar** (JASQ US, Not rated) a successfully IPO on Nasdaq with an ADR that raised US$225 million.
- **Suntech** issued US$500 million in 0.25% convertible senior notes due 2012 to 144A buyers, including an over-allotment option for US$75 million.
- **Renesola** issued RMB928.7 million (~US$120 million) of US dollar-settled 1% convertible bonds due 2012. The Company intends to use the proceeds for capital expenditure, working capital and general corporate purposes.
- **Good Energies** (investment fund belonging to the Brenninkmeijer family) sold a 12.5% stake in **Renewable Energy Corporation** (REC NO, Not rated)to Norwegian conglomerate **Orkla** (ORK NO, Not rated) for NOK6.5 billion and swapped a 17.9% stake in REC with **Q-Cells** (QCE GR , Not rated). That left Good Energies holding 29.9% of Q-Cells' ordinary shares and 49.6% of the total equity including preference shares. The value of this transaction in REC shares was not disclosed, but on a similar basis to the first deal, it would be equivalent to ~NOK9.3 billion. Q-Cells also signed a long-term supply agreement with **Elkem Solar**, a subsidiary of Orkla that is planning to become a major silicon producer. Elkem will supply Q-Cells with 66,800 tonnes of metallurgical silicon over 10 years, starting in 2008. Q-Cells also owns put options, allowing it to sell its new stake in REC to Orkla, and what appears to be a derivative between Orkla and Good Energies for its remaining 4% stake in REC.

This seems a move by Q-Cells to lock in its raw materials and advertise its ability to use a 50/50 mix of metallurgical silicon and conventional solar-grade poly-silicon. Orkla is now committed to owning almost 40% of REC, while Good Energies has US$1 billion to spend – presumably in the sector.

- **Yingli Solar** (Unlisted) finally filed an application with the SEC for a NYSE IPO. It is a vertically integrated Chinese PV manufacturer and reports have suggested that it hoped to raise US$400 million. Delays in the listing process have ensured that it is one of a long line of Chinese PV IPOs, and the market may now be more discriminating on price and technology.
- **ATS** (ATA CN, Not rated) has cancelled the Photowatt IPO. Its original filing for an IPO on NASDAQ and the TSX in Q4/06 recorded a non-cash impairment charge of US$94 million due to concerns about the ability to scale up the spheral solar technology. A subsequent filing noted that "the technological and commercialisation challenges… are substantial". We questioned how investors might react to a bundle of solar assets, including crystalline silicon, given the US market's varied response to crystalline silicon companies Solarfun Power and Trina Solar. The decline in module prices last year is expected to continue as this commoditises, with potentially significant impact on many companies that only recently turned profitable.

Biofuels

- Three Malaysian plantation firms - Sime Darby, Golden Hope Plantations and Kumpulan Guthrie - agreed to sell their businesses to Synergy Drive, a vehicle created by CIMB Investment Bank to create the world's biggest listed palm oil plantation firm. Potential annual revenue could reach MYR26 billion (US$7.4 billion), with total plantation land of 600,000 hectares. We are unconvinced by palm oil, due to the possible impact of its production on the environment, and, based on previous comments, we believe the EU may start to discriminate against "unsustainable" sources. Our preference remains for jatropha based products, as these avoid the reputation risk associated with displacing food supplies.
- **Kreido Biofuels** (KRBF US, Not rated) reversed a biodiesel technology into an OTC shell and completed a US$25 million raise. Kreido believes it has a method of improving the conversion process for vegetable oils into biodiesel.
- **Ensus** pulled its previously announced £80 million AIM flotation citing failure to attract sufficient interest from institutional investors and raised £90 million of private equity. The capital is earmarked for the development of its 400 million litre ethanol production facility on Teeside. Ensus has contracts with Glencore for the supply of wheat and use of the DDGS, and Shell Trading for all the ethanol.
- **Sao Martinho** (SMT03 BRL, Not rated) completed a US$200 million IPO in Brazil for ethanol production.
- **China Agri-Industries Holdings** (606 HK, Not rated) raised HK$3.2 billion on its IPO and has bought stakes in three of the five plants licensed by the Chinese government. On gong to press, China Agri had an EV of US$3.7 billion, making it one of the largest bio-fuels plays.
- **Biofuels Corp** (BFC LN, Not rated) gave another profit warning and said it expects to raise more cash to keep running or convert debt to equity. The company's technology still appears to have problems; its EV of ~£107 million, which is 93.5%

debt compares with a replacement value of ~£30-50 million. Biofuels Corp has not been helped by feedstock prices, but fundamentally we believe the problem is company specific and any fall out across the sector should be limited.

Emissions and other

- **Applied Intellectual Capital** (AIC LN, Not rated) listed on London's AIM market and raised £20 million to develop its electrochemical technology.
- **Helius Energy** (HEGY LN, Not rated) listed on the AIM and raised £2 million for the development of biomass fired renewable energy plants. Our previous experience with biomass suggests that this is a challenging market, especially for larger projects in a public environment. Management overlap with some of D1 Oils' original promoters also may cause concern.
- **Itron** (ITRI US, Buy) completed a US$235 million private placement at US$57.50/share to ten institutional investors.
- **Railpower Technologies** (P CN, Not rated) completed a C$34.5 million secondary offering, placing 35.4 million units (one share and a warrant) with the underwriters exercising their over-allotment option of 4.5 million units. Proceeds will be used for working capital, R&D and market development. The financing should alleviate liquidity issues reported in Q3/06, when the company had cash of C$9 million, compared to C$77 million the year before, as it was hit by increased work in progress and customers' payment schedules.
- **TEG Group** (TEG LN, Buy) raised £11 million in a secondary issue, subject to approval by an EGM, to fund its Manchester PFI work and accelerate growth. The issue was heavily oversubscribed and attracted several new investors.
- **Vycon** (VYCO LN, Not rated) listed on the AIM and raised a gross £9.2 million. Vycon makes a neat steel flywheel energy storage system that has applications for UPS, regenerative braking and power stabilisation. High energy prices hopefully make the market more receptive to flywheels than when Active Power (ACPW US, Not rated) was launched.

Venture capital

- **China** plans to launch a renewable energy fund to deploy some of the cash it has received from carbon trading under Kyoto. China has approved investments to reduce emissions through to 2012 by 300MT according to UN data worth €3 billion.

RENEWABLE ENERGY

Political comment on the environment has been at an all time high.

Hardly a day seems to have gone by without some new press excitement over renewable energy. We have long believed in Adam Smith's invisible hand, whereby competition and enlightened self-interest improve products and hence the economy. However, we are slightly concerned that competitive grandstanding between politicians may not deliver results that match the rhetoric.

Until recently, the international perception of the US was foot dragging on climate change. At the Federal level this still appears true, but the states are no longer waiting in their rush to attract new industry. Individual states have been competing to pass the most ambitious laws on renewable energy use, while the EU has committed itself to a binding target of 20% renewable energy use by 2020 and to cut CO_2 emissions by 20%

from 1990 levels by the same year. The EU also offered to cut emissions by 30% if other rich countries joined it. The goal is to be met by a variety of schemes, such as increasing the share of energy from renewables, making biofuels provide 10% of the market and improving energy efficiency by 20%. We welcome this, as it allows companies to invest on a time frame that matches asset lives and also keeps moral pressure on other major polluters.

The 27 EU states will each decide how they contribute to meeting the 20% targets and we believe this is probably the weakest aspect of the scheme. Germany, the UK and the Scandinavians are keen to cut emissions, but Eastern Europeans may worry about the effect on their economic growth. The UK also aims to enshrine in law a 60% cut in emissions by 2050, along with a system of 'carbon budgets' that provide rolling five year limits on emissions, with a 15-year lead time. We welcome the UK and EU plans, as industry can work backwards to infer a carbon price and factor this into investment plans. It's a shame the UK is not applying this logic to the Renewables Obligation (RO).

Fiddling politicians

The British government wants 20% of energy to come from renewables by 2020 and will probably incorporate this in a forthcoming energy white paper. In our view, this is a welcome target and the existing RO should be capable of delivering it, given a modest extension. However, the government seems set on fiddling with the scheme and undermining industry's recently found confidence in the RO.

The RO has successfully delivered the cheapest renewables: onshore wind, landfill gas and biomass co-firing. While we welcome the intention to increase the quantity and diversity of renewable energy delivery to the grid, it is clear that the attempt will succeed only if financial support is increased. The RO and associated Renewables (Scotland) Obligation originally came into force five years ago, when suppliers had to provide 3% of their electricity from renewables. The current level is 6.7% and will rise incrementally to 10.4% by 2010 and 15.4% by 2015, when it will remain stable until 2027 when the RO is currently expected to end. During 2004-05, landfill gas generation secured 34% of total Renewable Obligation Certificates (ROCs) issued, co-firing received 20%, small hydro 18%, onshore wind 16%, biomass 8%, offshore wind 3%, sewage gas 2% and others received 0.5% of total ROCs issued.

The government now hopes that by banding the RO, less developed technologies (i.e. more expensive) can be included in Britain's renewables portfolio. However, this fails at three levels in our view:

- civil servants are notoriously poor at estimating the market return required for new technologies and are likely to undershoot targets as a result;
- any changes to the system are likely to increase the political risk factor, which reduces the number of projects that are economic;
- trying to bring in more expensive technologies whilst trying to get to a 20% target in 2020 whilst trying to use the same amount of money as a 15% goal, is naïve.

The reforms propose a reduction in subsidies for onshore wind in order to allow increased support for development of offshore wind, wave and tidal energy. It is unclear whether the reduction in onshore wind would be offset by an increase in other technologies, as available funds are dictated by the RO level and an index linked buy-out price which suppliers must pay if they do not meet their requirements. The government

intends to freeze the price in 2015, allowing it to decline in real terms, and it proposes to allow the RO level to rise in line with supply after 2015, up to 20%. By freezing the buy-out price, the government hopes to effectively get an additional 5% for nothing. However, banding the system so more technologies are economic means that the 20% would have to include capacity that is more expensive than would be brought forward by an unreformed system. To us, this implies sourcing a third more renewable power with a mix that includes significant quantities of technologies that are uneconomic under the current system, for the same amount of money, unless major cost reductions occur in the existing RO technologies.

In our view, if the planning permission and grid connection issues were resolved, then the UK would make much better progress towards its renewable energy targets without touching the RO. There currently are 7,700MW of onshore wind projects being considered for planning consent, some of which have been in the system for four years. Another 1,660MW of onshore wind are currently operational, 640MW is under construction and 1,500MW have received consent to build.

If these changes go through, they are likely to have a modest negative impact on companies such as Novera (NVE LN, Not rated), Renewable Energy Generation (RWE LN, Not rated) and Renewable Energy Holdings (REH LN, Not rated) but positive on Ocean Power Technology (OPT LN, Not rated) and other developers of novel technologies.

The outlook for the economy is positive, but there is no positive outlook that a politician cannot wreck – Professor Patrick Minford TEG lunch 13/3/07

Global wind industry reports another record year

Seventy countries installed 15,197MW of wind turbines last year, boosting the global total to 74,223MW from 59,091MW in 2005, despite supply chain constraints. The annual market for wind power grew 32% and follows a record 41% in 2005.

In terms of economic value, the total value of wind generating equipment installed last year was €18 billion. In terms of installed capacity, the US led with 2,454MW, followed by Germany with 2,233MW, India with 1,840MW, Spain 1,587MW, China 1,347MW and France with 810MW. Europe leads the world with 48,545MW of installed capacity at the end of 2006, which is two-thirds of the world total and EU capacity grew 19% last year to generate the equivalent of 100TWh a year, or 3.3% of total EU electricity consumption.

The five largest wind markets are: Germany (20,621MW), Spain (11,615MW), the US (11,603MW), India (6,270MW) and Denmark (3,136 MW), with 13 countries passing the 1,000MW mark that France and Canada reached in 2006. In the EU, 3,755MW were installed outside of Germany, Spain and Denmark in 2006, compared to 680MW four years previously.

Despite its growth, Europe only accounted for half of last year's new capacity, compared to three quarters in 2004. Asia had the biggest increase, with the addition of 3,679MW or 53% growth that took it past 10,600MW and accounted for 24% of new installations. India was the largest market, with 1,840MW of new capacity, taking its total to 6,270MW. China doubled its capacity by adding 1,347MW - a 70% increase on 2005 - and taking its total to 2,604MW, no doubt helped by its new Renewable Energy Law, which came into force in January.

For the second year running, the US installed 2,500MW, making it the country with the most new wind power, and 22% of the world's new capacity was installed in North

America, where the annual market increased by one third in 2005. According to the AWEA, new wind generating capacity worth US$4 billion was installed in 2006, making it the second largest source of new generation for the second year in a row, after natural gas. We remain concerned that some of the US boom is driven by the expectation that the §45 PTC expires next year and the market may then go through a quiet period. We believe the plethora of RPS policies in the US should alleviate much of this risk, although some of the smaller wind turbine manufacturers, such as Clipper Wind (CWP LN, Not rated) are probably more exposed than the more global players such as Vestas (VWS DC, Not rated) or Repower (RPW GR, Not rated).

US DoE supports solar development

Rather like its support for cellulosic ethanol (see below), the US DoE has chosen 13 solar projects to receive US$168 million to "significantly reduce the cost of producing and distributing solar energy." The funding is subject to appropriation from Congress and industry must contribute 50% of the cash, to give a total investment over the next three years of US$357 million.

It is hoped that the projects will expand the US PV manufacturing capacity from 240MW in 2005 to 2,850MW by 2010, in order to keep the industry on track to cutting the cost of PV to 5-10¢/kWh by 2015 (i.e. competitive at the meter). In our view, this timeline is ambitious, but not impossible for the top end of the scale. The teams selected for negotiations provide a snapshot of the main areas that the industry needs to develop over the next few years:

- **Amonix** - manufacturing technology for high-concentrating PV and on low-cost production using multi-bandgap cells;
- **Boeing** - cell fabrication research to yield very high efficiency systems;
- **BP Solar** - reducing wafer thickness while improving multi-crystalline silicon yield;
- **Dow Chemical** - integrated PV-powered technologies for roofing products;
- **General Electric** - cell technologies including a bifacial, high-efficiency silicon cell;
- **Greenray** - a high-powered, ultra-high-efficiency solar module that contains an inverter;
- **Konarka** - manufacturing research and product reliability assurance for extremely low-cost PV cells using organic dyes;
- **Miasole** - high-volume manufacturing technologies and PV component technologies;
- **Nanosolar** - improving low-cost systems and components using thin-film PV cells;
- **Powerlight** - reducing non-cell costs by automated design tools and modules that include mounting hardware;
- **Practical Instruments** - explore a novel concept for low-profile, high-concentration optics to increase the output of rooftop PV systems;
- **SunPower** - lower-cost ingot and wafer fabrication technologies, automated manufacture of back-contact cells, and new module designs, to lower costs;
- **United Solar Ovonic** - increasing the efficiency and deposition rate of multi-bandgap, flexible, thin-film PV cells and reducing the cost of inverters and BoP components.

RPS spreading in the US

The trend toward setting goals for renewable power in the US is gaining momentum, and if Congress passes a bill currently being drafted that would call for 15% of power to come from renewable sources by 2020, the entire country would have a standard. In 2005, US renewable power accounted for about 2.3% of overall US electricity, with hydroelectricity accounting for another 6.5%. The pressure to adopt an RPS has grown since the original market liberalisation in the '90s. Since then, 9/11, Hurricanes Katrina and Rita, and the 2003 blackout in the eastern US have all raised awareness of renewables.

Figure 1 lists the main RPS standards, although the definition of renewable power varies by state and comparisons may not be proportional (New York's 24% target by 2013 includes large hydro, which represents 19% of current production, while California's 20% target for 2010 excludes existing large hydro).

Figure 1: US RPS

State	Standard	By Year
Iowa	105MW	1983
Maine*	1% per year to 10% by 2017	
Massachusetts	4%	2009
California	20%	2010
Connecticut	10%	2010
New Mexico	10%	2011
Vermont*	10%	2013
New York	24%	2013
Illinois*	8%	2013
Nevada	20%	2015
Montana	15%	2015
Colorado	10%	2015
Wisconsin	10%	2015
Texas	5,880 new MW by 2015	
Delaware	10%	2019
Maryland	7.50%	2019
Hawaii	20%	2020
Pennsylvania	18%	2020
Rhode Island	15%	2020
Washington	15%	2020
New Jersey	22.50%	2021
Washington DC	11%	2022
Minnesota	25%	2025
Arizona	15%	2025

Notes:
1. Voluntary renewable portfolio goal.
2. One MW on average in the US powers 800 homes, or 400 homes in areas with high air-conditioning demand (ie Arizona or Florida).

Source: University of North Carolina

Minnesota adopted the most aggressive requirement for renewable power generation in the US. It became the 23rd state to set targets for green power and now requires that 25% of the state's electricity comes from renewable sources by 2025. This could equate to an additional 5GW of renewable power being added – or eight times the current capacity.

Minnesota is the fourth Midwestern state to set a renewable target, and there are no Southeast states, due in part to low power prices, a relatively conservative political climate and pressure from electric utilities. However, even the Southeast is heading to renewable targets, with recent moves in the North Carolina legislature. Other developments include plans in New Mexico to increase its RPS to 15% by 2015 and 20% by 2020, compared to a previous target of 10% by 2011, while Oregon is targeting an RPS of 25% by 2025, with interim targets of 5% by 2010, 15% by 2015 and 20% by 2020.

Canada resurrects WPPI and RPPI

Canada announced C$1.5 billion in funding for renewable energy, which in our view was effectively resurrecting the WPPI/RPPI system run by the previous administration. The money will help renewable power produced from wind, biomass, small hydro projects and the ocean, with a 10-year funding period for projects built in the next four years. This should be good for companies such as Canadian Hydro Developers and also ensures that the recent BC Hydro RFP should deliver a reasonable set of projects. We do not expect this news to materially impact the market, as there was a general expectation of its renewal.

British Columbian greenwash?

The BC government released a new energy plan requiring zero net GHG emissions from all new electricity projects and calling for the province to be energy self-sufficient by 2016, with 90% of the power coming from clean or renewable resources. Under the plan, BC Hydro will establish a standard offer program with a set purchase price for power projects up to 10MW, and ensure its procurement of electricity from larger scale project recognises the value of intermittent resources like wind in BC's overall supply portfolio.

In our view, this is jumping (naively) on the green bandwagon and delivers little impetus. BC has no coal generation and will not until CCS is economic. For BC, it puts more pressure for the Site C hydro site, although this remains expensive and tied up with First Nations issues. In our view, this is likely to stimulate further green RFPs that should benefit firms such as Canadian Hydro Developers.

Solar is sexy

A recent survey of venture capitalists and other investors at an industry conference reported that solar power would be biggest source of clean power by 2020. An apparently well known investment bank found that solar was selected by 40% of respondents as likely to be the leading source of clean energy within two decades, followed by wind (33%), hydro (22%) and geothermal (5%).

As wind and hydro power currently represent much larger percentages of global energy supplies today than solar, the results appear to imply significant growth rates for solar energy. To overtake hydro by 2020, solar would need to grow at least 30% per year, assuming no new hydropower, which our comments on British Columbia and report on the 2006 wind market, suggest is unrealistic.

Solar was a popular discussion topic and appears a more attractive investment option due to apparently higher growth rates, better margins and a range of investment options, including traditional manufacturing, project development, potentially game-changing technologies and the volatility around silicon supply problems. In our view, solar offers many advantages over other renewables, but it still lags a long way behind on

economics. Using the rule of thumb that each doubling of production results in a 20% cost reduction, we calculate that solar will be competitive with *current* wind power prices in approximately 14 years, assuming current prices are US$4,000/kW and the market grows 30%/year. We believe solar could offer a better learning curve, as its relatively small unit size offers more data to help move along the development curve, compared to lumpier products such as wind turbines or wave plants.

Geothermal investment company established

Geysir Green Energy (Private) raised US$100 million from FL Group, Glitnir bank and VGK Hönnun to invest in global geothermal energy. Geysir believes it could raise US$1 billion within three years, but plans to begin investing "within a matter of weeks". It will invest in geothermal projects at all stages of development, as well as buying up companies and acquiring existing geothermal plants. The company will focus on investment opportunities in Asia, Europe and the Americas. As well as financing, the company will provide technology and know-how, since Iceland is a world leader in geothermal energy and 85% of its houses are supplied with geothermal heat.

We welcome the establishment of this fund and hope that it may take an active role is the usually underperfoming listed geothermal plays. As an environmentally friendly power source, we like geothermal but have had concerns over its application in the public markets.

Scotland to install world's largest wave farm

Scottish Power (SPW LN, Not rated) plans to build a £10 million wave farm off Orkney, using four of Ocean Power Delivery's (Private) Pelamis, to give an output of ~3MW. The project is expected to be operational next year and the Scottish Executive has offered a £4 million grant. The first commercial application of OPD's technology is expected to be a 2.3MW site off the Portuguese coast due to start operating this spring and a 75 kW prototype is currently undergoing testing.

Wave power is highly attractive, due to its relatively predictable nature and the energy density offered from a relatively small area: a typical Scottish wave can deliver 40kW per metre of wave front. Scottish Power recently agreed to a €17 billion merger with Iberdrola (IBE SM, Not rated), which makes the new company a leader in wave power, as Iberdrola is already working with Ocean Power Technology (OPT LN, Not rated). The World Energy Council estimates the opportunity for wave energy to be 2000TWh/year and the Carbon Trust reports that marine energy could provide 20% of Britain's current electricity. We are looking forward to a successful trial for OPD, as the market has suffered from the public failure of OPT to live up to its IPO predictions.

EMISSIONS

Phase I prices ended the quarter around the €1 level, despite increases in energy prices, which suggests that most buyers have already covered their compliance positions and industrials are selling their surplus. In contrast, Phase II prices rose substantially to end closer to €17 in possible anticipation of more cuts in NAPs. The EU appears to have learnt from last year's problems and remained faithful to its determination to create scarcity in the Phase II market by reducing the Polish cap by 76 million tonnes (27%) and the Czech cap by 15 million tonnes (17%), thus reinforcing market confidence. Some traders have also speculated that buyers are starting to build up their positions for 2008 after this price increase, thus further strengthening Phase II contracts.

Carbon trading volumes set to grow further

Carbon trading volumes are set to grow 50% this year, according to Point Carbon. It expects ~2.4 billion tonnes of CO_2e to be traded in 2007, up 50% from 1.6 billion tonnes in 2006. However, the transaction value is not expected to increase much, due to lower average carbon prices. In 2006, total contracts traded were ~€22.5 billion, but for 2007 the turnover is only expected to increase 4.9% to~€23.6 billion.

The results came from a web-based survey of 2,250 organisations and 60% represented emitting companies. Of those that were active in the EU ETS, 65% claimed that the scheme had led them to "initiate internal abatement" measures to reduce emissions – up from 15% in 2005. It also found that moving production outside Europe in response to the EU ETS was mentioned by 2-3% of respondents as their primary means of complying with emissions targets.

The EU ETS represented 62% of the global market in terms of volume, and 80% of its value in 2006. Brokers accounted for 71% of trading, with the remainder traded on exchanges, the majority (above 75%) on the European Climate Exchange.

The other major section of the carbon market – the Clean Development Mechanism (CDM) – is forecast to stay flat, at 552 million tonnes of CO_2e. The CDM allows projects in developing countries to claim carbon credits, which can be used to meet emissions targets in industrialised countries. Point Carbon expects the volume of primary transactions – where credits are bought directly from projects – to shrink 13% to 456 million tonnes of CO_2e, as most large industrial CDM projects have been identified and contracted.

Within the CDM, China accounted for 70% of volume, and a third of total volumes were from HFC-23 destruction projects, with a further 21% from N_20 projects. On the buy side, the UK and Italy accounted for 36% and 24% of volumes respectively, due to London's role as a financial centre, along with large purchases by Enel and the Italian government. The obvious beneficiary of the volume increases is Climate Exchange (CLE LN, Not rated), which owns the European Climate Exchange. The exchange hit a new record of 3.3 million tonnes/day in March and Q1/07 volumes were twice the previous year's.

Carbon trading back office slow down?

An important part of the carbon trading infrastructure that allows the transfer of Kyoto credits looks like it will not be operational until the back end of the year. The International Transaction Log (ITL) should link national emissions registries and the EU's Community Independent Transaction Log (CITL). Testing is underway according to the UN, but it is unclear when compatibility testing with each EU member state's registry will take place. Until this occurs, importing CERs into the EU ETS remains virtually impossible, as does the important task of listing CERs on exchanges.

The ITL is intended to track Kyoto Protocol trades and from next year, all transactions in the EU ETS. A key difficulty is that linking the CITL to the ITL requires all EU registries to switch over simultaneously. It appears that testing and handover should be completed well before the end of the year, with several exchanges, including the European Climate Exchange, Powernext and Nordpool intending to list CER contracts, once the switch-over has occured. We believe the listing of CERs could have a profound impact on the listed carbon funds, as it will make marking to market effectively obligatory, but could also expose risks of having over-paid in the initial rush for CERs last year.

California heading to emission trading

California's governor has signed an executive order to reduce carbon emissions from transportation fuels, in order to accelerate the use of alternative vehicle fuels. The order requires a cut in vehicle fuel carbon levels by at least 10% by 2020 and also implements a law for emissions caps to reduce greenhouse gases by 25% by 2020. CARB is obliged to implement the new fuel regulations before December 2008. Short term, we expect the industry to focus on biofuels, but we believe new engine technologies will be needed to meet this requirement and expect that Clean Air Power (CAP LN, Buy) could benefit, once it has developed a US product – probably using its existing Caterpillar relationship.

IPCC reports

The Intergovernmental Panel on Climate Change (IPCC) was set up in 1988 and brings together a large group of international scientists to provide an objective overview of climate change for policy makers. It issued major updates in February and early April, following its last report in 2001. The reports clearly link human activity to climate change and, in our view, increaseS the probability that the courts will start to find in favour of environmental lawsuits. The main points were:

- **It is very likely that anthropogenic GHG increases caused most of the observed increase in globally averaged temperatures** since the mid-20th century, where "very likely" means at least a 90% probability. The 2001 report said it was "likely" that human activities were the dominant cause of warming in the last 50 years, or at least a 66% probability. While the 1995 report believed the balance of evidence was in favour of an anthropogenic cause.
- **Warming of the climate system is unequivocal,** as is now evident from increases in global average air and ocean temperatures, melting of snow and ice, and rising sea levels.
- Temperatures are likely to rise by 2-4.5degC above pre-industrial levels if CO_2 concentrations are kept at 550ppm in the atmosphere, against about 380ppm now. The "best estimate" for the rise is ~3degC and the **warming is unlikely to be less than 1.5 degC.**
- The report cites six models with core projections of sea level rises ranging from 28-43 cm by 2100, which is a tighter band than the 9-88cm forecast in 2001.
- It is "**very likely" that extreme weather events will become more frequent** and the arctic sea ice could disappear in summer by the latter part of this century, with the system of Atlantic currents (including the Gulf Stream) very likely to slow by 2100, although an abrupt shift is "very unlikely".

The IPCC expects to publish further reports during 2007:

- Bangkok, 4 May 2007 - A report, "Mitigation of Climate Change", will analyse ways to fight global warming, including options and costs for cutting back emissions of GHG.
- Valencia, Spain, 16 November 2007 - A "Synthesis Report" will sum up all the findings.

From an investment perspective, we expect the IPCC reports to raise the sector profile and create more volatility in our stocks, round each reporting timeline, with the

emissions based stocks reacting most. These include the likes of Camco (CAO LN, Not rated) Trading Emissions (TRE LN, Not rated) and AgCert (AGC LN, Not rated).

US emission rules extended

The US has proposed new regulations that would cut diesel NOx and particulate emissions from trains and ships by 90% over the next few years by using stricter manufacturing standards, emissions technology and cleaner fuels. These would begin in 2008, with full implementation in 2015. Commentators suggest the rules could cost industry ~US$600 million in 2030 but provide health care savings of US$12 billion.

The proposals to cut emissions from diesel-powered US ships and trains come on top of federal laws passed during the Clinton presidency and which took effect in 2006, requiring diesel-engine trucks and cars to use fuel with much lower sulfur content. New trucks are also required to add diesel particulate filters which combined with the cleaner fuels cut particulate emissions by 90%.

Ocean-going vessels produce more sulfur dioxide emissions than all the world's cars, trucks and buses combined, according to a new report from the International Council on Clean Transportation. The study shows that the sulfur content of marine fuel is much higher than road diesel: marine fuel has an average sulfur content of 27,000ppm compared to 10 to 15ppm for road fuels in Europe, Japan and the US.

US ships and trains, which would account for the bulk of diesel soot pollution by 2030 if the rules did not go into effect, must start using the ultra-low sulfur diesel fuel by 2012. The EPA believes the timings should enable oil refiners to prepare to boost production fuel over coming years. A House bill is finally proposing that the US Coast Guard and EPA are authorised to enforce emission limits on thousands of vessels that enter US waters each year, bringing the US in line with pollution regulations followed by other countries.

The rules call for old locomotives to start using new emissions technology between 2008 and 2010, and newly manufactured train and ship engines to apply the standards starting in 2009. By 2014, marine diesel engines would be required to use catalytic converters, with locomotives following in 2015.

In our *Daily Letters* on Johnson Matthey and Catalytic Solutions we have discussed how emission abatement market is growing as standards are getting higher, but are also being applied to an increasing variety of sources. We believe these rules demonstrate this process and we expect them to help Johnson Matthey (JMAT LN, Hold), Catalytic Solutions (CST LN, Buy) due to a greater demand for emission catalysts and QuestAir (QAR CN/LN, Buy) due to the increased demand for hydrogen to make low sulphur fuel.

US EPA requires particulate reductions

The US EPA has identified 20 states where particulate levels exceed legal limits set by the agency. This covers approximately one third of the US population and unsurprisingly clusters around big cities. The affected states must deliver cleanup plans to the EPA by February 2008 and lower particulate pollution to a safe level by 2010. However, there remains some controversy around the plan as some sources could comply by purchasing emission credits from a nationwide "cap-and-trade" program proposed by the White House, which could hamper the ability to improve local air quality.

Most states that violate federal clean air rules are in the Midwest, which has the most coal-fired generation, and in Northeast between Washington, DC, and New York,

although Southern California and Atlanta also have unhealthy levels of particulates. Somewhat bizarrely, counties with the most severe problems- like those around Los Angeles- could get a five-year extension, delaying attainment until 2015.

The Edison Electric Institute expects utilities to spend US$50 billion installing technology to comply with clean-air standards that require them to cut emissions of sulfur dioxide and nitrogen oxides by 70%. We expect the main beneficiaries of this move would be Catalytic Solutions (CTS LN, Buy), Johnson Matthey (JMAT LN, Hold) and Umicore (UMI BB, Not rated), which all provide catalysed soot filters and NOx/SOx abatement options. We believe Catalytic Solutions looks particularly well placed, due to its AUS acquisition and the recent contract from a Flying J refinery in California.

EU plans greener fuels

The EU plans to amend a directive on fuel quality and require a 10% cut in the CO_2 released during production and use of fuel. It is believed that these changes would make companies use more biofuel, in order to save 100 million tonnes of CO_2 a year by 2020.

The announcement occurred while the EU was debating proposals to force carmakers to increase the fuel efficiency of the average car sold in Europe. The plans are regarded as key steps towards cutting down on emissions from the transport sector, which threatens to derail EU plans to cut greenhouse gas emissions by 20% by 2020.

Carmakers and fuel manufacturers have unsurprisingly complained that both proposals would increase costs for consumers. The proposed amendment to the fuel quality directive would oblige manufacturers to ensure an annual 1% cut in the emissions produced during the production and use of fuel between 2011 and 2020. A new class of fuel, labeled "high biofuel content", would also be introduced, with a biofuel content of up to 10%, instead of the current maximum of 5%.

In our view, current biofuel incentives remain somewhat haphazard in their ability to reduce carbon emissions. At this stage of the market, we believe a broad incentive is still required, but would expect to see a more targeted approach to focus on the cleanest biofuels in the future. In our view, this is likely to favour companies using jatropha or palm oil, as both have relatively high yields and low fertilizer usage.

Chinese emissions to overtake the US?

China is on course to overtake the US this year as the world's largest carbon emitter according to estimates based on Chinese energy data. Emissions rose by ~10% in 2005 according to the US Carbon Dioxide Information Analysis Center (CDIAC), while Beijing's data shows fuel consumption rose more than 9% in 2006, suggesting China could easily outstrip the US this year, well ahead of existing forecasts.

CDIAC used fossil fuel consumption data from BP to calculate China's CO_2 emissions in 2005 at 5.3 billion tonnes, versus 5.9 billion for the US, with respective growth in 2005 of 10.5% and less than 0.1%. In 2006 Chinese fuel consumption rose 9.3%, which equates to 2.4 billion tonnes of coal, according to a Chinese government advisor. Last year, the IEA forecast China overtaking the US as the world's biggest carbon emitter before 2010.

China's Office of the National Coordination Committee on Climate Change could not comment on either forecast as it did not have a reliable estimate of the country's

emissions: "We have just set in motion our national reporting plan... but it will not be done for two or three years."

Figure 2: En bref: China and climate change.

- China ratified the Kyoto Protocol in 2002, but as a developing country it avoids the current round of emission cuts, but this should change when the next Kyoto round occurs. China has talked about setting up a national climate change strategy for several years.
- China joined the Asia-Pacific Partnership for Clean Development and Climate in July 2005. The informal alliance, made up of the US, Australia, India, South Korea, Japan and China, aims to use technology, rather than binding limits, to reduce emissions.
- Per capita, China's energy-related emissions are very low: ~2.72 tonnes of CO_2/person in 2003, compared to 19.95 t/person for the US, and 9.53 t/person in Britain.
- China's large population means its total emissions are higher than many countries with higher per capita emissions.
- China's rising oil consumption and dependency on polluting coal for around two thirds of its energy have driven up its tally.
- China's first national climate report, announced in the local media in January, warns that climate change will raise the average temperatures in the country by 2-3 degC in the next 50-80 years.
- In 2004 China passed a law calling for 10% of energy to come from renewable sources by 2010.

Source: Reuters and IAEA

UN data for 2003 puts the US top with 23% of world carbon dioxide emissions and China second on 16.5%. On a per capita basks, the US emits 20 tonnes against China's 3.2 tonnes and a world average of 3.7 tonnes. However, China gets ~70% of its energy from coal, the highest carbon-fuel and its rapid growth are threatening to outweigh efforts by the EU and others to tackle climate change. The EU plans to cut its emissions by at least 20% by 2020, however between now and 2015 China intends to build generating capacity equal to the entire existing capacity of the EU. China's growth has been fuelled largely by burning coal, and it is still building new power plants at an unprecedented rate. Last year alone it added around 100GW – effectively equal to France's entire capacity.

Taking the top spot could focus pressure on China to do more to limit emissions ahead of the next Kyoto round. Thirty five developed nations have agreed to cut emissions under Kyoto and they want others - especially the US and China - to do more.

Canada plans GHG targets

The Canadian government is (finally) planning GHG targets for key industries - including oil and gas - this spring for implementation in 2010-2015, following the environment's recent leap up the polls. However, the new rules won't mean Canada meets its Kyoto targets, at its GHG emissions in 2004 were 35% above where they would have to be in 2012 to comply.

The Conservative government promised last year to cap greenhouse gas emissions by major polluters, but not until sometime between 2020 and 2025. The latest announcement confirms its plan to set what it describes as short-term targets for GHG based on emission intensity and to cap other air pollutants.

The government said in October it would consult broadly with individual sectors on proposed new emissions rules with a view to a decision in spring on the overall

regulatory approach, including proposed short-term targets to be reflected in the proposed regulations to come into effect in the 2010-2015 period. The government has projected that by 2010 Canada's emissions would be about 46% above the targets it had agreed to hit by 2012 under the Kyoto Protocol.

Less dirty coal

TXU has scrapped eight of eleven planned coal-fired plants to gain environmental support for its leveraged buyout. This adds an interesting twist to a market that has coal providing approximately half the electricity consumed. With the subsequent Supreme Court ruling on CO_2 being a pollutant, we believe TXU's move prudent, as NGOs are litigating every new coal-fired plant. Retrofits that reduce emission from existing plants are likely to gain (eventual) approval, but until CCS is available on a major scale, we believe new coal fired generation in the US is likely to be difficult. Peabody Energy (BTU US, Not rated) has been unable to build two coal-fired plants for several years, as environmental opposition has tied up the plans in courts: only four US plants have come on line since 2000, even though 155 were built between 1980-1999, with a further ~80 on the drawing board. Coal-based plants account for 50% of US electric power and are predicted to increase their share to ~57% by 2030, according to the EIA and bring domestic coal production to 1.78 billion tons by 2030 from 1.1 billion tons in 2004. An MIT study reports that CCS could raise consumer power bills by 20% in the US, although it would allow continued reliance on vast US sources of coal and may still be cheaper than nuclear.

Institutional investors want GHG legislation

Institutional investors controlling US$4 trillion in assets joined major companies in asking the US Congress to pass legislation to reduce GHG. Ceres organised the group, as it believes the greatest climate risk facing investors and businesses is the uncertainty caused by the absence of US policy.

The group issued a *Climate Call to Action*, seeking GHG reductions of 60-90% below 1990 levels by 2050, along with a US policy that includes a cap-and-trade system, to "allow for flexibility and encourage innovation", but which establishes "an economy-wide carbon price". This was targeted at putting a price tag on carbon, thereby enabling market mechanisms to drive emissions reductions and climate protection. The investors were joined by companies including DuPont, P&G, Allianz, Exelon and BP. The group also called on the SEC to clarify which companies should disclose climate change risks in the MD&A.

Large corporations go green

Most large corporations claim to have been working for years on pro-environment strategies; they are also now acknowledging that growing consumer awareness of global warming is changing the way they work. Hurricane Katrina, Oscar-winning documentary "An Inconvenient Truth" and the State of the Union's push for alternative fuels have all heightened concern over climate change in the last year. Commentators now warn that failure to address this shift in opinion could hurt companies selling to consumers, since 60+% of US consumers hold government and big business directly accountable for global warming (Source: MindClick Group). Perhaps this explains why US companies are more committed to fighting global warming than their government, as an (ex) politician makes Hollywood movies on climate change, while an ex Hollywood

actor leads the world's fifth largest economy towards ever more stringent environmental standards.

OTHER SECTORS

UK Budget – great for compost

The UK's budget offered more encouragement to the environmental sector, plus an unexpected boost for waste management and recycling companies thanks to a major increase in landfill tax. Biofuels were a high profile beneficiary, with the announcement of enhanced first year capital allowances for biofuels plants and an extension of the current 20p/l price incentive. There were warm words on energy efficient homes, although the stamp duty saving for zero-carbon houses costing up to £500,000 probably does not deliver much improvement, given the implied saving of £6,250 is unlikely to pay for much eye-catching technology. High energy light bulbs are now due to be phased out by 2011 and we believe this will eventually be positive for the LED sector and companies such as Dialight (DIA LN, Not rated). In our view, the main beneficiaries of the landfill tax boost are the two listed composting companies – TEG Group (TEG LN, Buy) and Bioganix (BGX LN, Not rated) – which saw the annual increase in potential gate fees go from £3/t/year to £8/t/year until 2011.

Canadian budget – great for confusion

The Canadian government extended accelerated depreciation to a wider range of renewable energy sources, while biofuel processors will be eligible for a C$0.10/litre subsidy on production, but they will lose their 'no-excise-tax' status and now be subject to an excise tax of C$0.10/litre.

Separately and before the budget, the government announced regulated renewable fuel content in gasoline was to reach 5% by 2010. Canadian plays on ethanol could include: Universal Energy Group (UEG CN, Not rated) and Ag Growth (TSX:AFN.UN, Hold), although with no ethanol trade restrictions between Canada and the US, it is probably more prudent to look at the whole North American market.

The London Accord

Client input required?

The London Accord is a co-operative research programme that aims to provide investors with more information on making investments that address climate change. It is sponsored by the City of London and BP, and supported by Bank Sarasin, Canaccord Adams, Credit Suisse, HSBC, Morgan Stanley and Société Générale.

The plan is to produce 6-12 research papers this year, detailing techniques that make it easier to bring climate change into account, as there is still a lack of consensus in the market. Canaccord Adams is producing a report on renewable energy (excluding solar) and **if any clients have particular questions that they believe the existing research does not address**, please contact Mark Thompson.

BIOFUELS

Over the last few months, a long position in vegetable oil/corn and a short position in biofuel would have done very well. Our previously highlighted concerns over biofuels seem to have played out and the 'spark spread' between vegetable and mineral oils has turned negative. Adding to the woes were also some misdirected policy decisions.

Europe to miss its targets?

Verbio (VBK GR, Not rated), one of the leading German biofuel producers, saw its shares halve after a downbeat trading statement as it warned that business would not improve before 2008. The setback impacts the entire sector as Verbio said that its bioethanol business had been hit by high feedstock prices, cheap ethanol from Brazil and by "very hesitant fulfillment of the mandatory blending rules" in Germany, where according to Verbio this is not being achieved by fuel suppliers. Verbio and its main competitor apparently have the bioethanol capacity in place to supply the requirement, but not much more than half that capacity is currently being demanded. If Verbio's analysis is right, fuel suppliers in Germany will have to increase sharply their mix of ethanol in the months ahead – or face a fine from the Federal Government. In our view, excess gasoline refining capacity in Europe was always going to make ethanol a more difficult proposition than biodiesel, where insufficient mineral diesel capacity exists.

Biodiesel: production up, price down

Global production of biodiesel was 5.4 million tonnes in 2006, up 80% from 3.0 million tones. FO Licht expects 2007 production to reach 7.9 million tonnes, which equates to an annual growth rate of 46%. Much of last year's growth was due to relatively low feedstock costs and strong product prices, however 2007 is likely to see these reverse.

European biodiesel production in 2006 led the world, converting rapeseed, sunflower and other oilseeds into 3.96 million tonnes of fuel, a 50% increase on 2005. In 2007, FO Licht forecasts European biodiesel production of 4.72 million tonnes, up 19% year-on-year. In 2006 Germany was by far the largest biodiesel producer in the EU, increasing output 45% to ~2.2 million tonnes from 1.5 million tonnes the year before.

However, Europe's biodiesel industry is also running well below capacity, despite high-level political commitment, as several key countries including Britain, Italy and Spain have been slow to implement promises to increase biofuel use, while the largest market – Germany – has seen biodiesel sales fall dramatically as Berlin started taxing biofuel. According to the VDB, sales this year are 30-40% down on December 2006.

Germany's production capacity doubled since 2005 to just over four million tpa at present and industry forecasts suggest it will reach 4.8 million tpa by the end of the year. Germany introduced compulsory blending of biodiesel will fossil fuels from January 2007 but this only generates demand for ~1.5 million tpa.

Germany's government said that it could not afford the loss of revenue as drivers switched from heavily taxed fossil diesel. As a result they introduced a 9¢/litre tax on biodiesel last August, saying this would rise in automatic stages to match the 45¢/litre tax on fossil diesel by 2012. Initially, high fossil fuel prices hid the tax, but falling oil prices have now removed the incentive to buy biodiesel.

Sales of B-100 in Germany fell 8% year-on-year in 2006 to 476,000 tonnes and the industry expects this and high feed stock costs to impact 2007 production. However,

many plants are already under construction and these are likely to add a further 600,000-700,000 tonnes in 2007.

Canadian biodiesel has developed slowly, despite Canada being the world's largest producer of canola (a low erucic acid version of oilseed rape) that is widely used as a biodiesel feedstock, due to a lack of government incentives. Last year, the government said it would require 2% renewable fuel content in diesel and heating oil by 2012, which could create demand for ~600 million litres of biodiesel. Canada is projected to produce 95 million litres of biodiesel in the 2006-07 marketing year (source: Canadian Government). The recent budget included C$2 billion over seven years to boost ethanol and biodiesel capacity, mainly through a 20¢/litre production incentive. However, after three years, those incentives could be clawed back if producers achieved more than a 20% rate of return. While the mechanism remains unclear, we believe comments about claw backs or rate caps are likely to discourage growth, as the industry applies a greater political risk premium.

US biodiesel growth looks likely to be strong in 2007, with 105 plants on line and 77 more under construction, meaning that production capacity could potentially reach 2.5 million tonnes at the year end, compared to 0.75 million tonnes in 2006.

UK biodiesel producers are also having problems as Biofuels Corp announced that unfavourable market conditions had caused it to restrict production to 25% of capacity in the first couple of months of the year and output would remain low for the immediate future. D1 Oils has also said it was operating below capacity, as it could not yet make the switch from edible oil feed stocks to jatropha.

It is clear that if there is no legislative support on taxation or binding targets there is no real market for biofuels, unless mineral oil prices increase substantially. However, we are unconvinced that the government should change its incentive policy each time the spread between vegetable and mineral oil moves against the industry. We prefer regulatory consistency and leave it for the industry to negotiate more appropriate feedstock agreements. We believe the UK's RTFO that is due to start in April 2008 (it requires biofuels to make up at least 2.5% of oil company sales) should provide the necessary lift for the most competitive producers.

French biofuel demand may grow

France looks likely to raise the maximum level of biodiesel that can be blended with mineral diesel within a few months, according to the farm ministry. It is considering lifting the blending ceiling to 7%, in order to meet the EU's 5.75% target. France is Europe's second largest biodiesel producer and wants biofuels to form 5.75% of the calorific value of all fuels sold by the end of next year and 7% in 2010. Unsurprisingly, the biofuel industry has welcomed the target, but is concerned over current EU legislation that limits the volume of directly blended biofuel to 5% by volume. As all biofuels have a lower calorific value than fossil fuels on a volume basis, at least 6.6% of fuel will need to come from biofuel.

It appears that France has notified the EU of its intention to raise the maximum blending level of biofuels and suggested raising the level to 10%. Apparently the EU was "neutral to unfavourable" for biodiesel and strongly unfavourable for ethanol, due to apparent difficulties with compatibility with existing cars. As a result France has focused on biodiesel and suggested raising the blending level from five to seven percent instead, with a possible announcement before the upcoming elections. In France, diesel is

routinely blended at 4% by volume, approximately 70% of French cars run on diesel and France imposes some of the lowest duty rates in Europe on diesel fuel.

Cellulosic ethanol attracts more support

The US DoE intends to invest ~US$385 million in six cellulosic ethanol projects over the next four years. If all are completed, the projects should produce 492 million litres of ethanol. The DOE believes that the financial support will assist in meeting the President's goal of making cellulosic ethanol cost competitive by 2012, and this forms part of the President's 20 in 10 initiative that aims to reduce US gasoline usage by 20% in the next 10-years by:

- increasing the supply of renewable and alternative fuels by setting a mandatory fuels standard to require 132 billion litres of renewable and alternative fuels by 2017 (~five times the existing 2012 target);
- reforming and modernising corporate average fuel economy standards for cars and extending the current light truck rule.

The DOE hopes to show that cellulosic ethanol can be commercialised in spite of its high start-up costs by reducing early-stage commercialisation risk. Six are due to receive financial backing:

- Abengoa Bioenergy Biomass of Kansas – US$76 million;
- Alico, Florida – US$33 million;
- BlueFire Ethanol, California – US$40 million;
- Broin Companies, South Dakota – US$80 million;
- Iogen Biorefinery Partners, Virginia – US$80 million; and
- Range Fuels, Colorado – US$76 million.

Out of corn?

It seems unlikely that the US will produce sufficient domestic corn to meet the 35 billion gallon target for renewable fuels by 2017. This is hardly surprising, given that US farmers produced 10.5 billion bushels of corn last year versus the record of 11.8 billion two years previously. The US DoA has earmarked 2.15 billion bushels of the 2006 crop to be converted into ethanol, which should halve corn stocks to 752 million bushels by the year end.

US ethanol production in 2006 was 5.2 billion gallons and given ideal growing conditions and expanded corn acreage, a maximum of ~15 billion gallons of ethanol could be produced from corn alone. To produce 35 billion gallons of corn ethanol needs ~12.5 billion bushels of corn, with all the demand for exports and cattle feed on top. When the target was announced, corn prices fell nearly 2% at the CBOT, as the market recognised that the ethanol story had moved beyond corn. Indeed, the President plans to expand the RFS to become an 'Alternative Fuels Standard', covering corn ethanol, cellulosic ethanol, biodiesel, methanol, butanol, hydrogen and other alternative fuels.

Production of ethanol from corn in the US will double by 2008 if 150 proposed ethanol plants are built, but a continued reliance on corn to meet ethanol demands could be difficult. Projections from the US DoA suggest that demand for ethanol may divert corn from export markets, and up to half of currently exported midwest corn could be

redirected to ethanol plants if only one quarter of currently-planned ethanol plants come on-line. Government projections do not consider proposed ethanol plants, resulting in likely underestimations of ethanol's impact on corn markets. However, we believe improved corn yields will offset some of this impact, as might GMO approaches to optimising corn for ethanol production.

The US has 100 active ethanol plants which can produce five billion gallons a year, and the additional 58 plants under construction or expanding could increase capacity to nine billion gallons. That level would surpass the Renewable Fuels Standard requirement of 7.5 billion gallons by 2012 ahead of schedule, displace 15% of gasoline use and the proposed 150 plants would double US capacity by 2008 if they are built. The Renewable Fuels Standard certainly provided impetus, but the rapid rise in fossil fuel prices, the phase-out of gasoline additive MTBE and subsidies for ethanol production have played a significant role on the rapid expansion of ethanol production.

The US may need to import more ethanol, according to the US Energy Secretary in Davos. He does not foresee a subsidy of 51¢ a gallon to farmers remaining in place beyond 2010 or an import tariff of 54¢ a gallon on ethanol beyond 2008, however we cannot realistically see this being debated this side of the presidential election, given the farming lobby's power. Longer-term, this should primarily help the large ethanol producers in Brazil, such as Cosan (CSAN3 BR, Not rated).

Moving ethanol towards a global commodity

One of the obstacles to ethanol becoming a fully fledged world commodity is that Brazil is the only supplier of scale on the world market, and countries are wary of mandating ethanol blends in transport fuels without other sources of supply. However, the recent US Presidential visit to Brazil means that the world's two leading ethanol producers, accounting for 70% of global production, are now pushing ethanol closer to being traded as an international commodity by setting standardised contracts and norms for exports of the fuel.

US AT AN INFLEXION POINT?

In our view, the US hit an inflexion point for environmental investing this quarter, with the State of the Union speech, the Supreme Court defining CO_2 as a pollutant and new regulations on climate change receiving bipartisan support in Congress.

Energy security majored heavily in the State of the Union speech, with a commitment to continue changing the way America generates power, by even greater use of clean coal technology, solar and wind energy, and 'clean' nuclear power. Further research on batteries for plug-in and hybrid vehicles, expanding the use of clean diesel vehicles and biodiesel, as well as investing in new methods of producing ethanol from wood chips to grasses, to agricultural wastes also featured. The president hopes to reduce gasoline usage by 20% in the next 10 years, by increasing the supply of alternative fuels, by setting a mandatory fuel standard to require 35 billion gallons of renewable and alternative fuels in 2017 - nearly five times the current target – by modernising fuel economy standards for cars and conserve up to 8.5 billion gallons of gasoline by 2017. This is significant, as it envisages the first major changes to US vehicle fuel economy standards in decades, but the cuts are relatively modest, at an annual average of 4% for new cars from model year 2010. Noticeably, the President talked about helping the US be a "better steward of the environment and help it confront the serious challenge of global

climate change". We believe this is significant as **the Whitehouse is now treating climate change as a fact.**

Overall, we think the policies are likely to be positive for all environmental technology stocks, although the speech lacked some of the breadth of ambition seen in previous years. Lots of technologies were mentioned, although several pragmatic initiatives were included, such as increasing CAF standards. As widely expected, ethanol initiatives were highlighted given the rapidly approaching elections. However, we think the Whitehouse has missed the change in mood, as the public, the states, and many, many members of Congress are interested in a comprehensive approach to climate change with mandatory requirements for all sources.

CO_2 is a pollutant – US Supreme Court

In our view, one of the most profound environmental cases was settled just after the quarter ended, when the US Supreme Court ruled that CO_2 is a pollutant. This means that the US government has a legal duty, under the 1970 Clean Air Act, to restrict greenhouse gas (GHG) emissions.

Twelve states and 13 campaign groups brought the case against the US Environmental Protection Agency (EPA) claiming that CO_2 should be defined as a pollutant and therefore subject to laws regulating emissions. In a tight 5-4 ruling, the Court said the EPA offered "no reasoned explanation" for refusing to regulate CO_2 and other harmful gas emissions from cars, although the EPA had argued that the Act did not give it the powers to limit CO_2, because it was not deemed a pollutant.

The ruling says that, unless it can be shown that CO_2 is not involved in global warming, the EPA should regulate it. Given the recent IPCC report on man-made pollution being a "very likely" cause of global warming (i.e. probability greater than 90%), we cannot see the EPA even trying to make this case, although further judicial wriggling still seems probable.

US to cap and trade

Senator Barbara Boxer, California Democrat and chairman of the committee with broad jurisdiction over climate change issues, has called for aggressive caps on US greenhouse gas emissions in a Reuters interview. Senator Boxer believes mandatory caps are essential, but recognises this is not the only tactic needed. Boxer said that any climate change legislation that emerges from her committee will have bipartisan support, and that the White House and Senate Republicans will oppose it at their peril. Senator Boxer believes that solving global warming will be one of the key issues of the 2008 election, and there is variety of legislation in the offing, including a proposal by six US senators, including potential 2008 presidential contenders from both major parties that would cut emissions to one-third of 2000 levels by 2050.

Companies that we cover that we believe could benefit from these changes include: Badger Meter (BMI US, Buy), ESCO Technologies (ESE US, Buy), Itron (ITRI US, Buy), Protonex (PTX LN Buy), ADA-ES (ADES US, Buy), Fuel Tech (FTEK US, Buy), Fuel System Solutions (FSYS US, Buy), Diversa (DVSA US, Buy), SunOpta (STKL US, Buy), FuelCell Energy (FCEL US, Buy), Plug Power (PLUG US, Hold), Quantum Fuel Systems (QTWW US, Buy) and Distributed Energy Systems (DESC US, Buy).

RECYCLING - *where there's muck there's brass*

We believe the recycling industry offers a compelling investment case, as despite its vast size – sales exceed US$250 billion annually in the US alone – the key investment themes have been largely undiscovered by investors. In fact, we see the recycling industry as being at a unique point, benefiting from the confluence of several positive dynamics. These include high prices for energy and metals, rising costs to extract limited natural resources, and growing concerns over environmental pollution. Taken together, these trends provide an important growth catalyst for the industry and should help well-positioned companies capitalize on opportunities within their particular market segment.

Recycling Primer

Starting as a fledgling environmental movement in the 1960s, the recycling industry has grown to become a significant part of the global economy. Indeed, the editor of Recycling Resource magazine has stated that:

> *". . . without recycling, given current virgin raw material supplies, we could not print the daily newspaper, build a car, or ship a product in a cardboard box. Recycling is not some feel-good activity; it is one of the backbones of global economic development. Recycling is a key ingredient to industrial growth and stability."*

We not only agree with this assessment, but argue that a confluence of events and trends in the world today are creating a "perfect storm" scenario for the recycling industry. For the first time, all of these important dynamics have come together simultaneously, thus providing a unique and powerful growth catalyst for the industry, in our view. As we look at the recycling industry today, we see the following as the key points supporting our "perfect storm" investment thesis:

- **Recycling today makes economic sense**. Although recycling has not always been a profitable enterprise, the reality is that recycling today is not only economically viable, but in many cases highly profitable. For certain materials, particularly metals such as steel and aluminum, recycling is always less costly than mining, processing, and producing virgin metals. As global demand for raw materials continues to increase and costs for producing virgin materials are expected to remain at relatively high levels, we conclude that the economics of recycling should become even more compelling, driving recycling rates higher for most materials over time.
- **High energy prices** have driven up the cost of producing materials and finished products from virgin materials, as energy is one of the most significant costs in the production of non-ferrous metals, accounting for 20-30% of the cost of new aluminum or zinc. Consequently, in today's high-priced energy environment, the value proposition of recycling has increased significantly since recycling typically requires just a fraction of the energy used to produce goods from virgin sources. We conclude that high energy prices will not only encourage incremental recycling, but also likely keep metal prices (both new and scrap) above historical norms.
- **Sharp increases in metals prices**, fueled in part by continued strong demand from China and India, have created a powerful, direct economic incentive to recycle all types of metals. Although metals prices are certain to fluctuate going forward, we conclude that solid demand trends - particularly from emerging economies - are likely to keep metal prices at relatively high levels and therefore stimulate

incremental recycling. Importantly, we note that China, which accounts for approximately 30% of global steel consumption, is projected to experience an 18% CAGR for imported steel scrap from 2004-2009, according to industry sources.

- **Significant concerns over global warming should lead to more recycling.** Industrial manufacturing and landfill waste are two of the major sources of GHG emissions. Recycling not only lowers the energy intensity of manufacturing, but also (by definition) reduces the amount of waste in landfills. Major industry participants, such as Alcoa in the aluminum industry, are taking active steps to reduce GHG, including an initiative to make aluminum production greenhouse gas neutral by 2017.
- There is growing recognition that **the world's natural resources are scarce, finite, and costly to acquire.** As a result, conservation of these resources is now widely considered a critical goal. Indeed, recycling certain metals - namely copper and zinc - is absolutely essential today as some research indicates that rising demand could exhaust completely the world's supply of these precious metals within the next several decades. Given that most of the "easy" (i.e., inexpensive) extraction of resources in the world has already been done, we conclude that the high and growing costs of mining virgin natural resources create an important catalyst for increased recycling.
- **Rising concerns over environmental pollution,** particularly from discarded electronics ("e-waste") that can be highly toxic, are leading to new policies. Governments are beginning to address the issue with various legislative initiatives that mandate recycling of electronic products, including computers, monitors, cell phones, and televisions. The EU has already passed two significant directives that not only require electronics waste recycling but also require environmentally-friendly product designs in order to minimise e-waste. Based on current trends, we conclude that the next major recycling "movement" will be electronics recycling, or "e-cycling."

Although recycling alone can't solve all the world's environmental issues, it is one of the most pragmatic solutions available now to help conserve resources, reduce production costs, lower GHG emissions, and lessen the world's total energy consumption. And while these are not new issues, the reality is that recycling in years past didn't always make economic sense. Today, however, the recycling industry is not only economically viable, but profitable thanks to significant gains in recycling technology that have made the process of recycling substantially more efficient and cost-effective.

Against this backdrop of high energy and metals prices and increased concerns over the environment, we argue that the recycling industry is at a unique point in its history, benefiting from an unprecedented number of positive dynamics and growth catalysts. In such an environment, we conclude that the economics of recycling have become compelling for a wide range of companies, creating worthwhile investment opportunities within this sector. Companies that we currently cover that are directly exposed to the recycling and waste reduction markets include: Interface Inc. (IFSIA, Buy); LKQ Corp. (LKQX, Buy); Metalico Inc. (MEA, Buy); Metal Management Inc. (MM, Buy); Newalta (NALu CN, Hold); Schnitzer Steel Ind. (SCHN,Hold); TEG Group (TEG LN, Buy); and Trex Company (TWP, Hold).

Want to learn more?

To help introduce the industry and investment community to the themes and opportunities that we have identified, we are hosting a **recycling industry conference**. This features more than 15 public and private companies that participate in one of five key growth segments within the recycling industry: scrap metal, electronics recycling ("e-cycling"), green building, "value-added" recycling, and bioenergy. The conference takes place at the Peninsula Chicago Hotel, Chicago on the 19 April 2007 and clients interested in attending should contact John Quealy, Eric Prouty or their sales representative.

CARBON CAPTURE AND STORAGE TURNS RESPECTABLE?

Carbon capture and storage (CCS) is a process that compresses and buries GHG emissions, mainly from power plants. It is potentially very expensive, but it is gaining momentum as a solution to global warming due to its compatibility with existing infrastructure.

We have previously touched on several technologies available to deliver 'clean' coal combustion and CCS takes this one step further. We believe this is an attractive option for many groups, as it potentially delivers a substantial reduction in GHG emissions. While we have concerns over geological storage, we believe CCS provides an attractive interim step towards genuinely clean energy.

Norway intends to establish a state-owned company that will manage the government's interests in CCS projects. At present, this covers a project planned for Statoil's Mongstad refinery on the west coast and one planned for a gas-fired power plant due to be built at the Kaarstoe gas-processing plant north of Stavanger.

The Norwegian government hopes to contribute to the technological development and wider use of CCS, which is still at an (early) development stage. CCS typically involves removing CO_2 from the exhaust stream and burying it under ground. Statoil has been burying CO_2 beneath the offshore Sleipner gas field since 1996. Norway is planning to build gas-fired power generation units to diversify from its near total dependence on hydropower, but the government has said new gas-fired plants should adopt CCS.

Last October, the Norwegian government and Statoil agreed to establish what they call the world's largest full-scale CCS project in connection with the planned construction of a CHP plant at Mongstad. The government will initially own 80% and Statoil 20% of that project, although the government hopes to bring in more industrial partners and decrease its pro-rata ownership as a result.

The Mongstad CCS facility will capture CO_2 emissions from the power plant, which will supply electricity to the refinery and the grid from 2010. It will start with partial CO_2 capture, with full capture expected to be in place by late 2014.

AEP and Alstom are also planning to launch a large-scale CCS demonstration project with a coal-fired plant, beginning with a pilot in 2008 and commercial scale by 2011. The initial phase at AEP's 30MW Mountaineer Plant in New Haven, West Virginia should validate Alstom's post-combustion capture technology using a chilled ammonia process and the second phase should provide a commercial scale system at the 450MW Northeastern coal plant in Oklahoma that captures ~1.5 million tonnes of CO_2/year and reuses it for EOR.

A recently released MIT report on clean coal concluded that large-scale carbon sequestration provided an effective method of curbing emissions, but cautioned that an integrated coal conversion and CCS capability is an enormous system engineering and integration challenge. The research also emphasized that large scale demonstrations tested in a variety of geologies will be needed before governments, utilities or consumers will allow its widespread use. Other nations are also looking at sequestration, as Australia launched an A$1.5 billion clean coal program that includes sequestration, while Canada is researching microalgae systems.

The costs are substantial and AEP expects its pilot plant to cost US$50-70 million, with the Northeasstern plant costing US$250-300 million for the CO_2 capture and compression, plus US$225-300 million for other equipment. However, assuming a simple 10-year cash on cash payback target, this implies a CO_2 value of US$40/tonne.

A number of companies could benefit from the move to CCS, although in our view, the two closest pure plays are HTC Pure Energy (HTC CN, Not rated) and QuestAir (QAR CN/LN, Buy). We also expect the broader emission catalyst providers to benefit, such as Catalytic Solutions (CTS LN, Buy), Johnson Matthey (JMAT LN, Hold) and Umicore (UMI BB, Not rated).

Figure 3: Proposed CCS projects – as at October 2006

Project	Location	MW	Year	Comments
ZeroGen	Australia	100	2010	Involves IGCC power plant technology with CCS in a saline aquifer. Announced in 2006 and hopes to be the first commercial scale 'zero emissions' coal-fired power plant anywhere in the world.
Progressive	UK	800	2011	Uses IGCC and energy capture, with 5Mt of CO_2 per year to be used for EOR in the North Sea. The project should be able to operate on coal or petroleum coke with the possibility of including biomass.
SaskPower	Canada	300	2012	Uses low-sulphur lignite coal with post-combustion capture or oxyfuel technology. Expects to use the captured CO_2 for local EOR.
FutureGen	US	275	2012	Uses coal gasification to produce electricity and hydrogen as well as provide a test bed for developing future technologies. The project is a partnership between the US DoE and industry.
PowerFuels	UK	900	Post-2012	An IGCC CCS project to be located at the Hatfield Colliery, which is due to re-open in 2007 after being closed for more than two years. The colliery is also owned and will be operated by PowerFuels.
E.On	UK	450	Post-2012	An IGCC project will be co-located with their existing gas-fired power plant in Killingholme. The first phase of the project would be the construction of the power plant with CCS being added in the second phase.
RWE	Germany	400-450	2014	Uses IGCC technology and separates hydrogen after gas treatment and cleaning to use directly as an energy source or in synthetic fuel production.
RWE nPower	UK	1000	2016	Investigates supercritical technology combined with post combustion CCS. This is the largest of all the proposed CCS projects to date.
Vattenfall	Germany	250	2020	Due to finish a 30MW CCS pilot plant in 2008 to provide a platform for the development of a commercial scale plant by 2020.

Source: World Coal Organisation

RESEARCH UNIVERSE

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							12-mo Target		52-wk ($)		Shares (M)		Mkt	EPS ($)			P/E (X)			Bk V	P/	Cash	LTD	
Company	Symb	Ex	Analyst	Rating	$	P($)	P($)	Rtn(%)	Hi	Lo	Out	Float	Cap ($M)	2006	2007E	2008E	2006	2007E	2008E	($)	BkV	($M)	($M)	FYE
ADA-ES	ADES	Q	Quealy	BUY	US	$14.00	$20.00	42.9%	$25.24	$10.95	5.7	5.1	$79.8	$0.07	$0.10	$0.20	NA	NA	70.0x	$4.72	3.0x	$17.4	-	DEC
Badger Meter	BMI	A	Quealy	BUY	US	26.86	33.00	22.9	33.20	20.55	14.5	12.4	389.5	0.96	1.20	1.45	28.0	22.4	18.5	5.07	5.3	3.0	5.9	DEC
Basin Water	BWTR	Q	Quealy	HOLD	US	7.33	7.00	(4.5)	17.50	6.03	19.6	14.4	143.7	(0.10)	0.20	NA	NA	36.7x	NA	4.45	1.6x	59.7	-	DEC
Bennett Environmental	BEV	T	Elford	HOLD	C	0.78	0.70	(10.3)	5.28	0.61	27.0	20.3	21.1	(0.48)	NA	NA	NA	NA	NA	2.27	0.3	3.2	0.7	DEC
BioTeQ Environmental Tech	BQE	T-V	Elford	SPEC BUY	C	2.25	2.75	22.2	2.81	1.00	59.8	46.8	134.6	(0.02)	(0.02)	0.12	NA	NA	18.8	0.54	4.2	27.2	-	DEC
Brush Engineered Materials	BW	N	Prouty	BUY	US	48.55	UR	UR	50.20	17.67	20.4	20.0	990.4	1.41	UR	UR	34.4	UR	UR	14.31	3.1	15.6	20.3	DEC
Canadian Hydro	KHD	T	Thompson	BUY	C	6.22	6.59	5.9	6.70	4.60	132.0	97.2	755.0	0.07	0.10	0.09	88.9	62.2	NA	337.10	0.0	61.7	334.9	DEC
Carmanah Technologies	CMH	T	Elford	HOLD	C	2.98	3.00	0.7	3.90	2.55	42.5	38.4	126.7	0.00	0.02	0.04	NA	149.0	74.5	1.09	2.7	2.3	-	DEC
Catalytic Solutions	CTS	AIM	Thompson	BUY	GBp	124.50	176.00	41.4	135.50	121.50	63.9	NA	78.0	NA	(10.00)	(1.80)	NA	NA	NA	1.95	63.9	11.7	11.8	DEC
Clean Air Power	CAP	L	Thompson	BUY	GBp	35.00	110.00	214.3	76.00	50.00	26.9	26.9	18.4	(14.70)	(8.20)	(3.50)	NA	NA	NA	88.18	0.4	4.9	-	DEC
Distributed Energy Systems	DESC	Q	Quealy	BUY	US	1.58	3.00	89.9	7.24	1.34	38.6	36.2	61.0	(1.37)	(0.65)	NA	NA	NA	NA	1.19	1.3	18.2	8.2	DEC
Diversa	DVSA	Q	Quealy	BUY	US	7.40	UR	UR	12.43	6.09	46.8	37.1	346.3	UR	UR	UR	UR	UR	UR	0.89	8.3	51.9	3.7	DEC
ESCO Technologies	ESE	N	Quealy	BUY	US	45.57	50.00	9.7	58.42	40.67	25.9	23.9	1,180.3	1.07	1.50	2.25	42.6	30.4	20.3	14.58	3.1	28.0	-	SEP
Fuel Systems Solutions	FSYS	Q	Quealy	BUY	US	17.99	25.00	39.0	25.11	11.08	15.4	7.9	277.0	0.70	0.99	NA	25.7	18.2	NA	7.21	2.5	13.7	7.1	DEC
FuelCell Energy	FCEL	Q	Quealy	BUY	US	8.33	10.00	20.0	15.00	5.84	53.2	54.4	443.2	(1.65)	(1.62)	(1.55)	NA	NA	NA	1.56	5.4	93.4	60.5	OCT
Fuel-Tech NV	FTEK	Q	Quealy	BUY	US	24.84	30.00	20.8	29.68	10.07	24.5	16.2	608.6	0.28	0.44	0.65	88.7	56.5	38.2	2.16	11.5	32.4	-	DEC
Futura Medical plc	FUM	L	Thompson	BUY	GBp	72.00	121.00	68.1	74.00	52.00	48.9	52.6	35.4	(3.80)	(1.70)	NA	NA	NA	NA	40.46	1.8	3.5	-	DEC
Headwaters	HW	N	Quealy	HOLD	US	22.10	24.00	8.6	40.15	20.54	48.4	40.4	1,069.6	2.18	1.82	1.25	10.1	12.1	17.7	19.49	1.1	54.7	585.0	SEP
Insituform Technologies	INSU	Q	Quealy	SELL	US	25.90	UR	UR	29.81	18.56	27.4	27.0	709.7	0.90	UR	UR	28.8	UR	UR	12.43	2.1	96.4	65.0	DEC
Interface	IFSIA	Q	Prouty	BUY	US	16.01	22.00	37.4	17.10	9.89	61.0	53.8	976.6	0.64	0.96	1.20	25.0	16.7	13.3	4.49	3.6	110.2	411.4	DEC
Itron	ITRI	Q	Quealy	BUY	US	65.37	77.00	17.8	73.72	44.76	30.8	25.1	2,013.4	2.40	2.90	3.50	27.2	22.5	18.7	15.23	4.3	396.0	469.3	DEC
Johnson Matthey plc	JMAT	L	Thompson	HOLD	GBp	1,582.00	1,401.00	(11.4)	1,646.00	1,399.00	219.0	206.3	3,376.3	30.10*	90.10	81.40	52.6	17.6	19.4	4.77	331.5	220.0	703.0	MAR
LKQ Corporation	LKQX	Q	Prouty	BUY	US	21.51	28.00	30.2	25.49	17.84	56.2	45.8	1,208.9	0.79	0.97	1.15	27.2	22.2	18.7	7.54	2.9	4.0	92.0	DEC

*2006 Actual results

Source: Datastream, Canaccord Adams estimates. Prices as at COB 28 March 2007.

A copy of Canaccord Adams' ROS index is available on request.

Company	Symb	Ex	Analyst	Rating	$	P($)	12-mo Target P($)	12-mo Target Rtn(%)	52-wk ($) Hi	52-wk ($) Lo	Shares (M) Out	Shares (M) Float	Mkt Cap ($M)	EPS ($) 2006	EPS ($) 2007E	EPS ($) 2008E	P/E (X) 2006	P/E (X) 2007E	P/E (X) 2008E	Bk V ($)	P/ Bk V	Cash ($M)	LTD ($M)	FYE
Metal Management	MM	N	Prouty	BUY	US	$45.42	$48.00	5.7%	$46.28	$23.99	26.0	25.7	$1,180.9	$2.38	$3.70	$4.00	19.1x	12.3x	11.4x	$17.69	2.6x	$106.3	$0.2	MAR
Nanophase Technologies	NANX	Q	Prouty	BUY	US	5.73	UR	UR	8.42	5.10	18.3	17.0	105.1	(0.28)	UR	UR	NA	UR	UR	0.83	7.2	8.6	1.4	DEC
Pentair	PNR	N	Quealy	HOLD	US	30.80	33.00	7.1	41.55	25.69	101.6	98.5	3,129.3	1.76	1.92	2.20	17.5	16.0	14.0	16.74	1.8	54.8	721.9	DEC
Protonex	PTX	AIM	Quealy	BUY	GBp	93.00	124.00	33.3	97.38	89.00	43.3	NA	40.3	(0.37)	(0.18)	NA	NA	NA	NA	NA	NA	NA	-	SEP
Pure Technologies Ltd.	PUR	T-V	Elford	BUY	C	2.00	2.15	7.5	2.10	1.12	23.5	15.6	47.0	(0.16)	0.02	0.08	NA	100.0	25.0	0.56	3.6	5.1	-	DEC
Quantum Technologies	QTWW	Q	Quealy	HOLD	US	1.25	2.00	60.0	5.00	1.24	64.9	52.2	81.1	(0.62)	(0.95)	(0.65)	NA	NA	NA	1.41	0.9	12.7	42.0	APR
QuestAir	QAR	T	Thompson	BUY	C	1.35	1.95	44.4	62.00	48.55	52.4	38.5	75.5	(0.20)	(0.14)	(0.12)	NA	NA	NA	390.02	0.2	15.8	533.0	SEP
Schnitzer Steel Industries	SCHN	Q	Prouty	HOLD	US	39.06	NA	NA	44.00	30.05	30.9	22.7	1,208.0	4.58	2.95	3.72	8.5	13.2	10.5	24.42	1.6	24.8	142.8	AUG
Stantec	STN	T	Elford	BUY	C	31.75	33.00	3.9	33.00	18.50	45.1	41.1	1,431.9	1.31	1.45	1.75	24.2	21.9	18.1	9.09	3.5	28.4	12.0	DEC
SubSea Resources plc	SUB	L	Thompson	HOLD	GBp	8.03	22.00	174.0	15.85	4.50	112.0	170.9	24.2	(2.80)	(6.00)	4.50	NA	NA	1.8	0.09	87.4	3.6	0.8	MAR
TEG Environmental	TEG	L	Thompson	BUY	GBp	136.15	168.00	23.4	133.00	70.10	38.0	36.6	43.8	(3.67)	(0.15)	8.31	NA	NA	16.4	9.80	13.9	5.5	4.8	DEC
Telvent GIT, S.A.	TLVT	Q	Quealy	BUY	US	19.70	21.00	6.6	19.70	10.65	29.2	9.7	575.2	1.02	1.26	1.50	19.3	15.6	13.1	7.98	2.5	93.1	22.8	DEC
Tetra Tech	TTEK	Q	Quealy	HOLD	US	18.11	20.00	10.4	20.37	15.18	58.2	57.8	1,054.0	0.67	0.75	0.88	27.0	24.1	20.6	6.33	2.9	31.4	58.5	SEP
Trex	TWP	N	Prouty	HOLD	US	21.90	NA	NA	32.50	20.25	14.8	11.9	324.1	0.15	0.65	1.01	NA	33.7	21.7	11.36	1.9	0.7	52.1	DEC
TSO3	TOS	T	Elford	SPEC BUY	C	2.30	5.50	139.1	3.63	2.06	46.1	35.5	106.0	(0.20)	(0.17)	(0.04)	NA	NA	NA	0.75	3.1	27.0	-	DEC
Victrex plc	VCT	L	Thompson	BUY	GBp	792.00	882.00	11.4	842.50	718.00	81.6	78.0	607.4	39.40	41.50	45.50	20.1	19.1	17.4	1,390.33	0.6	6.5	-	SEP
Westport Innovations	WPT	T	Elford	HOLD	C	1.50	1.60	6.7	1.93	0.87	75.3	73.3	113.0	(0.25)	(0.25)	NA	NA	NA	NA	0.06	25.0	19.2	16.7	MAR
WFI industries *	WFI	T	Elford	HOLD	C	22.50	25.00	14.2	26.90	13.76	12.1	8.4	272.3	0.81	0.91	1.17	27.9	24.7	19.2	1.83	12.3	7.6	1.2	DEC

*2006 Actual results
**WFI financial data converted to C$ at current exchange rate of 1.13
Source: Datastream, Canaccord Adams estimates. Prices as at COB 28 March 2007.

A copy of Canaccord Adams' ROS index is available on request.

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Global Stock Ratings
(as of 28 March 2007)

	Coverage Universe		IB Clients
Rating	#	%	%
Buy	301	57.8%	42.2%
Speculative Buy	64	12.3%	71.9%
Hold	129	24.8%	34.1%
Sell	27	5.2%	3.7%
	521	100.0%	

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