



Paper

# Clean Energy Investment and the 'New Competitiveness'

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26 June 2008

*This is a paper based on a presentation to the RBS-HMG UK Low Carbon Economy conference, London, 26 June 2008. At the conference, Gordon Brown, UK Prime Minister, launched the government's Renewable Energy Strategy Consultation. This was an invited 'thought piece' presented at the conference.*

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The topic of clean energy investment should be positioned as a strategic economic, industrial and foreign policy issue for the UK, and other countries.

I will argue that:

- the international context has fundamentally changed. In the last 2-4 years a variety of substantive factors have now aligned to create a unique point to tackle the energy and environmental challenges ahead, particularly climate change;
- creating the conditions where significant capital flows into the clean energy sector is a vital part of capturing this new circumstance – and the role of government policy will be vital;
- part of this debate is considering, today, what kind of society, and what kind of energy economy will be resilient in 2020/2025, in a world facing uncertain, and potentially destabilising global conditions. Fostering an environment now, that enables the next phase of leaders to thrive, is what could be termed the 'new competitiveness'. Put succinctly: 'If you want a competitive economy in 2020, who should you be talking to now?'

### **International Context**

To shed light on why the debate has 'tipped' in the recent past, let's review what might be termed a 'brief history of time' in the climate world, starting 20 years ago:

- in 1988 the first Ministerial level meeting, in Toronto, adopted the so-called 'Toronto target': a 20% cut in global CO2 emissions, by 2005; the Intergovernmental Panel on Climate Change (IPCC) was set up by UN bodies to review the state of knowledge on climate change;
- In 1990, the IPCC's first report was published, collating information on the science, impacts and potential responses to climate change. This stated that for long-lived greenhouse

gases such as carbon dioxide (CO<sub>2</sub>) '*immediate reductions in emissions from human activities of over 60 per cent*' would be required to stabilize their atmospheric concentrations at [1990] levels.

- At the start of the 1990s CO<sub>2</sub> concentrations in the atmosphere were around 355/360ppm.

This impetus gave rise, in 1992, to the UN Framework Convention on Climate Change, which remains the main international framework (with its subsequent Kyoto Protocol) for governments to take collective action on climate change.

Without going into the detail of what held back political action and public attention over the next decade or so, if we fast-forward 14 or 15 years to 2004- 2005 climate change and energy start a dramatic rise up the political and public agenda – so what happened?

- Firstly, CO<sub>2</sub> concentrations steadily rise – and in 2007 stand at around 387ppm<sup>1</sup>, this heralds the likelihood of a series of sustained and destabilising climate-related events occurring – flooding, drought, hurricanes, sea-level rise, and non-linear economic disruptions. Hurricane Katrina and severe regional or national scale disasters are ratcheting up public concern;
- The science debate, dogged by sceptics in the first decade, has been largely laid to rest (the IPCC's fourth major report in 2007, reinforced acceptance that climate change is already occurring and is caused by human activities); the notion of 'climate security' reaches the UN Security Council.
- The economic debate around climate change shifted gear with the report by Sir Nicholas Stern, 2006. This reorientated the debate away from a strategy 'play' to get policy delayed on cost grounds, to where the impact of climate change itself is recognised.

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<sup>1</sup> For context, in the week of this presentation, the veteran US scientist Jim Hansen credited with putting climate change on the US political map, launched a 'campaign' calling for a 350ppm target (ref Financial Times, 23 June, 2008). Dr David King, former scientific advisor to Tony Blair, has indicated that at 450ppmCO<sub>2</sub>e (ie all greenhouse gases in a single 'CO<sub>2</sub> equivalent' figure), that there is less than 50% chance (using a probability distribution function) of staying below the 2 degree temperature rise limit that the EU have adopted (at a conference organised by Reuters, London, 28 May, 2008).

- In 2005, the Kyoto Protocol and its emissions compliance markets – permitting the trading of carbon between nations and companies - entered into force, as did Europe's regional Emissions Trading Scheme (EU ETS). This created both a terminology that business could understand, as well as a shift from the perception of climate policy as a business 'opportunity or threat', to 'opportunity or liability'. This led to new parts of corporate sector actively seeking clarity on, and supporting definitive government action on climate.
- These factors are now being brought to bear in the 'Copenhagen agenda' – referring to the UN Ministerial meeting at the end of 2009, which will crunch the politics and content of a post-2012 climate 'deal'<sup>2</sup>. Note that emissions targets in the range of 25-40% reductions for industrialised countries have been referenced, with the EU advocating a 30% cut in emissions by 2020.

Given the underpinning science, political investment, and corporate shift in focus on this issue, climate change is not an issue that will go away. The sheer scale and near term requirement for action (signalled by science, and reinforced by the EU goals for example), heralds profound changes in economic activity.

However, it wasn't just the fact the climate change debate changed momentum, but the changes emerging in broader fundamentals around 2004 - 2005:

- oil price had started a steady rise in 2004 and hitting both the IEA and IMF (Monetary and Financial Policy Committee) agendas – in terms of the economic consequences for importing countries, (including the very poorest). Oil prices, and with it natural gas, growth continued to unprecedented levels, with few expecting a sustained fall below \$100 per barrel at mid-2008;
- China (and India) economic growth hit the radar screen – bringing with it the sense that energy/materials demand was going to rise and rise and rise;

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<sup>2</sup> The first commitment period of the Kyoto Protocol, which creates binding targets on industrialised countries, runs from 2008 to 2012; the matter of further commitments under 'Kyoto' is under negotiation, alongside different forms of action or commitment that could apply globally.

- other global energy security issues emerged – the question of Russia/Gazprom tactics around oil and gas exports and pricing: signalled the rising tension in energy geopolitics, alongside the Middle East, contributing to concern over energy imports reliance;
- for a mix of the above reasons, The City, and Wall Street/Silicon Valley Venture firms started to get seriously interested in clean energy ('clean tech') – particularly renewable energy.

It was this *confluence* of international factors – unable to predict – that has created the current powerful drivers on both the climate and energy front. Although each one of these may change complexion in the near term, the direction and significance of these trends are all long-term.

The financial crisis escalating during 2008 has been game-changing in a number of ways. It starkly demonstrates, like the expected impacts of climate change itself, how fast-moving events in a global, complex, inter-related system can create sudden profound changes to the whole, with unforeseen 'feedback loops' exacerbating the impact.

Governmental reaction was eventually swift and profound: nationalisation of financial institutions, multi-billion pound injection of capital into the banking system; guarantees of public savings; the re-emergence of the emergency function of IMF (without conditions) in an emergency role for entire economies.

For climate change policy, two issues arise from this: this rather radical redefinition of the role of government in the market place, and the role of public policy in protecting public interest, feed through into a more active approach to government regulation in climate and energy. The terminology of 'free market' *versus* 'command and control' has falsely polarised the role of government: generally being used to suggest any regulation undermined market efficiency, rather than shaping its ability to deliver on overlapping objectives.

Secondly, and pertinent to this paper, is whether the solutions to climate change, particularly in the energy sector such as renewable energy, are seen as lower risk, longer term, more stable options for investment.

## Renewable Energy Investment

Renewable energy is the key topic at this conference, with the Prime Minister's launch of the UK government's renewable energy consultation earlier in the day. The interest from mainstream financiers and investors in the 2004-2005 period heralded the start of exponential investment growth in the sector, as the graph, from New Energy Finance, illustrates<sup>3</sup>. This provides probably the most accurate deal-by-deal assessment of global sector investment, finding:

- dramatic, exponential year on year rise in investment from \$33.4 billion in 2004 to 2007 where it reach \$148.4 billion globally;
- A fast rise from a small base, hides the fact that renewable energy and biofuels asset financing in 2007, approached 10% of total global energy infrastructure financing (power, oil & gas). This is kit in ground:
- This means that the energy sector is already starting a process of transformation, the often quoted figures indicating renewable energy is only a small part of total global energy supply reflects past investment trends, these new investment statistics reflect a substantive change is now occurring in the shape of the energy profile to come.
- Energy efficiency investment is small but growing rapidly, calculated by New Energy Finance at \$1.8 billion in 2007, reflecting a 78% increase over 2006 levels<sup>4</sup>.

This evidence indicates that interest from financiers and investors isn't the constraining factor in growth of the sector. Indeed, exponential growth rates have outpaced even industry expectations: in 2008 two of the major RE business sectors – wind and solar - revised their forward projections upwards, compared to projections made only two years previously.

- The CEO of Good Energies, a leading global investor in renewable energy companies and developers, reported that the solar industry revised its 2010 estimates upwards, in

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<sup>3</sup> See [www.newenergyfinance.com](http://www.newenergyfinance.com); also available in 'Global Trends in Sustainable Energy Investment 2008, Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency', UNEP Sustainable Energy Finance Initiative and New Energy Finance, June 2008. Available from URL [www.sefi.unep.org](http://www.sefi.unep.org)

<sup>4</sup> see above reference.

2008, by about 2GW over its 2006 estimates, to over 12GW by 2010;

- The Global Wind Energy Council also revised its 2012 estimates upwards in 2008, by close to 20GW, compared to its 2006 estimates

The same story exists in China: in 2007 cumulative wind installations exceeded 5 gigawatts (GW) – the goal originally set for 2010 in mid 2006. The goal has now been doubled to 10GW by 2010, and this also is projected to be too modest according to the renewable energy industry association in China – with 20GW expected by 2010, rising to 100GW by 2020.

The international context is indicative of investor interest: at the Renewable Energy Finance Forum in New York [one week prior to the RBS-HMG conference, June 18-19, 2008], the pre-eminent finance sector event for the renewable industry, attended by 650 financiers and investors, some fascinating statistics:

- United States: is the No.1 market for wind installation in 2007, within this, Texas is the lead state, ahead of California (13,000 people attending a Houston wind conference weeks earlier);
- Solar industry: this is now shifting focus into larger utility scale investments; one leading investor highlighted expectations that this is a \$300-500 billion finance opportunity for the 2008-2011 period (reflecting a compound annual growth rate of 51%)
- Managing Directors of five US investment banks (including Citi, Goldman Sachs, Morgan Stanley) sat on the same panel to discuss the renewables sector and carbon issues in the US, noting that a revised due diligence process for carbon is under discussion;
- Biofuels: discussion of 2<sup>nd</sup>, and even 3<sup>rd</sup> generation biofuels was central to assessment of opportunities in that sector
- Venture Capital: is now reflecting the very broad portfolio of options up and down the supply chain of the 'clean tech' sector – now starting to see energy efficiency coming onto the agenda, by definition VC precedes sector maturity;

- New market formers– eg Google: Google.org presented two serious market shaping renewables initiatives: a goal of stimulating 1 GW of new renewables at less than the price of coal (solar thermal, advanced wind, geothermal and transmission & storage); and accelerating the adoption of plug-in electric vehicles, announcing a \$10m request for proposals, from for-profit companies, to generate momentum. October 2008 update: Google joined ranks of T. Boone Pickens and Al Gore in presenting transformative energy plans: launching an ambitious pathway to end oil and coal use for electricity generation in the US, and cut oil in car-use by 38% by 2030. Although this carries a \$4.4 trillion price tag, it generates savings of \$5.4 trillion;
- One financier described the sector as: the 'single largest wealth creation opportunity in world'.

A final point on this conference in New York: it clearly illustrated the absolutely critical connect between the interest of 'high finance' and the role of public policy:

- There was systematic concern that the 'stop-start' nature of the US Federal renewable energy support scheme (the Production , and Investment Tax Credits, PTC and ITC) means US will lose the 'competition' for capital going into this sector – as capital is likely to flow to where the policy and regulatory environment is perceived as more stable and predictable ....
- Andy Karsner, the Bush Administration's lead on Renewable Energy gave a presentation on the 'Success for my Successors', heralding issues for a new Administration to tackle following the November 2008 Presidential election. He emphasised the need for a focus on stable, predictable, and 'disruptive' technological and institutional policy mechanisms.
- October 2008 Update: the US included RE support scheme extensions (both the PTC and ITC, by 1 year and 8 years respectively) as part of the \$700 billion US Treasury capital 'bailout' of Wall St at the start of October, after a sustained cross-sectoral, bi-partisan effort in support of this.



## The Role of Public Policy

*Risk and reward:* From a financing perspective government renewable energy policy, which tends to focus on a variety of types of 'support scheme' designed to improve commercial returns, is part of the 'risk and return' equation that financiers apply to decide whether and where to invest. It is all about getting the right risk-adjusted return at the right level. If that supportive regime is subject to unpredictable change, it becomes a risk. It is worth saying: risk and reward is not the same as cost and benefit.

The question will be: can financiers rely on getting their money back, or the returns investors expect if, for example, there is a change of government, or if external circumstances change or become more politically difficult? If policies keep changing, or if governments appear not to be serious about implementing their goals, then money will go to the projects in countries or regions that offer the right kind of 'risk/reward' ratio, in a regime that is perceived as stable and reliable.

It is not so much that there is a competition for a limited pot of capital between countries – there isn't an upper limit on what will be invested, but that capital will only flow to where overall conditions offer a commercially attractive package, involving a variety of factors. For government policy it is a question of providing the right, stable conditions to access private capital needed for RE plans. This is particularly so in the current constrained financial markets, where there is a significant additional layer of caution over risk within the banking sector.

This then provides the context for considering the domestic situation. How does society see its energy, and arguably industrial, sector evolving in the face of a series of significant global challenges; what kind of commerce, industry, energy will underpin a resilient economy in 2020/2030; what 'slice' of the emerging renewable energy and energy efficiency supply chain is envisaged nationally; and what policy regime is appropriate for achieving these goals. The timing and nature of decisions will be particularly acute given the importance of getting investment into the relevant underlying infrastructure.

## Financial Perspectives on Policy

The Chatham House project I've been running on Renewable Energy has created a forum for asking City financiers just these questions: from a finance perspective – what does policy need to deliver to attract investment? While this has predominantly focused on EU and UK issues to date – given the policy developments underway; an experimental Finance Roundtable was also held in Singapore on the Asian situation; and more to come on emerging markets. From a policy perspective this is really about 'issue identification' – are policymakers tackling the right issues to attract investment?

Understanding the transmission – the '1s and 0s' - between the policy regime and investment decisions, can help get more precision into what policy is trying to achieve, leading to better policy and more deal flow. It also sheds light into the 'bigger picture' global debates over technology pathways and investment.

First, importantly, the City's expertise in carbon-related finance is well recognised, however being a financial centre, there is *also* very strong expertise in RE finance, reflected in RBS a major renewables investor, hosting this conference. From London, capital is being invested across Western and Eastern Europe, with increasing interest in Turkey, some Northern African countries eg Morocco, the Middle East and so on.

This is to recognise that the UK is home to capital which is mobile, and which will go where there is the best risk-adjusted returns. Even in this more cautious environment, deals are actively being done, and 'deal flow' is important – its how money is made. The Ernst & Young 'Renewable energy country attractiveness Indices' for Quarter 1-2, 2008, states:

*"We have seen no slowdown in projects being taken to financial close and providing they are soundly structured, expect this to be the case for the foreseeable future. We are finding that investors and bankers are increasing their due diligence activity in the renewables area. For example with biomass, the availability and sustainability of fuel source is critical."*

The UK will need to attract very significant capital into the home renewable energy market to meet the new ramped up policy goals (15% of final energy

consumption from renewable energy by 2020, up from less than 2% in 2008). Its not just about compliance with energy delivery, but also what piece of the industry supply chain, and the issues raised above. To build a sector bringing lasting jobs and, arguably, participate in an expanding global market, will require the right environment for skills, manufacturing and so on, rapidly veering across into something that looks a lot like industrial policy.

With reference to the policy and regulatory risk, the questions likely to be on financier's mind, include:

- how do we know governments are serious about sticking to this agenda;
- what are the underlying objectives of the policy, and what happens if not on track to meet them (will it be dropped, will something be 'tightened')
- what are the penalties for non-compliance
- will the policy deliver the right returns (economics at project level have to stack up, eg offshore wind),
- are all the pieces in place across the deal eg planning to get project approved (delays are costly), grid connections, including the offshore to onshore regulatory regime where relevant; is infrastructure there for delivery in the case of renewable fuels, for example.

There is no 'template' perfect market design. The oft-rehearsed debate over the UK's 'Renewables Obligation' support scheme (based on tradable certificates and obligations on energy suppliers) 'versus' 'feed-in tariff' schemes (based on a premium tariff payment for renewable energy production 'fed in' to the grid) used in a number of European countries, is somewhat sterile. The feed-in system is evidently more successful in terms of volumes of installed capacity in countries like Germany and Spain; however the other factors must be in place, and are essentially national in character.

It comes down to what I would describe as "the boundary around the deal" – this has to encompass everything from getting a deal approved through the planning system (cost and time), the ability to generate or produce the power, heat or fuel; the ability to deliver it which means the right infrastructure and operating systems (grid, pipes and wiring, smart metering) as well as

commercial conditions. In other words, not only the support scheme. These need to be understood in terms of the 'disaggregation' of the RE sector into identifiable subsectors, which may have significantly different characteristics and infrastructure needs – eg reliable and affordable access to biomass feedstock, which meets known sustainability criteria (to use the example in the Ernst & Young quote above)..

The policy regime needs to be understood by investors, and how it evolves needs to be *stable and predictable*: London-based financiers are saying this is a key issue for the UK at present.

In 2004, a set of mainstream renewable energy financiers described the underlying policy conditions required for investment as being 'Long, Loud and Legal' (ie reflecting project lifetimes; substantive enough to positively affect the bottom line; and legally binding to create confidence). The central point is about the *precision* with which policy translates through to market design and to investment. This phrase has been picked up and used by other market players and political actors (including the UN Secretary General); indeed Sir Nicholas Stern expressed a preference for the phrase 'clear, long and credible'. The intent is the same: policy must have durability, credibility and stretch across the relevant parts of the deal, risks need understood and managed, before investment will flow.

The binding EU Renewable Energy Directive<sup>5</sup> proposed as part of the Climate Change and Energy Package; will put the focus firmly on the implementation regime at Member State level.

## Energy Efficiency

To deliver on a 20% increase in renewables by 2020 this will need to be situated clearly as part of a longer term transition to meet environmental and security goals, the central importance of energy efficiency will have to be better reflected and integrated into energy policy. Energy efficiency is once again on the political horizon, but has not yet started to bite in same way as renewables have. One graph, now well known, is the Vattenfall/McKinsey

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<sup>5</sup> The complete press pack and a copy of the Commission's proposals, released in January 2008, can be found at [http://ec.europa.eu/commission\\_barroso/president/index\\_en.htm](http://ec.europa.eu/commission_barroso/president/index_en.htm). This forms the basis for negotiations in 2008 between the Council, Commission and European Parliament. The intent is to have the RE Directive, as part of the Climate Change and Energy Package, ready for Heads of State and Government to sign in Spring 2009.

Carbon Abatement Cost Curve graph, showing that a substantive variety of energy saving options have zero or negative costs for cutting carbon.

The exactitude of the analysis behind the graphic is in one way less interesting than how it has hit the radar screen, reflecting what I would call the 'third wave' of energy efficiency (or demand side management). First were the oil shocks of the 1970s; many of us remember the interest in 'Negawatts' in the 1980s, and now, here we are again.

A more recent McKinsey report highlights the substantial investment opportunity: estimating that \$170 billion per year invested in 'energy productivity' internationally out to 2020, could feasibly cut projected energy demand growth by half, by 2020<sup>6</sup>. On average, McKinsey calculates, this investment would generate an Internal Rate of Return of 17 percent from future energy savings.

So unlocking the 'bottom left hand side' of the curve – the zero and below zero abatement cost options – is where the money potentially lies. It is definitely appearing on the finance sector's radar, but the challenge is creating a regime that enables the value to be tapped in a commercially relevant way.

Integrating energy efficiency, new decentralised options, combined heat and power, smarter grid and metering, into the overall policy approach for renewable energy and grid and distribution infrastructure, as well as consideration of energy storage, will be crucial. Pressing, politically sensitive, rising consumer energy prices are an added impetus. Getting policy, regulations and business models right is vital. This simply recognises the importance of aligning demand reduction initiatives with underlying commercial imperatives of a range of actors, from energy utilities (are revenues linked to kWh sales?) to the building sector and product manufacturers.

Without this it won't be possible to optimise and capture the opportunities for demand reduction and efficiency.

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<sup>6</sup> McKinsey Global Institute, 'The Case for Investing in Energy Productivity', February 2008. Available from URL: [http://www.mckinsey.com/mgi/publications/Investing\\_Energy\\_Productivity/](http://www.mckinsey.com/mgi/publications/Investing_Energy_Productivity/). Note that energy productivity is defined as the ratio of value added to energy inputs: the inverse of the more commonly used energy intensity of GDP which measures the ratio of energy inputs to GDP.

This is now is a key moment. Couched, as it needs to be, as an energy infrastructure and economic challenge - there are probably only 2 or 3 rounds of energy policymaking over the next 10-15 years, and investment in this period will substantively shape the energy emissions profile in 2050. Early action will therefore be required for a number of reasons, not least if an industry in the clean energy arena is to be stimulated that will play a substantive national and potentially international role.

### A Word on Cost

In the current climate of high energy costs, concerns over economic recession, and rising costs associated with carbon, it will be difficult to avoid the matter of how much it will cost, in the near term, to deliver a significant increase in renewable energy. In that vein, a short remark on 'Cost-Benefit Analysis' is in order.

We need new analytics in this area, a new evidence base bringing forward much more clearly the investment opportunity, and the benefits in short and medium term. The opportunity to hedge risks of volatile fossil fuel prices was the subject of much of the work by Shimon Awerbuch, who tragically died in 2007. He used finance portfolio theory to examine the overall risks and cost of fossil fuel price volatility in energy systems, concluding that even though renewable energy has a higher up front cost, it can lower the overall cost across the energy portfolio. Clearly this is a complex area, but this work indicates that simple cost-benefit comparisons need to be carefully worked through, and they risk failing to provide an accurate sense of macro-economic costs of different energy options.

In this vein: GE Energy Financial Services (a financial services arm of GE, not linked to investment only in GE technology) - in June 2008 released a short analytic report showing economic benefits to the US Treasury of the 'PTC' support scheme. It includes net gain, in dollar terms, to the US Treasury, and shows an IRR of 5% (on the surface of it, the PTC would lower the Treasury's tax take). It outlines the direct and indirect economic benefits, and jobs-backing its call for US Federal policy stability in this area.

The European Wind Energy Association estimates that, by 2020, wind could be saving Europe Euro 20.5 billion per year in fuel costs and Euro 8.2 billion a year in CO<sub>2</sub> costs – a saving of nearly Euro 29 billion<sup>7</sup>.

## Conclusion

The notion of setting this environment and energy debate in the context of economic competitiveness is a way of raising questions now about the nature of the medium term game. The 'new competitiveness' is not an answer in itself, but simply raises the eyeline to the future: what do we think a resilient economy and society in 2020-2025 will look like, in a world responding to climate change, and a range of other factors that are essentially unknown in their detail. To remind ourselves: even five years is a long time, five years ago no one predicted oil at \$140 per barrel, or exponential growth in the renewables sector, or, for example, the impact of Hurricane Katrina on the US public policy debate. One year ago certainly few predicted the depth, rapidity and severity of the global financial crisis mid 2008. Turbulent and game-changing times are upon us.

The details above – illustrate that the constraint isn't in the money or interest from financiers and investors, but the capacity for the UK – or any other country – to attract that capital to their backyard, to build the supply chain and resilient, low carbon energy economy. This will depend on integrating energy and environment into a broader package, to get the 'pipes and wiring' right – not just kit in the ground, but also in skills, jobs, industry, education and so on.

One might say that under a notion of the 'old competitiveness' –climate policy poses threat to business, while in a period of significant change, the 'new competitiveness' focuses on the sectors and solutions that should be prime drivers of both.

At present, arguably, the City has been ahead of governments in assessing the economic upside of renewable energy; and now EE just rising onto radar.

Value drivers are already changing, new opportunities are emerging, and in one to two decade's time it is very hard to imagine that the FTSE 100, or the opportunities they are pursuing, will be the same as at present.

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<sup>7</sup> This calculation of fuel cost savings is based on an assumption of oil trading at \$ 90 per barrel, lower than current prices. In article, 'Security of Supply', in *Wind Directions*, July/August 2008; magazine of the European Wind Energy Association.

We need public policy today to align interests and integrate approaches across different sectors, and different tiers of public jurisdiction (eg including cities) in order to optimise where the money goes. That means those driving the front end of the solutions, the existing and emerging business leaders and entrepreneurs who stand to be winners over the next decade. That means governments need to spend as much, or more, time talking to the new guard as well as the old guard.

When it comes to renewable energy, as one public policy leader at the NY Finance conference said: it's time for the good boys and girls of the energy sector to become the big boys and girls of the energy sector.

That is the new competitiveness.

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*The RE Finance Project works with financiers and investors to examine and understand the transmission between renewable energy policy and finance. While the focus is at national or regional level – where policy is being developed or implemented - this provides a perspective on broader questions of 'low carbon technology and investment', currently being raised in the international arena.*