Market Update and Key Issues
Briefing from Finance Practitioners to the
Clean Energy Ministerial

Low Carbon Finance Group
London, April 2012
Market Update and Key Issues - Clean Energy Ministerial

Briefing from Finance Practitioners: Low Carbon Finance Group

This briefing provides (i) an overview of current renewable energy market dynamics from the perspective of private finance practitioners either currently involved in, and/or advising on, transactions in the market and (ii) observations about policy design to attract capital.

London, being an internationally recognised financial centre, has the expertise and capacity across the range of low carbon investments. In the renewable energy space, institutions focus primarily on the European markets and the broader Europe Middle East and Africa (EMEA) region, as well as global market opportunities.

The Low Carbon Finance Group ("LCFG") is a non-political group of senior energy financiers from across the finance spectrum, formed to provide policymakers with the factual basis for understanding the conditions required for attracting capital to low carbon energy, with significant investment focus on renewable energy. It draws on experience from the past 15 years, investing in, and advising on, over £20 billion of global renewable energy investments. Many of the institutions also have an interest in energy efficiency.

Participants are drawn from global equity investment funds, pension fund advisors, independent power investors, project finance banks and investment banks.

Sections

Summary points
1. State of the Market
2. Financial Conditions
3. Financial Regulation
4. Policy: market perception - cooling of support
5. Near-term impact on renewable energy
6. Institutional investors, current market
7. Outlook
8. Policy design to attract capital

Annex 1 European Financing issues at Q1 2012
SUMMARY

- Interest in renewable energy investment remains positive, particularly for mature technology segments, with offshore wind also attracting interest although at an earlier stage of development.

- Financial turbulence and new financial regulation are features of the present environment in many jurisdictions, creating additional uncertainties for investors.

- There is not a shortage of capital for investing in the renewable energy sector. However, policy remains central for creating stable, attractive conditions for financiers to drive scale and sector development for renewable energy and energy efficiency within the energy market. This is even more important given today’s economic environment.

- There is a belief that the policy environment is cooling towards renewable energy in several countries. This is increasing regulatory uncertainty and risk.

- Taken together, these factors reinforce the need for a stronger, clearer set of policies from governments, to reflect the pace and scale of investment anticipated in response to core market drivers such as energy security, diversity of supply, climate change and economic development.

- Policymakers also need to monitor the impact of financial regulations, to avoid undermining other efforts to attract capital to low carbon energy.

- A visible and integrated ‘pull factor’, that creates confidence, will help facilitate conditions for financiers in today’s market, as well as creating basic conditions that would enable institutional money to enter the market at greater scale.

- Understanding how the different sources of capital interact and their risk appetite and return requirements can inform more effective and efficient policy design.

1. State of the market

Appetite for renewable energy among financiers remains positive across a range of markets globally, particularly for the more mature technologies (onshore wind, solar, biomass). There is also interest in offshore wind, as a significant growth sector offering a large project pipeline in some regions, although at an earlier stage of development.

However, across the EU and in the US, in particular, it is a more challenging environment for renewable energy, as austerity and financial turbulence have fed through into increased policy risk, restrictions on capital and uncertainty, as discussed below. Nevertheless, it is these background conditions that are producing a stronger interest in infrastructure more broadly, with countries looking to build their way out of the economic downturn, and notwithstanding some patchy and difficult conditions, investment continues into well-structured projects.
Globally, markets in the major emerging economies (Brazil, India, China in particular) are an increasing area of focus, as countries offering large volume renewable energy opportunities. Furthermore, smaller markets are of interest to specialised funds and, under the right risk conditions, project finance banks. This includes markets in North Africa, North and South Asia as well as SE Asia, South America, and increasingly Eastern Europe.

While there is interest in energy efficiency investments generally, this is likely to increase if energy prices rise significantly, and with greater policy attention. At present, energy efficiency opportunities are country specific, are less clearly defined in policy, are considerably more diversified throughout the economy and often small in scale. This makes it more difficult to characterise this as a 'sector' in the same way as, for example, renewable energy generation. That said, energy efficiency does offer a positive net present value without subsidies, the technology is proven, and costs are coming down (e.g. LED lighting). Policy has a key role to play in unlocking greater scale.

The overall challenge in all markets is not a shortage of capital, rather the need for conditions that can facilitate the emergence of financeable projects, with the right risk/reward profile. A clear pipeline of projects is important to attracting pools of capital at greater scale, particularly into new markets, as the resource and time required for due diligence into a single project can then be scaled across additional opportunities.

Core characteristics of those countries that are most successful at attracting capital are:

- Strong policy frameworks;
- Comprehensive energy regulation;
- Good quality renewable energy resources;
- Long-term underlying market drivers

Existing sources of finance include on the funding side: commercial banks (through instruments such as project finance and corporate debt); renewable energy and infrastructure funds, developer and utility equity and multilateral agencies. Products to manage risk are also available from public finance institutions such as national and regional development banks and the multilaterals, as well as export credit agencies. Some banks and funds have a particular focus on emerging markets. With increasing focus and innovation from public finance institutions on clean energy, it is anticipated that the growth of interest in developing countries will extend beyond the major emerging economies, particularly where there is experience within domestic financial institutions, and domestic developer/industry capacity.

At present there is growing interest but, as yet, limited involvement from institutional investors. There is increased attention on these large pools of capital by policymakers, given their scale, and the current state of the institutional investment market is discussed further below.

2. Financial Conditions

Generally, financial conditions became considerably more turbulent for European and US banks, weakened by the 2008-2009 crisis, the Eurozone sovereign debt position and the requirement to hold higher levels of capital. The Asian banks, in particular, have not suffered commensurately.
These financial conditions are resulting in banks de-leveraging their balance sheets, debt is priced higher and, for projects, there is the prospect of the (re-)emergence of shorter loan tenors (the latter were also a feature of the aftermath of the financial crisis in 2008-2009). Against this economic backdrop banks are looking to restrict the volume of long-term debt on their books. This can be achieved by selling down what banks already have (de-leveraging) and / or restricting participation in new long-term (greater than 10 years) transactions.

Renewable energy projects would generally seek 15 – 20 year loans, reflecting project life; shorter loan tenors are manageable, but add re-financing risk into the project equation. It is important to remember that within institutions project finance is competing for capital against other debt products which means that renewable energy must add up commercially: risk-adjusted returns must be comparably attractive to other opportunities.

Financial regulations, such as Basel 3, introduced to curb risk following the 2008-2009 financial crisis, are also contributing to uncertainty, as discussed below.

The environment of financial uncertainty in European and US markets is also constraining some financial institutions from entering new markets or new sectors internationally, as risk appetite is reduced and familiar markets, proven technology sectors and known relationships are sought.

Nevertheless, capital is still available for good, well-structured projects, with project sponsors and management teams that have a track record. International lenders, equity providers and project developers, are still actively seeking opportunities globally, and not all financial institutions are impacted to the same degree by financial conditions. However, the policy environment remains central to providing scale and a pipeline of opportunities.

3. Financial regulation

Financial regulation, developed to control risk exposure, is introducing further change in the financial markets at a time when there are also significant changes emerging in the energy sector. There is concern over the impact of financial regulation on the provision of long-term finance, including to low carbon energy.

Basel III, the third round of banking regulations from the Basel Committee for Banking Supervision, will introduce a range of obligations on banks, including amongst other elements progressively increasing the capital requirements to cover risk; new ratios for liquidity and stable funding sources; and increased capital buffers for periods of stress. This means banks must review and restructure balance sheets accordingly, over the 2013-2018 period.

Solvency II, a pan-European regulatory framework for the insurance, reinsurance industry and some pension funds, defines the minimum amount of capital reserve that must be held to reduce the risk of insolvency. Amongst other things, this includes an assessment of exposure to market, credit and operational risk, and requirements on reserving capital for illiquid, long-term investments.

It is not yet clear exactly how these financial regulations will impact the clean energy sector, however there are concerns that these have the potential to raise the cost of
capital, impact equities, make long-term bank loans less attractive (and higher cost) and make longer-term, or lower-rated, bonds less attractive for the insurance industry, making the sector less attractive to the type of investors being sought.

Financial institutions and policymakers need to understand, and monitor, the impact of these regulations to avoid undermining other policy efforts to attract capital to low carbon energy.

4. Policy: market perception - cooling of support

In general, financiers perceive a ‘general cooling’ of political support for renewable energy in several markets. As economic conditions have become constrained, (albeit with notable exceptions), policies have been reviewed, often in the context of public debate over cost, and budget austerity. This follows damaging retrospective changes to renewable energy subsidies in specific European countries in 2010-2011, which focused investor attention on policy and regulatory risk to investments reliant on government support. Tax changes (e.g. to interest deductions) and uncertainty in countries have also harmed returns and negatively affected existing investment.

In a period of economic constraint cost factors are much more sensitive. It is understandable that affordability is a priority for policymakers, and for financiers, affordability is also central to delivering policy stability. However, unplanned or unforeseen policy change creates a volatile environment that adds to regulatory risk perception, and therefore cost of investment overall. Policy that is designed with the flexibility to enable a response to changing external conditions (e.g. technology cost reduction) in a transparent manner can produce greater overall stability and an increase investor appetite.

Although there is not a shortage of capital for investment there is competition for that capital. Therefore investors will invest in countries and sectors where there is long-term stable policy in place.

5. Near term impact on renewable energy

While renewable energy remains attractive for financial institutions, policymakers need to be aware that in today’s investment environment a clear, strong signal of government commitment is vital, particularly as investing in a renewable energy project today will require stable conditions out to 2025 or 2030. Policy will also be central to catalysing greater interest in energy efficiency in the current environment.

Turbulent conditions, however, are more likely to adversely affect investment in the newer technologies, given higher risk, and regaining momentum may be difficult if investors withdraw without clear support from governments for this part of the market. Policymakers need to monitor this closely.

6. Institutional investors – current market

There is increased interest in real assets from institutional investors, generally in the context of an increasing focus on low risk, long-term, inflation-linked assets that can provide stable returns. Institutional investors are starting to add renewable energy to
their portfolios, although this is a small proportion of this to date. They are attracted by the growth potential, renewable energy returns not being closely correlated to other infrastructure assets and GDP in general. However, renewables must compete with more familiar ‘traditional’ categories to deliver returns.

To date, there remains a gap between interest and actual investment, which is still relatively modest as a proportion of total assets under management. At present, a majority of institutional investors do not have detailed in-house sector knowledge for direct investment in renewable energy, although the more sophisticated early investors have now developed such capability. Accordingly, institutional investors have allocated capital to specialised funds with strong track record in the sector, which are able to better manage risks and deliver appropriate returns, when they have chosen to invest in this sector.

Added to this, a low risk appetite means institutional investors will generally not take renewable energy construction risk directly, and are more likely to focus on already-constructed, de-risked, operating assets, with steady revenue streams (low policy risk). In a few cases, earlier involvement in project development may be possible where construction risk is minimised, provided the returns are perceived as commensurate. For institutional investors to make the effort to understand and allocate to this space, they have to feel that not only are the returns attractive, but that they can count on the safety of the revenue streams. This is most demonstrable in the need for consistency and long-term strategic commitment from various policy makers and the energy markets.

Financial institutions, including institutional investors, are also examining structures that would enable access to larger pools of capital for both debt and equity, matching the objectives and strategies of the different institutions. This includes, for example, the potential to develop capital markets solutions for accessing debt, which might now be scarcer from banks in view of their rising cost of funding and Basle 3 regulations.

In the near term, the provision of finance for project development through construction to operation is likely to remain with a mix of commercial banks / multilateral agencies providing construction debt in the near term, and developers, utilities, specialised funds and some corporates providing equity, under the right conditions.

It is important that governments understand how the different sources of capital interact and their risk appetite and return requirements. The policy and regulatory framework, and any public finance intervention for risk mitigation for example, needs to have informed expectations in this regard, and be designed accordingly to produce the most effective and cost-efficient results.

7. Outlook

There is now strong momentum in the renewable energy sector internationally, notwithstanding some significant regional variation and turbulence. The ingredients are in place are in place for sustained growth albeit with different trajectories for the sub-sectors, reflecting stage of development, location of resource and skills. There is also a track record emerging of system management with high penetration levels of

---

1 LCFG is preparing a short briefing on cost of capital, to contribute to this area (forthcoming).
variable power (Spain/Germany), as well as the capacity of distributed power to make a material contribution to overall energy deliver. Interest in energy efficiency and demand management suggests a ‘sector’ poised for growth, as models are being sought to monetize its benefits.

However, uncertain or volatile economic and financial conditions in several regions, and rising perception of regulatory risk, is reinforcing the need for a stronger signal of government commitment to clean energy agenda. This needs to better reflect the pace and scale of investment into the sector anticipated in response to core public policy drivers such as energy security, climate change and economic development.

To be effective, this needs to be translated into specific long-term policies and to be embedded in broader energy market development (whether utility-scale or distributed), at national and/or regional level. The system approach is essential to plan for, connect and balance larger volumes of variable power and actively deploy demand management.

Policies such as strong, clear ‘pull factor’ in terms of simple, stable, well-designed, regulation, indicating scale of ambition in the jurisdiction, will help both facilitate conditions for existing financiers in today’s market, and create the basic conditions that would enable institutional money to enter the market at greater scale.

8. Policy Design to Attract Capital

There is now a good track record of policy design that works for attracting capital. The set of design factors below were structured around electricity market policy in the UK, but are relevant where governments are seeking to develop ‘investment grade policy’ in the context of national market structures and conditions.

Policies and regulations relevant to other elements of completing a transaction: from planning and land access, to grid availability and cross-border interconnection, need to be in place, as these impact the overall attractiveness of a jurisdiction. This may require careful sequencing, particularly for long-lead time elements such as transmission and distribution infrastructure, where required.

Good design can reduce policy-linked risk, lower actual cost of capital, and therefore make any specific public finance interventions required more effective:

- Price stability and predictability, including:
  - Long-term revenue certainty and visibility
  - Bankable markets and structures
  - Inflation-linked revenues.

- A level playing field for all market participants, including:
  - A power purchase obligation with a creditworthy counter party; or an equivalent reliable ‘route to market’ for selling power
  - Fair, reasonable, and equal balancing charges for utility and non-utility generators.

- Simplicity and transparency.

There are additional measures of interest to both Government and financiers:
- Affordability (important to Government, consumers and financiers in the context of overall stability of the policy environment).
- "0-60" speed, a measure of how long it takes financiers to become comfortable with the new regime and to commit to investments (important to Government for delivering public policy goals linked to timelines).
- Consideration of potential unintended consequences.

Both debt and equity financiers strongly favour regulatory support mechanisms that provide long-term electricity price stability or visibility. It is central to creating bankable projects that will attract the longest term and lowest price capital. The longer, and more stable and visible, prices are, the lower the cost of capital, and the more likely institutions will invest and commit increasing allocations of capital.

The willingness of institutions to lend to projects is determined not only by the 'overall package' of factors, but also familiarity. Both debt and equity tend to favour policies and systems that they know and are proven to deliver, not new and untried systems.

Most of the pension funds and other institutional investors that Governments seeks to attract to the sector have long-term liabilities (pensions, annuities, insurance companies) that are linked to inflation. Therefore, they are increasingly seeking investments that are linked to inflation. Thus, a system that includes inflation linkage will attract more of this class of investors and will ensure higher allocations.

As critical as price is a market for the power sold, price stability without an assured market or purchaser exposes independents (and their investors) to revenue risk there may be no buyer. If there is a possibility that a developer faces this uncertainty after a project's capital costs are fixed, it will be impossible to invest.

There should be low barriers to entry for new investors in terms of ease of understanding of the regime and becoming comfortable with the asset class. A track record in other markets helps, as it is easier to explain to credit committees and pension fund trustees - the ultimate decision makers about the investment of funds.

Whatever support system is chosen, it should have clearly defined policy goals and have a transparent mechanism for review and change, to secure the achievement of those objectives. It must be seen as sustainable beyond the short-term (for example a parliamentary cycle). To retain confidence in the support mechanism, and for it to be an effective and continuing driver for investment, there has to be transparency regarding the rules under which it will operate. Any proposed changes must be consistent with the original objectives, where possible scheduled from the outset, and provide for suitable grandfathering.

It is understandable that governments have concerns in wanting to ensure sufficient capital inflows without interested parties making returns that are considered ‘too high’. Unless the system is affordable across the medium to long term, there is a high risk of amendment or change, which undermines market stability.

For the purposes of the timing of securing investment and ability to meet public policy goals, policymakers need to take into account the time it take for financiers to get comfortable with a new system, reducing the time period of delay/hiatus. The expression ‘0-60mph’ is simply a way of thinking about this.

Anticipating unintended consequences, where possible, including through regular market monitoring, is important for market stability.
Annex 1

Summary: European Financing issues at Q1 2012

Banking sector
- Deals are getting done across mature technologies (onshore wind, biomass and solar; strong interest in offshore, as a less-mature market);
- Pipeline of bankable projects: ‘healthy but challenging’;
- Liquidity (finance) is being prioritised to existing clients, and known sectors (smaller developers likely to be more impacted in this environment);
- Capital is still available but hurdles are more challenging: banks are maximising engagement and committing resource to key deals in a given market.

Banking sector - challenges
- De-leveraging and managing balance sheets;
- Consequences for terms and conditions: previous long-term lending tenors now shortened to below 10 years (and re-emergence of ‘mini-perm’ structures) capacity is being built-in for re-pricing;
- Long-term cost of capital is up, with pricing on new transactions up by about one percent;
- Basel 3 financial regulation and its consequences are on the horizon, banks are nervous about market volatility;
- Deals are taking a longer time to close;
- Trend across banks to return to home markets.

Equity
- General perception of lower commitment by government to renewable energy means we are seeing some return of equity investor interest in more conventional energy segments, less reliant on government support (e.g. gas generation, CCGT).

Bond Market
- Bond market is a next step for long term debt financing;
- Policy stability is essential through this transition (as volume of available debt going down and equity is stepping in to bridge the gap);
- Bond investors are generally transactional (rather than relationship banking) so deals have to ‘stack-up’ in terms of its risk matrix e.g. counter-party risk, electricity market structure.

Institutional investors
- While there is a step up of activity: there remains a gap between the current interest in investing in the sector, and actual investments. While considerable resources are held, pension funds don’t have detailed sector knowledge in-house; allocations to date remain relatively modest, with notable exceptions.
- There is an opportunity to tap into appetite for structured assets: investors are considering greater exposure to infrastructure, currently c.1-2% of capital with potential of 10% of overall capital, albeit renewable energy assets have to compete with other infrastructure assets (road, rail, hospitals, grid etc);
- Perception of risk is holding back further expansion, including: technical, operational and regulatory risk.
- Investment is in operating assets: II’s have not been willing to take construction risk: banks and developers are taking this risk. Onshore wind is general small-scale but risk profile is known; for offshore wind the scale of deals is larger (a factor that creates interest), but risks are more challenging.