Roof mounted solar PVs

Greg Barker's proposed downgrading of the Feed in Tariffs (FiT) for large scale solar PV projects in March delivered a blow to the future of the solar energy market, rendering large schemes unviable. Despite these revisions opportunities remain for smaller roof mounted projects, not only in income terms but also in terms of reducing occupational costs and assisting with energy security. The latter two factors becoming increasingly important considerations for occupiers.

The downward revisions to the solar FiT rates was on the back of concerns that the number of large scale 'solar farms' in the pipeline would soak up the subsidy available, restricting the amount available for smaller schemes or other technologies. In contrast, the rates for anaerobic digestion were increased in order to aid its uptake. The revisions also meant that £30m could be saved from the FiT budget.

While the larger solar schemes saw cuts in their tariff rates of approximately 40%, the rate has remained unchanged for those schemes generating below 50kWh. For larger schemes new banded rates have been introduced with project sizes above 250kWh receiving a rate of £0.085 (the new banded tariff rates are found in the table on the following page).

While the cuts to the solar PV rates have effectively killed any return for large scale projects, for smaller roof mounted schemes it can still offer attractive IRR's on equity.

Roof mounted solar PV model based on gearing of 70%*	
PV Capacity:	50kW
Total capital expenditure:	£165,000
FiT rate (2011/12):	£0.329 per kWh
FiT revenue (25yrs):	c£450,000 (c£18,000 per annum)
Metered export rate (2011/12):	£0.031 per kWh
Energy export revenue (25yrs):	c£42,500 (c£1,700 per annum)
NPV:	£20,400 on equity
Equity IRR (pre tax):	18.3%
Payback year:	Year 6

*Note: Model is based on an average project yield of 850 kWh per kWp (kilo Watt peak)

Looking purely at returns, the table below outlines the modelled revenue and IRR of a roof mounted scheme based on a gearing of 70%. As shown, the IRR would be in the region of 18.3% (on equity) and when compared against interest and bond rates it could offer an attractive investment alternative.

However, it's the knock on benefits beyond revenue generation that adds to the attractiveness of FiT participation. For instance, utilisation of the energy on-site will offer operational savings, energy security and CSR benefits to occupiers effectively enhancing the attractiveness of a particular property to existing and prospective tenants.

Based on the same model, using the energy generated on site could produce cost savings of approximately £4,000 per annum (totalling £100,000 over a 25 year period)**. Using the energy on-site would have further benefits in relation to returns as it would see the IRR move to 23.4% where the owner is in occupation.

While the operational savings alone do not sound particularly significant, this, combined with the fact that it can offer improved levels of energy security and help meet CSR targets, will assist in providing a compelling case to prospective tenants when marketing space. We expect the issue of energy security will become increasingly important going forward as the cost associated with energy supply disruption can be significant. For example, a client recently cited a case where loss of energy supply at one of their sales centres in the South West cost the business over £250,000 in lost sales over a two-day period.

While disruptions to energy supply are relatively rare at present, there are concerns that they could become more frequent as investment funding constraints and integration of renewable energy technology into the national grid could increase the frequency of service interruptions. Impacts on global energy supply streams due to political and/or military conflict in regions of prime energy production are also adding to the concerns surrounding supply and rising costs. With this in mind, even without the FiT revenue, providing some level of on-site energy generation should be considered in order to reduce obsolescence and maintain and enhance attractiveness to prospective tenants. With entry FiT rates expected to be reduced as technology advances, it will be early adopters that will realise the real benefits of FiT participation.

***Note: Based on average electricity unit cost for non-domestic users between Q110 to Q310 of £0.083kWh.*

Opportunities in Green

Feed-in tariffs (FiT) - rate revisions				
Introduction date	Entrants to FiT's after the 1st August 2011 will be affected. Revisions will not be applied retrospectively.			
Tariff rates	**Original 2011/12 tariff rates**		**Proposed tariff rates post consultation**	
	Scale	**Rate (£kWh)**	**Scale**	**Rate (£kWh)**
Photovoltaics (PVs)	under 4kW (new build)	£0.361	under 4kW (new build)	£0.361
	under 4kW (retrofit)	£0.413	under 4kW (retrofit)	£0.413
	4-10kW	£0.361	4-10kW	£0.361
	10-100kW	£0.329	10-50kW	£0.329
	100kW-5MW	£0.307	50-150kW	£0.19
	Stand alone system	£0.307	150-250kW	£0.15
			250kW-5MW	£0.085
Anaerobic digestion	under 500kW	£0.121	under 250kW	£0.14
	Over 500kW	£0.09	250-500kW	£0.13

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