

PV power-shift – will Europe's FiT cuts play into America's hands?

As the Ancient Greek philosopher Heraclitus once memorably observed: "Everything is in a state of flux." If a modern-day proof of this axiom were required, we need look no further than the renewable energy industry where it looks like a paradigm shift – involving the US and Europe – is about to take place ...

From the outset the industry has always been controversial – a sector led as much by political machinations as it is from the economic effects of supply and demand. Coupled with seemingly ever-increasing global requirements for low carbon energy sources and fears surrounding damage to the environment caused by over-consumption of fossil fuels, governments in the developed world have made proactive efforts on behalf of the renewable energy industry, notably in solar power and photovoltaic (PV) energy.

Historically, this was more so in Europe than the US where a left-leaning, liberal bias, meant governments were more than happy to subsidise the sector in the hope of underpinning a fundamental shift into renewable energy sources. Simultaneously, a more conservative and oil-based US economy meant that comparatively less effort was made there to push towards renewable energy sources and solar power.

All of which brings us to our power shift. Two significant events have now begun to filter through to the solar energy sector. Firstly, the Democrat Barack Obama came to power, bringing with him a more liberal agenda which included substantial efforts to support renewable energy sources. Moreover, in Europe particularly, problems surrounding sovereign debt and budget deficits this year, have spurred the need



for renewed efforts by governments to cut spending, and acknowledge some drastic austerity measures are required. For proof of this, one need look no further than Greece – a country which was recently all but declared bankrupt and had to go, Spartan helmet in hand, to Angela Merkel's Germany for a drastic bail-out procedure.

These major developments are now beginning to have effects in the PV industry, with Spain and Germany announcing a reduction in subsidies. Simultaneously, in Obama's US, several loan guarantees have recently been put in place to benefit fledgling solar energy companies, not just via efforts to boost renewable energy sources but also thanks to funds set up to provide economic stimulus.

In fact the period 2010 to 2012 is shaping up to be one of significant transformation for Europe's PV industry as it confronts regulatory incentive revisions, expanding market development opportunities and scaling competition from better financed and more robust power players. Europe's PV markets are forecast to add as much as 15.5 GW from 2010 to 2012 at an average of 5 GW per year. In the longer term, the PV sector in Europe is expected to maintain its growth trajectory from an expected 6.3 GW in 2010 toward 101 GW of installed capacity by 2025, according to a new IHS Emerging Energy Research market study: *Europe Solar PV Markets and Strategies: 2010-2025*.

"In domino-like fashion, Europe's governments are revising their Feed-in Tariff schemes and permitting procedures in 2010 to keep pace with PV's rapid technology and cost advances," according to IHS Research Director Reese Tisdale, one of the study's authors. "Feed-in Tariffs have been instrumental in getting the Europe PV sector off the ground to date. These schemes are evolving rapidly in their designs to shape both the size and content of the market going forward," he added.

Long considered the hub of the global PV industry, the German PV market faces significant changes in coming months due to proposed revisions to the Feed-in Tariffs expected to be enacted by the end of 2010. As a result, German PV development is surging ahead of the proposed tariff reductions. While Germany is among the most cost-competitive markets in Europe, reduced Feed-in Tariff rates will force players to further reduce system costs. Other markets such as Italy, France, and the Czech Republic are poised to follow

suit with expansive tariff revisions planned in 2010. Despite tariff revisions, Germany will continue to dominate global PV build-out, and continued development in Italy, France, and the Czech Republic will also prove pivotal in driving the industry forward through scale, technology improvements, and deeper experience for developers, according to Reese Tisdale.

"Europe is no longer a one-market PV industry. With development focused almost entirely on Germany several years ago, the Europe PV market has now diversified to five or six active countries—ultimately to stabilise the market and dampen risk," he said. Scaling PV activity in European markets outside of Germany has propelled a new group of utilities and power players into the industry forefront. Leading utilities and renewable players Electricité de France (EDF), Enel, Statkraft, Acciona, and E.ON are at the forefront of large-scale PV deployment, particularly in France and Italy, leveraging their renewables success and experience to position for broader international competition.

As competition increases in the downstream development segment, a growing number of international suppliers are challenging the more entrenched European companies for market share. Leading this charge has been the rising presence of lower-cost Asian manufacturers. Furthermore, the recent oversupply of the global PV module market, technology and manufacturing improvements has led to a dramatic reduction in solar PV system costs in 2009 and 2010. Adding to this positive cost trend, the increased positions of larger industrial players such as Siemens, ABB and GE are expected to have an additional impact on the PV sector.

"Over the past 24 months, the makeup of the PV market has shifted dramatically with the growing presence of Asian suppliers squeezing traditional European suppliers," said Reese Tisdale. "At the heart of this change are Chinese companies, led by Suntech, Yingli, Trina, SolarFun and Canadian Solar, who are gaining market share through low-cost modules." Through the first quarter of 2010, eight of Europe's top 15 module suppliers in Europe were Asia-based, highlighting a shift toward a more global supply chain from the more entrenched German suppliers that have been so successful in the past, according to the study.

Speaking in Brussels recently, European Energy Commissioner Günther Oettinger

said the EU would need a harmonised Feed-in Tariff to boost investment in solar power and other renewable energies. His comments came as the German parliament was voting to approve cuts to the national Feed-in Tariff. The country's lower house of parliament approved a reduction of the country's Feed-in Tariff of up to 16 per cent while giving the industry an extra three months to adjust with a 13 per cent cut, coming on top of regular tariff adjustments approved on an annual basis.

The German tariff cuts are the result of a compromise reached between the upper and lower parliamentary houses. The original proposal to immediately cut support for roof-top solar installations by 16 per cent stumbled in the upper house, however. Chancellor Angela Merkel's coalition government had pressed for deeper cuts, insisting that support must be brought into line with drops in solar prices of as much as 40 per cent. Moreover, consumer organisations have been campaigning for reductions, pointing to rising electricity prices.

Commissioner Oettinger praised the German Renewable Energy Sources Act (EEG) for guaranteeing "a fair price" for renewable energy, urging Europe to adopt something similar. "I think we need a European EEG," he suggested. The ground-breaking regulation, adopted a decade ago, made Germany the world's biggest solar market despite its northern location and paved the way for similar schemes to be applied elsewhere across Europe. To integrate solar power from the Mediterranean region into the European market, infrastructure would have to be built between Morocco, Spain and France, as well as Tunisia, Italy and Germany, capable of reaching as far as Central European markets, Herr Oettinger said.

"Maybe we need a Europe-wide guarantee and a Europe-wide price to get enough investment," he said. Feed-in Tariffs oblige grid operators to buy renewable electricity at a favourable price in order to give emerging technologies such as solar and wind a fair chance of competing with fossil fuels. Over time, the tariffs are reduced as technological development brings production costs down. The EC has periodically examined the option of harmonising national support schemes for renewables with the aim of removing barriers to production across national borders. But its latest report in 2008 concluded that harmonisation at this point could disrupt the market by abolishing

well-established national support schemes. Many EU states have embarked on additional cuts in incentives for solar power in the wake of a steady decline in the price of solar panels but the moves have cast doubt on the future of the industry, which was built on preferential tariffs, and solar companies have warned of potential job losses.

Recently, the cash-strapped Spanish government also announced cuts to premium tariffs for wind power and reduced the number of hours that wind and solar thermal power were eligible for premiums. But while the reductions were modest, the industry expressed fear that the PV solar sector would bear the brunt of upcoming subsidy cuts. Elsewhere, the Czech Republic approved cuts to its generous Feed-in Tariffs in March, while Italy has also announced cuts to subsidy regimes for renewables.

Moving now to the US, we find a different story emerging. While Europe may be turning its collective back on Feed-in Tariffs, over in the United States, many are arguing the subsidies have been extremely effective in Europe at promoting the use of solar power. Solar industry groups from 13 states have said it is high time for the entire country to make use of Feed-in Tariffs to encourage homes and businesses to generate their own solar power.

Meeting recently at the Intersolar North America event in San Francisco, the industry associations heard that Feed-in Tariff programs had proved "wildly successful" in Europe. They went on to issue a statement suggesting it was now "long overdue" for the US to make the most of such initiatives. Feed-in Tariffs are now in use in 64 jurisdictions around the world, and have been particularly credited with boosting take-up of renewable energy in Germany and Italy – which would not seem to be without irony, given developments in Germany recently referred to above.

In the US, there has been interest in Feed-in Tariffs in a handful of states including California and Oregon. As hopes for a nationwide renewable electricity standard floundered in the US Senate recently, the solar industry groups believe state and local-level adoption of Feed-in Tariffs can spur on the growth in American solar power. Gary Gerber, President of the California Solar Energy Industries Association (CalSEIA), said: "States can take action now. States can grow local renewable industry businesses and create local jobs. Feed-in Tariffs are simple, easy

to use, stable, and effectively drive the costs of renewables down quickly."

This view is corroborated by one EC official, who said experience suggested Feed-in Tariffs were "generally the most efficient and effective support schemes for promoting renewable electricity". While property tax-based PACE incentive programmes have been criticised by certain sections of the investment sector, investors have suggested a properly developed Feed-in Tariff scheme could reduce risks for renewable energy projects. Mark Fulton, Managing Director, Global Head of Climate Change Investment Research for Deutsche Bank Climate Change Advisors, said: "There is strong evidence that Advanced Feed-in Tariff (FIT) programmes that exhibit Transparency, Longevity and Certainty (TLC) can clearly reduce project risk, allow renewable energy developers to obtain a lower cost of capital, and create new jobs."

Lyle Rawlings, President of the Mid-Atlantic Solar Energy Industries Association, which represents solar companies in New Jersey, Pennsylvania, and Delaware, said: "In New Jersey, the second-largest solar market in the US, a tradable market commodity system of incentives was adopted that has driven up the cost of solar power to more than double the cost that a Feed-in Tariff would produce, while falling about 50 per cent short of the legislated goals for solar."

However, the groups noted that Feed-in Tariffs could work well in addition to existing programmes like net-metering. California adopted legislation last summer to allow a statewide Feed-in Tariff to support projects less than three megawatts in scale, with funds for up to 750MW total. Oregon launched its version of a pilot Feed-in Tariff programme on July 1. States represented by the solar groups calling for Feed-in Tariffs included Arizona, California, Colorado, Florida, Hawaii, Maryland-DC, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Texas and Virginia.

But do these things really represent a philosophical change in attitudes from Europe and the US towards the solar energy industry, or rather are they born of necessity, where political beliefs inevitably had to give way to basic economics in times of financial turmoil and uncertainty? As highlighted, the need for European countries to reduce budget deficits and undertake fiscal austerity measures has now brought about the need for this to come under review. This has most notably been the case with Spain. Since 2008

for example, the country has invested an estimated €23bn in the PV sector, a quarter of that in 2008 alone. The annual cost of subsidies for all renewable energy sources in Spain is estimated to have reached €5bn last year and could hit €6.3bn this year. It has, therefore, come as no surprise that the Spanish government intends to cut subsidies for new solar energy projects, in order to make up some of the €18bn deficit for the Spanish electricity industry (brought about by the subsidised costs compared to low end prices in recent years). What has come as a shock recently however, is the government's intention to retroactively reduce subsidies in the sector by 30 per cent either by directly cutting the Feed-in Tariff, or by capping the number of production hours receiving the subsidy.

Although not yet enacted, expectations are that the law may be passed shortly and if so, the industry is likely to see a massive impact in the Iberian peninsula. This is particularly the case as the PV sector is usually highly leveraged, around 85 per cent of financing coming from bank loans. Naturally it would hit the profitability of the companies hard, reducing their value significantly along with equity prices. Naturally this would impact investors in the sector, particularly renewable energy and clean power funds, which have seen a lot of interest in recent years. Additionally, there would undoubtedly be a knock-on effect for those financial institutions which have provided financing for the companies, with the likelihood that some may default on their debt, or at least have to restructure the debt and delay repayments.

Depending on the banks' exposure to debt from the solar energy sector, this could take a cut out of profits in an industry that is itself, under pressure. This already has the banking sector worried. The Financial Times for example, recently published comments from a letter from the Spanish Banking Association to Miguel Sebastián, the Spanish banking industry minister, saying: "Any alteration to the tariff would be damaging to the sector and its financiers, and set a precedent which would end up seriously complicating Spain's ability to attract investors and financial institutions."

On top of this, investment in the sector is already beginning to suffer from the proposals. The Barcelona based construction company Fomento de Construcciones y Contratas (FCC) for example, has recently announced it will

be freezing €600m worth of investments in two thermo-solar plants that were due to come onstream in 2012 and 2013. The news also brought about a delay in at least two IPOs in renewable energy companies, due mainly to the uncertainty surrounding price subsidies in the sector; Grupo T-Solar Global shelved a €250m offer it was going to undertake, while Renovalia pulled its intended IPO, in which it hoped to raise €153m.

While in Europe, austerity measures are making the solar energy sector a prime target for cut backs, in the US, which is seeing comparatively little fear surrounding their sovereign debt, the political agenda led by the Democrat and pro-environmental President Obama, is leading to a move in exactly the opposite direction. President Obama promised during his election campaign for the White House, to create manufacturing and construction jobs in the green power industry, a move that not only benefits the environmental cause, but also one that will supposedly help the economy by stimulating job growth. Although one

could argue this was merely a way of promoting the idea to American voters, and the true value of economic stimulus coming from increased government spending is one which has been argued by economists for centuries, the move still comes on the back of effectively the same reasoning behind the opposite move in Europe, i.e. improving the economy.

Whereas in Europe the need to reduce fiscal deficits is paramount, in the US, President Obama has been able to increase government spending in the renewable energy sector not only to stimulate the economy, but also has previously been the case in Europe, to back the sector on ideological beliefs in environmental conservation and carbon reduction. President Obama recently began the move, announcing that nearly \$2bn in loan guarantees will be given to two solar energy companies, in a move which he hopes will kick start the industry in the US. He said the money would come from government stimulus funds designed to boost the economy during the recession, and expects the move to

create 5,000 new jobs. Although President Obama did acknowledge the move was simply a first step, his future plans were clear, saying "we're going to keep competing aggressively to make sure the jobs and industries of the future are taking root right here in America".

So, as we can see, It is a paradoxical situation with Europe and the US undertaking two totally opposite measures in the solar energy industry, with the hopes of effectively achieving the same (or at least a very similar) goal. In Europe, the need to reduce fiscal deficits has become the main priority for governments in recent months, and is seen as key by the market and economists alike, to stabilising their economies and paving the road towards a full economic recovery. It seems that while the brakes may be being firmly applied in Europe, they are well and truly being released by our neighbours across the Atlantic. Only time will tell who the long-term beneficiaries of this development may be, but one thing is for certain - we are in a period of flux. ■

The PES point of view

As we report elsewhere in this issue, it is a period of great change for the PV industry. Whereas European governments previously were keen to subsidise the industry in the form of Feed-in Tariffs as a viable alternative to the further squandering of fossil fuels, of late there has been a sea-change in philosophy and these are increasingly seen - in these economically austere times - as a luxury the major European players cannot afford. We at PES however, see things rather differently and would argue that now above all is not the time to ditch a system which is almost bound to reap long-term rewards. In a nutshell, a policy of ultimate immeasurable gain could be being ditched in favour of one of short-term expediency and political pragmatism.

If further proof were needed one has only to turn to the example of the US where, under the more enlightened foresight of President Obama's Democratic administration, the country is looking towards, and citing, the European Feed-in Tariff policy as a paradigmatic model of how viably to support the renewables industry. And surely, if ever there was an industry which deserved support - through direct subsidies or through other methods - it is this. After all, the future

of every man, woman and child on the planet depends to a lesser or greater degree on it.

While governments may prove obstinate, often falling prey almost instinctively to the worst kinds of short-termism, others may be more enlightened. IHS Research Director Reese Tisdale, for instance, one of the authors of the new IHS Emerging Energy Research market study: Europe Solar PV Markets and Strategies: 2010-2025, realises the true value of tariffs. "Feed-in Tariffs have been instrumental in getting the Europe PV sector off the ground to date. These schemes are evolving rapidly in their designs to shape both the size and content of the market going forward," he said.

Currently Germany is among the most cost-competitive markets in Europe, but of course reduced Feed-in Tariff rates will force players to further reduce system costs, while other markets such as Italy, Spain, and the Czech Republic are poised to follow suit with expansive tariff revisions planned in 2010. It is indeed a changing world as Tisdale points out: "Europe is no longer a one-market PV industry. With development focused almost entirely on Germany several years ago, the European PV market has now diversified to five or six active countries - ultimately to stabilise the market and dampen risk.

"Over the past 24 months, the makeup of the PV market has shifted dramatically with the growing presence of Asian suppliers squeezing traditional European suppliers," adds Tisdale. "At the heart of this change are Chinese companies, led by Suntech, Yingli, Trina, SolarFun and Canadian Solar, who are gaining market share through low-cost modules."

Throughout the first quarter of 2010, eight of Europe's top 15 solar module suppliers were Asia-based, highlighting a shift toward a more global supply chain from the more entrenched German suppliers that have been so successful in the past, according to the new study. In the light of these developments in the PV industry PES would argue it makes little or no sense - certainly not in the long-term - for governments in Europe to consider tinkering with the Feed-in Tariffs policy. To do so at this juncture would only offer more financial opportunities and economic gain to the rival businesses of south east Asia. Certainly, President Obama sees the value of Feed-in Tariffs. What's more - and with no little irony - he cites the European experience as a prime example of the fundamental need for them. Now cannot be the time to ditch these tariffs - short-term savings cannot be allowed to hold sway over long-term ecological gain or we will all, in the long term, pay a stupendously high price.