LARGE SCALE SOLAR™

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CARMAKERS GO SOLAR

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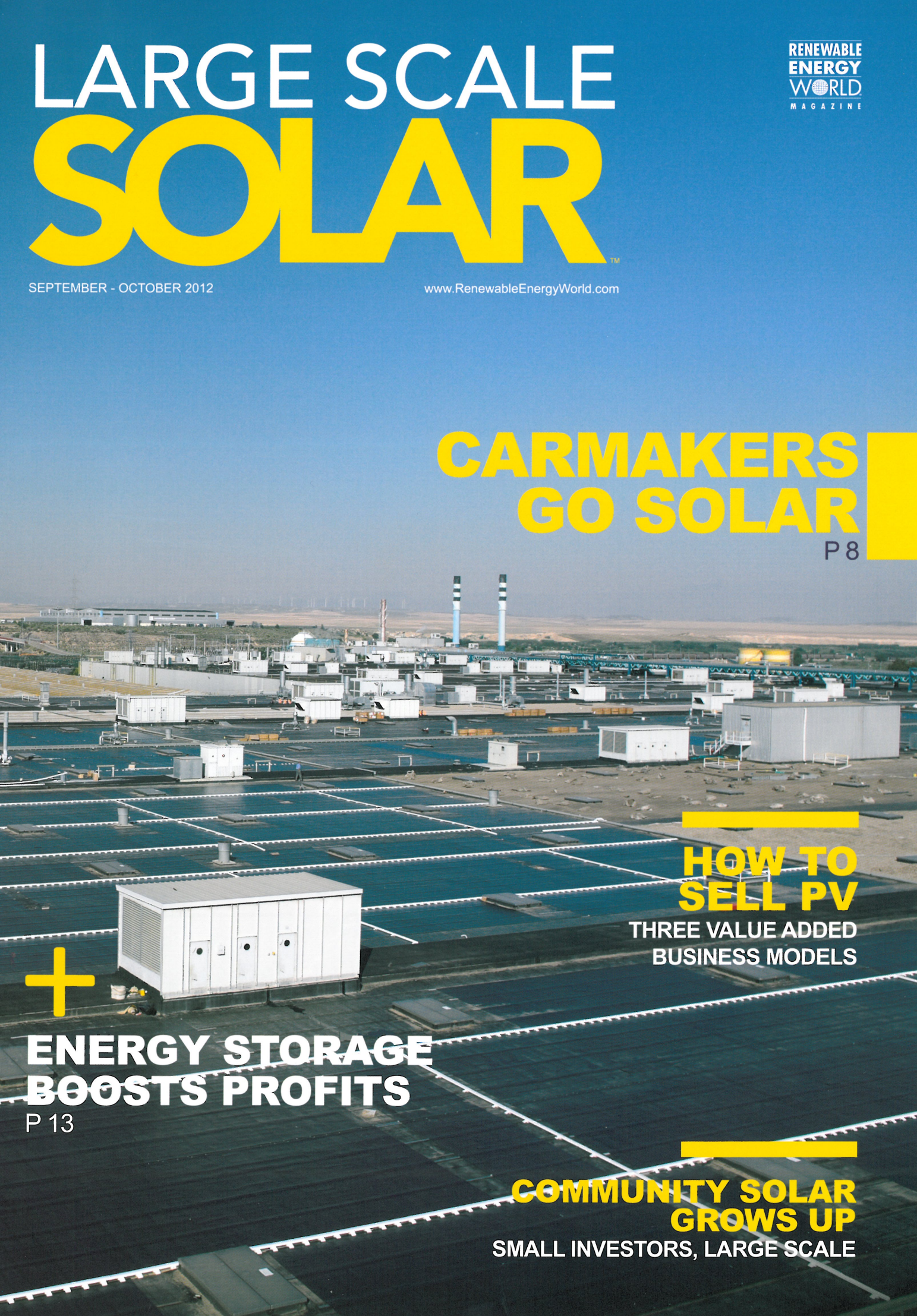

HOW TO SELL PV

THREE VALUE ADDED BUSINESS MODELS

+ ENERGY STORAGE BOOSTS PROFITS

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COMMUNITY SOLAR GROWS UP

SMALL INVESTORS, LARGE SCALE

A BUSINESS CASE FOR SOLAR

Value added services for suppliers

By changing to solution-based selling, solar manufacturers can increase the value of their products and use wider margins again, argues **Johannes Ritter**. In order to do so they need to cooperate or integrate EPC into their business model and learn how to actively sell successfully to customers. The business case is a tool that can help with this process of change.

Vaughn K Buntain, managing director of RE Solutions and matchmaker between investors and project managers of large-scale solar plants, believes that 'suppliers to the solar industry have historically been order takers. The new environment requires suppliers to re-learn how to sell and develop business to help stop their drop in revenue.' This sums up the situation manufacturers and suppliers need to adapt to in order to be successful again. It is not only in their interest; the entire industry would benefit from competition and production capacity for modules, inverters, and mounting systems staying high. When manufacturers and suppliers learn how to sell by changing towards solution-based selling they could, together with other initiatives, slow the current downward spiral.

Solar manufacturers see themselves under totally new circumstances that seem very threatening. For quite a few this has already meant bankruptcy. The situation is undoubtedly urgent and one can see market forces in action. But it is neither a totally new phenomenon nor is it symptomatic of the entire industry. Solar energy is very close to reaching grid parity by further reduced up-front capital expenditure. And because it is getting more and more attractive, solar energy can at last leave its stigma of high-cost energy behind.

SOLAR HAS MATURED

But the good news for the solar industry overall is made possible by the losses in price the suppliers were facing. A lot of them will not be able to survive for long if they do not find a way to turn the tide. It is a common phenomenon for a new product to become an interchangeable commodity as the technology matures. Hardware is a typical example. All the big IT companies practically started with producing hardware and when hardware did not offer high enough margins they turned towards selling services, especially turn-key solutions. Wind power is another example for the change from manufacturing turbines to actually handing over a completely installed wind power park to the customer.

SOLUTION-BASED SELLING

Solution-based selling sounds easy but requires a few dedicated changes. This does not mean changing everything, but changing a few things substantially and adapting the rest where necessary to the new strategy. Module efficiency has to keep improving, but probably at a slower rate than in the past. This is the minimum prerequisite to stay competitive. The same holds true for manufacturing of inverters and mounting systems. The strategy is to find the right balance between higher quality and efficiency, and reduce production cost as much as possible.

A successful solar energy project must combine the input and interests of four parties: the investor, the supplier, the EPC (Engineering, Procurement, Construction) contractor, and in some cases a banker. EPC is a party within the solar industry that is

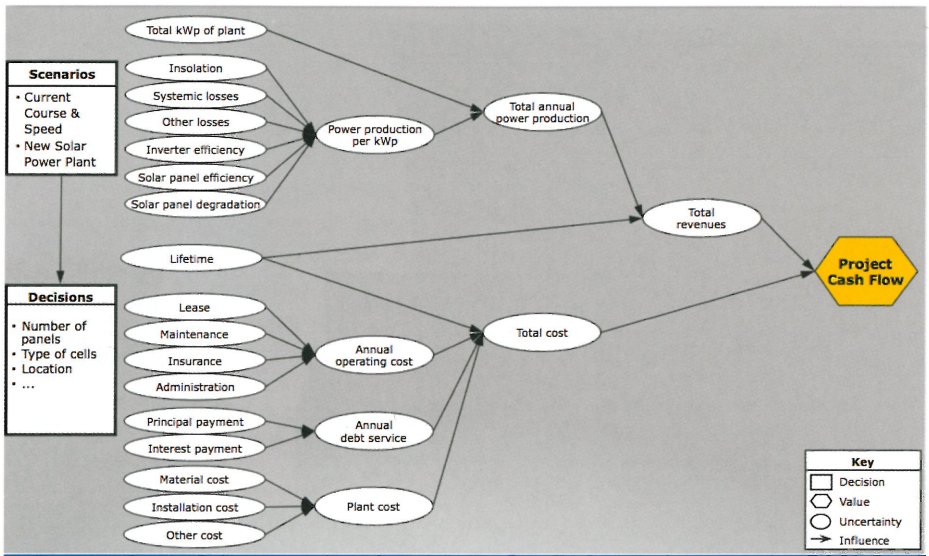
Business case calculations assure both the customer and the manufacturer that the price of the project is reasonable and that the worst case scenario is accounted for statistically. Solution Matrix

currently well off, if they are well managed and mitigate their risks well. They are the ones that already practice solution-based selling. They either function as an intermediary or as the one actually handing over the turn-key solar plant. For these tasks they combine a variety of capabilities, ranging from engineering to project management to installation, and even to marketing. Good project management includes profitability studies in order to offer the customer reliable numbers on key performance indicators (KPI) such as payback period and return on investment (ROI).

LEARN FROM SUCCESSFUL EPCS

That is where manufacturers and suppliers need to get to if they want to stay in business. They can either cooperate with EPCs or they can incorporate EPC into their own business model. For single products it is difficult to demonstrate unique selling points (USP), but with a complete solution

that enables them to deliver optimised products they could have a chance again at becoming profitable enterprises. The complete solution is optimised concerning how modules, inverters, and mountings fit and work together. The manufacturer of module X could offer the best solution for a solar plant of size Y in order to make best use of the modules. The most radical change for manufacturers in this approach is that they would actually be actively looking for projects to sell to instead of waiting to be sought after due to low prices. It is apparent that this change is a medium- to long-term one. Solution-based selling is a start to become financially robust again, and by polishing the image of a company with successful solar plants, good quality, and an overall positive image the effect on bankability will be positive as well.



All relevant aspects that influence either cost or revenue are taken into account using an Influence Map. Solution Matrix

CONVINCING CUSTOMERS

A customer-specific business case can be used during the presales process in order to present reliable numbers that are not just positive but realistic, as they simulate all possible risks. A business case can also be used by the investor to convince a bank that this investment is worthwhile.

Whether a project is profitable for the customer can be calculated with a business case. Especially for bigger projects of several MW, it is a requirement to quantify all costs, benefits, and risks. A simple calculation of costs for insolation, material, workforce, administration and other obvious elements of the project is not sufficient as it does not include the risks involved. Such a simple evaluation which relies on experience and general assumptions may be adequate for an average project. But more complex projects with long time periods and many uncertainties must account for that which lies outside the average. Every investor likes to know the specific risks such as the risks of modules degrading, the change of regulations, and inverters having a shorter lifecycle than the rest of the plant. In the Czech Republic or Spain the change of regulations after solar plants were built was not at all in favour of the owners and their return was minimised immensely. Overseas investors might have to add currency issues to the list of risks.

Convincing customers is an issue in presales when the customer is still weighing options, comparing with competitors and deciding whether to actually continue with the project. The question is how to adapt to the customer's needs in that process. One option is to go forward not only with a tailor-made project for the customer but also with solid numbers concerning costs and key performance indicators such as internal rate of return (IRR), Net Present Value (NPV), and payback period which include the probability of facing changes in regulations or unreliable inverters.

THE RESULTS

By looking at a large solar plant in southern Europe the business case results will be better understood. Investors are presented with the following numbers with respect to the project definition considered. The IRR is 13.2%, the NPV is €5,633,417 in its most likely value, and the payback period is ten years. These numbers presume a preciseness that is not possible with projects of such long lifecycles. Anyone who deals with profitability studies or business cases knows that these numbers have to be specified by the probability with which they will occur. Only a risk and sensitivity analysis can offer such results. In the risk analysis the calculated results are simulated so that all possible options can be considered. By doing so the variety of possible outcomes due to the high number of uncertainties in the project becomes apparent. The NPV could vary between €2.57 to €9 million. In order to eliminate the less probable results on the top and bottom end the range within an 80% probability is chosen. With a probability of 80% the NPV is between €4.3 and €7.3 million. Only risk which is quantified with hard numbers provides solid informational value. The bigger a project the more important these numbers become as they are more in the centre of interest for investors as well as their banks.

CONVINCING THE BANK

Getting a loan has become more difficult as banks became more risk averse. They ask 20%–25% equity for solar projects, instead of only 15% as a few years ago, and they increase the interest rates for risky projects. The business case methodology offers the bank all relevant information – and more precisely with respect to the specific project and with an exact assessment of risk. Banks often minimise risk by, for example, checking the attributed quality of the suppliers. For manufacturers of Tier 2-assessed products the risk premium is possibly reduced because the business case quantifies actual quality and reliability. And the fact that they can assure the payment of warranty claims to customers improves their bankability.

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