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FINERGREEN INSIGHT

1st ISSUE – JULY 2015

EDITO



Damien Ricordeau
President

These past few months have been very fruitful for Finergreen. We exceeded EUR 100 million of financing operations (equity and debt) in about 2 years of existence. Thus, these good news bring us towards new horizons. As experts in French solar PV, we keep expanding our activities as an international scale and diversifying to other energies, in particular biogas and wind power.

However, we must not ease up in our efforts. We are working in a market that, despite all the flattering words to describe it, is in trouble, at least in France. The number of actors who disappeared over the past few years is a reliable indicator of these difficulties that are already well-rooted in spirits ; and the failure in SolaireDirect IPO, that led to the takeover by Engie, reveals the fragility of Renewable sector, even in this year of COP21.

But everything is not a gloomy landscape and if it is a common thought that megaprojects in developing countries are

the most attractive ones, developed countries are also on the cutting edge. As an example, E.ON, the German national electricity supplier, chose to put an end to its activities in fossil fuel to fully focus on renewable energies, which was an audacious choice and a proof of consciousness.

If the energy transition has not yet been initiated everywhere, we can't deny that it will happen in the end. Despite some governments' sluggishness and a short-term counter-current politic, the wind is progressively turning in a positive way.

Anyway, we are particularly happy to work on this constantly evolving market and we are pleased to launch and share with you this newsletter n°1.

Enjoy the reading!



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ANNUAL DETERIORATION OF POWER MODULES

What assumption is relevant for the models?

The power loss of photovoltaic modules is a basic hypothesis in financial models and has a strong impact of the projects foreseen profitability. The main players of the sector do not always agree on the matter. With this article, we offer an insight on a study published by the Hepsul association that analyses the 20-year operation of PV panels connected to the grid since 1992 in France.

SUPPLIERS' WARRANTY

Suppliers of PV panels offer 20 to 25 years warranty for their panels' performance, which gives us an overview of the expected minimum level of performance required from the panels after a long time of exploitation.

For instance, if we take a 85% performance warranty for 25 years, we get an annual loss of power of 0,65% per year and 0,89% per year for a 80% performance warranty. These first valuations help us to exclude ceiling values, close to 1%, that can sometimes be applied. In the light of these guarantees, it is therefore inappropriate to consider such a high value for the panels' lifespan (however, some manufacturers guarantee an annual loss of maximum 1% in the first years to then guarantee a smaller loss).

OBSERVED VALUES

As mentioned in the introduction, the Hepsul association, specialized in the development of renewable energies for more than twenty years, published a study about the

the ageing conditions of modules that were connected to the network in 1992.

The survey is based on fifteen modules and their power was measured before and after cleaning. The measurements show that the average power, after cleaning, is higher by 2.72%. These 2.72% were not taken into account for the rest of the study since they did not reveal any sign of loss by ageing. However, this does not give a first overview of the impact of a good maintenance of modules.

To be able to compare the current powers with the flash-lists of that time, they had to recalibrate the cells thanks to a reference cell. It appeared that the average power after calibration is 56.74 Wc, compared to an initial power of 61.85 Wc. It gives a loss by ageing of 8.25% after 20 years, which represents an annual loss of 0.43%. For your information, if we add the loss due to stains on the modules, we get a total loss of power of 10.97%, which represents an annual loss of 0.58%

Then, thanks to these results and progress in innovation observed since 1992 concerning both the quality of panels and performance monitoring methods, we can see that the deterioration in panels nowadays is slower than those in 1992.

IMPACT STUDY

After having exposed the previous results, we thought it would be useful to show the impact of such assumptions in the long-term profitability of a project (20 years). Below is the observation of the Internal Rate Return (IRR) of a standard project, depending on the annual deterioration rate chosen, all other assumptions being equal.

Deterioration	Project IRR
0,30%	10,0%
0,50%	-0,53%
0,70%	-1,08%
0,90%	-1,67%



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WHAT DOES THE MARKET SAY?

Our questions to...



kiloWattsol
Solar resource expert

Xavier DAVAL
Founder

Created in 2007 and based in France and Germany, KiloWattsol is now recognized as an expert in technical audit and risk evaluation for solar projects. KiloWattsol covers the whole life cycle of a photovoltaic solar farm: evaluation of climate resource, audit of manufacturers, contracts review, constructions follow-up, technical acceptances and analysis of performances afterwards.

What are the key elements of the evaluation of producible?

The experience of the person who does the study. It is the responsibility of those who use the evaluation software to make sure that the indicated characteristics of the modules or inverters well reflect reality. It is also necessary to have a good knowledge of the products on the market.

What is your approach for transfer/acquisition operations?

The agreement on a price, which depends on production, is the key to a successful operation. To stick to reality and to the actual value of the asset, our approach relies on factual production data, read directly out of counter, that we correct if any uncertainty is noted. When we don't have detailed data yet, we identify eventual "breaches" for which we ask explanations and analyze the answers. By not being based on climate projections, this approach ensures a certain transparency and makes the negotiations easier.

What is your view on the French and global markets?

France still has a lot to do on the solar sector. The appetite for renewable energy has been initiated by a historically centralized culture, around an almost perfect transmission network and an electric mix in which nuclear weighs more than 75%. For those who can, be patient.

I've been working on the international stage for 20 years. I invite you to mentally cross the global population growth and the irradiation gradient. The interconnection between these two issues gives you a strip centered on the Equator where demand and resources are at their highest level. Solar energy is becoming the world's most well-distributed resource and is asserting itself as an obvious solution for our planet.

What is the impact of storage solutions on your activities?

Storage will soon be inseparable of solar energy. Our job is to certify the long term production capacity

of a project to allow its financing through a loan backed by a recurring income. Storage offers an extra degree of freedom by decorrelating irradiation (day/night, max at noon) to optimize the respond to the demand. It opens up new opportunities related to prices that vary depending on the time of the day and the year and makes the renewables more efficient than any other traditional energy.

What do you expect from COP21 ?

Our planet is going straight to the CO2 wall. I want to remain optimistic : one day, our politicians will have the courage to take the necessary decisions to slow/reverse the current trend. December 2015 in France would be a nice opportunity, as were the previous dates.

The Club of Rome sent out alarm signals in 1972, when growth would have allowed us to finance an industrial and technologic mutation. In an excessively tensed economic context, we will need huge dedication and determination to make some decisions. Can our democracies still do that?



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WHAT ABOUT FINERGREEN... ?

We were there:

On June 16th, Damien Ricordeau, Founder and CEO of FINERGREEN, attended a roundtable on the potential of Renewables in Russia, during Positive Economy Forum organized by Jacques ATTALI in Rostov-On-Don.



Setting up of 20 M€ bank financing

Finergreen conducted the simultaneous setting up of two bank loans on behalf of two French developers for amounts totalizing 8 and 12 M€.

The portfolios were composed of 30 and 46 rooftop-based solar plants and were previously sold by Finergreen to an European investor. The operation was enabled by two banks that contributed 50/50 each. The contracts were signed in May 2015.

Sale of a ground-based solar plant for 8,3 M€

At the end of June, Finergreen secured the sale of a ground-based solar farm of 5,2 MW of power. Located in Vendée, the plant were valued at 8,3 M€. The construction will begin this month.

Finergreen's dashboard

Rate	Date	Value
E3M	01/07/15	-0,0140%
SWAP 10 years	01/05/15	0,860%

Electricity Price

EPEX – Intraday	06/07/15	50,56 €/MWh
EDF – Blue Tariff	01/03/15	14,33c€/kWh

Two and half years of Finergreen existence, it is:

• Operations



• 2 new collaborators

Finergreen's team is getting bigger with the arrival of two new collaborators early 2015



Louis CATALA

Associate

Audencia – Centrale Nantes

«I wanted to find a job that would link my techno-financial studies with energy transition. As Finergreen works to create new green financial assets, it makes sense for me to take part of the adventure »



Théo BARALLON

Associate

HEC Entrepreneur – INSA Lyon

« After working for big industrial groups, I wanted to turn towards a more entrepreneurial experience and preferably in an growing sector. Finergreen's environment perfectly suits my expectations ».