

F&S ENERGY LIMITED

Peer to Peer Matching Platform

F&S Energy Sandbox Evaluation Report

26/08/2022

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Background to the Project

Brief Description of the innovation

Historically the business model of F&S Energy has been to buy renewable electricity from independent UK based generators and to supply this to electricity consumers within the industrial and commercial sectors, providing them with renewable electricity as demonstrably green as possible. When consumers would sign up with F&S Energy we would provide them with a green certificate and a map showing them the location of the local generators from which F&S were buying renewable electricity.

After feedback from customers, we knew there was firstly a growing concern around the green-washing carried out by many electricity suppliers with customers wanting to know exactly where their power was coming from, and secondly there was often a desire for customers to be able to supply power to other sites that they owned via the grid, or to other sites that they knew of.

Our innovation was to allow independent generators of a smaller size (typically up to 1MW) to become license exempt suppliers and to directly supply electricity to consumer sites through an online portal. This portal allowed generators and consumers to match up with either sites they knew or sites that were a good match for them, and then to contractually supply power from the generator acting as the License Exempt Supplier (LES) to the electricity consumer. Whilst sleeving arrangements are becoming increasingly an option for larger energy consumers with purpose built generation to supply their electricity needs, this project was developed to open up the opportunity of peer-to-peer trading to smaller customers. The customer, or their nominated party acting under a Peer-To-Peer specific LOA, agrees the matches through the online portal with a suitable generator, rather than having to find and negotiate a deal for themselves.

Reason for the Sandbox Application

After review of the relevant legislation around LES's, we had a requirement to the innovation team to confirm that our understanding of the legislation was correct and that what we wished to do was all permitted.

Without confirmation, F&S Energy would not be able to proceed as we are very risk averse as a company when it comes to following the relevant legislation. As an independent electricity supplier, we could not afford the risk of the innovation not being allowed once the cost to develop the solution had been invested into this project.

Scale of the Project

For the year from the 1st April to the 31st March 2022 which was the most recent RO compliance period, 49 generators have used the matching portal and successfully matched up with 45 electricity consumers. 62 matches have been made in total. During this time period, certain parties have had multiple matches

as the initial 6 month contract may have ended and they would then have matched against a different partner. 5,233MWh of electricity has been matched between license exempt suppliers and electricity consumers during this period. Some other parties, both generators and consumers have used the matching portal but were not always able to find an agreed match.

Impact of the project and the sandbox

When discussing the impact of the project and the sandbox, it should be recognized that there are currently very exceptional circumstances in the electricity markets which overshadow everything else, with many suppliers going out of business, and many electricity consumers struggling to afford to pay their bills. There is also very limited liquidity making it very difficult for electricity suppliers to buy and sell power on wholesale markets and so hedge their positions. All of these factors are limiting the competition in the electricity markets both for PPAs and for supplying power and so this makes it more difficult than expected to evaluate the success of the project.

Impact on generators

Generators were offered a financial incentive for any volume of matched power that was sold directly to the matched consumer. This provided the generators with the benefit of an increase in the revenue they received and so helped to encourage small scale renewable generation in the UK. However under these exceptional circumstances in PPA prices, this uplift was greatly overshadowed by the huge increases in energy prices that could be obtained. In general generator owners also liked the idea that they were aware who they were supplying their renewable electricity to through becoming a License Exempt Supplier themselves, rather than just a normal PPA contract. There was also a significant interest from the generators to contractually provide their own excess power to other sites they have, in cases where private wires are not viable.

Impact on end consumers

Consumers were able to achieve 2 benefits. Firstly they received a financial incentive on any power that was matched through the peer to peer portal, and secondly, they could contractually see that the power was coming directly from a renewable generator of their choosing. This seemed to be a very popular incentive for electricity consumers. However as is the case with the renewable generators, the massive disruption in the electricity markets had overshadowed the impact the project would otherwise have had.

Impact on the system and other non-participating end-consumers

When carrying out shows and presentations promoting the peer-to-peer project, we did receive very good feedback from both consumers and generators about supplying power via the grid directly to parties which they knew. From feedback from customers and energy brokers, we have been told that the project encouraged customers to purchase renewable electricity, as they could be certain that

through working with us they were actually receiving renewable electricity rather than green-washed electricity.

It was necessary to get brokers on board with the scheme as they largely control the electricity markets and without getting them onboard the project would have been a non-starter.

Impact on supply market competition

The peer-to-peer offering adds to the supply offering in the UK market. It allows a generator to act as a supplier and supply its electricity directly to another party to the benefit of both parties. This is another way in which the owners of small generators are able to sell their electricity.

Due to the intermittent nature of the renewable generators, all consumers required a backup supplier (F&S Energy in the case of this project) to provide power when the License Exempt Supplier was not generating. We are currently developing a solution for the peer-to-peer program whereby several license exempt suppliers can match off against a single consumer which will improve the abilities of generators to match off against consumers. For example a wind turbine which can generate at all times of the day together with some PV solar generated power would provide a superior shape of electricity output which would more closely match most electricity consumers. However this development is a complicated process particularly, where there are different start and end dates for various license exempt suppliers and this creates significant matching and billing issues which is currently being developed.

Impact on project design and execution

Engagement with the Innovation team was crucial for the project to go ahead and for the project's success. The initial intention of the peer to peer platform was to allow generators to supply local consumers through the portal. The definition of local was going to be if both the license exempt supplier and the consumer were within the same GSP, this would have been restrictive, but we thought as an extension of how we have always worked, that local generators should match with local consumers. However the feedback from the innovation team gave us the reassurance that consumers and generators could be matched nationwide which allowed a consumer site to match off against a generator which may be outside that GSP. This was extremely beneficial and allowed large electricity consumers such as large landmark buildings in central London to be able to match up directly with renewable generation from the home counties (outside the London GSP) which wouldn't have been possible if it was only able to match with generation within London.

Journey of a Peer-to-Peer match

License Exempt Supplier

A generator which wishes to become a License Exempt Supplier (LES) needs to sign the necessary contracts with the licensed supplier F&S Energy to facilitate this and perform the functions that the LES is unable to such as registering meters, paying industry charges, settlements etc. The LES is then able to register on the peer-to-peer portal and attempt to find a potential match. This can be a site which is already known to the owners of the LES or it can be a site that is found through the portal. The LES enters its details into the portal as can be seen below:

Site Details

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MPAN	██████████
GSP	██
Site	Generator
Broker	██████████
Company	██████████
Contact	██████████
Email	██████████
Telephone	██████████
Mobile	██████████
Address 1	██████████
Address 2	██████████
Address 3	██████████
Address 4	██
Postcode	██████
Type	Solar

Site Information

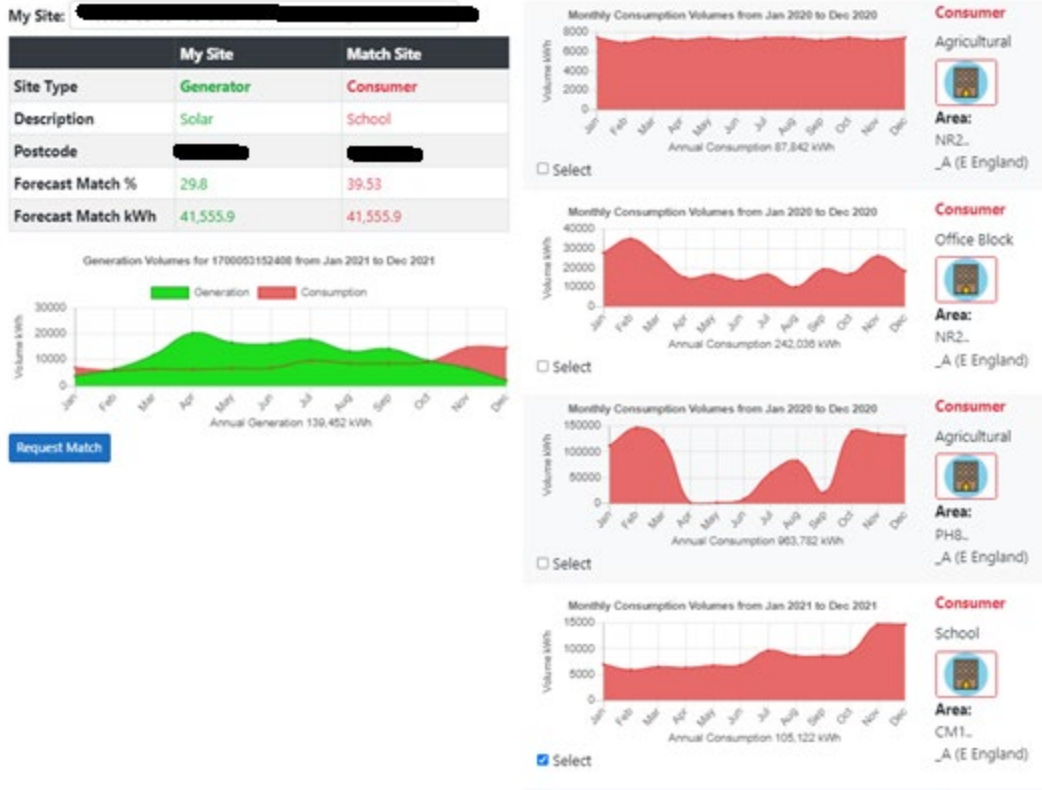
Sheep Farm



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The LES will then be able to attempt to match against a consumer. This consumer can be chosen because it's a site already known to the LES or it can be a site which has a consumption profile which closely matches the generation profile of the LES. Finding a good match between consumption and generation profiles provides greater financial benefits.

Match Place



Once the LES selects a consumer for a potential match, the consumer is then notified and will be able to either agree to the match or reject the match. If the match is agreed, contracts will be electronically signed off by all parties and the LES will supply the consumer with electricity for the duration of the contract. Any shortfall in the supply will be made up by the facilitator (F&S Energy).

Consumer

A consumer signs up to use the portal much like the LES and enters its details into the portal to find a suitable match.

Site Details

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MPAN	██████████
GSP	██
Site	Consumer
Broker	██████████
Company	██████████
Contact	██████████
Email	████████████████████
Telephone	██████████
Mobile	██████████
Address 1	██████████
Address 2	
Address 3	██████████
Address 4	██
Postcode	██████
Type	School

Site Information

Primary School

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The consumer can then choose a suitable match based on the generator profiles or it can choose a site already known to it.

Match Place



Once the consumer and LES agree on a match, contracts are signed and the consumer will be supplied with electricity by the LES for the duration of the contract. The consumer will then contractually know exactly where this power is coming from. Any additional power that the consumer required will be provided by the facilitator (F&S Energy).

Insights and lessons learned

Taking Part in the Ofgem Sandbox

Taking part in the Ofgem Sandbox made the project possible because it gave F&S Energy the confirmation that the project could go ahead under the granted exemption.

What didn't go to plan

The main thing that didn't go according to plan was the monumental increase in energy prices, together with massive price volatility and the collapse in liquidity in the wholesale markets. These factors made conducting many aspects of the operations of an electricity supplier difficult, including the normal quoting process, and we saw over 30 electricity suppliers go out of business. This was the climate in which the peer-to-peer sandbox was undertaken, and resulted in less focus being placed on the sandbox than would have been originally intended.

Another thing which didn't go according to plan was the complexity of building an IT system to match off license exempt suppliers with electricity consumers. Creating the portal, integrating this portal with the

existing in-house system, and the matching and billing of the settlement data was a difficult and ongoing project and the complexity was a considerable drain on F&S Energy.

Another issue was that there was another non-BSc party who had funding to promote a different idea which it also called peer-to-peer trading. This project involved trying to register a consumer MPAN as exempt from all policy costs by matching 100% of its electricity consumption volume against a renewable generator. Because there were questions around whether it was possible to ever really match 100% of a consumers volume against intermittent generation and to make an MPAN exempt in this way, parties understandably became wary of this scheme. Because of this, we found that this had already muddied the waters when we came to speak to parties about peer-to-peer trading when they had already had their doubts about another program which was also called peer-to-peer trading.

Customer appetite for peer-to-peer trading

From promoting our peer-to-peer platform, we learnt is that there is a good appetite for innovations like peer-to-peer trading. We received extremely positive feedback particularly from the owners of smaller generators in the agricultural sector and also groups who were particularly concerned about where their green power was coming from and whether it was truly green and not the result of green-washing.

Whilst the appetite for peer-to-peer trading was very positive amongst both generators and electricity consumers, it was less positive from electricity brokers. We believe it is likely that this was not a part of their usual business model and as this is a small scale project, it wouldn't be seen as worth their while in promoting it to their customers.

Additionality

We also received positive feedback on this scheme from parties interested in installing new smaller scale renewable generation. Over the last year we've had meetings with hydro, wind and many solar installers. We've had consistent feedback from all installers that this is a useful scheme when they're looking into installation finances, and also to ensure that there is a market for the generation they're installing. The portal with energy consumers waiting for matches with License Exempt Suppliers allows installers to show perspective generation owners that there is a growing market for consumers to be supplied with small scale UK based generation.

Another use that businesses and several installers have mentioned was for customers with multiple sites, where they have high consumption at one site without the ability to install renewable generation on the same site. For these cases it was highlighted that the customer could install excess generation at a lower consuming site and then contractually link this, through the peer-to-peer scheme, to the higher consuming site. Generating their own power in this way can help them meet their renewable quotas and achieve net-zero. It also allows the customer to receive the financial benefits to their business from matching the sites through the peer-to-peer scheme. As mentioned earlier in the report these financial benefits are currently less significant with the huge increases in electricity prices, but once prices return to more historically normal levels, this scheme will provide an increased incentive to install more renewable generation at a local or community level within the UK.

Future Work

We believe this innovation will encourage businesses to build the necessary renewable generation to increase the amount of electricity that is matched, and hence move each of the businesses on the peer-to-peer platform towards a net zero position.