

Would peer-to-peer energy trading be risky to grid infrastructure ?

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2018 Q3

75% market share

Big Six



2018

59% Customers didn't switch
energy supplier in 12 months



"Switching is a hassle"

"Hard to work out saving"

"Things will go wrong"

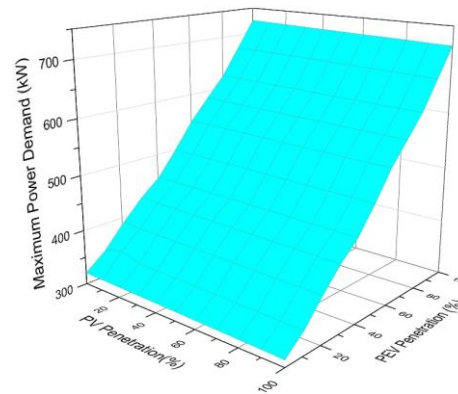
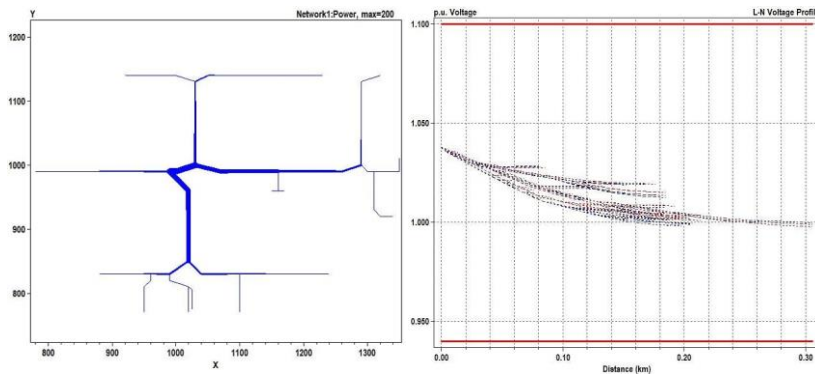
Electricity Network Modelling

- Complex topology
- Time resolution
- Geographical locations
- Asset thermal modelling

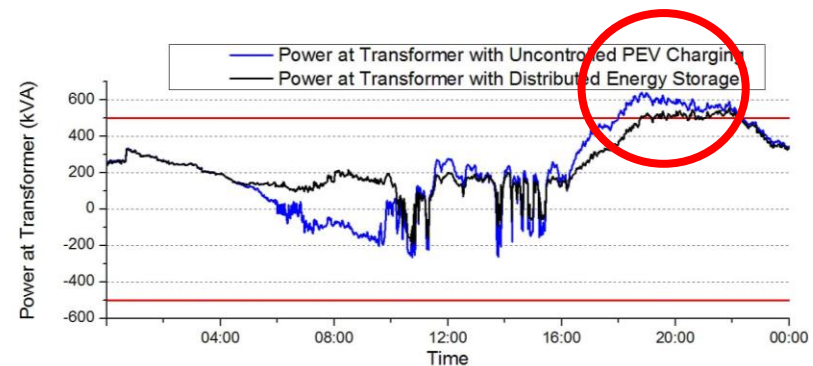
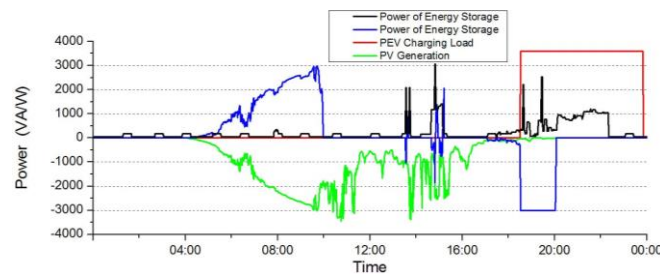


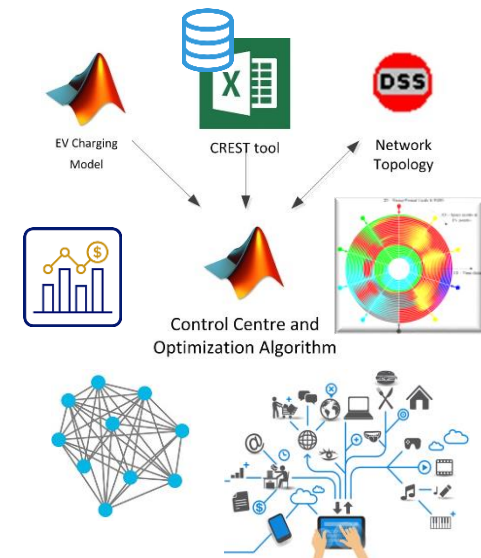
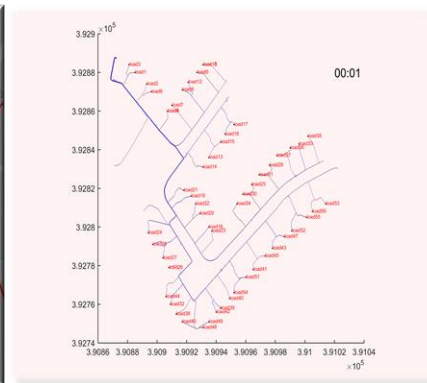
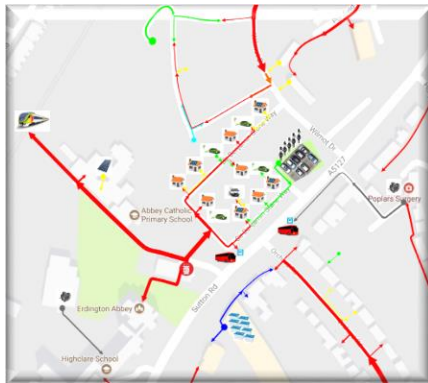
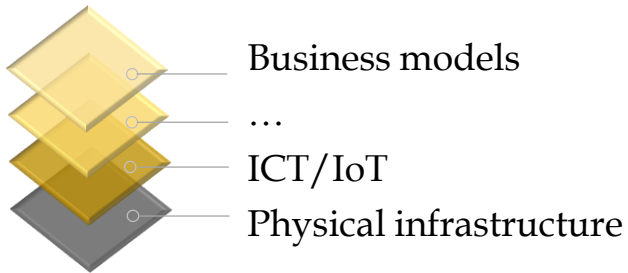
Impacts and Management of Distributed Energy Resources

- Smart Grid & Low-Carbon Technologies
- Distributed Renewable Power Generation, Energy Storage, Electric Vehicles
- Network Asset Thermal (current), Voltage limits, Phase Unbalance



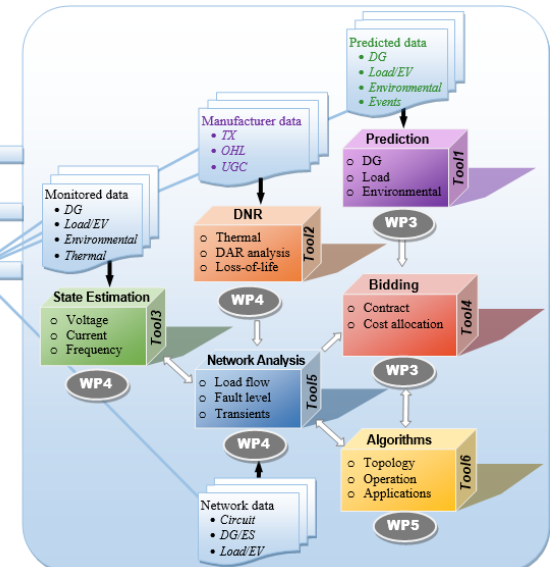
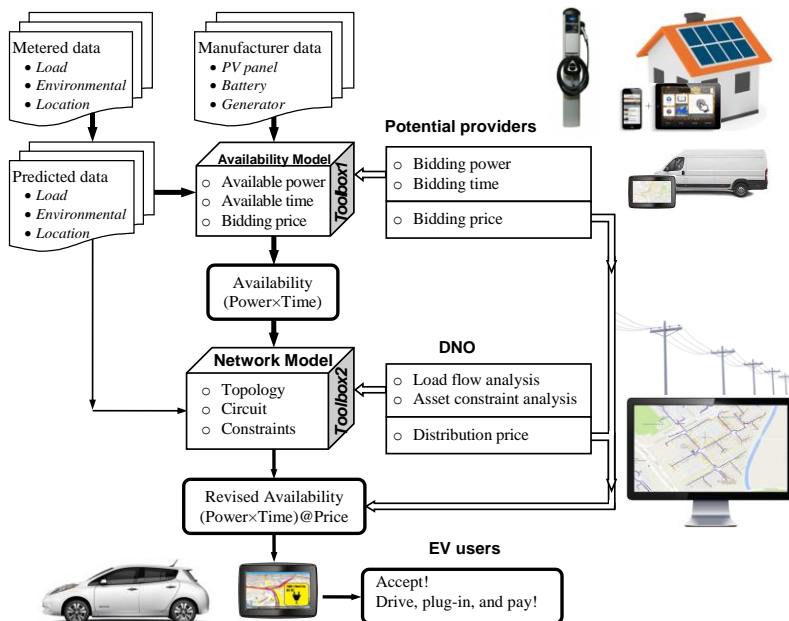
PEV	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
0%	18	17	17	16	14	10	27	307	320	3014	1894
10%	44	43	43	43	38	37	42	357	275	929	1330
20%	85	84	84	83	82	81	81	356	267	740	1112
30%	105	104	103	102	100	99	97	355	264	776	1146
40%	412	401	392	381	379	379	376	403	467	787	1162
50%	1158	1144	1128	1112	1118	1107	1098	1086	1120	1236	1552
60%	1861	1830	1819	1800	1780	1763	1750	1739	1805	1896	2205
70%	2592	2576	2550	2533	2507	2495	2482	2478	2510	2687	3251
80%	3459	3390	3360	3330	3303	3266	3238	3242	3263	3322	3544
90%	4857	4788	4697	4652	4615	4572	4534	4509	4537	4651	4919
100%	6559	6494	6394	6350	6294	6268	6244	6247	6322	6554	6995



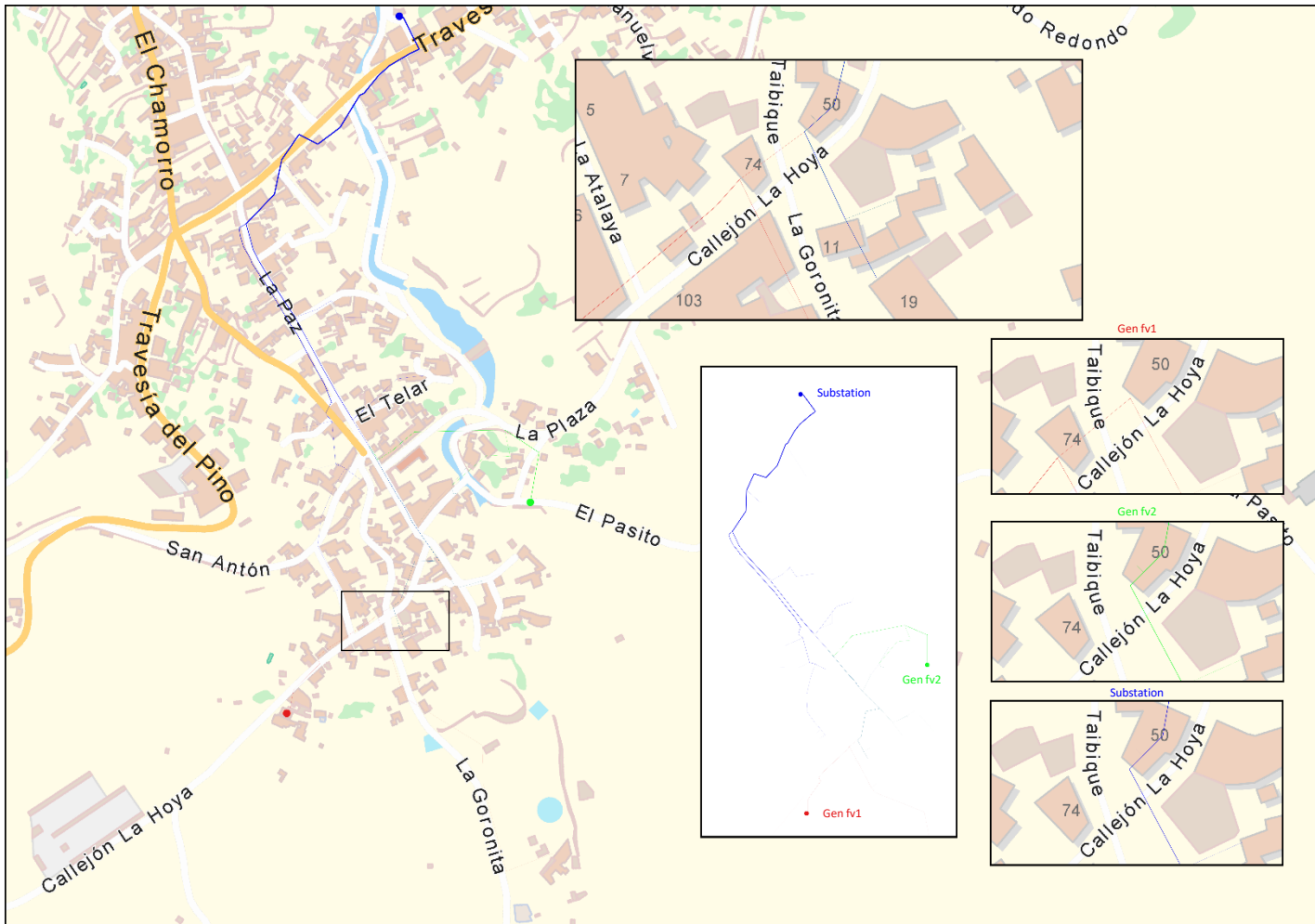


EPSRC Energy Feasibility – “Electricity Satnav”

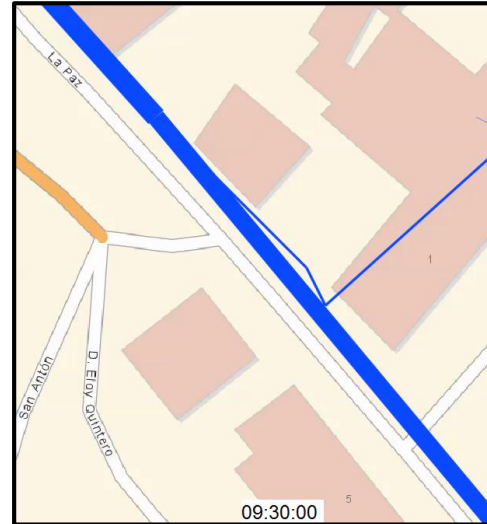
EPSRC UKRI Innovation Fellowship – “Street2Grid”

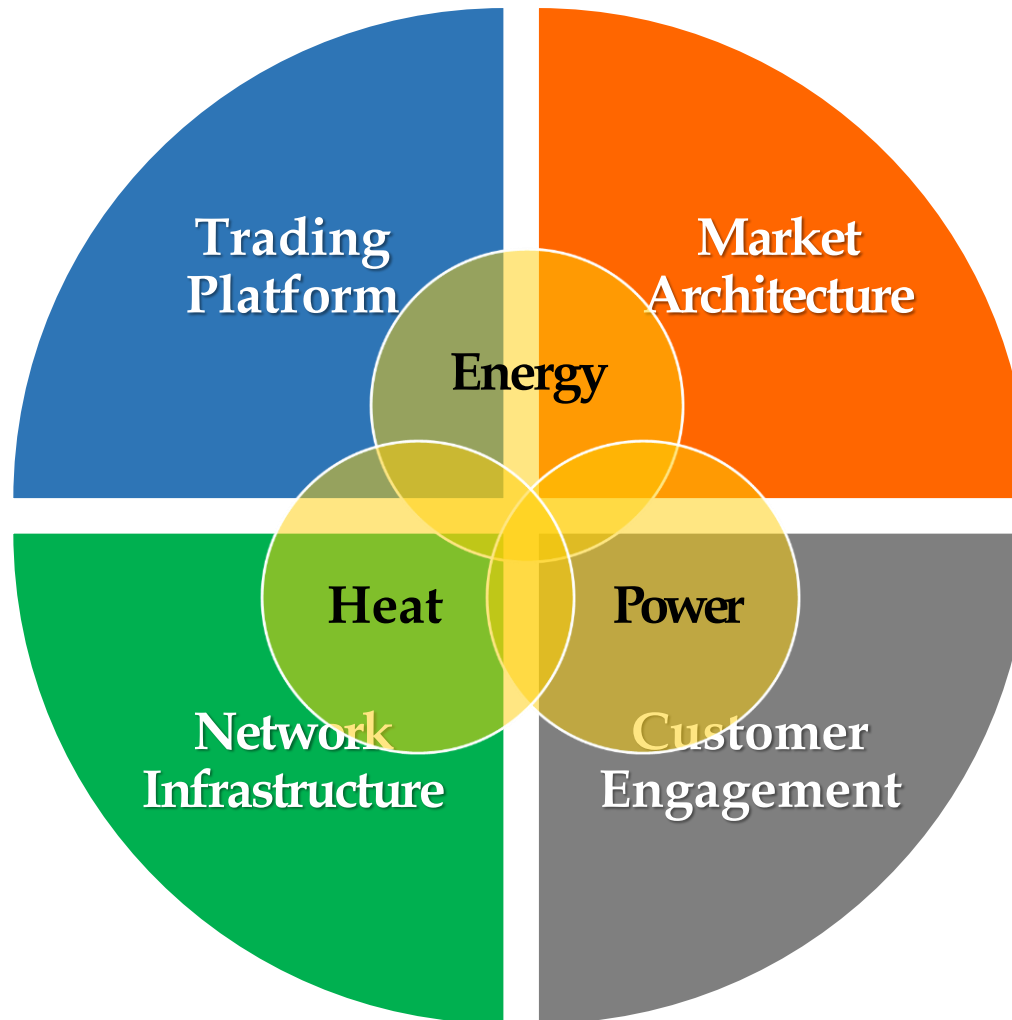


“Street2Grid”



“Street2Grid”





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