



BOSTON SPA

energy efficiency trial

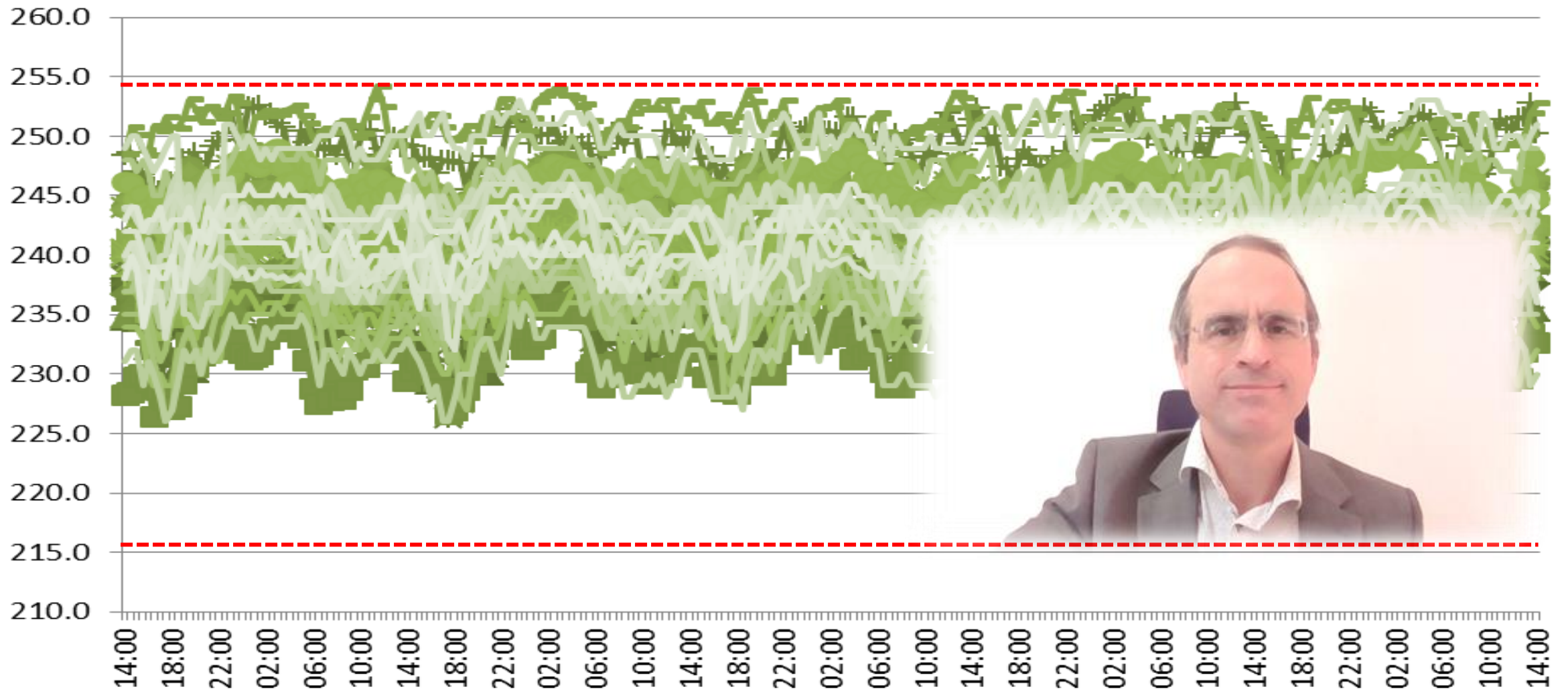


Francis Shillitoe (Project Manager)

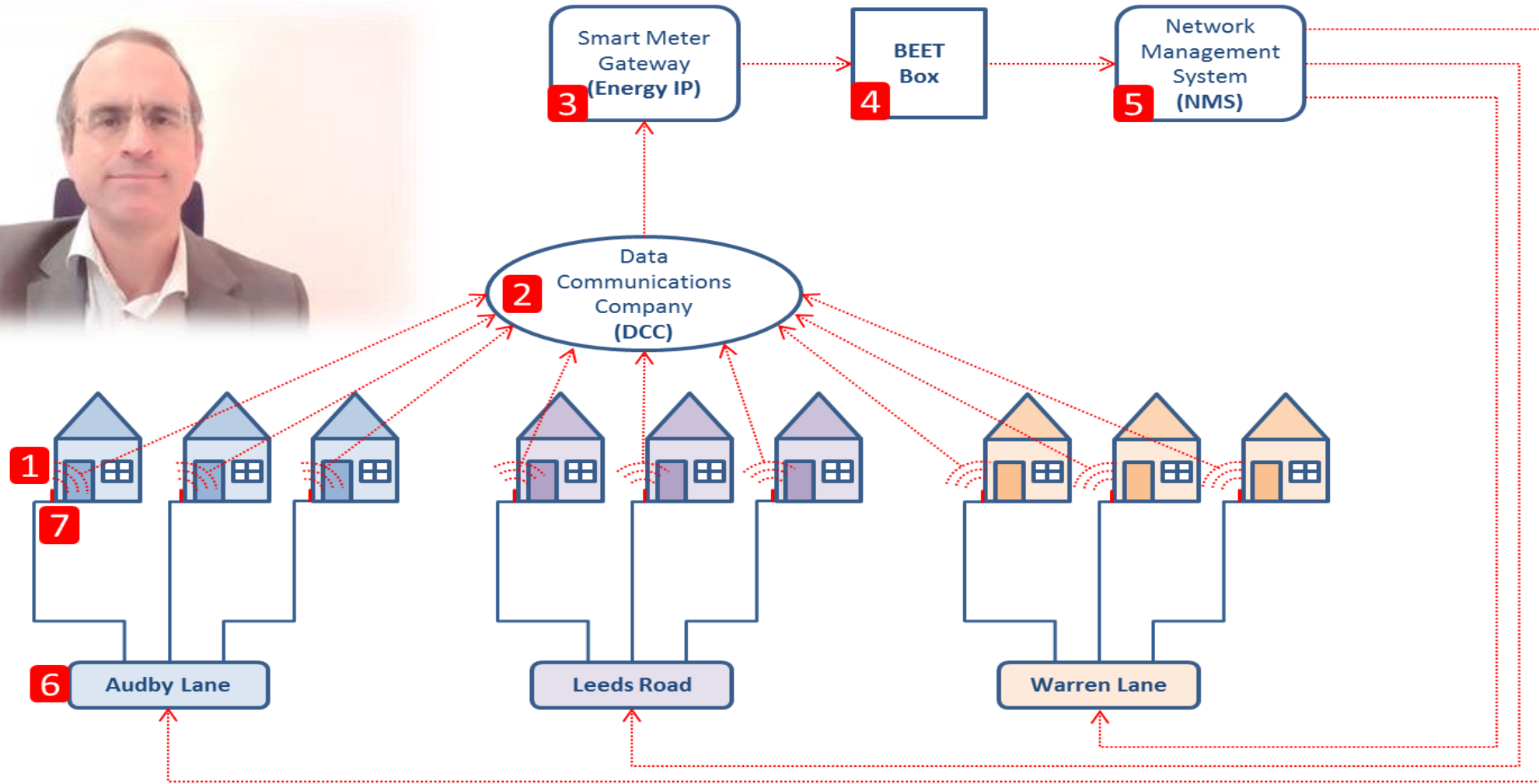
ENIC

December 2020

The problem to solve



What is the innovation?



BEET = Boston Spa Energy Efficiency Trial

Project Progress



The challenges

Changes to control philosophy and cyber-security. Will Control, OT and IT security accept this?



The challenges – Smart Meters

Slow response times

Voltage measurements not clock synchronised

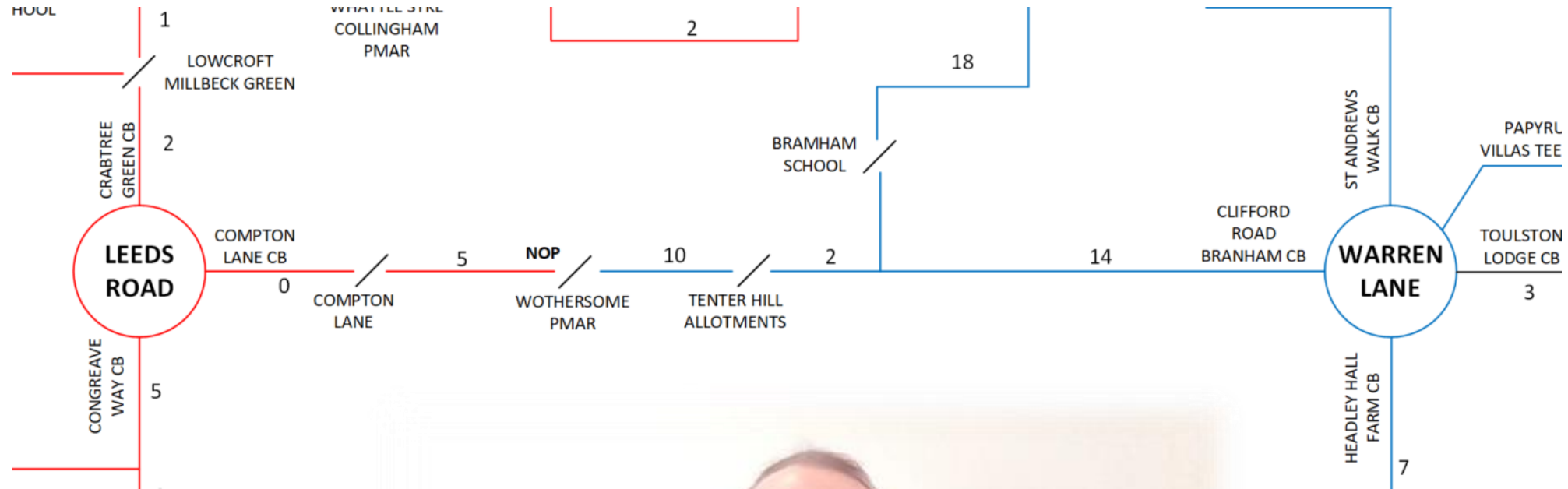
Voltage measurement accuracy



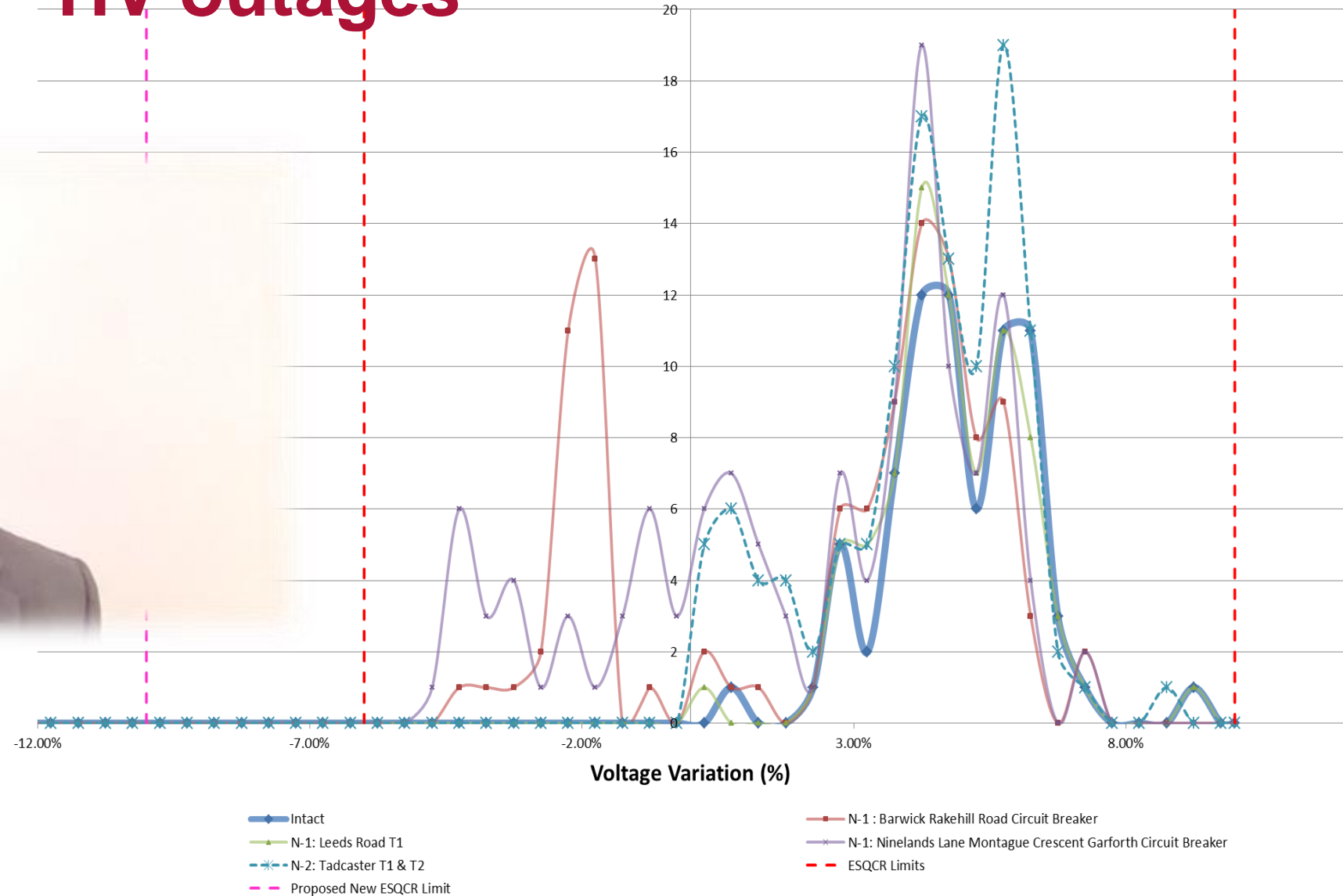
The challenges – Smart Meters



The challenges - HV outages



The challenges - HV outages



What are the benefits? – potential customer savings

Customer Level	Unit	Potential Annual Benefit (for given percentage voltage optimisation)					
		1%	2%	3%	4%	5%	6%
Typical Domestic	kWh	30	60	90	120	150	180
	£	5	9	14	18	23	27
	kgCO ₂ e	9	18	27	36	45	54
BEET Trial Area (15,000 customers)	MWh	450	900	1,350	1,800	2,250	2,700
	£k	68	135	203	270	338	405
	tCO ₂ e	135	270	405	540	675	810
Northern Powergrid (3.9m customers)	GWh	117	234	351	468	585	702
	£m	18	35	53	70	88	105
	ktCO ₂ e	35	70	105	140	175	210
Great Britain (28.5m customers)	GWh	855	1,710	2,565	3,420	4,275	5,130
	£m	128	257	385	513	641	769
	ktCO ₂ e	257	513	770	1,026	1,283	1,540





Thank you

For further information please contact me:

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