



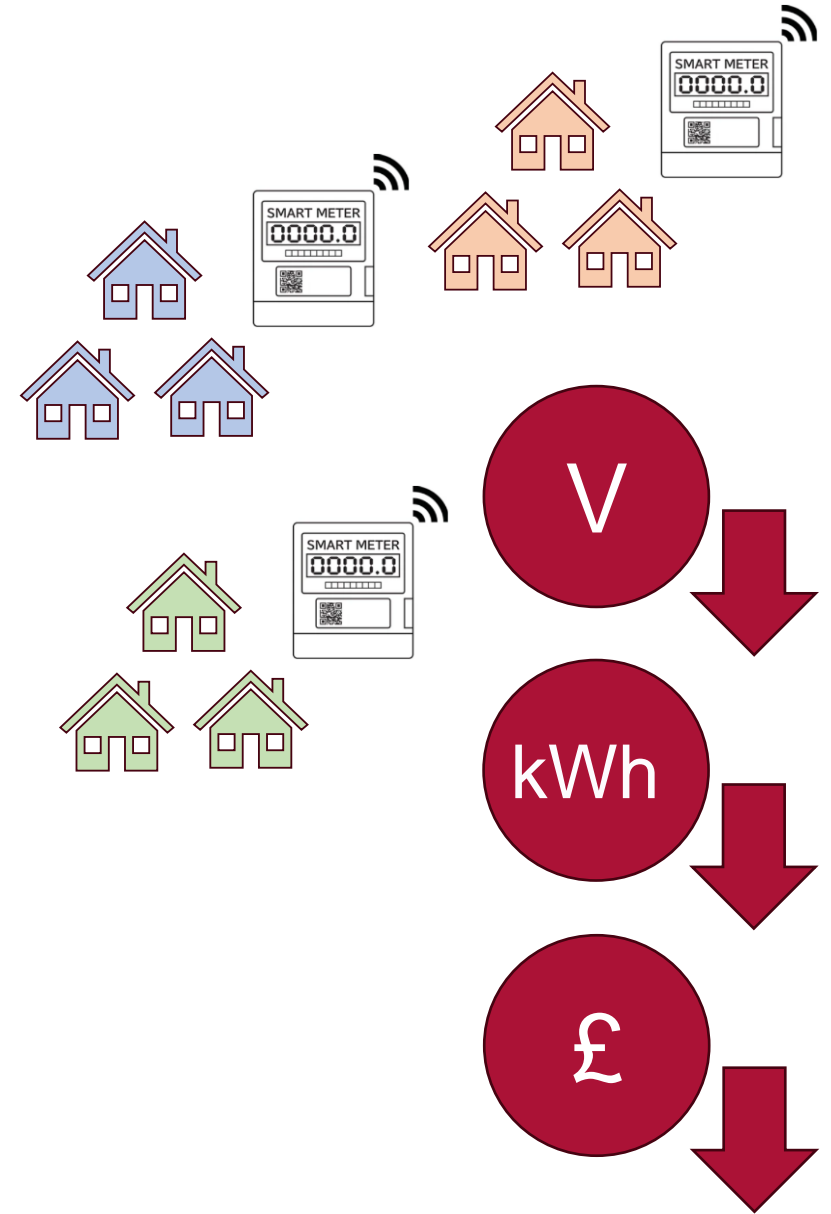
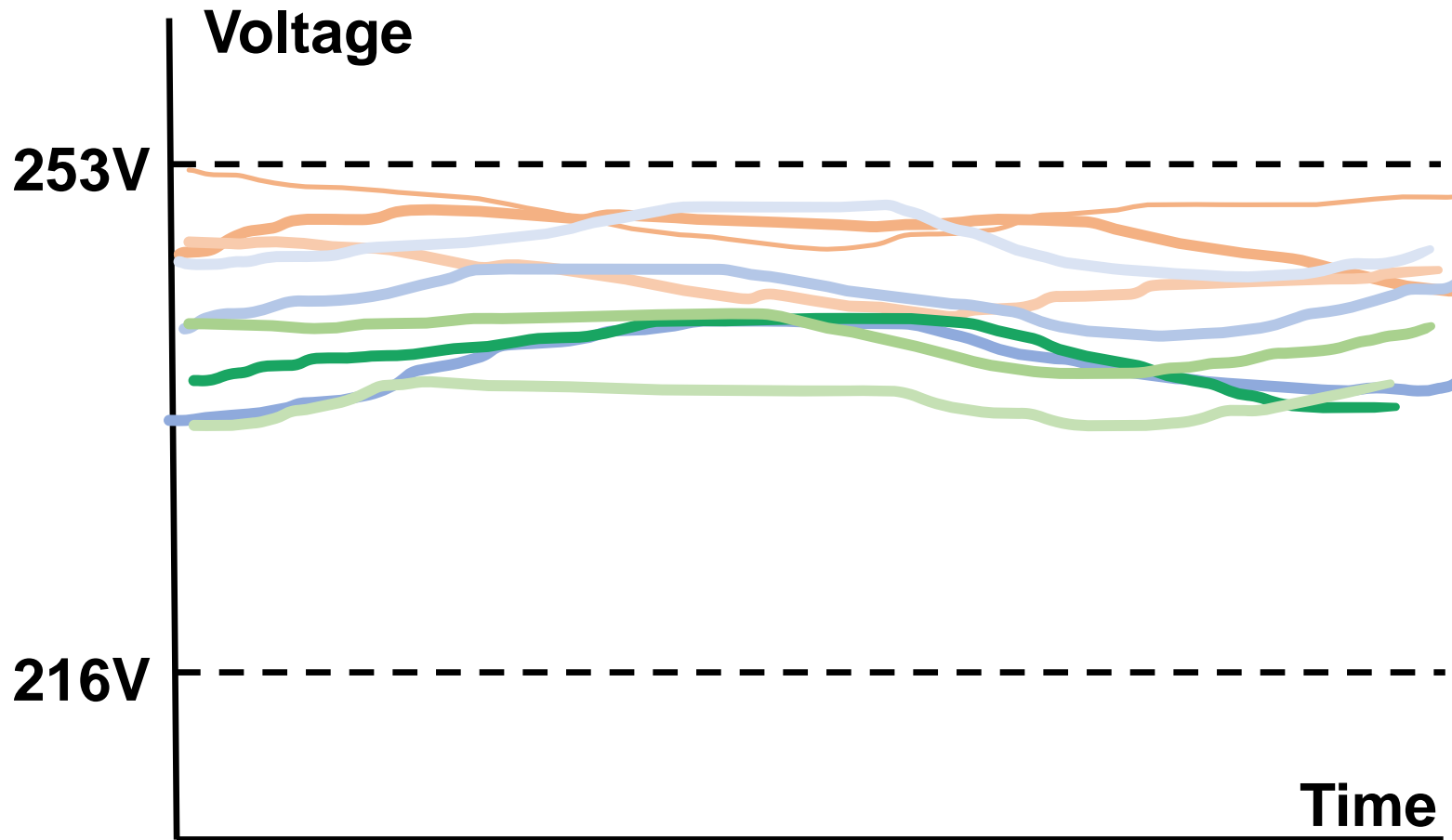
Northern Powergrid

Boston Spa Energy Efficiency Trial (BEET)

Francis Shillitoe

Project Manager

Customer voltages are too high

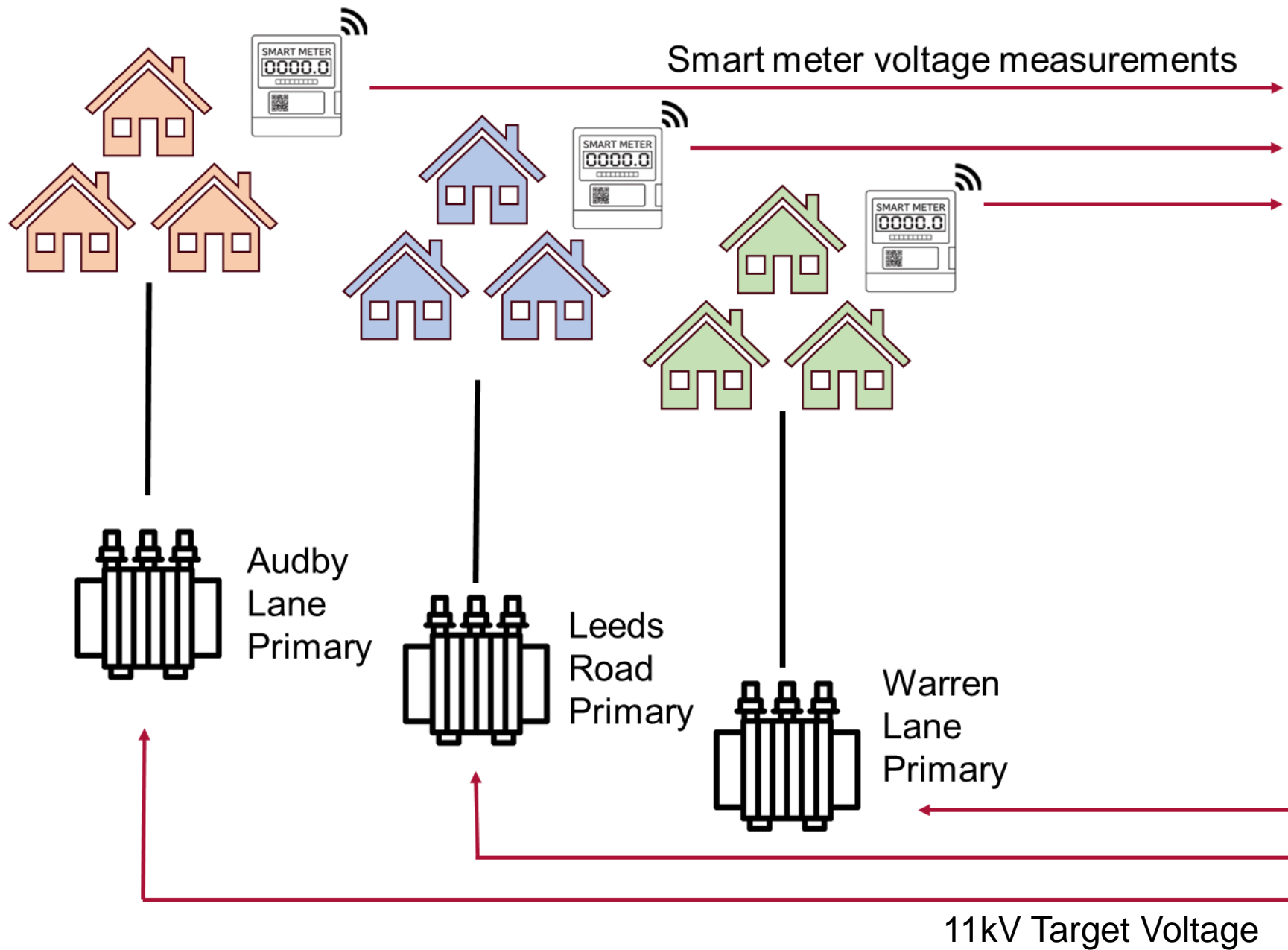


Reduce customer bills

		Estimate of Annual Customer Saving (for given percentage voltage reduction)		
Scale	Annual Consumption	1%	2%	3%
Typical Domestic	3,000kWh	£9	£18	£27
BEET Trial Area (15,000 customers)	45,000MWh	£135k	£270k	£405k
Northern Powergrid (3.9m customers)	11,700GWh	£35m	£70m	£105m
Great Britain (28.5m customers)	85,500GWh	£257m	£513m	£770m

Assumptions:

- 1% voltage reduction causes 1% reduction in energy consumption
- Unit price for domestic energy: £0.30 per kWh



SIEMENS Siemens Advanta

Smart Meter Gateway

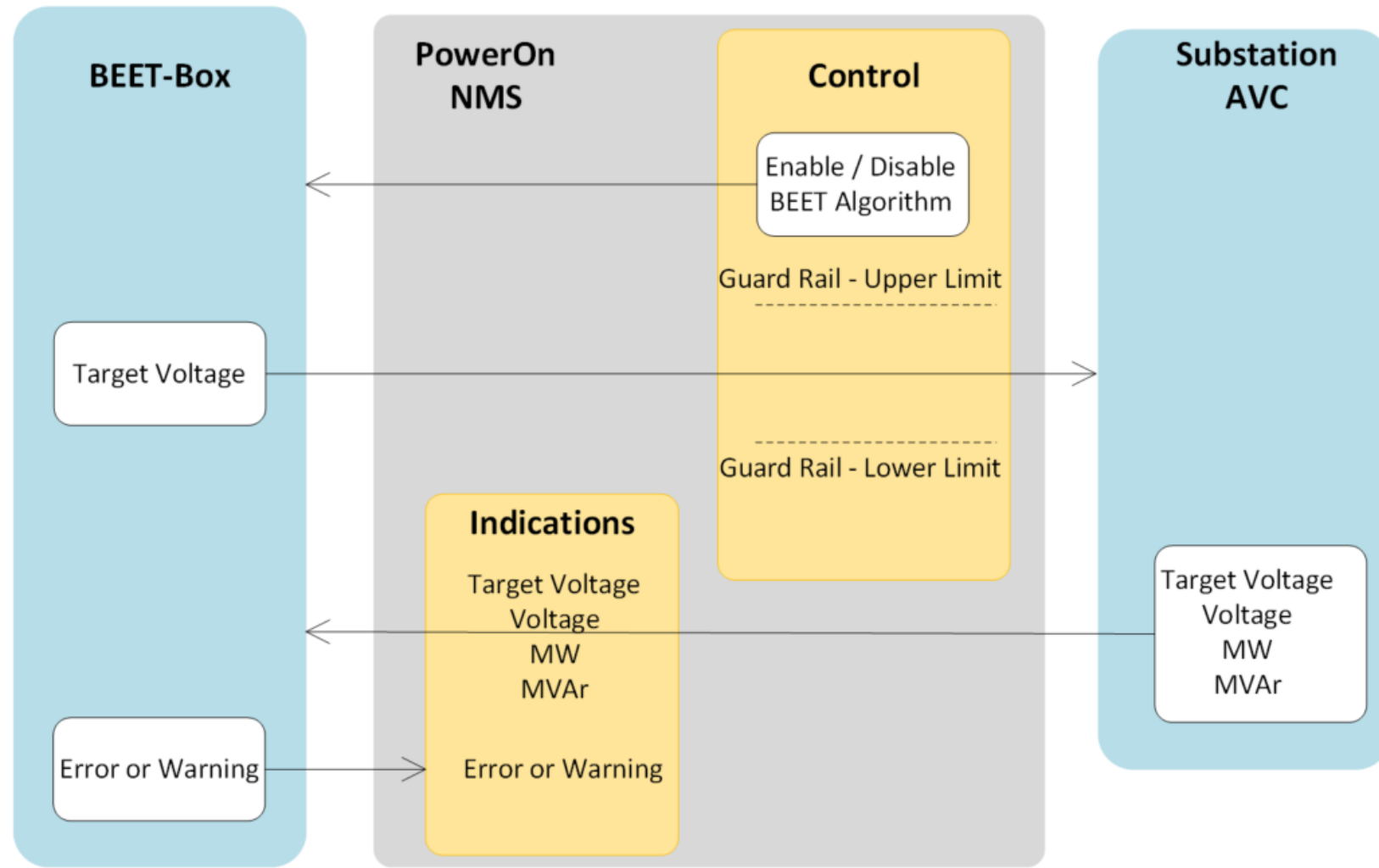
Fundamentals

BEET-Box



Network Management System

Indications and Controls on Network Management System



Baseline Programme

We are here !



October 2021



Preparing for the trial.

January 2022



BEET algorithm developed and infrastructure built

April 2022



BEET-Box ready for testing.

July 2022



All system components tested

August 2022



Voltage control goes live.

August 2023



Further testing & refinement.

November 2023



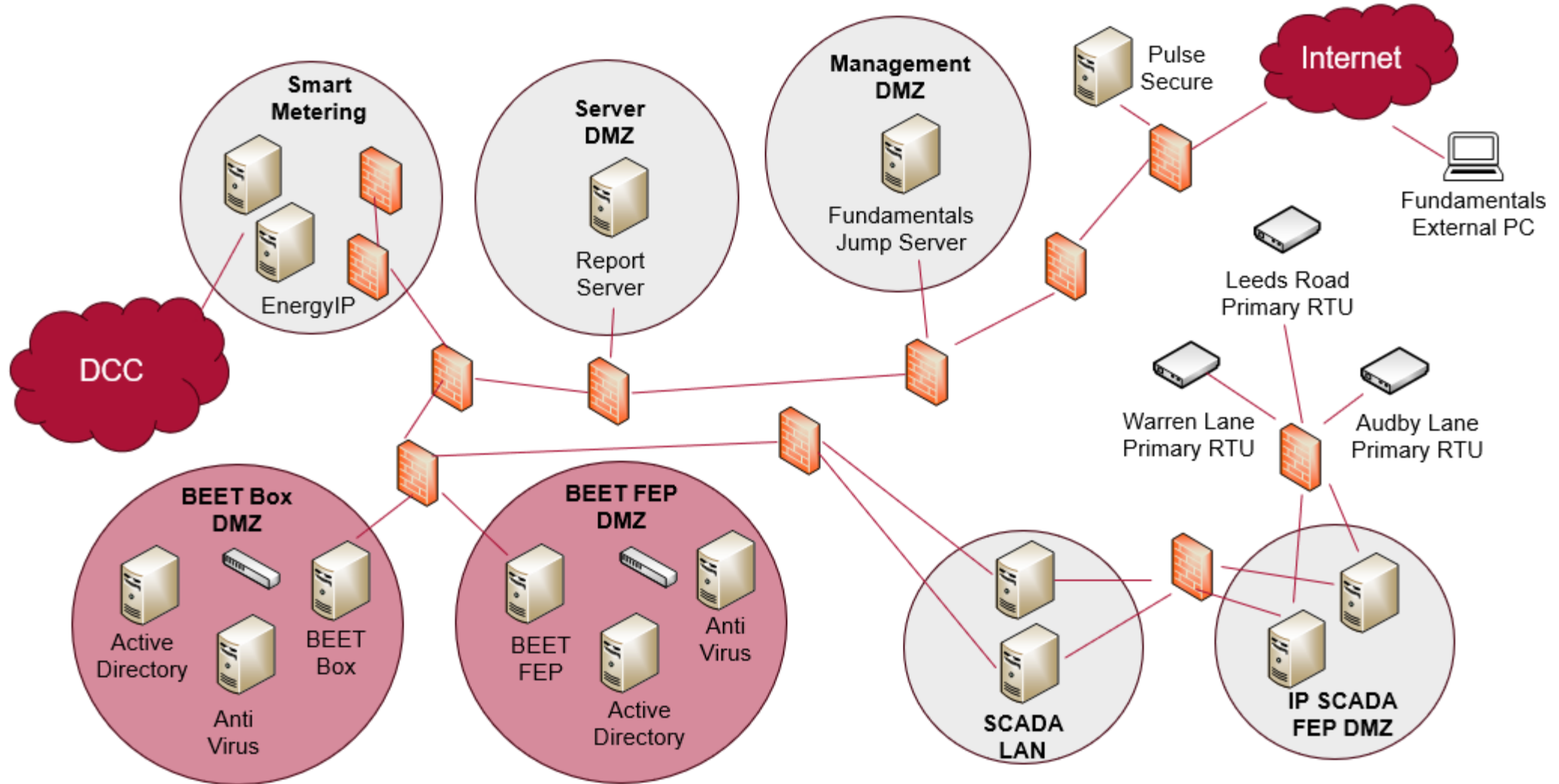
Trial ends.

2023+ ...

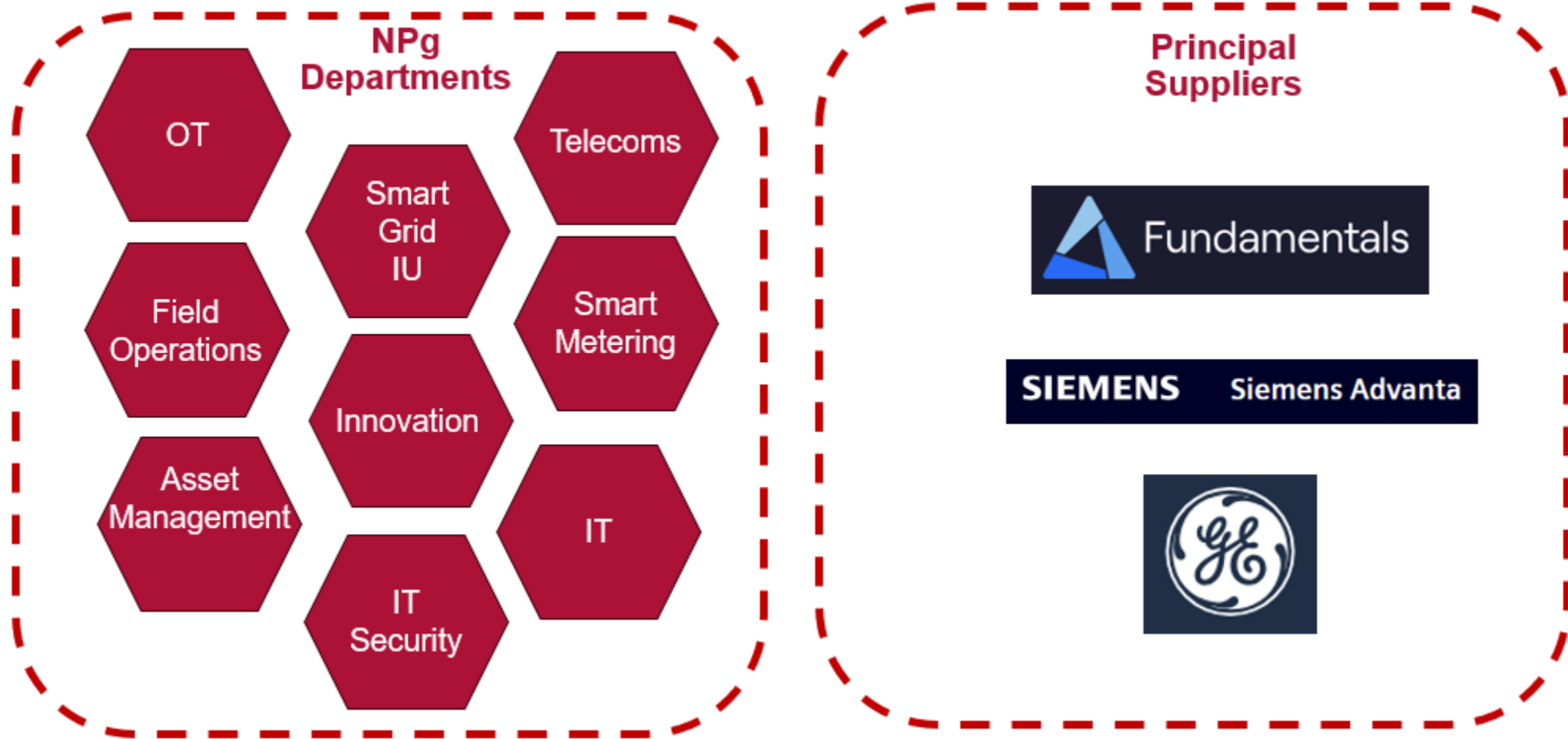
If the trial is successful ... regional rollout



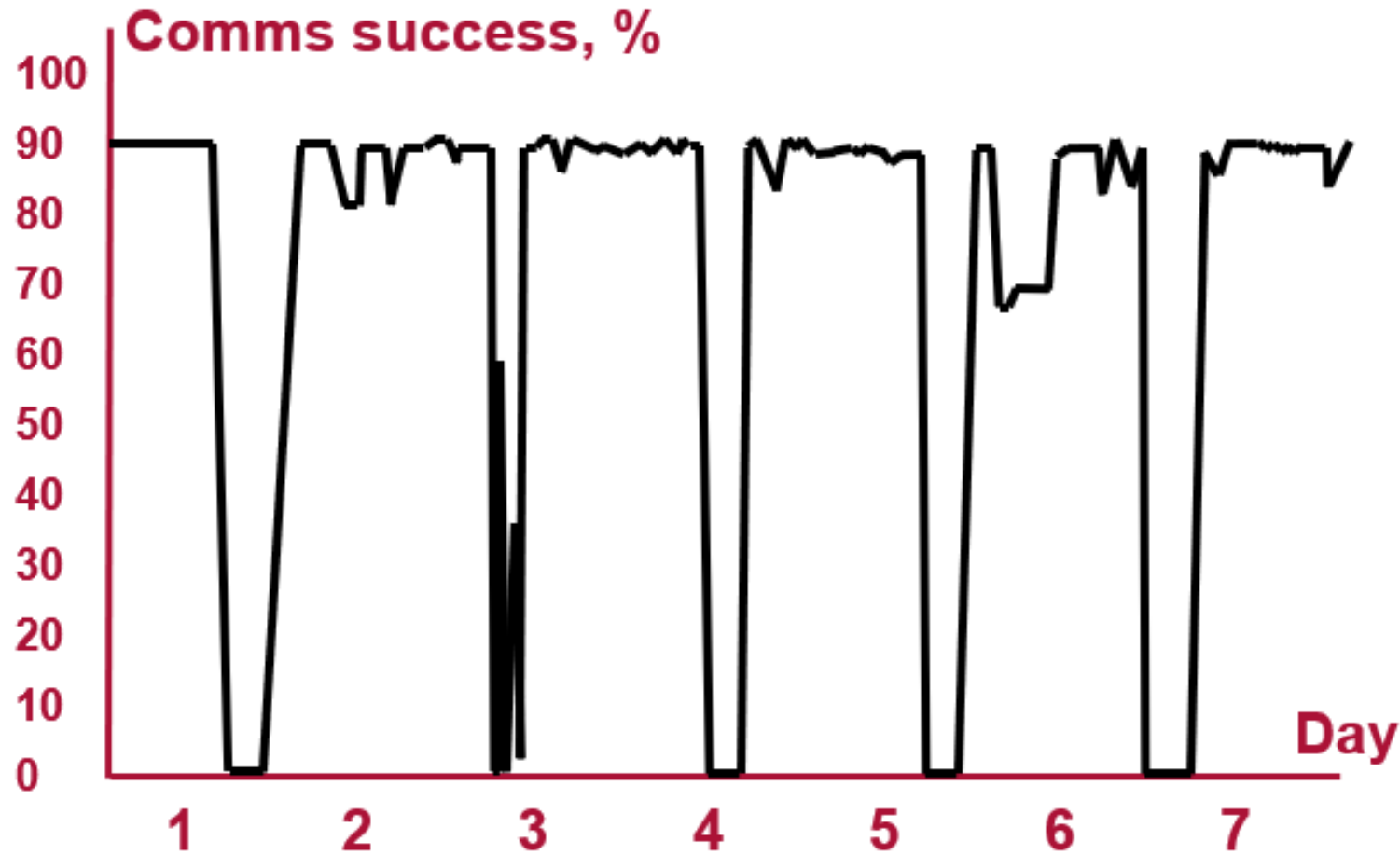
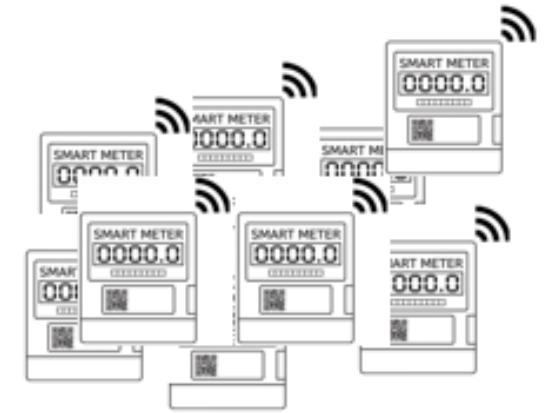
Challenge 1 – Infrastructure



Challenge 2 – Number of Business Functions



Challenge 3 – Smart Metering



**500 smart meters
polled for voltage
reading every 30 mins
for 7 days**

Questions & Answers

For further information please contact me:

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