

**electricity
north west**

Bringing energy to your door



SMART STREET

IRM roll-out

Stay connected...

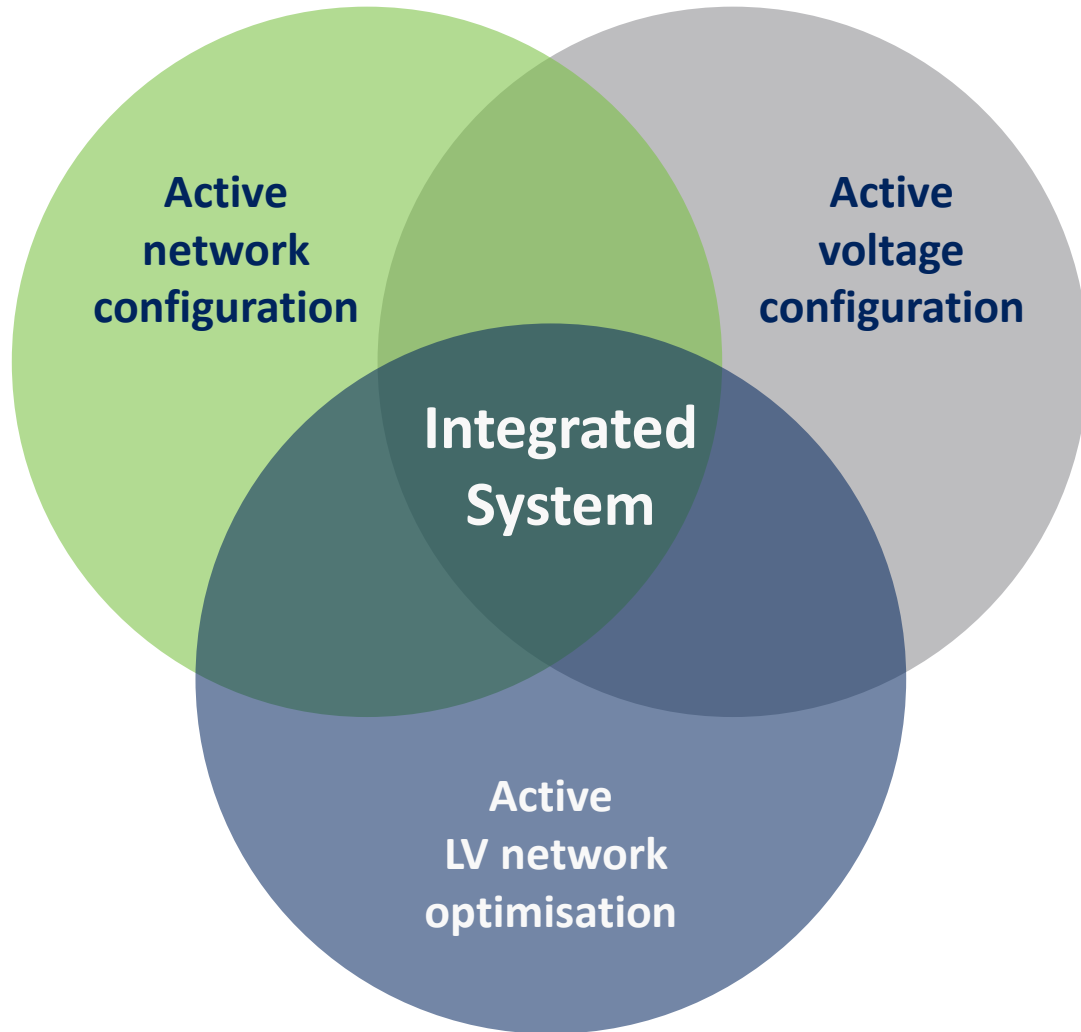


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An aerial photograph of a residential building with a red-tiled roof. Several blue solar panels are mounted on the roof. The building has a brick facade and windows. The text 'SMART STREET' is overlaid in a white box with a dark blue border.

SMART STREET

“A unique application to reduce customers bills and facilitate the transition to a low carbon economy”



Active network configuration

Installation of LV circuit breakers and link box switches


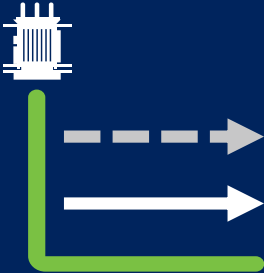


Active voltage configuration

Installation of on-load tap changing transformers with revised tap changer specification for increased savings.
No short/medium term benefit for capacitors

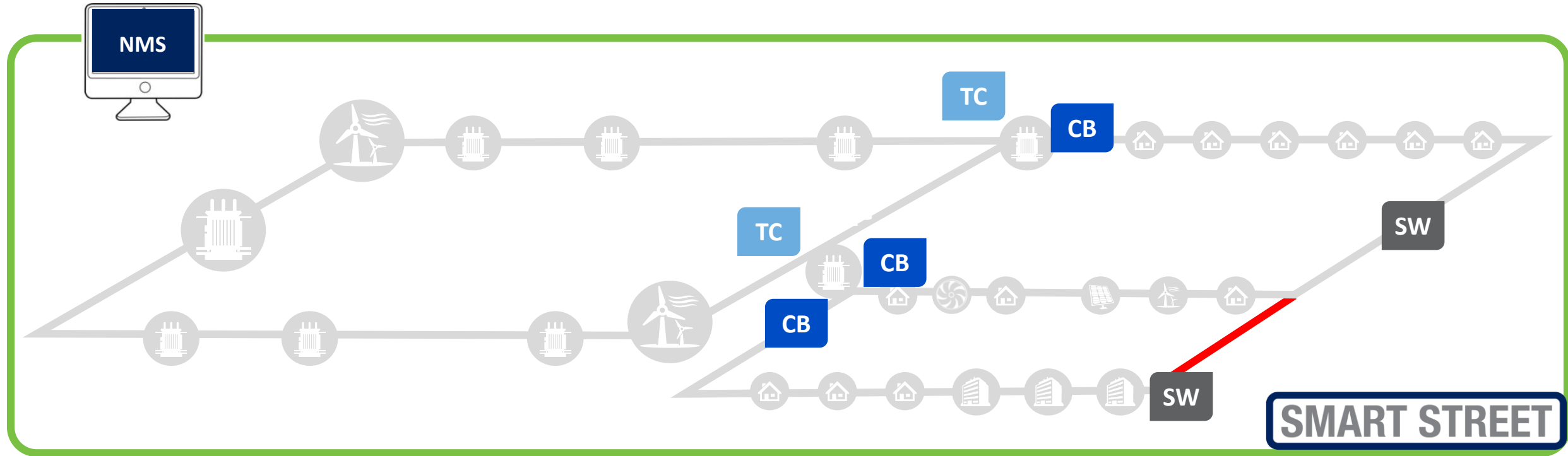
Active LV network optimisation

Optimisation software controlling all devices centrally and automatically adjusting the network for real time situations

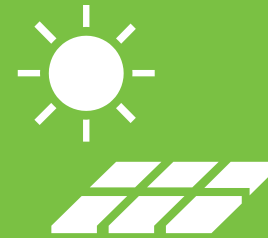


Site selection	OLTC	Meshing	Integration
			
<p>Integrated system approach</p> <p>Deployed on 180 networks across Electricity North West</p>	<p>180 distribution transformers with OLTCs</p>	<p>Active LV network configuration</p> <p>2160 LV CBs</p> <p>1080 LV link box switches</p>	<p>Active LV network optimisation</p> <p>Via Schneider NMS</p>

Deployment overview



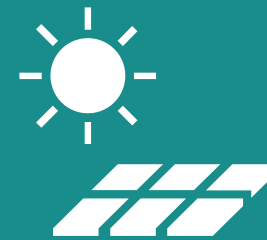
CB LV CB **SW** LV Switch **TC** On-load tap changer



Predicted high LCT uptake



Areas with a high level of fuel poverty



Sites which satisfy both criteria

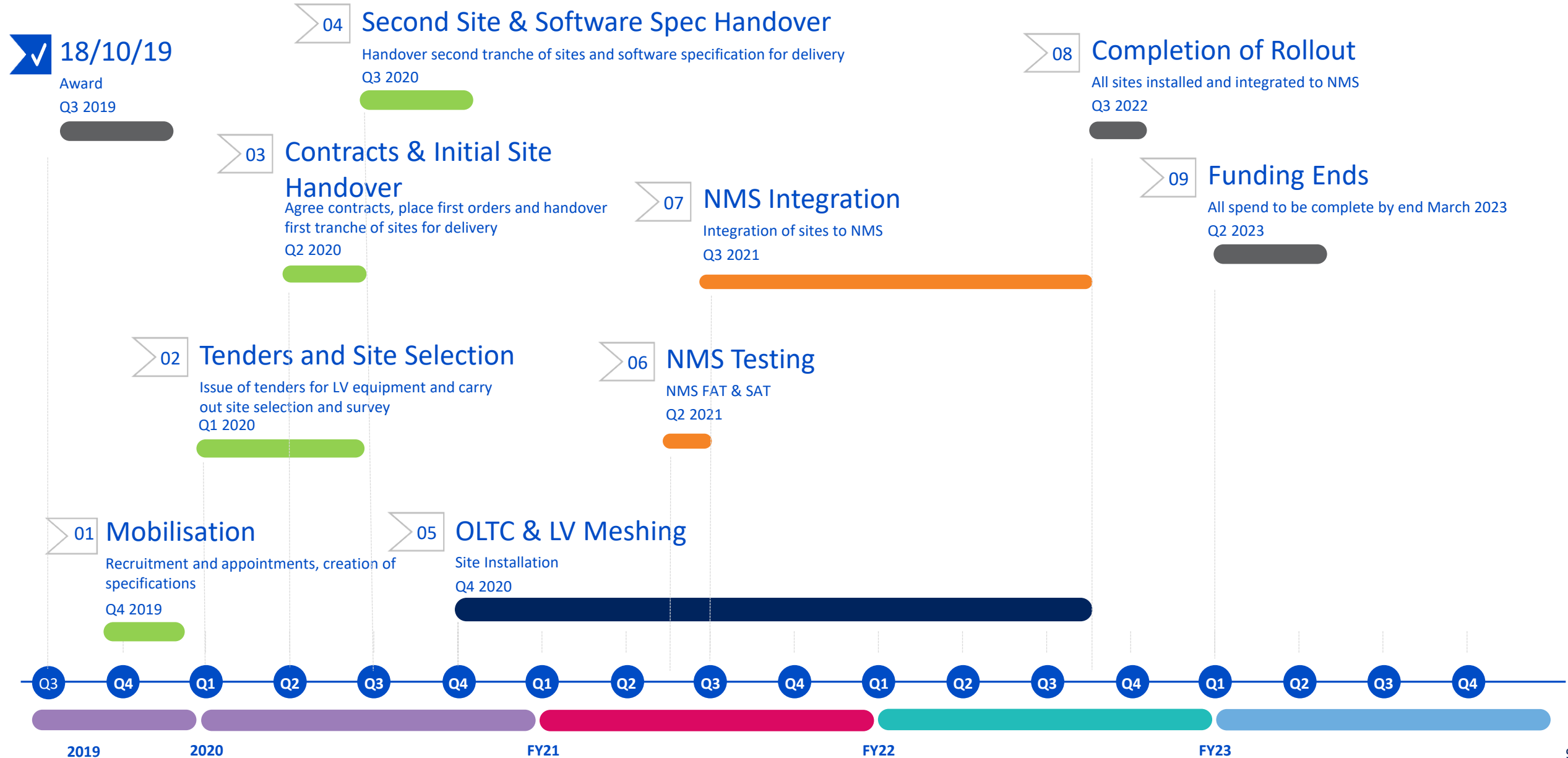
Business case – financial

Scenario	Total benefits (£m NPV)					
	2023	2028	2033	2038	2050	Payback year
Baseline	0.16	11.81	22.85	32.16	49.72	2023
High	1.76	17.65	32.64	45.23	68.88	2022
Low	-1.2	6.68	14.18	20.56	32.64	2024

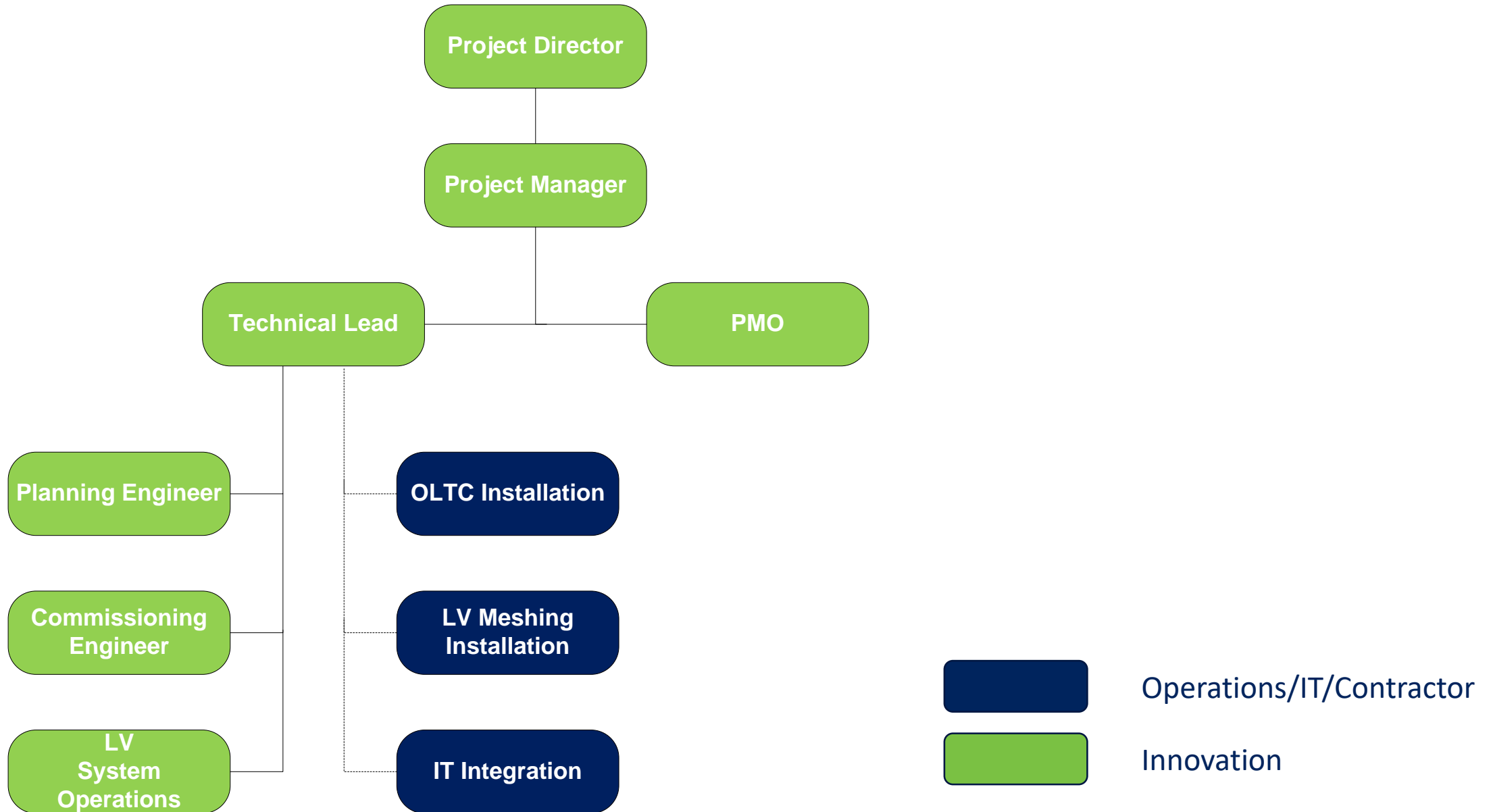
Business case – carbon

Scenario	Total benefits (tonnes CO ₂ e)				
	2023	2028	2033	2038	2050
Baseline	16,695	62,402	97,300	120,966	143,860
High	21,715	79,859	124,415	154,835	184,256
Low	12,323	47,003	73,369	91,122	108,151

Smart Street (IRM) Roadmap



Project delivery structure



Innovation team responsibilities



Role	Responsibility
Project Manager	Financial oversight and management, project reporting internal and external, resource management, project governance, contract management
PMO	Procurement, admin, contracts
Technical Lead	Oversight of technical assurance and liaison with non-Innovation teams, oversee scope and issue work packages to non-Innovation teams, specifying equipment and software, technical input to tenders, technical compliance
Planning Engineer	Site selection, project scheduling, outage management
Commissioning Engineer	To commission all new kit on site and ensure connection to NMS
LV System Operations	Development of new policies and procedures required to manage the Smart Street LV system and its interaction with the rest of the network

Other teams' responsibilities



Role	Responsibility
OLTC Installation	Detailed network design and installation works for transformer change to transformers with on load tap changers with connection to the NMS at the 180 sites as advised by Technical Lead
LV Meshing Installation	Detailed network design and installation works for LV switchgear installations with connection to the NMS at the 180 sites as advised by Technical Lead
IT Integration	Development and delivery of optimisation software module and integration with site equipment in line with specification provided by Technical Lead

Project costs (£m)



Task Description	Cost Per Year 2019/20 prices (£m)				
	FY20	FY21	FY22	FY23	Total Cost
Project Management and Planning	0.08	0.28	0.25	0.25	0.78
ENW Commitment as per bid	0.08				
OLTC Installation		1.88	3.26	0.97	6.11
Labour		0.48	0.87	0.28	1.62
Materials		1.40	2.39	0.69	4.48
LV Meshing Installation		3.03	5.08	1.39	9.50
Labour		0.19	0.33	0.10	0.62
Materials		2.84	4.75	1.29	8.88
NMS Integration		0.36	1.21	0.07	1.64
Labour		0.31	1.03	0.06	1.41
Materials		0.05	0.17	0.01	0.23
Totals	0.08	5.56	9.80	2.68	18.03

FY20 cost is outside of the IRM adjustment so excluded from the total cost

QUESTIONS & ANSWERS



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