



**URBAN
TRANSITIONS**
MISSION

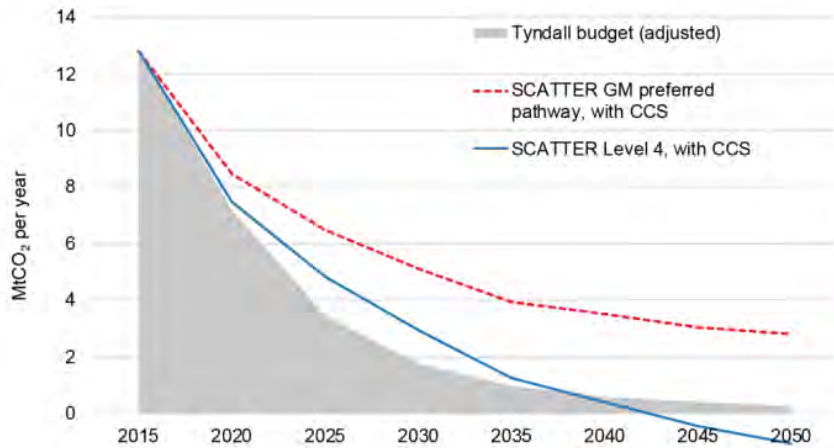
Utilising Data to Deliver Carbon Reduction & Investment:

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10 October 2023

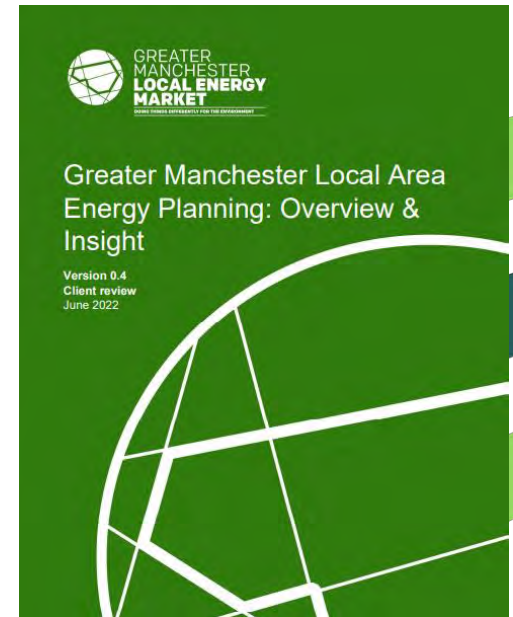
UTM in Action: smart & connected infrastructures



Overview



2016-2050 Total Emissions	
Tyndall	94.5 MtCO ₂
SCATTER L4	111.9 MtCO ₂
SCATTER GM	191.8 MtCO ₂



- Using key insights for overall targets
- Transforming modelling data into tangible policy and specific climate plans - LAEPs
- Delivering the plans: informing approach and priorities
- What's next? Creating investment pathways and 5 year budgets

Local Area Energy Plans

The video player interface includes a title bar with a logo and the text "1.1 Local Area Energy Plans" and "Love & Logic". The main content is a 3D map of Michigan where different regions are populated with icons representing various energy sources and infrastructure: wind turbines, solar panels, power lines, houses, and industrial buildings. The video player controls at the bottom show a play button, a progress bar at 03:38, and icons for volume, settings, and full screen, with the "vimeo" logo on the right.



What is Local Area Energy Planning?

Local Area Energy Planning (LAEP) enables data-driven, spatial and collaborative planning, to help unlock investment and delivery of smart local energy systems – summarised by these 7 steps.



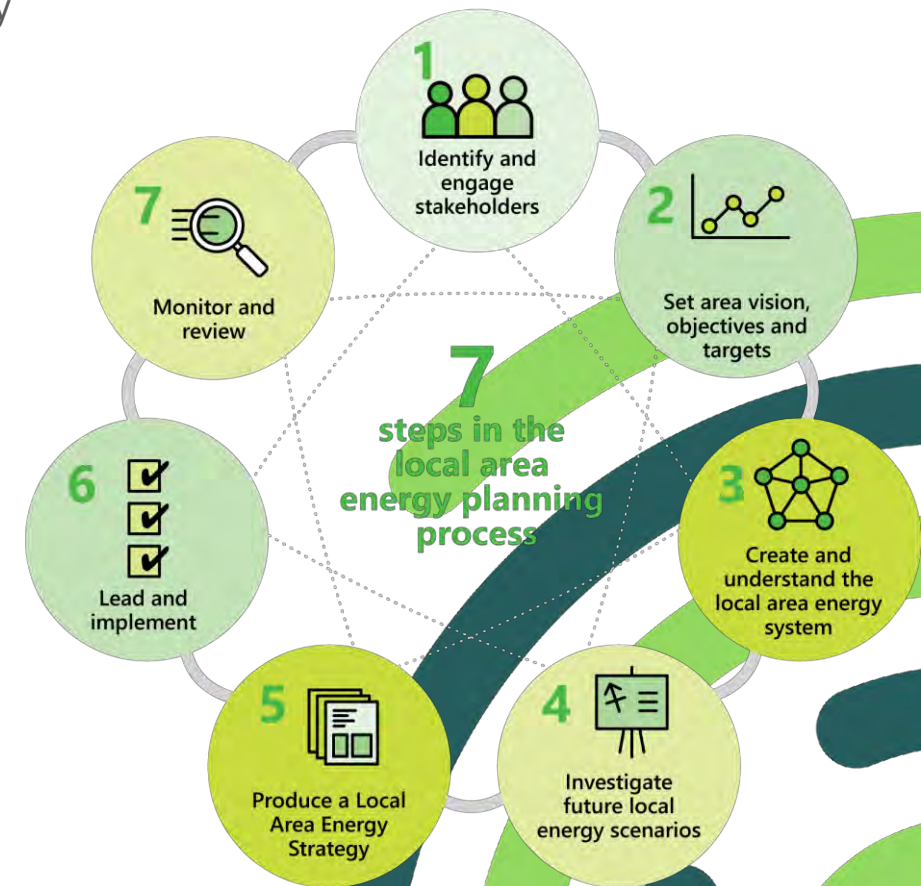
Each local area is different - its people, geography, building stock, energy networks and ambitions and priorities



Local Area Energy Planning provides a data driven, spatial and collaborative means, involving local government & network operators, of exploring a range of possible future local energy scenarios to cost-effectively decarbonise



Resulting in the identification of energy network and system choices to support carbon neutral aspirations - informing what local action is needed and where



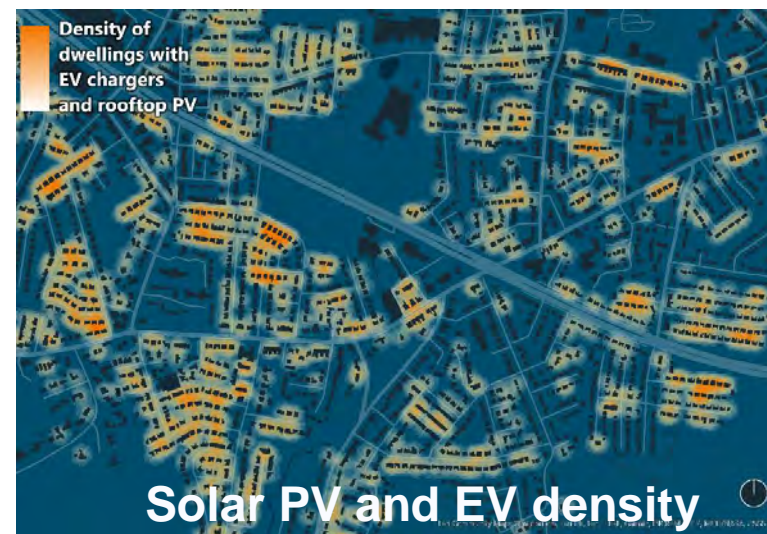
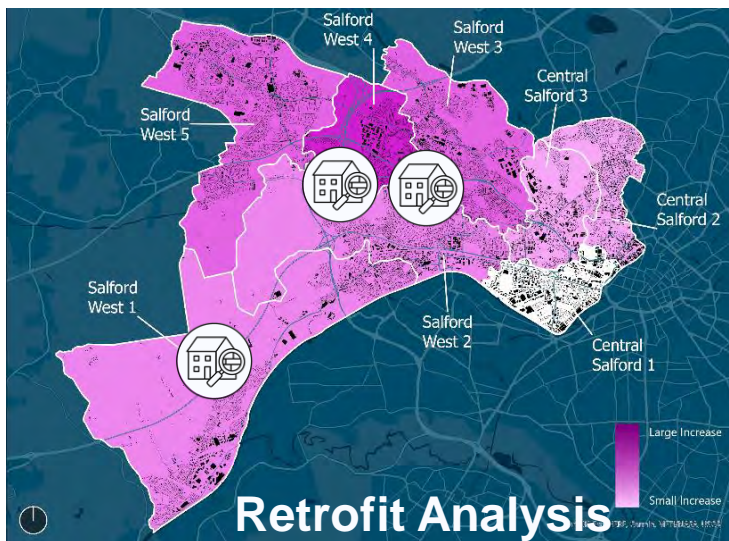
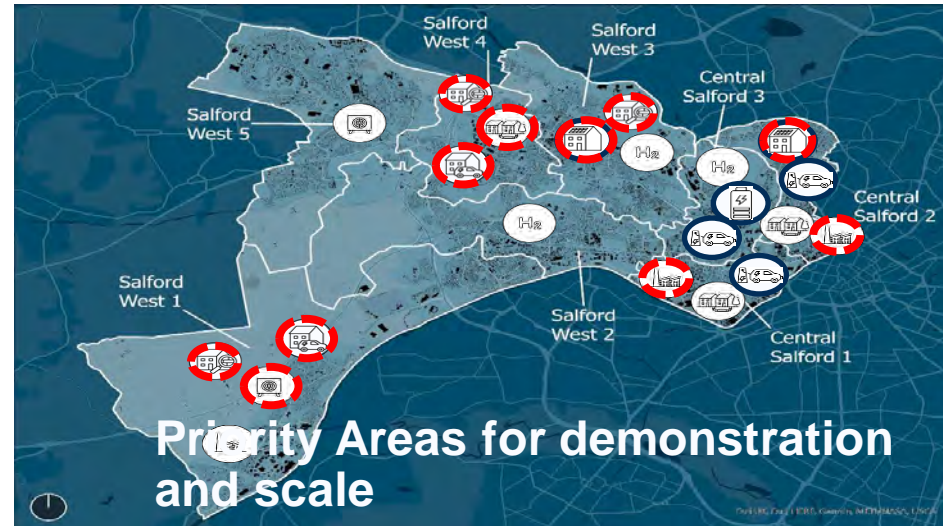
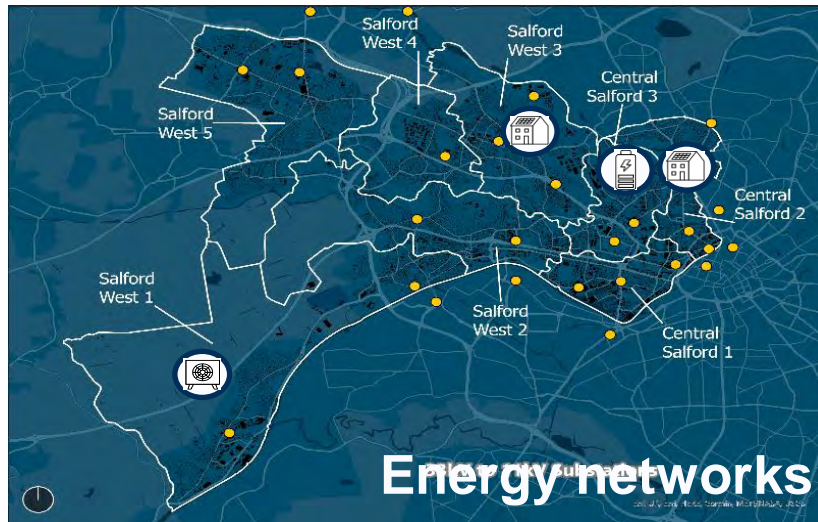
Supporting Research



The Local Area Energy Plan is built up using a range of research and data assets e.g.,

- **Domestic Buildings:** Stock condition modelling of 1.2m homes
- **Go Neutral:** Public building and land analysis for on site generation, storage and EV infrastructure
- **Public Buildings:** Desktop and available data sets
- **Heat Network:** Analysis provided by feasibility studies and national programmes
- **EV infrastructure:** Historic analysis and studies held by GM Transport Authority
- **Energy Networks:** Data provided by both the GNO and DNO (Network Operators)
- **National data sets:** Energy Performance Certificates, Display Energy Certificates etc

Local Area Energy Plan



Delivering carbon reduction in GM

Summary LAEP Numbers

To deliver the LAEPs, the following MUST be delivered over the next 5 years:

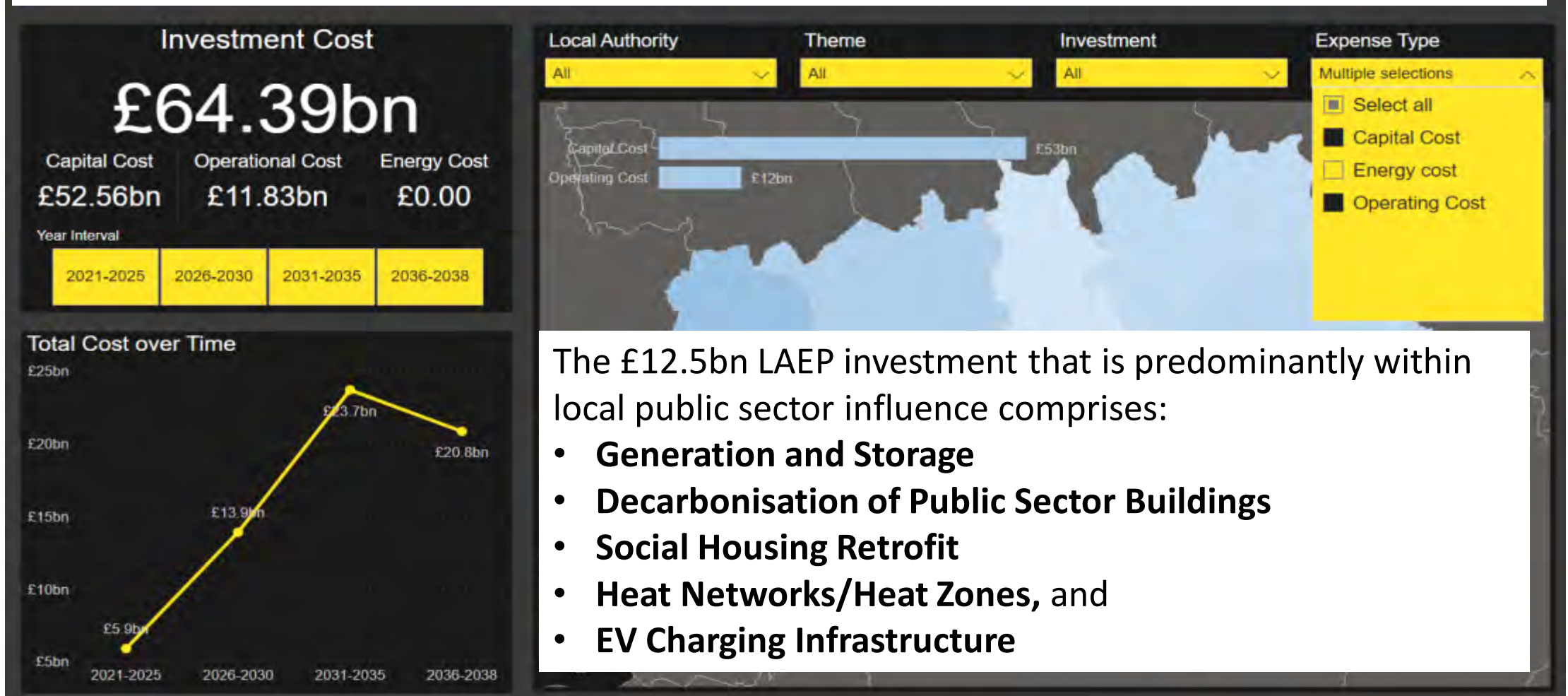
- **140,000 homes with fabric retrofit**
- **~2GW domestic rooftop solarPV**
- **190,000EVs**
- **8,000 homes connected to heat networks**
- **116,000 heat pumps in homes**

	2020-25	2025-30	2030-35	2035-40
Heat pumps	116,000	572,000	941,000	1,000,000
District heat connections	8,000	107,000	177,000	180,000
Hydrogen boilers	0	500	909,800	909,800
Insulation (basic) - primary	81,000	302,000	440,000	497,000
Insulation (basic) - secondary	67,000	250,000	365,000	413,000
Insulation (advanced) - primary	42,000	158,000	230,000	260,000
Insulation (advanced) - secondary	73,000	271,000	394,000	445,000
EVs	44,000	248,000	598,000	995,000
EV chargers	60,000	269,000	483,000	517,000
Rooftop PV (MWp)	1,900	2,900	3,600	4,400

To date, over £200m of capital grant funding has been acquired/delivered – piecemeal and insufficient.

Delivering the LAEPs - Investment

GM LAEP investment required to meet 2038 is c.£64bn



Thank you



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