

MAYOR OF LONDON

Finance Your Retrofit

RE:NEW

9 May 2017

Ben Coombes

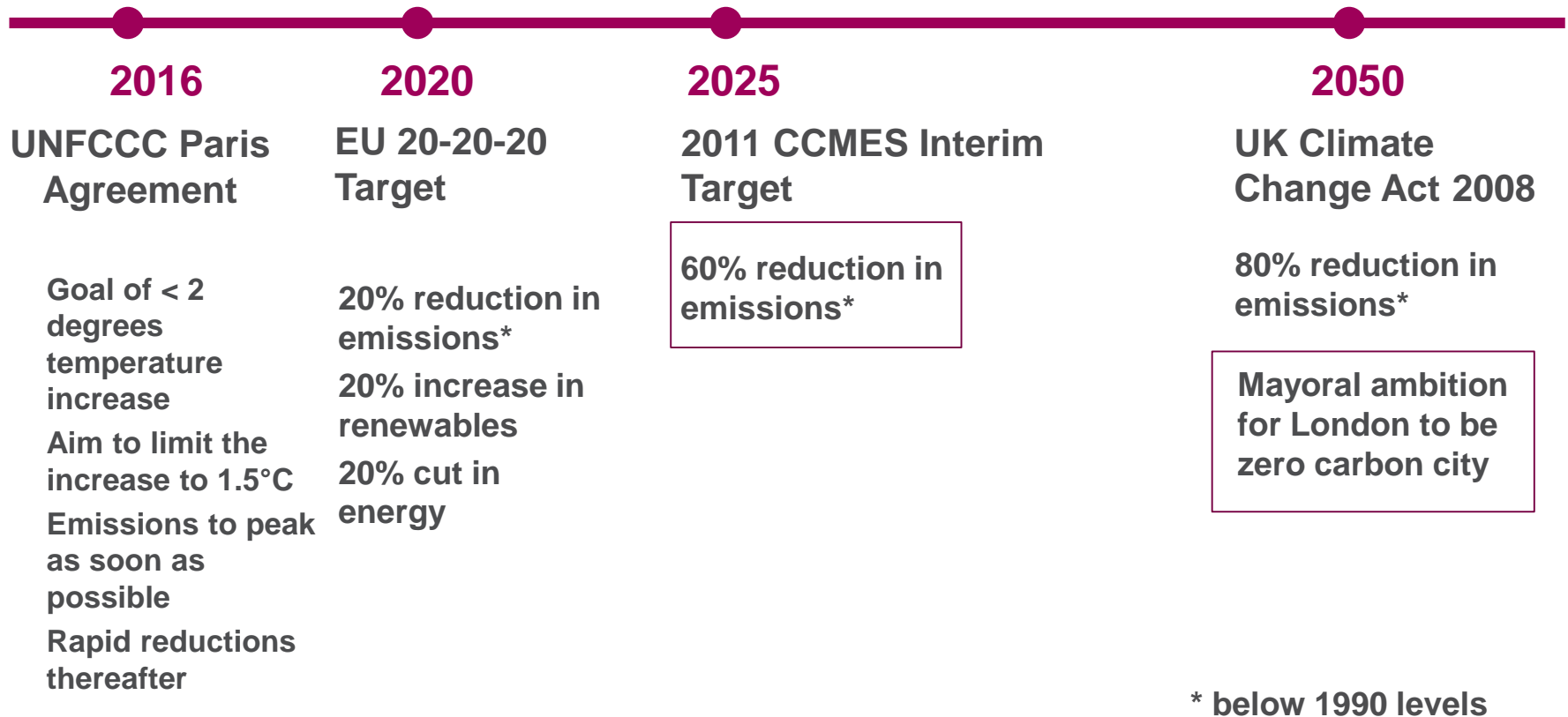


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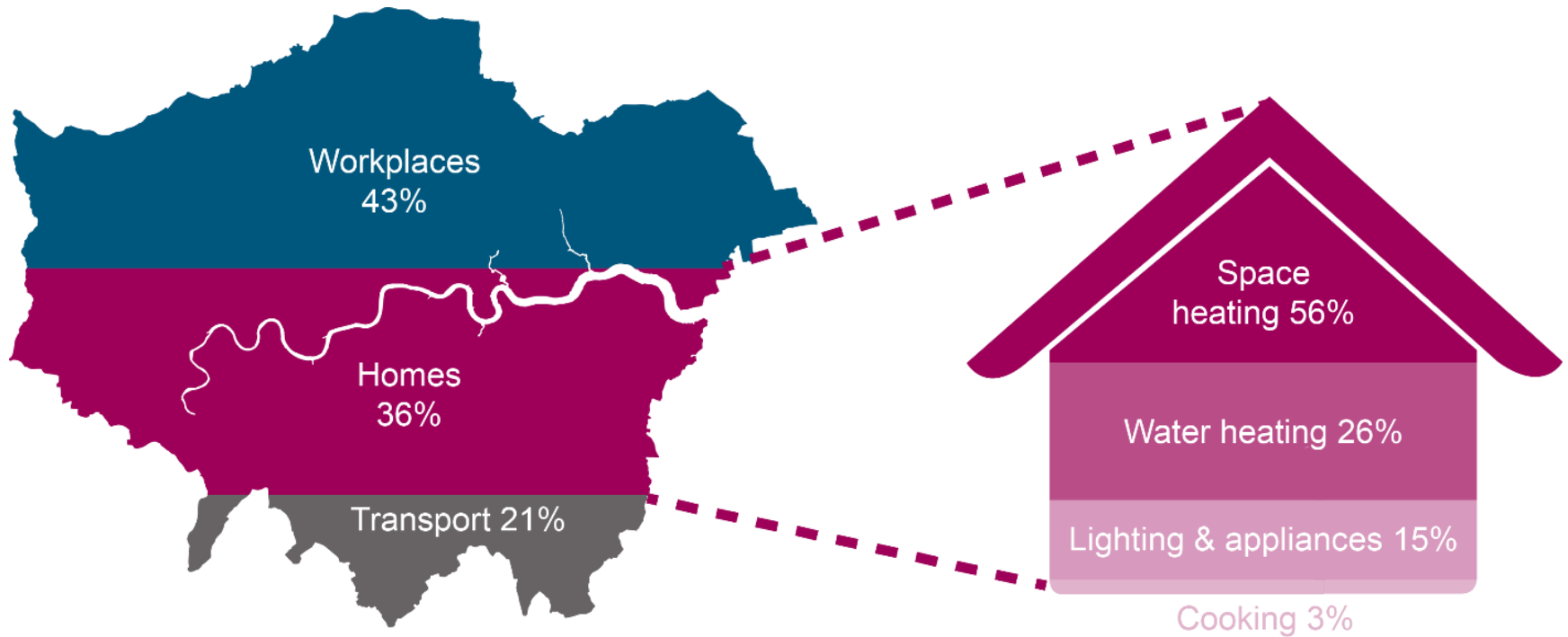
Agenda

TIMINGS	ITEM
11.00 – 11.20	Registration, tea and coffee, networking
11.20 – 11.30	Welcome and introduction to the day
11.30 – 11.50	MEEF - plans for the Mayor's new energy efficiency fund
11.50 – 12.05	ECO funding – policy update, flexible eligibility and how to access funding
Break	
12.20 – 12.35	Case study – on Amicus Horizon's experience in developing the business case, delivering ECO-funded projects, and other sources of funding they are exploring
12.35 – 1.00	Business Case for Retrofit – RE:NEW's service to develop a business case and optimise programmes to reduce funding requirements
1.00 – 1.15	Questions/ Discussions
1.15 – 2.00	Networking and Lunch
Close	

London's commitment



Carbon emissions in London: the facts



How RE:NEW helps



SUPPORT TEAM

SKILLS AND CAPACITY TO HELP
WITH RETROFIT PROJECTS



RE:NEW FRAMEWORK

PROCURE YOUR RETROFIT
PROJECT QUICKER



128,000 HOMES IMPROVED
47,200 tCO₂ SAVED
£8.8m FUEL BILL SAVINGS

RE:NEW

MAYOR OF LONDON

RE:NEW Support Team services



The RE:NEW Support Team



Jamie Abbott

Programme
Director



George Simms

Stock analytics and
programme
optimisation expert



Tom Vosper

Energy management
and district heating
networks expert



Karen Klomp

Solar, community
and fuel poverty
expert



Keith Von Tersch

ECO funding, energy
management and
procurement expert



Aileen Miah

Marketing and
engagement lead



Tom Elliott

Energy efficiency
and Passivhaus
design expert



Lisa Pasquale

Technical risks
expert



Preom Sharda

Junior Project
Manager and
research analyst



Jules Bickers

Director of Housing
and housing industry
expert

RE:NEW Framework of suppliers



Purpose built



Wide scope



Pre-agreed terms



Managed framework



Project design



Marketing and engagement



Implementation



Post-implementation
(savings delivery / monitoring)

Supported Organisations and Framework Suppliers

Supported Organisations

RE:NEW is supporting 70 organisations including:



Framework Suppliers





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Mayor of London's Energy Efficiency Fund (MEEF)

9 May 2017

Kenroy Quellenec-Reid



European Union

European Regional
Development Fund

GREATERLONDONAUTHORITY

European Structural Funds 2014-20



London allocated c.£641m (€745.4m) to support:

- Skills
- Employment
- Business Development
- Low Carbon Infrastructure

Financial Instruments



Public Resources



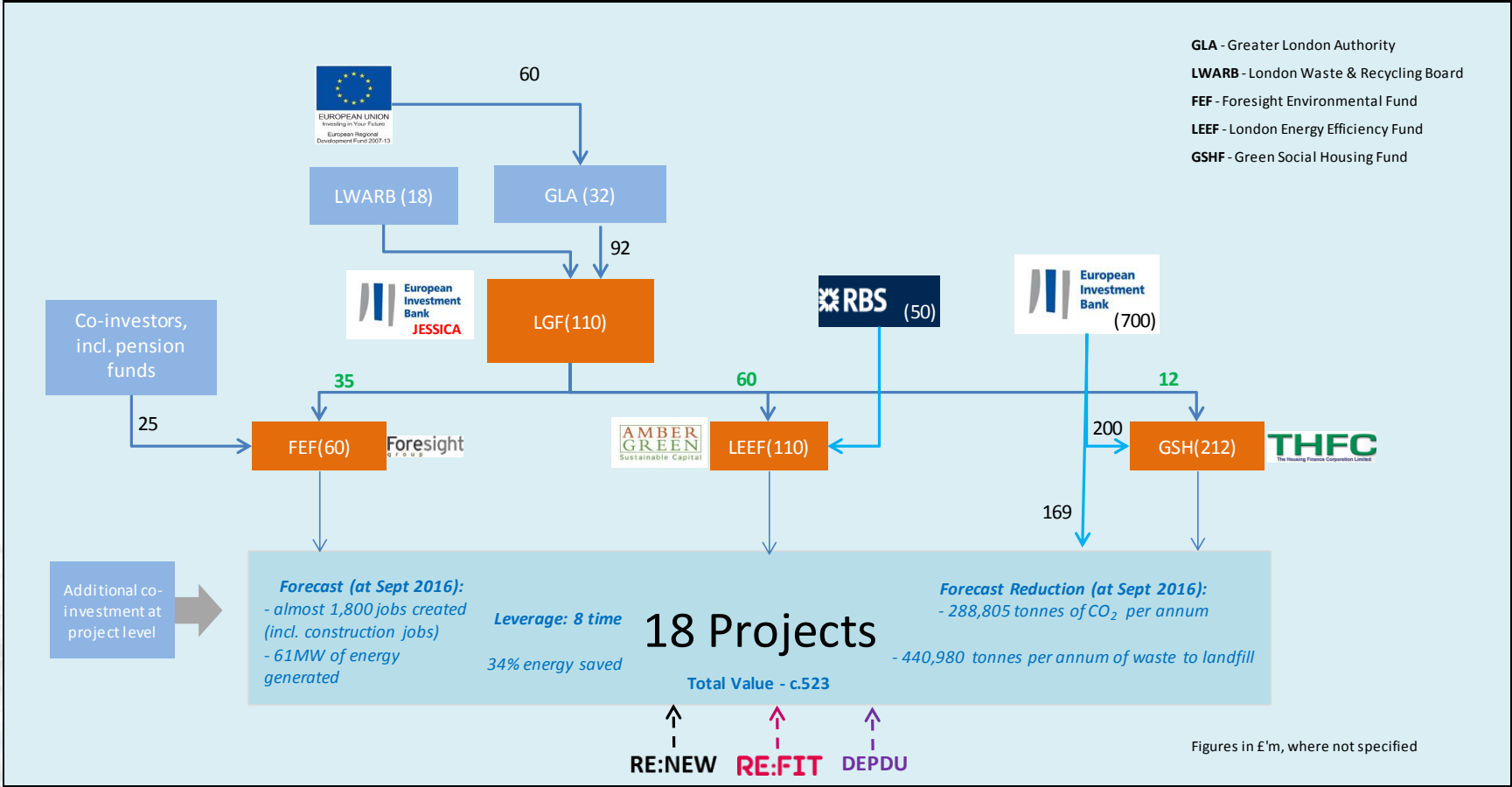
Financial Instrument

Private Investors

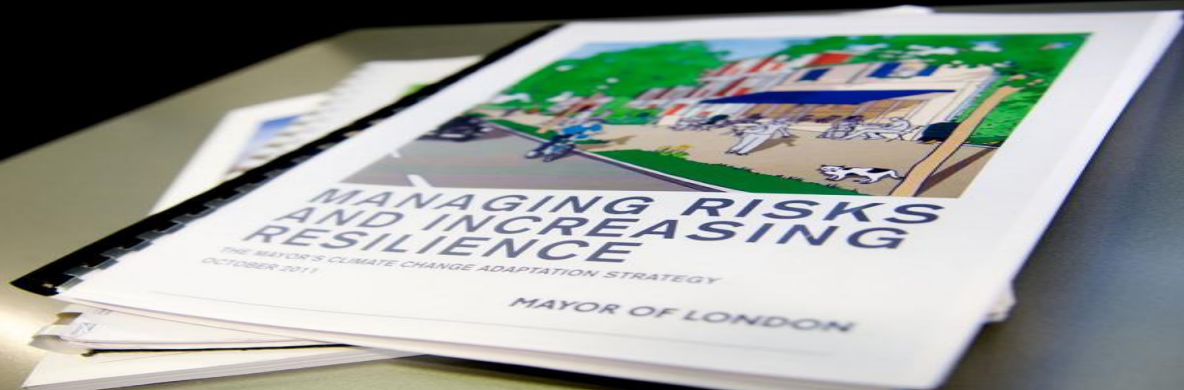
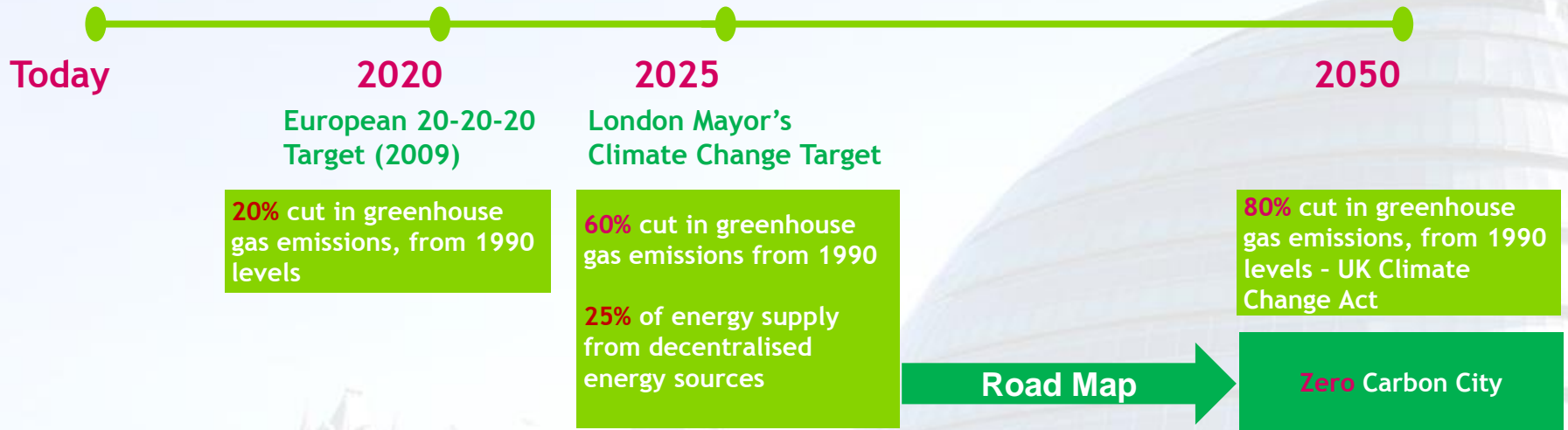


Recycle

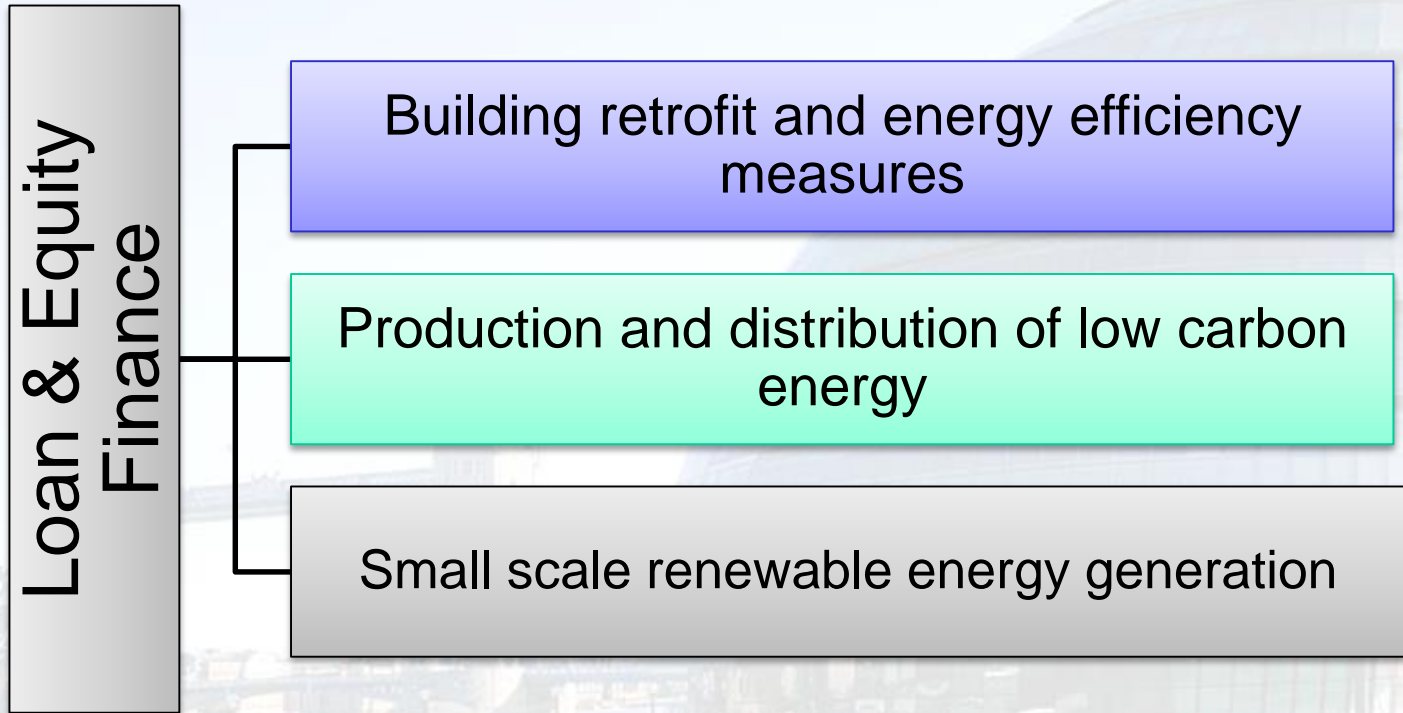
London Green Fund



London Climate Change Target



MEEF Investment Priorities



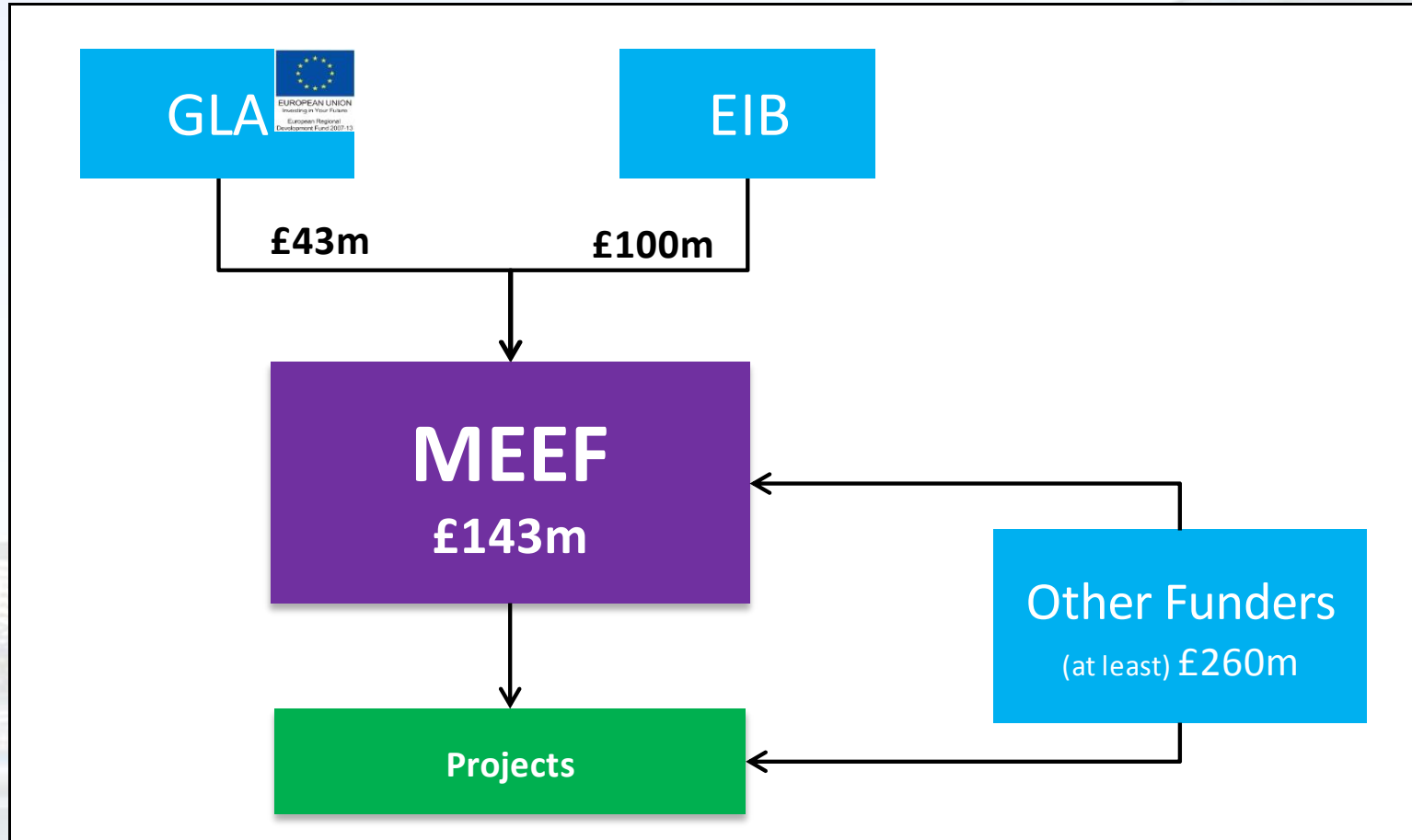
MEEF Eligible Investment Measures

Building Envelope	
Insulation	<ul style="list-style-type: none"> Insulation materials (including water vapour barriers, weather membranes, measures to ensure air-tightness, measures to reduce the effects of thermal bridges and scaffolding)
	<ul style="list-style-type: none"> Products for application of the insulation to the building envelope (mechanical fixings, adhesive, etc.)
	<ul style="list-style-type: none"> Energy-related costs of other building materials, if applicable
Windows and doors	<ul style="list-style-type: none"> Glazing and/or glazing enhancement, frame, gaskets and sealants
Other building-related measures impacting thermal performance	<ul style="list-style-type: none"> External shading devices
	<ul style="list-style-type: none"> Solar control systems
	<ul style="list-style-type: none"> Passive systems (if not covered elsewhere)
Building Systems	
Space Heating	<ul style="list-style-type: none"> Generation and storage equipment (boiler, storage tank, heat generation controls)
	<ul style="list-style-type: none"> Distribution (circulator, circuit valves, distribution controls)
	<ul style="list-style-type: none"> Emitters (radiators, ceiling floor heating, fan coils, emission controls)
Domestic Hot Water	<ul style="list-style-type: none"> Generation and storage (including solar thermal systems, boiler, storage tank, heat generation control)
	<ul style="list-style-type: none"> Distribution (circulator, circuit/mixing valves, distribution controls)
	<ul style="list-style-type: none"> Emitters (tap valves, shower head)
Ventilation systems	<ul style="list-style-type: none"> Heat generation and recovery equipment (heat exchanger, pre-heater, heat recovery unit, heat generation controls)
	<ul style="list-style-type: none"> Distribution (fans, circulators, valves, filters, distribution controls)
	<ul style="list-style-type: none"> Emitters (ducts, outlets, emission controls)

MEEF Eligible Investment Measures

Building Envelope (cont)	
Cooling (active)	<ul style="list-style-type: none"> • Generation and storage equipment (generator, heat pump, storage tank, heat generation controls)
	<ul style="list-style-type: none"> • Distribution (circulator, circuit valves, distribution controls)
	<ul style="list-style-type: none"> • Emitters (ceiling/floor/beams; fan coils, emission controls)
Lighting	<ul style="list-style-type: none"> • Light sources and luminaires
	<ul style="list-style-type: none"> • Associated control systems
	<ul style="list-style-type: none"> • Applications to increase use of daylight
Building automation and control	<ul style="list-style-type: none"> • Building management systems which introduce supervising functions (separate system controls are accounted for within the specific system)
	<ul style="list-style-type: none"> • Technical intelligence, central controller
	<ul style="list-style-type: none"> • Controls (generation, distribution, emitters, circulators)
	<ul style="list-style-type: none"> • Actuators (generation, distribution, emitters)
	<ul style="list-style-type: none"> • Communication (wires, transmitters)
Connection to energy supplies (grid or storage)	<ul style="list-style-type: none"> • Costs for first connection to the energy network (e.g. district heat, PV-system)
	<ul style="list-style-type: none"> • Necessary related installations
Decentralised energy supply systems based on energy from renewable sources	<ul style="list-style-type: none"> • Generation,
	<ul style="list-style-type: none"> • Distribution (if applicable)
	<ul style="list-style-type: none"> • Storage
	<ul style="list-style-type: none"> • Control devices
<p>*Design and installation costs under each category are eligible, too.</p>	

MEEF Capital Structure



Timeframe

- Appoint Fund Manager – June/July
 - Launch MEEF – Autumn
 - Investment over 5-year period



Thank you

**Kenroy Quellenec-Reid
Senior Programme Manager – Financial Instruments
Greater London Authority**

Kenroy.quellenec-reid@london.gov.uk

Tel: +44 (0)207 983 4559

www.london.gov.uk

[twitter @LondonEUFunds](https://twitter.com/LondonEUFunds)

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ECO Funding – policy updates and delivery tips

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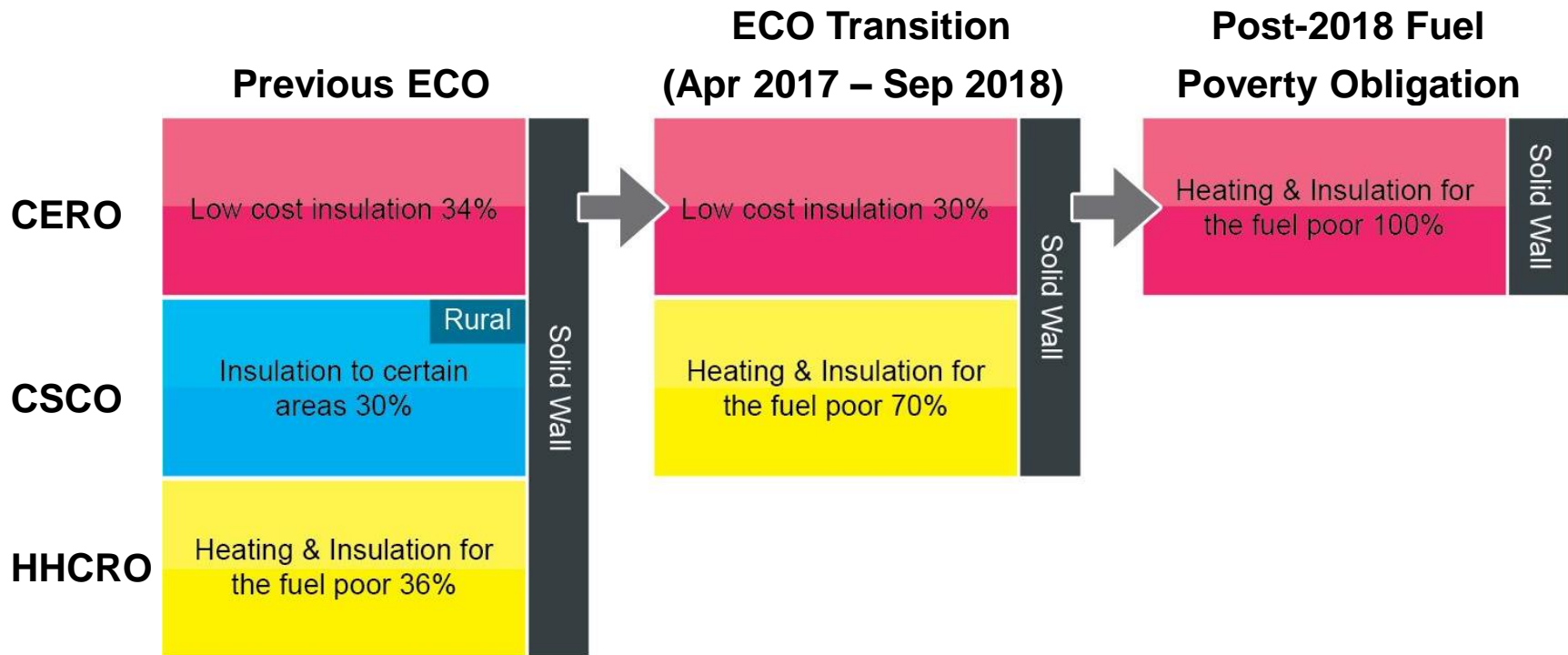
9 May 2017

Keith Von Tersch



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Recent changes



Recent changes

- Estimated £640m per annum, rising with inflation
- ECO scheme extension increased from 12 to 18 months
- Size of the obligations increased, partly reflecting new evidence on delivery costs provided during consultation
 - CERO: 7.3 million tonnes of lifetime carbon savings
 - Affordable Warmth: £2.76 billion lifetime energy bill savings (notional)
 - Estimated spend has not changed

Affordable Warmth eligibility

- Simplified eligibility for Affordable Warmth
- Around 4.7m households qualify

Social housing eligibility

- Insulation measures eligible under Affordable Warmth for social housing in EPC Bands E, F or G
- First-time central heating **only** for social housing under Affordable Warmth

Affordable Warmth eligibility

Private sector benefits criteria:

- Income-related employment and support allowance (ESA)
- Income-based jobseeker's allowance (JSA)
- Income support
- Pension Credit Guarantee Credit
- Tax Credits – income threshold
- Universal Credit – income threshold

Affordable Warmth eligibility

Household composition	Tax Credit recipients - Gross income (annual)	Universal Credit recipients - Net earned income (monthly)
1 adult	£13,200	£1,100
and 1 child	£17,400	£1,450
and 2 children	£21,600	£1,800
and 3 children	£25,800	£2,150
and 4 or more children	£30,000	£2,500
2 adults	£19,800	£1,650
and 1 child	£24,000	£2,000
and 2 children	£28,200	£2,350
and 3 children	£32,400	£2,700
and 4 or more children	£36,600	£3,050

Other changes

- 'Deemed scores' – uplifted after consultation
- Qualifying gas boiler replacements limited to around 25,000 per year
- Solid wall minimum retained and increased from 17,000 measures per year to 21,000
- No Green Deal Advice Report or chartered surveyor's report required for CERO measures
- Government will collect more detailed information on ECO costs from suppliers

Flexible eligibility

Up to 10% of an energy supplier's Affordable Warmth obligation

Private sector households:

- Living in fuel poverty
- Living on a low income and vulnerable to the effects of living in a cold home
- In-fill properties for the purposes of solid wall insulation
 - Semi-detached – 1 of 2 homes must meet other criteria
 - Terraces and flats – 2/3 of homes must meet other criteria

Flexible eligibility

	Flexible eligibility - key requirements
Statement of intent (Sol)	<ul style="list-style-type: none">• Sets out the criteria to identify households meeting the eligibility criteria for flexible eligibility. This is a mandatory requirement.
	<ul style="list-style-type: none">• LAs will have to publish an Sol before they can issue declarations of eligibility under flexible eligibility.
LA declaration	<ul style="list-style-type: none">• Statement in writing ('declaration') that a household is eligible for support.
	<ul style="list-style-type: none">• The ECO Order states that LAs must be consulted on the installation of a measure under flexible eligibility by suppliers, or their intermediaries.
	<ul style="list-style-type: none">• LAs can evidence that they have been consulted through a declaration. Templates available.
Local authority definition	<ul style="list-style-type: none">• Only LAs can issue declarations of eligibility, identifying households as meeting the eligibility criteria.
	<ul style="list-style-type: none">• LAs can delegate their functions to other LAs.

How to prepare for ECO funding

- Social housing
 - Data – know your E, F and G properties
 - Data – know what measures need to be installed for all properties so that you can develop packages of works
 - Understand what can be funded through Affordable Warmth and CERO
 - Talk to your existing contractors about funding
- Local authority private sector schemes
 - Check out the [ALEO statement of intent](#) or write your own
 - Decide how much work you want to do – delegate to another authority, get a contractor to find properties or find them yourself

Routes to ECO funding

- Existing contractors for social housing
- Managing agents – bring together installers and manage ECO contracts with multiple suppliers
- Energy suppliers – several will work directly with LAHAs
 - Usually interested in larger schemes
 - Will expect regular delivery of carbon against a workplan
 - Will expect you to manage most of the compliance elements, with support
 - May offer a higher level of funding

RE:NEW support

- Data analysis and programme optimization
 - Establish what needs to be done
- Putting you in touch with energy suppliers
 - Some in the room today
- Procurement
 - Help to demonstrate best value
 - Expression of interest vs invitation to tender
 - RE:NEW framework



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Funding retrofit

Andrew Piper
Sustainability Manager

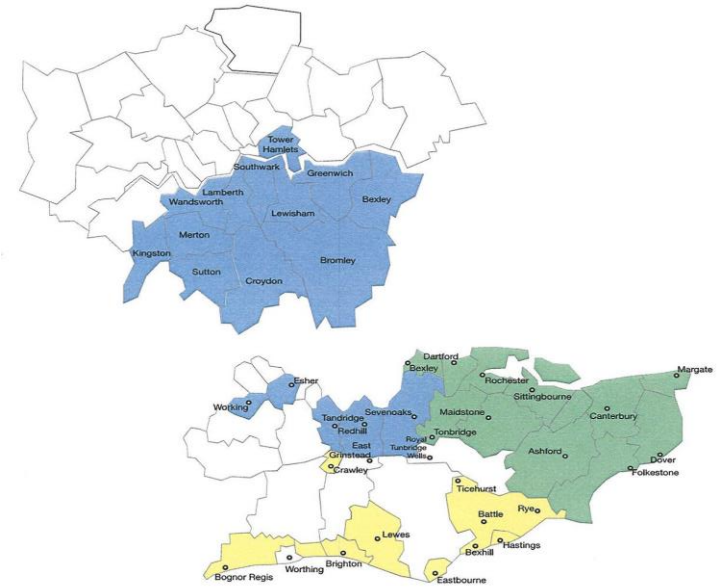


www.amicushorizon.org.uk/thegreenplan



AmicusHorizon:

- 28,000 homes in SE London, Kent and East Sussex
- SHIFT Gold landlord
- £3m retrofit grant funding in the last four years
- Pending merger with Viridian Housing (May 2017)
 - 44,000 homes



www.amicushorizon.org.uk/thegreenplan



Our approach:

- Energy and environment strategy sets minimum energy efficiency standard for all homes
- RdSAP – 93% of stock
- 5000 homes below target
- Focus on worst performing homes that can be improved cost effectively



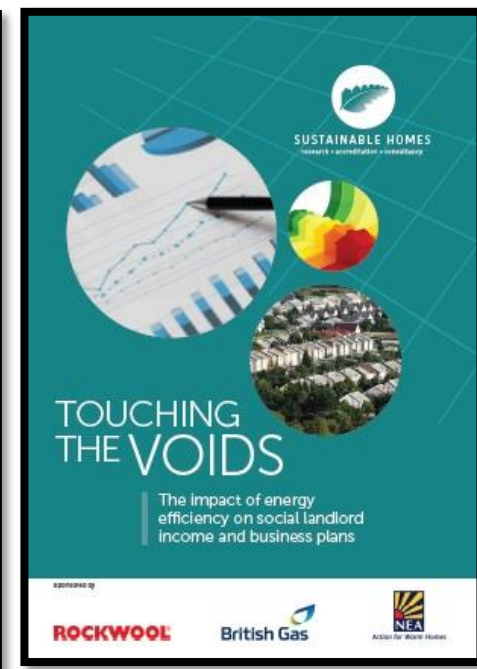
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Making homes, helping people

Business case development

- AH/Viridian developing a new, stronger business case for retrofit
- RdSAP/energy modelling
- RE:NEW support team analysis
- Energy advice programme evidence
- NPV calculations likely to be used for retrofit investment decision making



www.amicushorizon.org.uk/thegreenplan



ECO

Timeline

- Large AH programme scrapped in 2013 due to funding change
- AmicusHorizon/Viridian – a few hundred cavities and lofts over the last couple of years but no EWI

ECO2t - 2017

- HHCRO - E,F,G's: New organisation has approx. 1000 eligible homes
- Deemed scores makes process more straightforward
- EWI in London - big focus for future retrofit plans
- Flexible eligibility will help to deliver cross tenure schemes with LA's

Gas network operators

- Funded gas connections for fuel poor households
- Currently also funding new heating systems as an incentive to landlords
- Homes must meet criteria relating to distance to gas supply, most deprived LSOA etc

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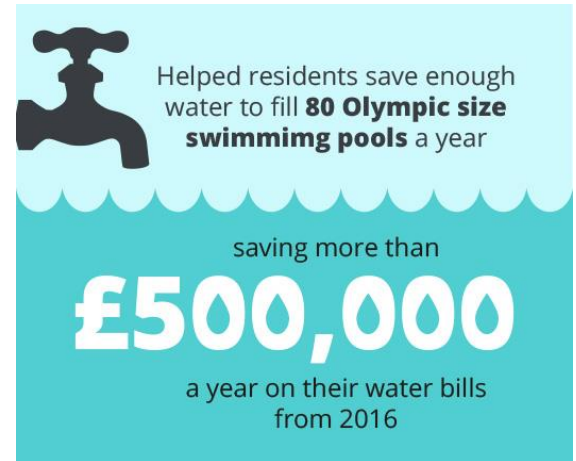
Water efficiency – current projects

Thames Water –

- Lansdown Green Estate – Lambeth
- 800 flats visited – measures installed include dual flush, showers etc
- Starting a large scale metering/retrofit project this year

Southern Water -

- 500 home pilot completed – new phases due to start soon
- 700 measures installed
- 7 million litres saved annually
- £10,000 water bill savings



Helped residents save enough water to fill **80 Olympic size swimming pools** a year

saving more than

£500,000

a year on their water bills from 2016

EU programmes

- UK - 2nd highest EU energy efficiency grant allocation of all member states - still an opportunity to bid!
- £2m in grants for three projects – IFORE, CAN and SHINE (400 home retrofit programme)
- 50-60% grant
- Relationships with local authorities and geography important
- Usually needs innovative approach with trans-national learning
- AH bidding for ERDF funding for Energiesprong pilot through C2C LEP



Energiesprong

- Whole house retrofit 'net zero energy' – avoids cyclical energy efficiency investment
- Guaranteed by energy performance contract
- Energy bill replaced with energy service charge – contributes to install cost
- Maintenance cost certainty for 30 years
- GLA pilot funding now available!

<http://www.energiesprong.uk/>



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Making homes, helping people

Other opportunities

- Renewable Heat Incentive
- Solar – community share schemes
- Clinical Commissioning Groups

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Email: andrew.piper@amicushorizon.org.uk

Tel: 01795 434691

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Building the business case for retrofit

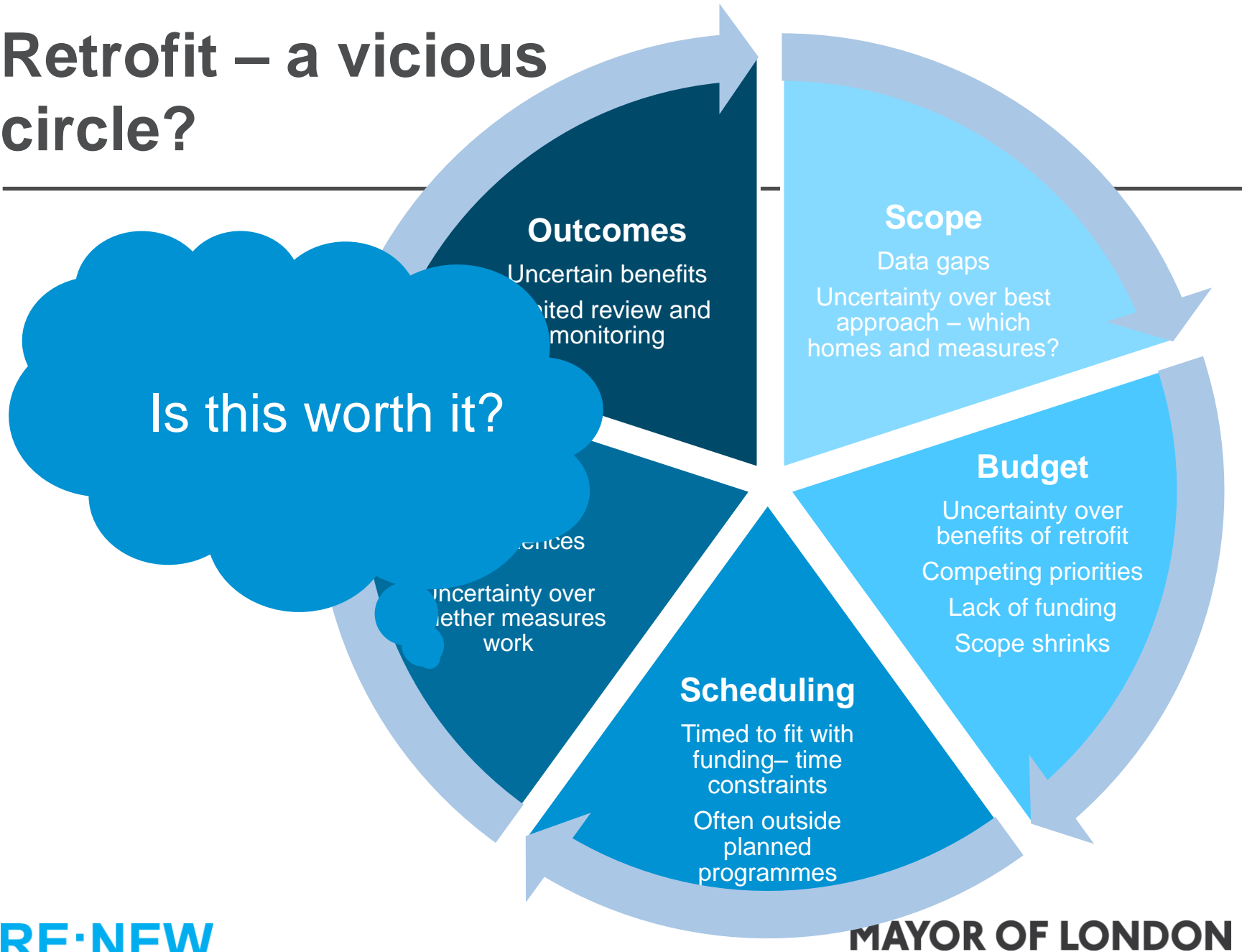
George Simms



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Retrofit – a vicious circle?



Why do retrofit?

Lower CO₂
emissions

Tenant
satisfaction

Healthier
homes

Improve
performance
of stock

Fuel
poverty

Local
employment

Increase
property
value?

Reduce
costs

Meet
statutory
targets

Building the case for retrofit

Delivering
quality

Recording
benefits

Planning
delivery

Building the
business case

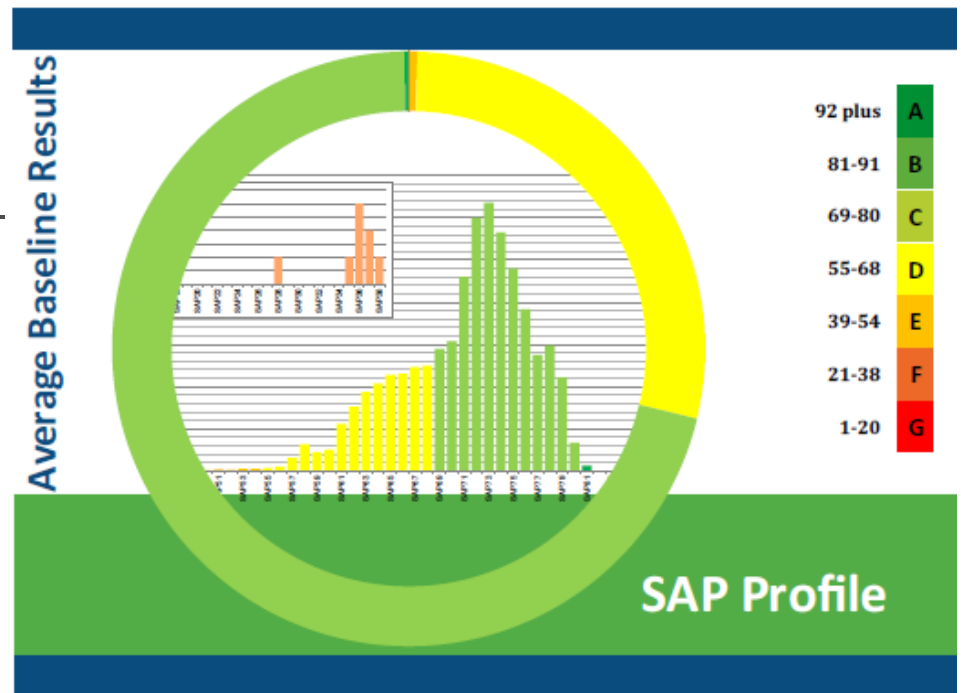
Data insights

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Data

- Good data analysis will highlight opportunities and constraints for each property
- Need to look at wider context –
 - existing maintenance requirements
 - NPV and disposals
 - 30 year life cycle costs
- Data analytics can highlight links between energy performance and costs



Building the business case

- New research highlighting the link between energy efficiency and increased housing management and repair cost savings
- Use of established analytics techniques to investigate a broad data set (tenancy and property data)
- Identified over £4m savings for Orbit Group, with potential for even greater savings – repairs, customer contacts
- Provides robust statistical basis for developing retrofit programmes targeted at priority properties to make them:
 - Comfortable to live in
 - Healthy indoor environment
 - Affordable to live in
 - Low cost to maintain and manage



Implications

- Findings are specific to Orbit but could be identified for all landlords
- Savings found across multiple areas
- Can target interventions better – make budgets go further
- Even greater savings available – only the tip of the iceberg (further savings anticipated from voids, complaints, arrears)



Planning delivery

- Scheduling retrofit alongside planned measures can create savings as well as efficiencies:
 - Shared overheads and delivery costs
 - Reduced likelihood of abortive work
 - Fewer visits per home
- Important to understand interdependencies
- RE:NEW identified potential savings of 10% across a £3.5m retrofit programme through:
 - Overlap between measures
 - Reduced costs of cyclical works
 - Reduced cost of solar PV when carried out alongside roof replacement

	Internal wall insulation	EWI	Cavity Wall	Loft Insul
Chimney replacement				2
Downpipes		3		
Fascia and soffit		3		
Flat roof				
Gutters		3		
Patio French Doors	2	2		
Pitched roof		2		3
Porch canopy		3		
Secondary doors	2	2		
Secondary flat roof				
Wall finish 1		3		
Wall finish 2		3		
Windows	3	3		
Additional WC	2			
Bathroom	2			
Boiler	2	2		
Electric storage	2			
Electrics	2			2
Front door	2	2		
Heating distribution	2			
Kitchen	2			
Smoke detectors				

Delivering quality

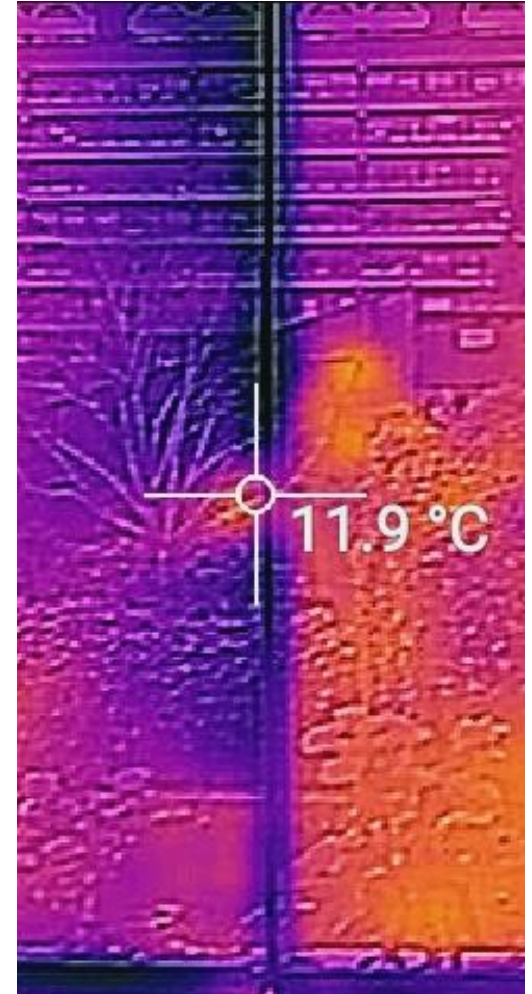
- Unintended consequences can lead to underperformance and increased repairs and include:
 - Interstitial condensation
 - Surface condensation and mould
 - Infiltration and ventilation
 - Thermal bridging
 - Overheating
 - Water ingress
- Good quality retrofit and ventilation specification and delivery will protect investment



Image courtesy of ArchiMetrics

Monitoring benefits

- How can we make the case if we don't review and understand performance?
- Monitoring can be in many forms, including:
 - Pre- and post-completion modelling of energy, temperature and RH
 - Tenant feedback (comfort, health, affordability)
 - Review of costs before and after
 - Valuation
- Evidence around benefits can help make the case for further phases of investment



Why do retrofit?

Lower CO₂
emissions

Tenant
satisfaction

Healthier
homes

Improve
performance
of stock

Fuel
poverty

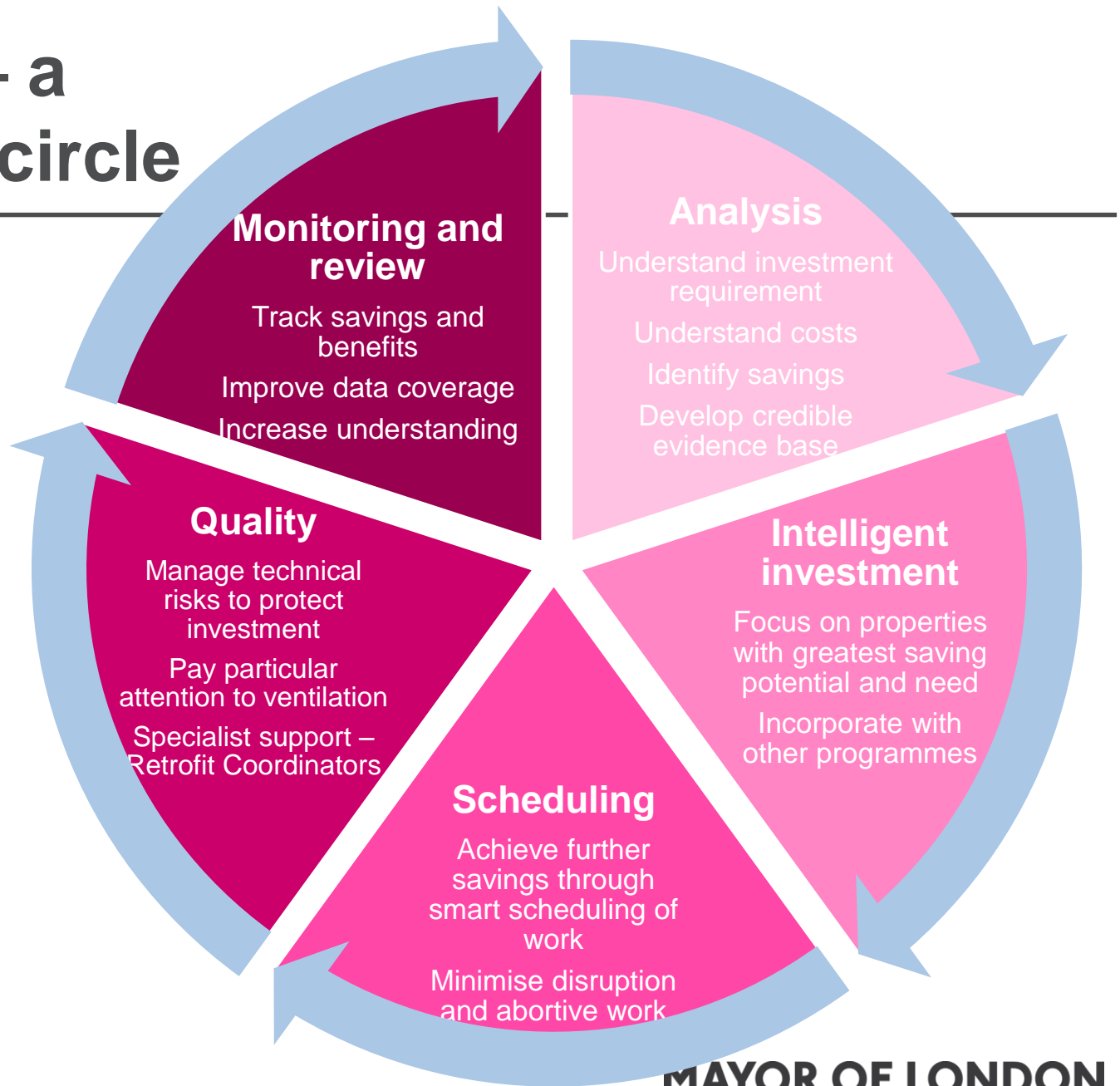
Local
employment

Increase
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Retrofit – a virtuous circle



Thank you

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