Mark Atherton
Director of Environment – Greater Manchester Combined Authority

Bridging the sustainability investment gap
### Environmental challenges – 5 Year Environment Plan

#### 5 environmental threats and challenges to Greater Manchester

<table>
<thead>
<tr>
<th>Climate change – mitigation</th>
<th>Air Quality</th>
<th>Production and consumption of resources</th>
<th>Natural Environment</th>
<th>Climate change – resilience and adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>More radical local and national action to accelerate CO₂ emissions reductions</td>
<td>Health impacts of particulates and nitrogen dioxide – NO₂ levels in breach of legal limits</td>
<td>Throwaway society, linear waste models and particular issues with plastic and food waste</td>
<td>Reducing biodiversity and environmental quality – lack of other sources of investment</td>
<td>Increasing risk of extreme weather events – particularly flood risk but also heat stress</td>
</tr>
</tbody>
</table>

#### 3 opportunities in tackling them

<table>
<thead>
<tr>
<th>People</th>
<th>Places</th>
<th>Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve health and quality of life, increase productivity and reduce inequality</td>
<td>Create vibrant and sustainable places and good quality homes</td>
<td>First mover advantage – increase prosperity and productivity</td>
</tr>
</tbody>
</table>
Models useful in informing the scale of the challenge

- **Tyndall Budget**
- **SCATTER GM pathway, with CCS**
- **SCATTER Level 4, with CCS**

**Most significant carbon drivers:**
- Buildings
- Cars, vans, taxis, motorcycles
- Decarbonisation of electricity

**Other important drivers:**
- Industry
- Freight
- Public transport
- Other (e.g. waste, agriculture)

**Focus on the innovation** that can close the gap:
- Technology
- Finance and funding
- Partnerships
- Leadership
- Engagement and education
- Skills

<table>
<thead>
<tr>
<th>2016-2050 Total Emissions</th>
<th>Tyndall</th>
<th>SCATTER L4</th>
<th>SCATTER GM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>94.5 MtCO₂</td>
<td>111.9 MtCO₂</td>
<td>191.8 MtCO₂</td>
</tr>
</tbody>
</table>
# Established Funds

<table>
<thead>
<tr>
<th>£m</th>
<th>Growing places</th>
<th>NW Evergreen Fund</th>
<th>Evergreen 2</th>
<th>GM Housing Fund</th>
<th>GM Low Carbon Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund size</td>
<td>£35m</td>
<td>£60m</td>
<td>£45m</td>
<td>£300m</td>
<td>£15m</td>
</tr>
<tr>
<td>Managed by</td>
<td>GMCA</td>
<td>CBRE</td>
<td>CBRE</td>
<td>GMCA</td>
<td>GVA</td>
</tr>
<tr>
<td>Deal size</td>
<td>£1m - £5m</td>
<td>£2m - £12m</td>
<td>£2m - £9m</td>
<td>£2m - £70m</td>
<td>£0.5m - £5m</td>
</tr>
</tbody>
</table>

**Comments**

- Senior, junior debt and equity for commercial property and infrastructure
- Funding between £1m-£5m with a minimum of 50% match from either public/private sources
- Commercial property debt fund invested to deliver urban regeneration projects
- Investment can be at either senior or junior debt
- Equity funding can be provided in certain circumstances
- Maximum 5 year term and limit of 20% of fund size per scheme with a cap of 30% exposure to any one developer.
- Launched in March 2017
- Commercial property debt fund focussing on:
  - Science and innovation (£30m)
  - Energy efficiency of buildings (£15m), including new and refurbished office development.
- ERDF rules apply with regular reporting
- 50% match funding requirement from either public/private sources.
- Senior, junior debt and equity for commercial property and infrastructure
- Funding between £500k - £70m
- Loans must be to Private Sector entities
- Governance process for higher risk Small loans of <£2m is more streamlined
- Focus moving forward is to support more non City Centre developments
- Launching imminently
- Debt and equity up to £5m focussing
- 50% match funding
- Maximum term of 15 years
- Aimed at renewable/low carbon technology installations and district energy networks
- Performance measured by GHG reduction targets.
## About the Fund

- New loan fund to promote the production and distribution of energy derived from renewable resources.

- Allocated from the 2014-2020 European Regional Development Fund

- The fund can invest up to 50% of eligible costs

- Investment repaid by projects will be recycled into further projects across Greater Manchester

- GMLCF will work with the Greater Manchester European Local Energy Assistance (ELENA) fund

- ELENA provides grant funding to support development costs for projects that deliver savings in energy consumption and carbon emissions

- ELENA can provide assistance for upfront project costs with GMLCF providing commercial investment

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### GM Low Carbon Fund

<table>
<thead>
<tr>
<th>Fund Manager</th>
<th>Avison Young (formerly GVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund Size</td>
<td>£15m</td>
</tr>
<tr>
<td>Lifespan</td>
<td>15 years</td>
</tr>
</tbody>
</table>

### Wind turbines

Investment can be applied to installation of wind turbines, as part of a wind farm or a property development.

### Energy from waste

We can invest in plants that use waste to generate heat and power and support more innovative technologies that have the potential to transform waste into other energy products.

### Biomass Combined Heat and Power (CHP)

We are looking to invest in all types of Biomass Combined Heat and Power projects (heat only, heat & power and heat, power cooling).
About the Fund

- The Evergreen 2 fund will invest up to £45m of European Regional Development Fund monies from the 2014-20 ERDF Operational Programme.

- Under Priority 1a, it will develop, retain and exploit excellence in GM’s Science / technology / Innovation assets, through investment in the appropriate volume, specification and flexibility of commercial floor-space.

- This will include investment in the development of new sites, the remediation and redevelopment of brownfield and the development / refurbishment of commercial floorspace.

- Under Priority 4b, the aim will be to promote increased energy efficiency, in particular in SMEs. The Investment Priority presents an opportunity to use ERDF resources to support improvements in the buildings. This includes energy efficient new buildings as well as deep renovations of existing buildings.

- The fund can invest up to 50% of eligible costs.

- Investment repaid by projects will be recycled into further projects across Greater Manchester.

Citylabs 2.0
£12.5m loan from Evergreen 2 as part of £18.5m finance package to deliver 92,000 sq ft of state of the art laboratory and office space.

Didsbury Technology Park
The scheme will deliver 20,000 sq ft of Grade A office space delivering innovation in science and technology sectors through SME collaboration. Evergreen 2 delivered a loan of £2.5m towards the eligible activities of the development.
The GM Energy Challenge

GM aspires to be the leading region in the UK to enable the transition and benefit from the innovation and green growth potential, through a whole system approach.

Energy
72% of energy consumed within GM is from buildings, both domestic homes and non-domestic offices, industrial, public.

Growth
The GM forecast for 2035 is to have approximately an additional:

• 201,000 new homes, for 250,000 extra residents; and 6.7 million m² of additional commercial and industrial floor space.

This continued anticipated future growth to 2035 will, unless action is taken, lead to:

• An additional 2,400 GWh/yr. energy.
• An increase of 0.4Mt CO₂ emissions increase under business as usual activity.
• Which represents a 3% increase in energy consumption.

Low Carbon Transport
The National Infrastructure Assessment (July 2015) states that “most charging should be slow and smart”, but “fast and rapid chargers will be needed to tackle range anxiety.”
Future Possibilities for Delivery

**Local Council**
- Social housing
- Private housing
- Owner
- Tenant

**SPV/ESCO**
- Energy management system

**Local power retailer**
- Owner
- Tenant

**SPV/ESCO**
- Aggregation from HPs/Storage

**VPP**
- Aggregation from multiple sources

**EV & battery storage**
- I'

**Generator (Renewable)**
- VI

**Supply heat and electricity**
- III

**Tier-1 aggregator**
- Controlling signals
- Balancing service to National Grid and/or Local DNO

**Local renewable energy (heat and electricity) generation**
- II'

**EV & battery storage**
- I
Regional Approach

Generation and storage
Decarbonisation of Heat
Low carbon Transport
Diversity and Flexibility

Priority Areas

1. Strategy
2. Innovation
3. Pipeline
4. Delivery Vehicle
5. Optimisation

GM Whole System Smart Energy Framework

Carbon Neutral City Region 2019

Go Neutral: A GM Low Carbon investment Portfolio

Energy Transition Region (ETR)

Local Industry Strategy
2040 Transport Plan
Local Area Energy planning
GM Spatial Framework

Local Energy Market

Diversity and Flexibility

GMCA
Bolton
Manchester Oldham
Rochdale
Salford
Stockport
Tameside
Trafford
Wigan
Natural Capital Investment Plan

The investment plan aims to support the agreed vision of:

“A Greater Manchester where investments in natural capital enhance the long-term social, environmental, and economic health and wellbeing of its people and businesses.”

Investment in natural capital defined as:

“Funding that is intended to provide a return to the investor while also resulting in a positive impact on natural capital.”

- Returns are defined predominantly, although not exclusively, in financial terms.
- Public and third sectors still have an important role to play, as enablers and innovators.
Sources of capital in the market

- **Philanthropy**
  - Investors: Trusts & Foundations, NGOs, Lottery Funds
  - Business Model: No business model / non-revenue generating activities
  - Form of Investment: Grants

- **Impact-First Investments**
  - Investors: Impact Investors, aligned corporates
  - Business Model: Unproven business model / unpredictable cash flow
  - Form of Investment: Equity

- **Responsible Investments**
  - Investors: Commercial Investors
  - Business Model: Robust business model / revenue generating activities
  - Form of Investment: Concessionary debt

- **Mainstream Investments**
  - Investors: Commercial Investors
  - Business Model: No business model / non-revenue generating activities
  - Form of Investment: Commercial debt and equity

**Blended Finance**
Pipeline of Project Types

**Currently most investible**
- Habitat bank for biodiversity net gain
- Woodland management and new woodland creation
- Catchment scale initiatives
- Sustainable drainage schemes
- Place-based portfolio model
- Peatland restoration

**Investible in 1–3 years**
- Green infrastructure models for social prescribing
- Community levies for flood protection
- Wetland creation

**Investible > 3 years**
- Outcomes payment models for physical and mental health
- Outcomes payment models for air quality
- Sustainable travel infrastructure (as a standalone project)

**High / predictable revenue streams**
- Outcomes payment models for agri-business
- Green Improvement District for urban areas
- Outcomes payment models for water quality
- Outcomes payment models for flood mitigation

**Low / uncertain revenue streams**

**Investment Opportunities**
Investment Plan – Summary of Actions

**Investment Readiness**
- Build political appetite
- Design and seek external support for Investment Readiness Fund (IRF), potentially through UIA* funding
- Commit to enabling policies
- IRF to give technical assistance for business planning and investment start-up
- Robust governance and an aligned investment advisor
- Implement policy actions

**Support**
- Publish GM Natural Capital Investment Plan
- Learn from social investment market
- Research investment barriers and performance for continuous improvement

**Finance Models**
- Research Place-based Trust model
- Political leadership on biodiversity net gain and carbon reduction
- Build on potential UIA* activity for SuDS
- If Trust model suitable, create Special Purpose Vehicle
- Setup carbon & habitat credit verification
- Develop SuDS contracts

*Urban Innovation Action – Funding TBC
Potential Delivery Structure
Bringing it together – our overall approach

**Supporting innovation in technology**

Innovation ecosystem to support all firms to be innovative, supporting the creation of new products and services (e.g. Energy Transition Region proposals).

**Taking new approaches to funding and financing**

Long-term sustainable funding models for infrastructure.

Developing business models in unproven areas (whole house retrofit; natural environment).

**Building on public and private sector partnerships**

Continuing the engagement from 2018 Green Summit, with GMCA convening stakeholders around key challenges and through a mission-oriented approach.

**Showing leadership**

A set of commitments from GMCA/LAs, plus health and social housing providers, showing we are leading by example.

**Engaging & educating residents, communities and businesses**

Make a programme of carbon literacy available to young people through the GM career portal, in addition to our own commitments on carbon literacy for staff in procurement.

**Upskilling our workforce**

Engage the sector in BridgeGM, to better link business leaders into schools and colleges.