

▶ A GREEN STIMULUS FOR HOUSING

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27th April 2021

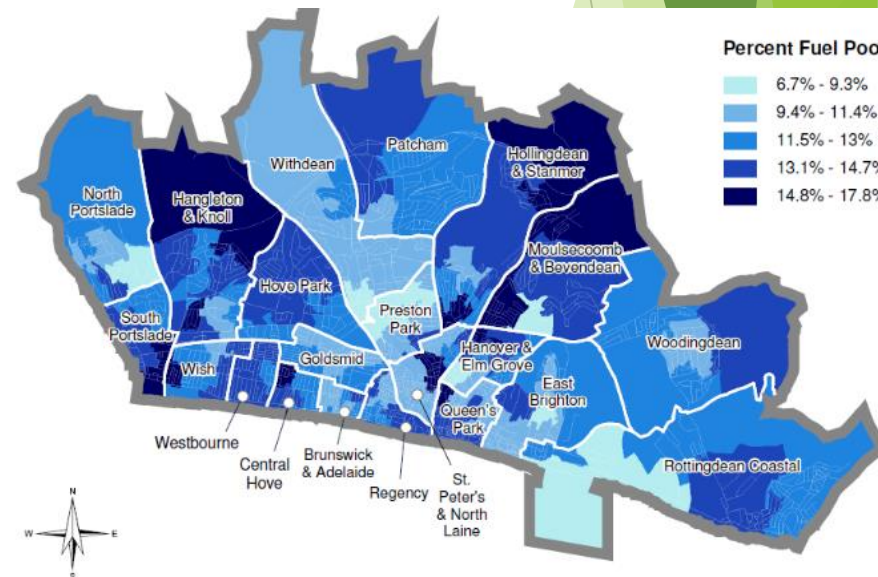
• The UK's housing stock is ancient!

- Lots of old homes which are hard to heat
- Uninsulated lofts and wall cavities
- Solid walls and floors with no insulation
- Single glazed windows and doors still common
- Old, inefficient heating systems based on high temperature boilers and radiators
- Dated or non-existent control systems
- Many homes need at least £10,000+ of investment



The Private Rented Sector & Fuel Poverty In Brighton

- **Brighton Private Rented Sector (PRS)**
- 31% of homes are PRS - 50% above national average
- Average monthly rent for 4 bed houses £1,867 (2016)
- Three-quarters of Brighton's stock built before 1919 - solid walls harder to heat and insulate
- 21.3% of PRS in fuel poverty in England - worst sector & double average
- Minimum Energy Efficiency Standards (MEES) introduced 1st April 2018 - EPC E or above - rarely enforced and too weak
- Sources: [Association for the Conservation of Energy, Brighton and Hove City Council]



'Whole-house' retrofit approach

- Involves multiple, complementary measures
 - Fabric & ventilation
 - Heat
 - Renewables
- Treats building as a system rather than focus on isolated measures
- Factors moisture, air quality, thermal bridging - not just CO₂
- Requires highly trained and integrated supply chain
- 20+ Million Heat pumps needed

Heating

- Condensing boiler (gas or oil)
- Fan-assisted storage heater
- Flue gas heat recovery device
- Heating controls (e.g. remotely controllable thermostats, zone controls, smart radiator valves)
- Warm-air unit
- Circulation pump

Hot water

- Hot water cylinder jacket
- Cylinder thermostat
- Waste water heat recovery devices for showers and baths



Insulation

- Cavity wall insulation
- Solid Wall Insulation
- Draught proofing
- Loft or roof insulation
- Room in roof insulation
- Under-floor insulation
- Party wall insulation

Lighting

- Energy Efficient luminaires

Windows and doors

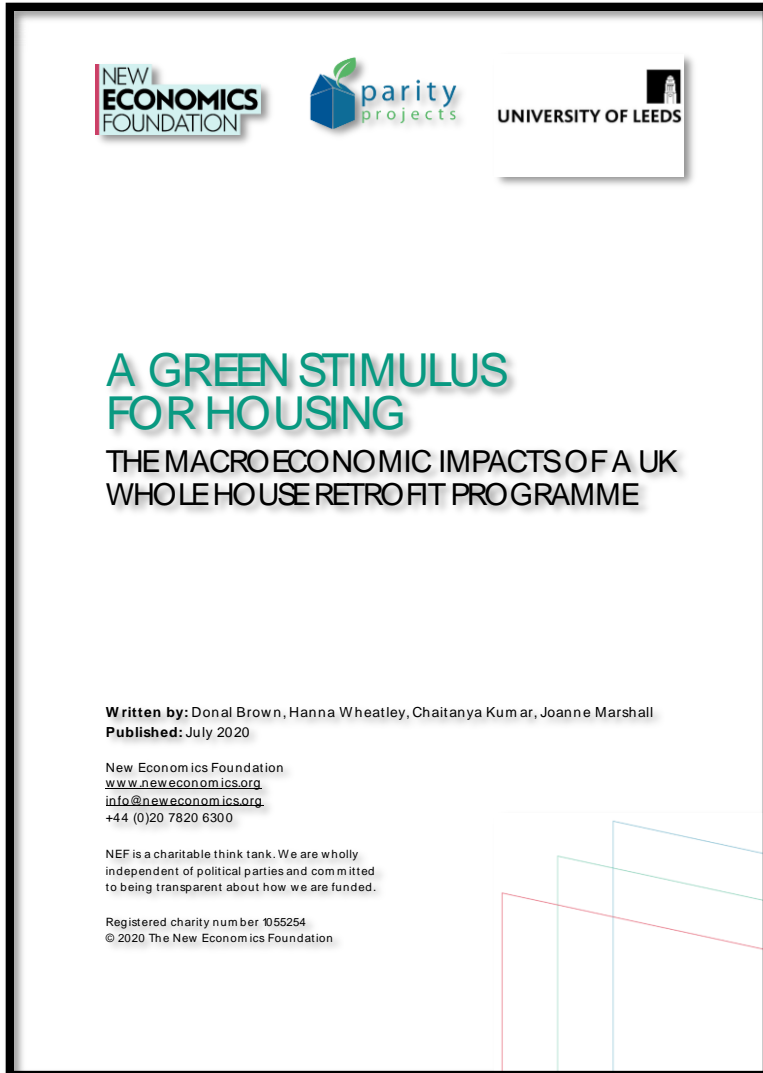
- Replacement glazing
- Secondary glazing
- High performance external doors

Micro-generation and renewables

- Air source heat pumps
- Biomass boilers and heaters
- Ground source heat pumps
- Micro wind generation
- Micro CHP
- Water source heat pumps
- Solar water heating
- Solar Photovoltaics

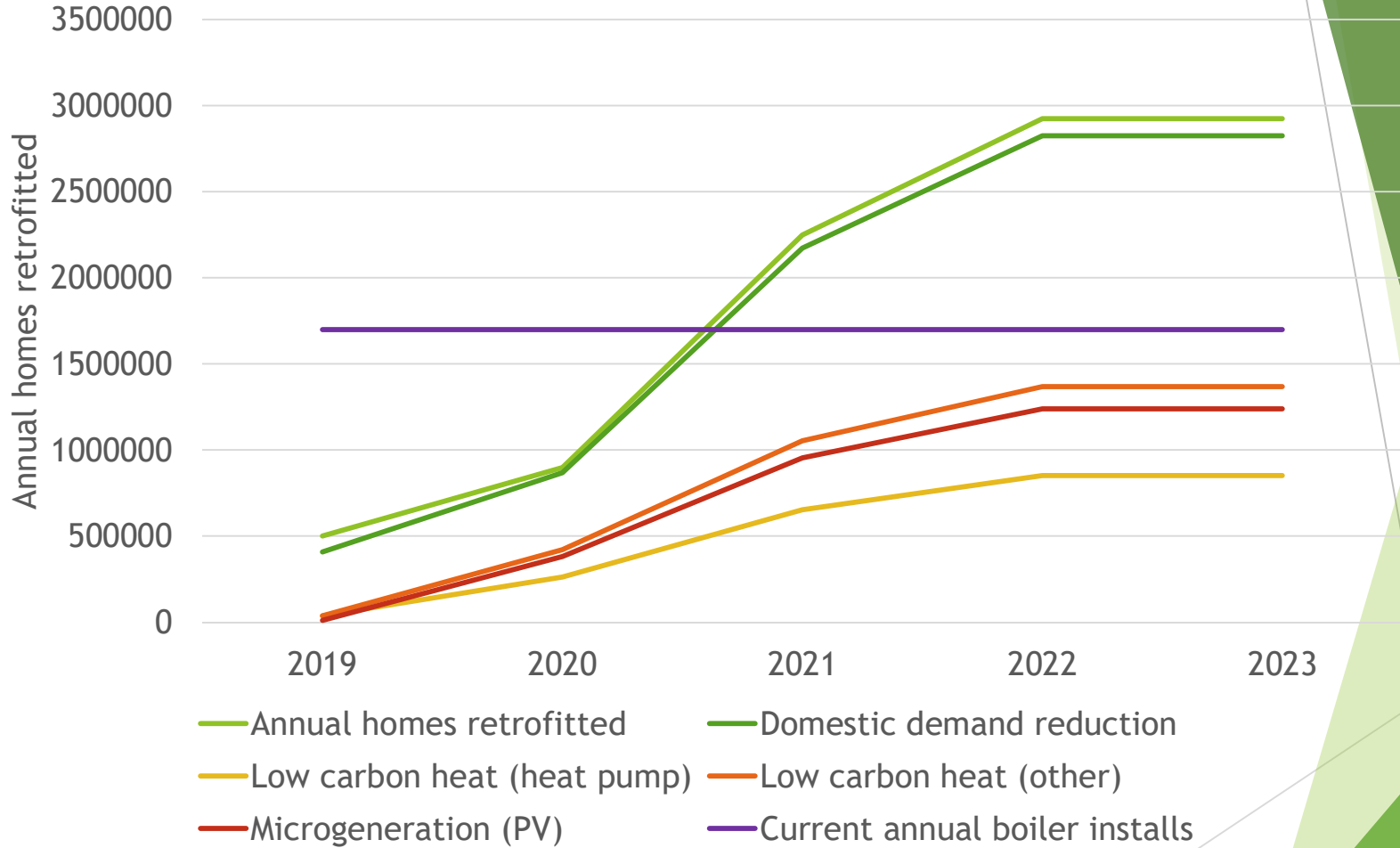
Note: additional measures and technologies are available for non-domestic properties

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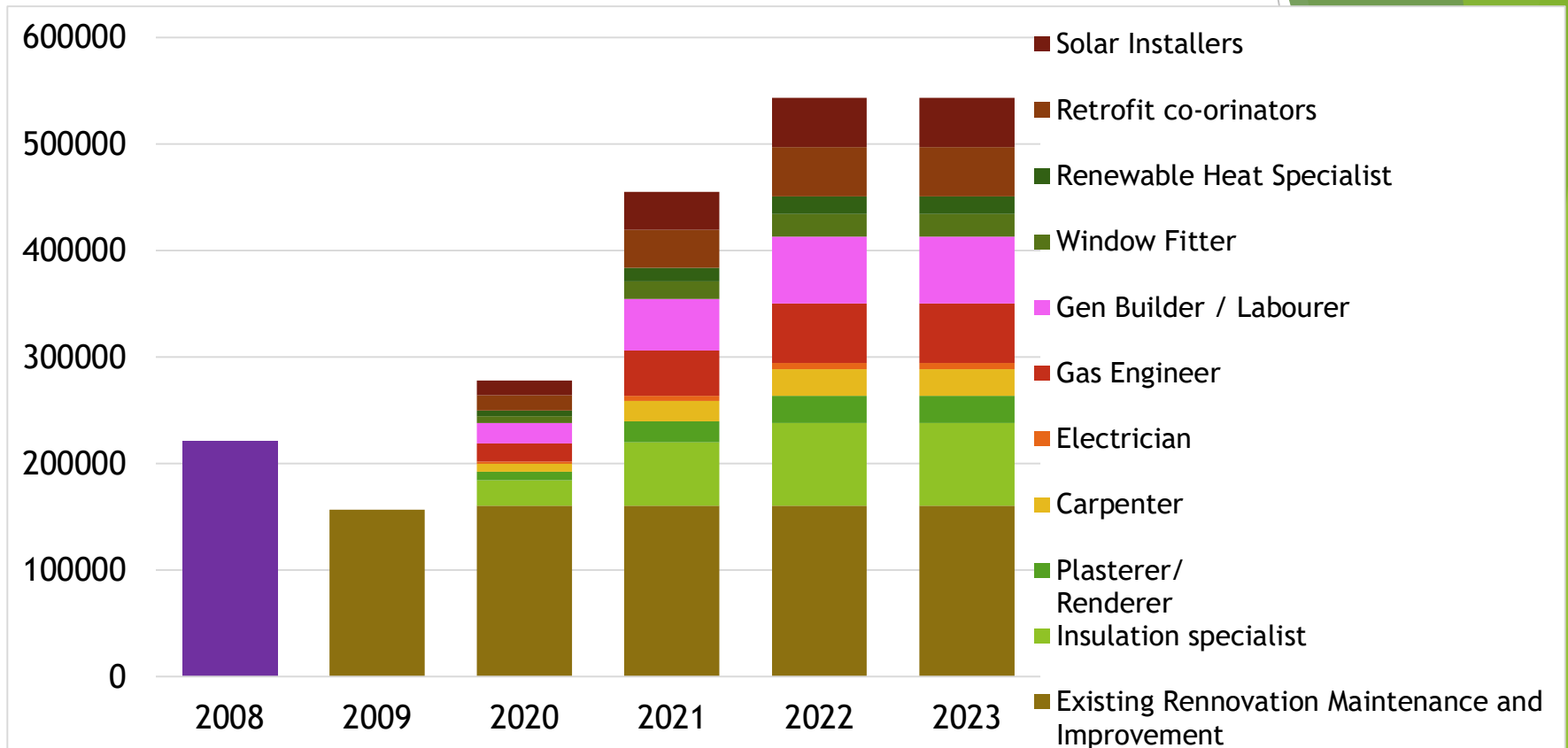
- Govt. COVID-19 recovery package ~£34bn
- 10% (~38TWh) reduction in heat demand
- 87-fold increase in low carbon heat with around 10% penetration of heat pumps
- 135% increase in microgeneration from renewables (7.4GW, mostly rooftop PV)

Deployment to 2024



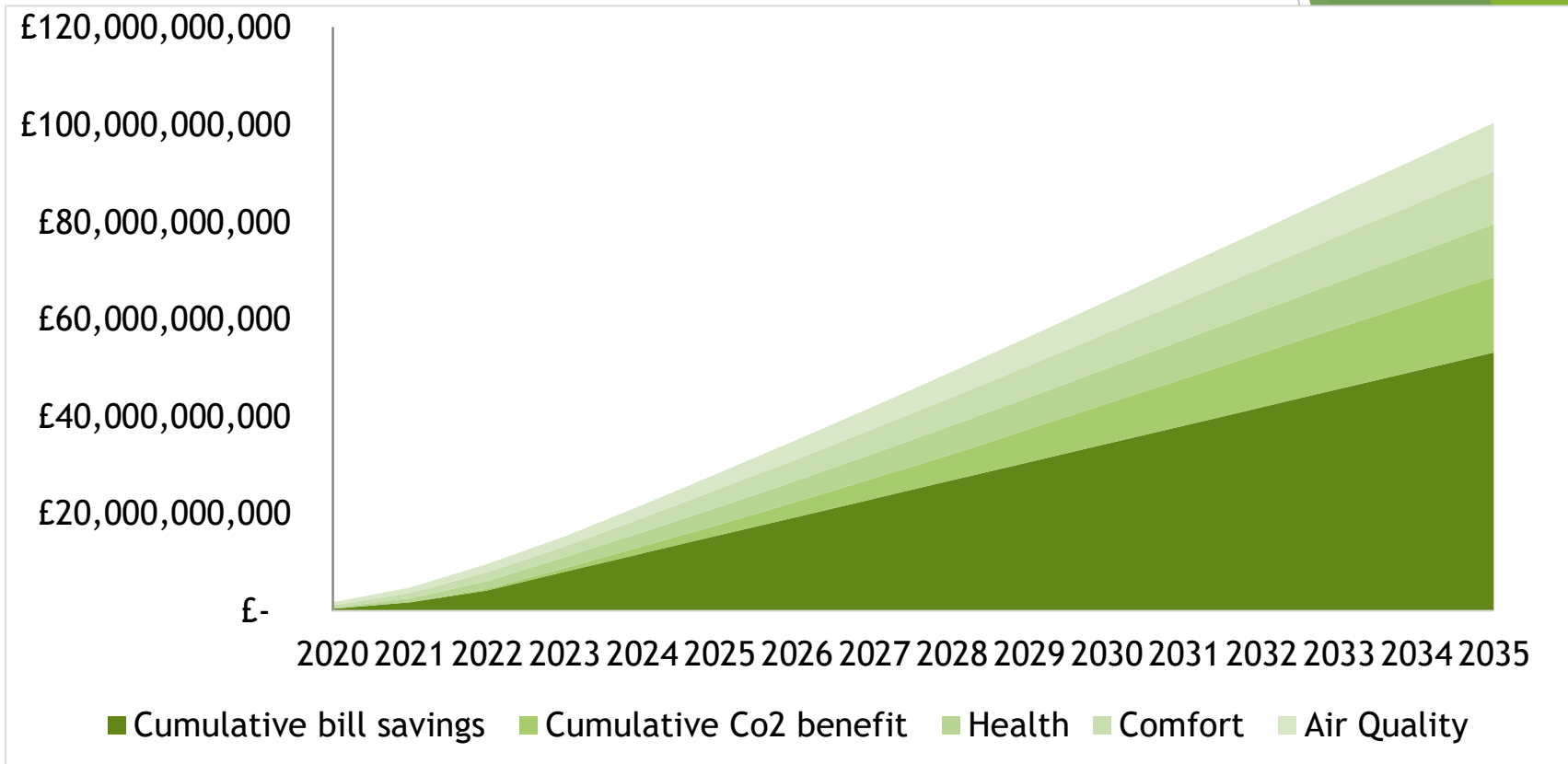
- **Nearly 3 million homes a year by 2023**

Jobs



- 117,811 new direct jobs in year 1, rising to 382,885, in year 4
- Average of 294,527 construction jobs between 2020-2024
- Total average of 515,157 when factoring indirect jobs⁷

Energy and environmental benefits



- Average energy bill savings of £418 for each home retrofitted - totalling £53.17bn
- £100.36bn wider benefits including wider health, comfort and air quality

Economic benefits

- ▶ Retrofit has very high tax multiplier £1.4+ / £1 gov investment
- ▶ Unlike HS2 or Crossrail creates jobs and growth in every region
- ▶ A net-zero consistent plan would create £302.91bn in GDP by 2030

This is the biggest engineering project the UK has ever seen		
Year 1 899,000 homes	£10.75bn programme 200,000 jobs sustained Government invests £4.4bn Govt revenue £6.03bn Tax benefit per £, £1.36 Private capital, £6.32bn Health benefits, £222.1m Additional GDP, £11.17bn	Avoided CO ₂ emissions: 1.92Mt
Parliamentary period 8,690,000 homes	£97.81bn programme 669,704 jobs sustained Government invests £34.6bn Govt revenue £60.25bn Tax benefit per £, £1.84 Private capital, £63.16bn Health benefits, £2.22bn Additional GDP, £111.56bn	40.9Mt
By 2030 26,890,000 homes	£240.92bn programme 669,704 jobs sustained Government invests £103.6bn Govt revenue £163.24bn Tax benefit per £, £1.58 Private capital, £137.32bn Health benefits, £6.54bn Additional GDP, £302.91bn	297.9Mt
Net Zero	£402.91bn programme 669,704 jobs sustained	

Two new Sussex projects on these topics

- ▶ UKERC: Whole Person Whole Place
 - ▶ Investigating the social and institutional barriers to retrofit in Brighton: Greater Brighton Region
- ▶ UKRI CREDS: Brighton Local Green New Deal
 - ▶ Making the case for major investment in housing, transport and green infrastructure - B&H City Region



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