Workshop 1d:

Fuel poverty, affordable warmth and health

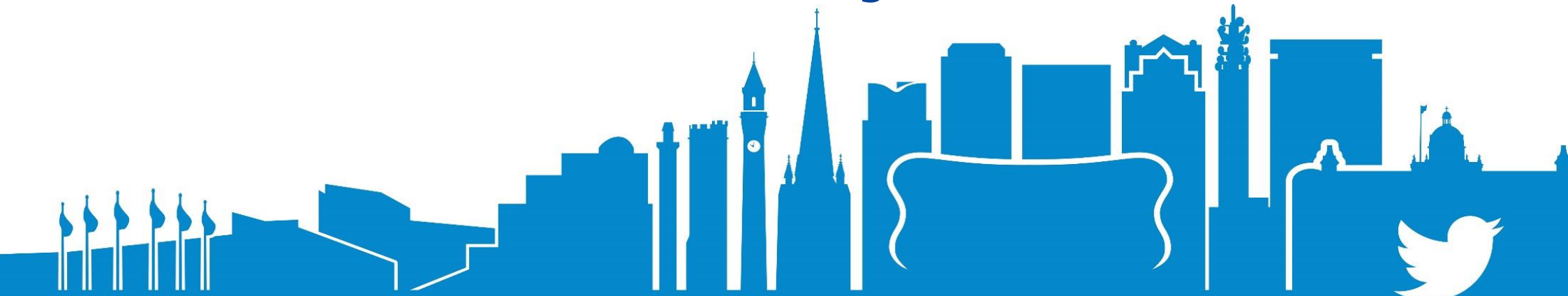
Speakers: Peter Rickaby (Rickaby Thompson Associates)

Toby Morgan (London Borough of Islington)

John Kiely (Savills)

Chaired by: Paul Graham

Room: Cambridge Room



NHMF Conference 2016, Workshop 1d

Fuel Poverty, Affordable Warmth and Health

Peter Rickaby, Rickaby Thompson Associates

John Kiely, Savills

Toby Morgan, London Borough of Islington

Workshop Content

1. **Fuel Poverty in the UK**
   Peter Rickaby
2. **Harlow Council's Approach to Fuel Poverty**
   John Kiely
3. **Harlow Council's Affordable Warmth Matrix**
   Peter Rickaby
4. **Islington's Seasonal Health and Affordable Warmth Interven**tions
   Toby Morgan

RICKABY THOMPSON ASSOCIATES
ENERGY + SUSTAINABILITY CONSULTANTS

savills

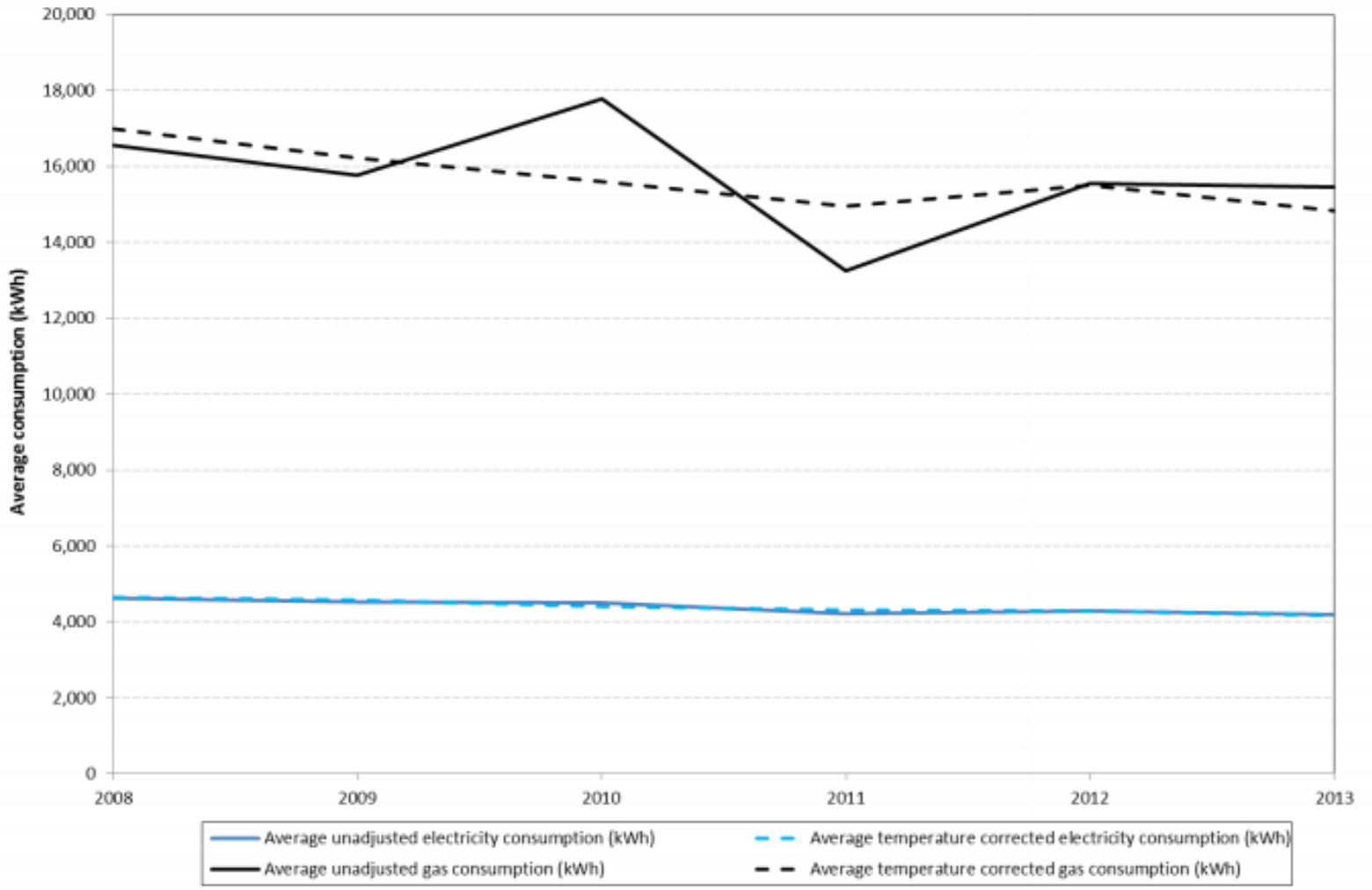
Fuel Poverty in the UK

Peter Rickaby

Average UK domestic gas and electricity consumption 2008 to 2013

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

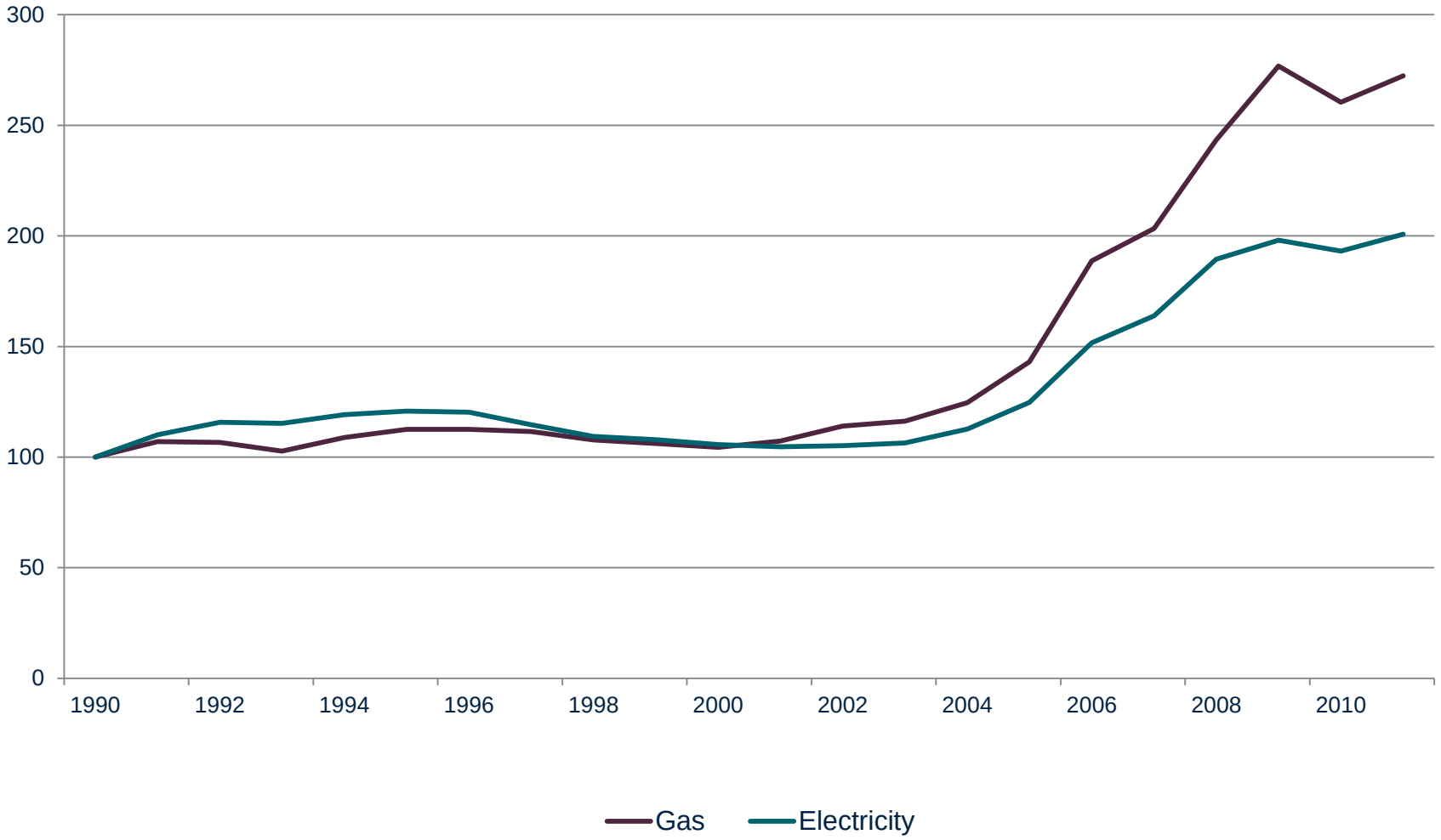


Source: DECC, ECUK Tables 3.07

Rising Energy Costs

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills



Trends

	1990	2013
UK fuel consumption from homes %	26%	29%
Number of households	22.64 million	27.07 million
Uptake of cavity wall insulation %	21.8%	69.8%
Homes with double glazing	11.29 million	26.13 million
Homes with solid wall insulation	-	211,000
UK average SAP energy rating	40.2	57.2 (2012)

Fuel Poverty in England

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

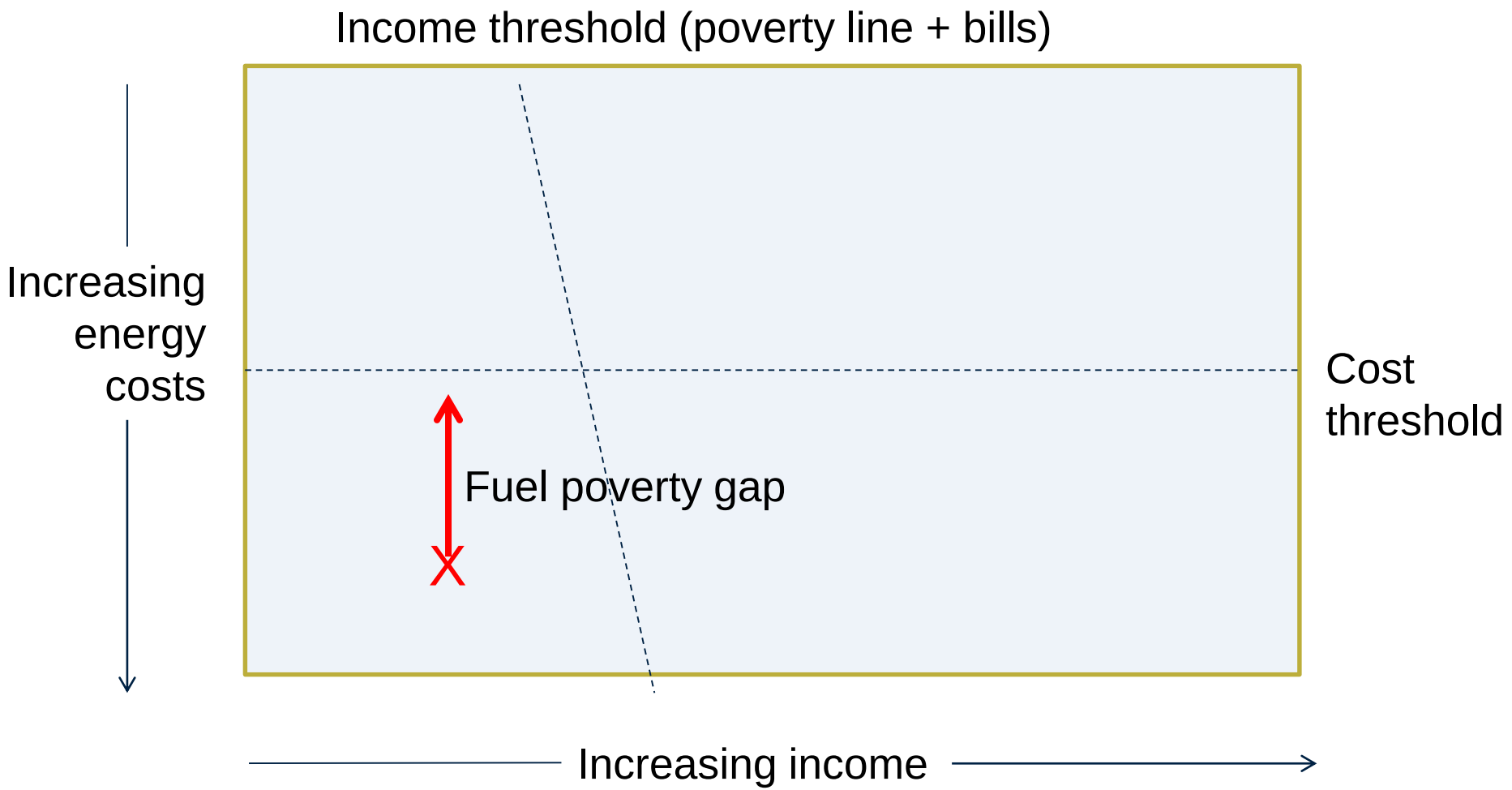
savills

- Traditionally defined as occurring when fuel cost to maintain adequate warmth is greater than 10% of household income
  - This definition is still used in Wales, Scotland and NI
- Now re-defined as the Low Income High Costs (LIHC) indicator, i.e. a household is fuel poor if:
  - Its energy costs are higher than the national average ***and***
  - After paying the fuel costs its residual income is below the poverty line (i.e. less than 60% of average income)
- Severity of fuel poverty indicated by 'fuel poverty gap':
  - The amount by which a household's energy costs would have to be reduced, or its income increased, for it to come out of fuel poverty

Definition of Fuel Poverty (LIHC)

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills



Fuel Poor Households in England

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

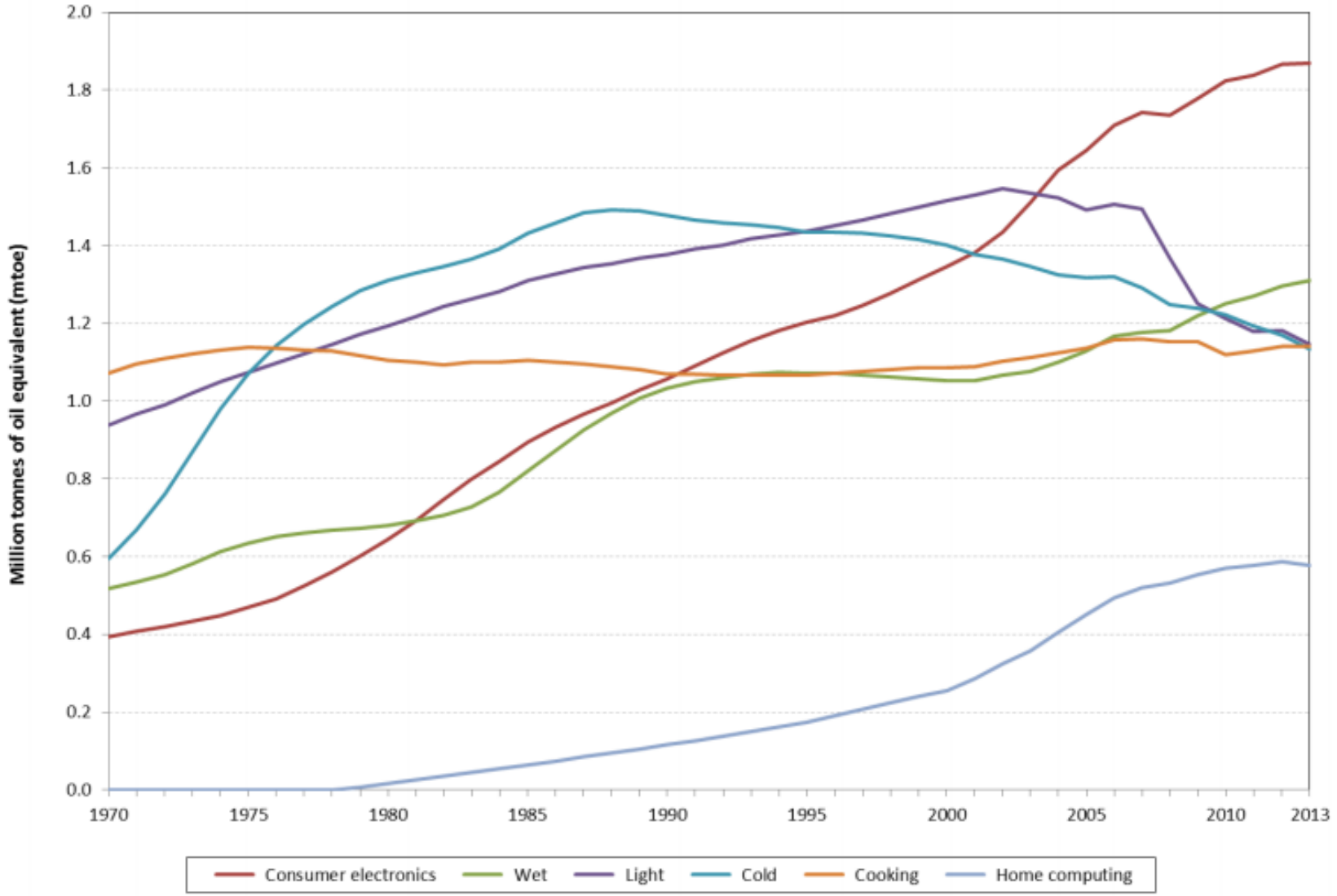
savills

- 2.35 million (10.4% of households) on the new LIHC definition in 2013
  - Average fuel poverty gap £374
- Highest percentages in those:
  - on pre-payment meters: 21%
  - in solid wall homes: 16%
  - not on mains gas: 14%
- The fuel poverty challenge
  - Protect residents from social impact of rising fuel prices
  - Ensure robust supplies of heat **and power**
  - Power accounts for 40-50% of fuel costs and emissions

UK Electricity Consumption by Appliance Type 1970 to 2013

RICKABY THOMPSON ASSOCIATES
ENERGY + SUSTAINABILITY CONSULTANTS

savills



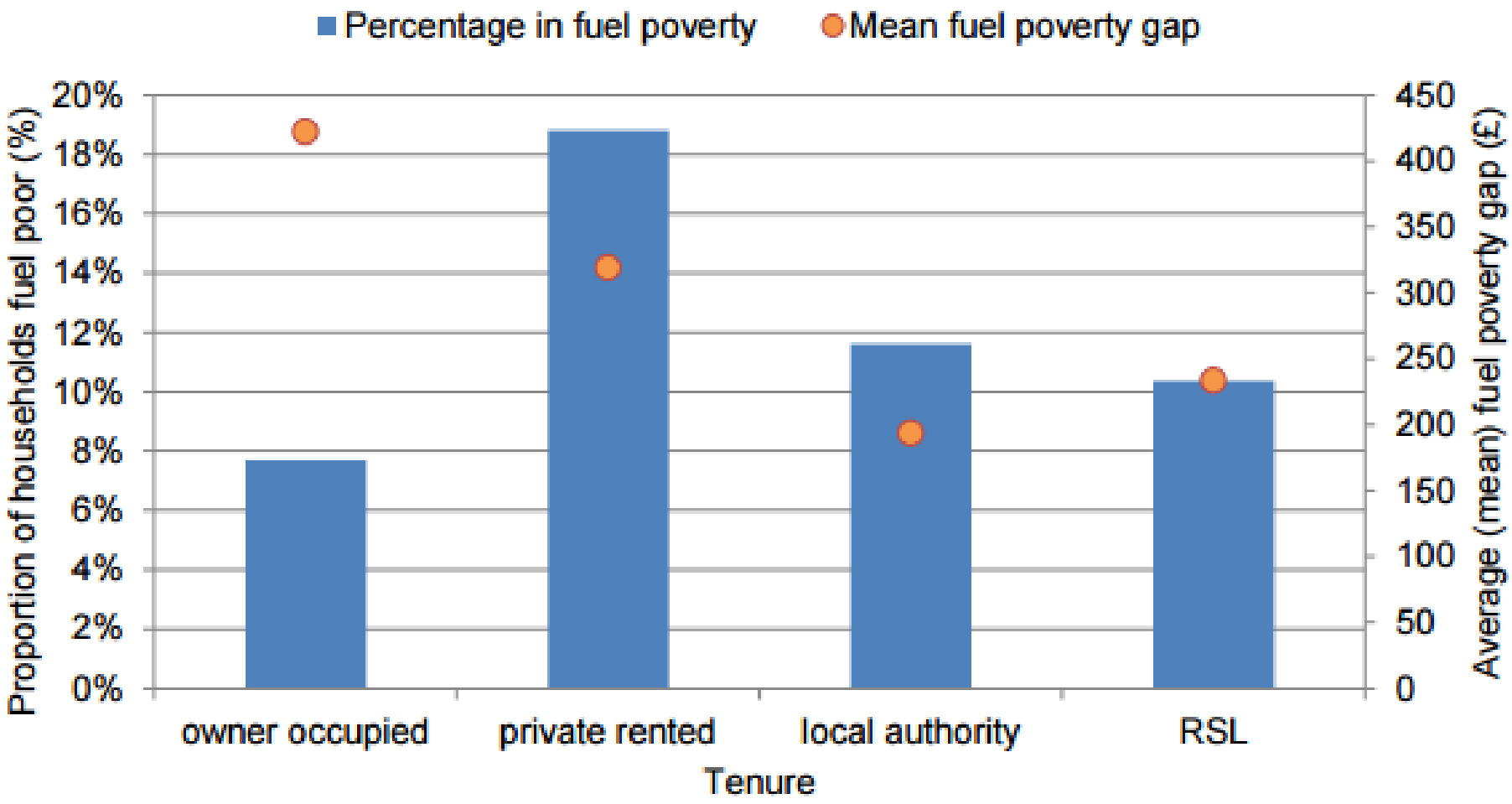
Source: Market Transformation Programme

Fuel Poverty by Tenure

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

Chart 3.5: Fuel poverty by tenure

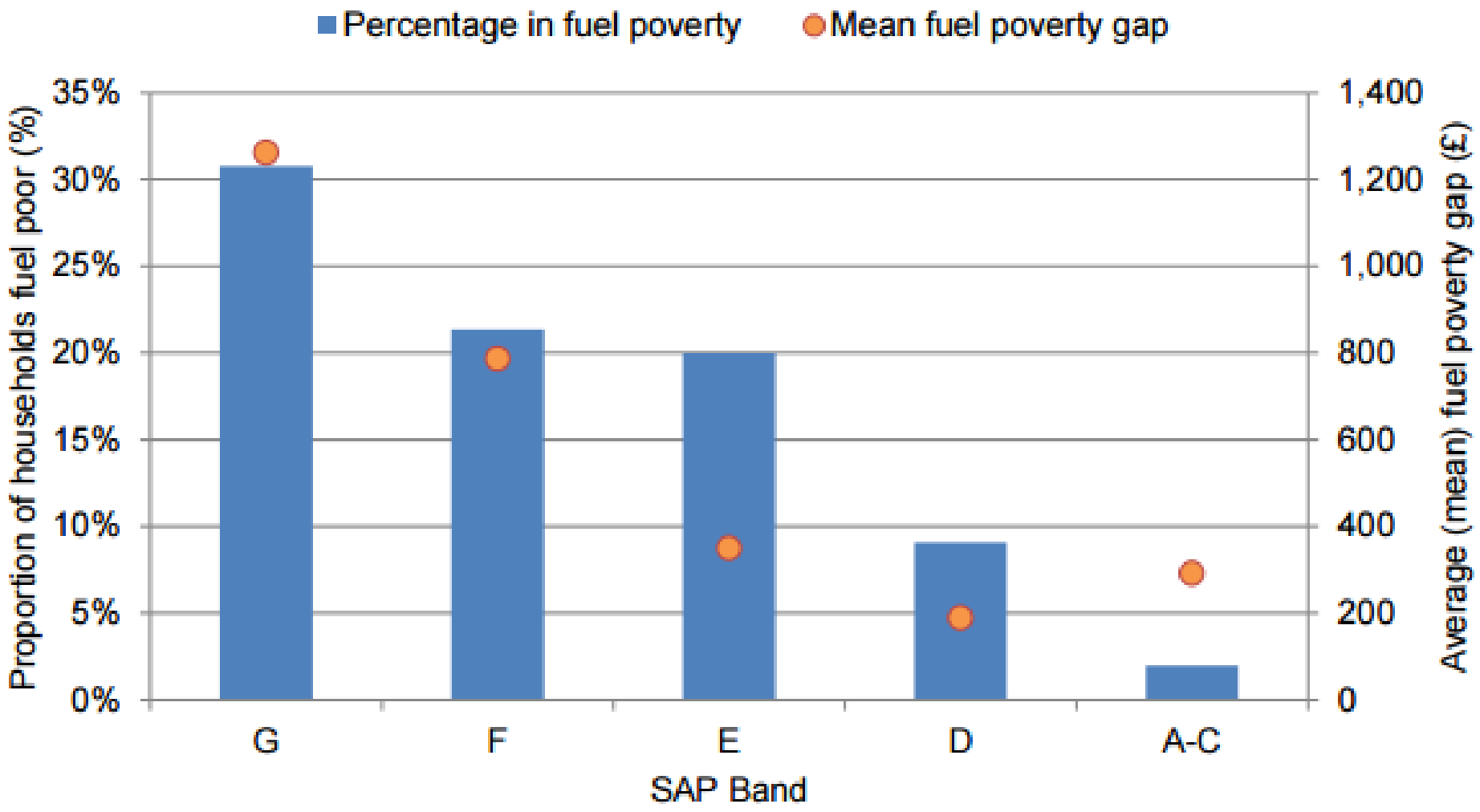


SAP and Fuel Poverty

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

Chart 3.1: Fuel poverty by SAP band, 2013



Fuel Poverty Targets

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

- The Fuel Poverty (England) Regulations 2014 set fuel poverty targets to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency rating of:
  - Band C by 2030
  - Band D by 2025
  - Band E by 2020
- DECC fuel price projections
  - No longer anticipating significant increases up to 2020
  - Various scenarios to 2030 dependent on global fossil fuel prices

Fuel Poverty in the UK

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

- Scotland, Wales and Northern Ireland still use the >10% definition so UK estimates also still use this:

	No. of homes	Percentage
England	2.73 million	12%
Scotland	0.94 million	39%
Wales	0.4 million	30%
Northern Ireland	0.3 million	42%
Total	**4.5 million**	**17%**

RICKABY THOMPSON ASSOCIATES
ENERGY + SUSTAINABILITY CONSULTANTS

savills

Harlow Council's Approach to Fuel Poverty

John Kiely

Sector Under Pressure

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

- Govt challenges – 1% rent reduction, compound effect 12%
- Welfare reform generally and benefit cap
- Securing value for money
- Greater emphasis on compliance rather than decent homes
- Restructures, staffing reductions

Amongst all this is challenge of Fuel Poverty but who can afford it – neither client nor tenant

A need for new Investment and Procurement Strategies including Environmental, Energy and Sustainability issues

Addressing this Challenge

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

- Investment Need and Funding Requirement
- Stock Performance and Sustainability
- Investment Planning
- Procurement and Delivery

Stage One – Investment Need

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

Key Components

- Robust Stock Condition Data
- Investment Required by Archetype and Element
- Knowledge of Stock Performance and Sustainability
- Housing Stock Energy Study
- Understand Leaseholder Liability
- Reality Checking

Energy and Sustainability Strategy

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

Understanding the fuel poverty challenge

- Assessing Energy Performance of Stock – By Type
- Costs to Meet Higher Efficiency Targets
- Tenancy Fuel Costs
- Fuel Poverty Assessment and Matrix by Occupancy Profile
- Model Brings Together – Costly to Heat Properties and Tenant Profiles
- Enables Management of Lettings to Mitigate Fuel Poverty
- Enables Specific Targeting of Energy Efficiency Works to Mitigate Fuel Poverty
- Medium Term Improvement Plan Per Archetype
- Creates Long Term Energy Efficiency Strategy: 20 – 30 Year Plan, Not 5 Year

Housing Stock Energy Study

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

Objectives

- Establish extent of fuel poverty and potential fuel poverty gap
- Identify and cost improvements to bring each dwelling *type* to SAP 80 and to 50% reduction of carbon dioxide emissions:
  - SAP 80 as proxy affordable warmth standard
  - C50 as contribution to national C80 target
- Establish the scope and cost of the work required to bring the *whole* stock to SAP 80 and to C50
- Estimate the potential for external funding:
  - via ECO, FiT and PAYS

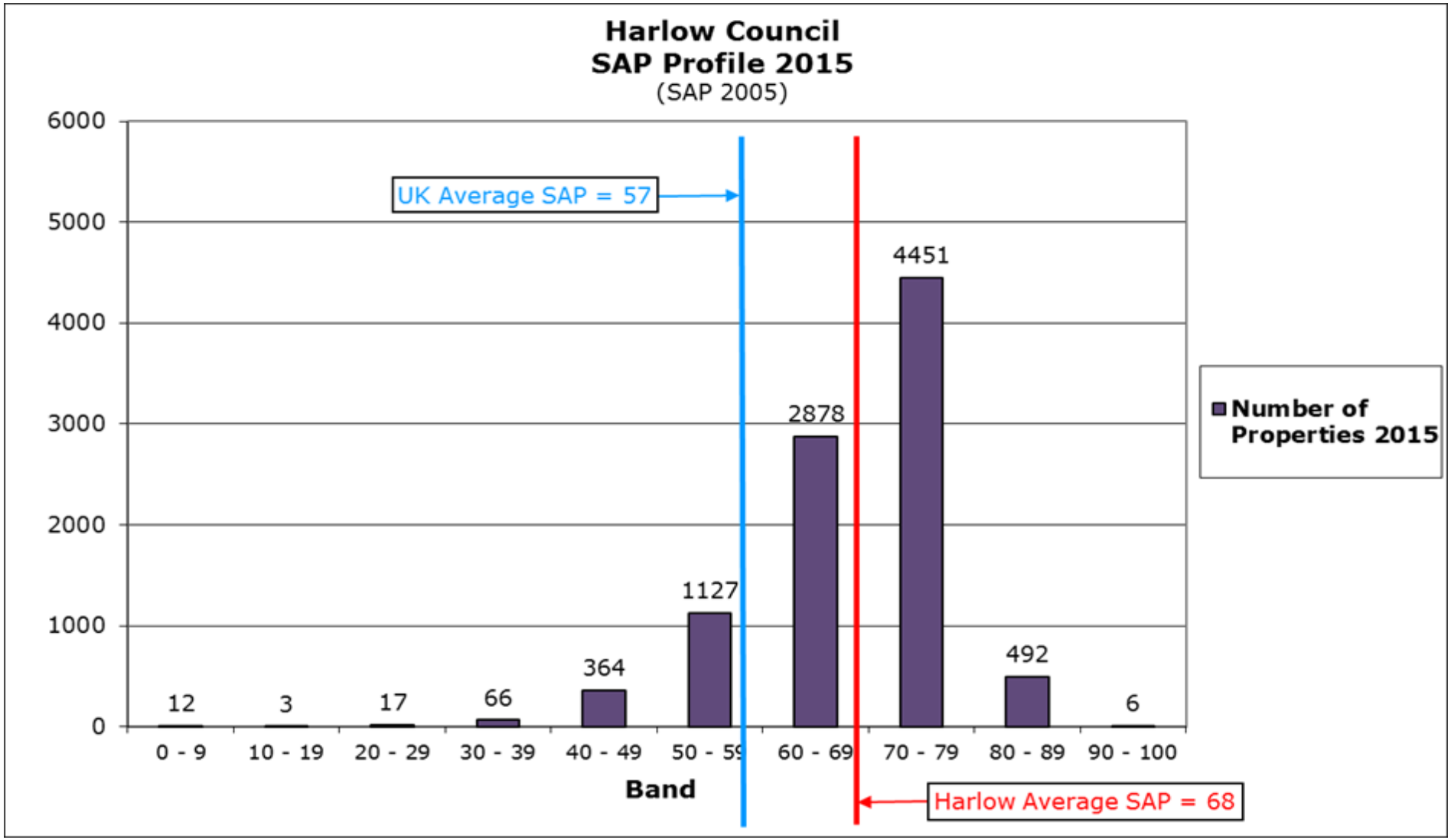
Harlow Council

Working together for Harlow

SAP Profile

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

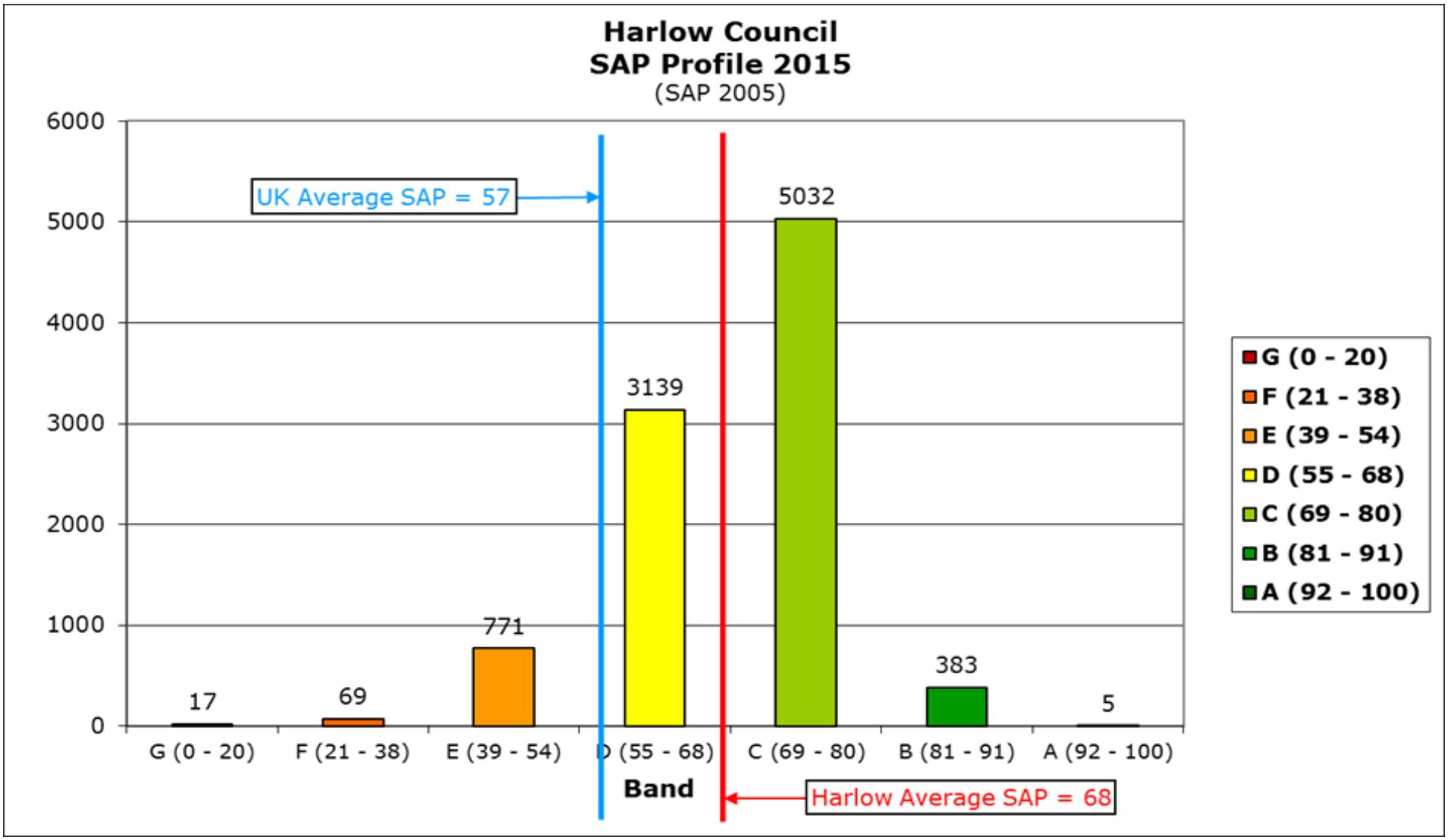


Average SAP 68

SAP Profile (EPC Bands)

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

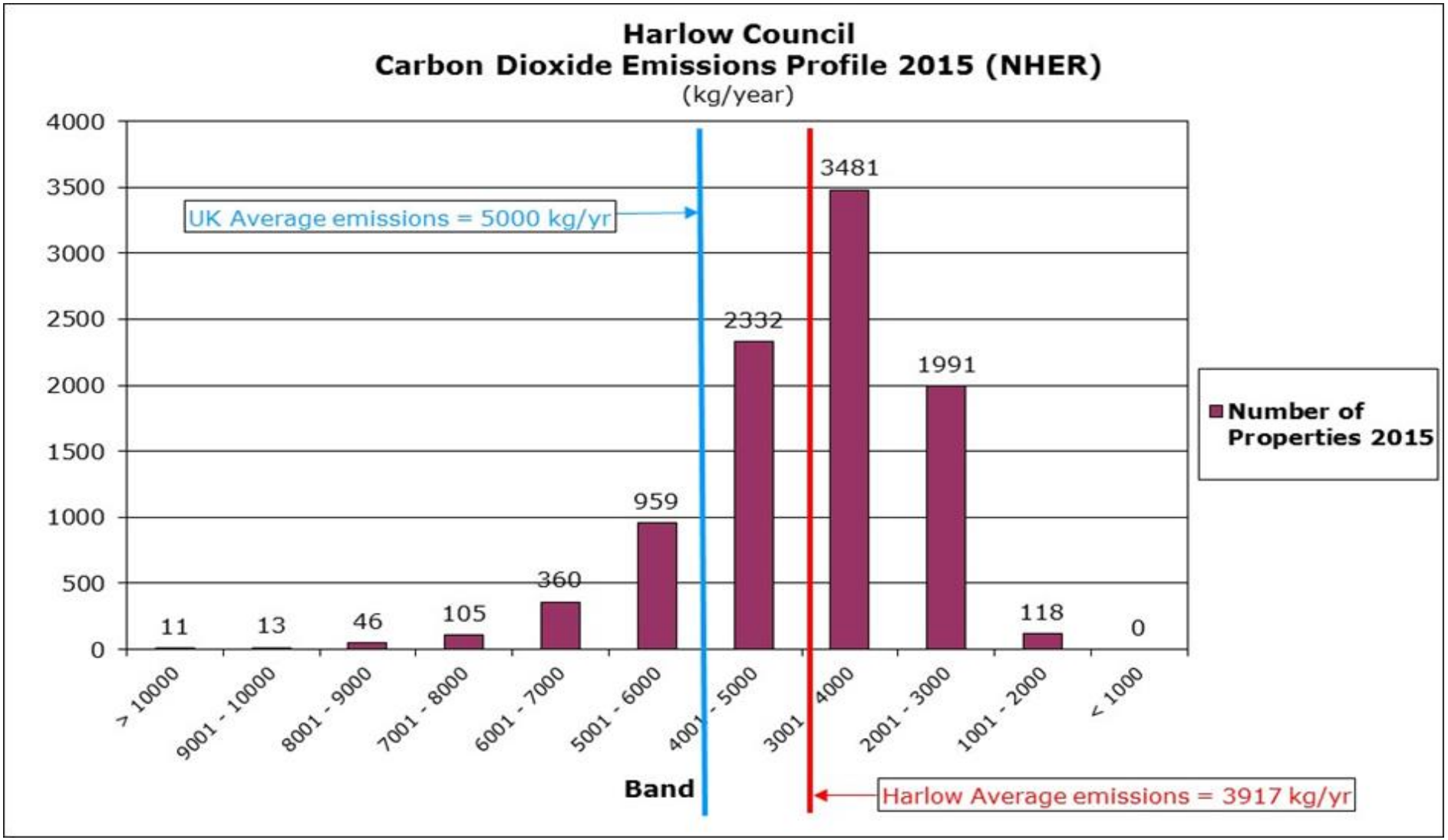


Average SAP 68

Carbon Dioxide Emissions

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

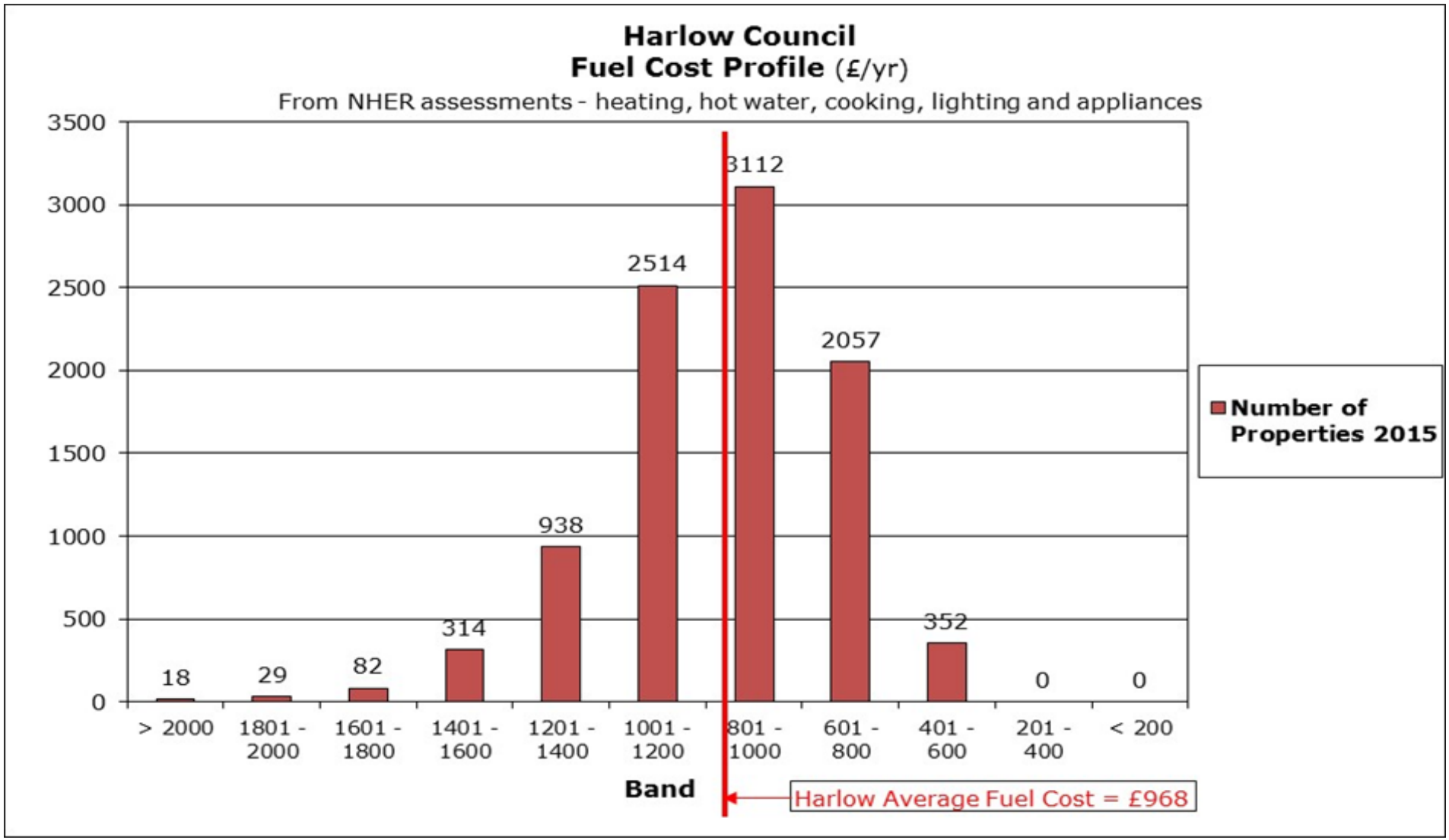


From NHER: average 3,917 kg/yr

Fuel Costs

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills



From NHER: average £968/yr

Energy Analysis

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

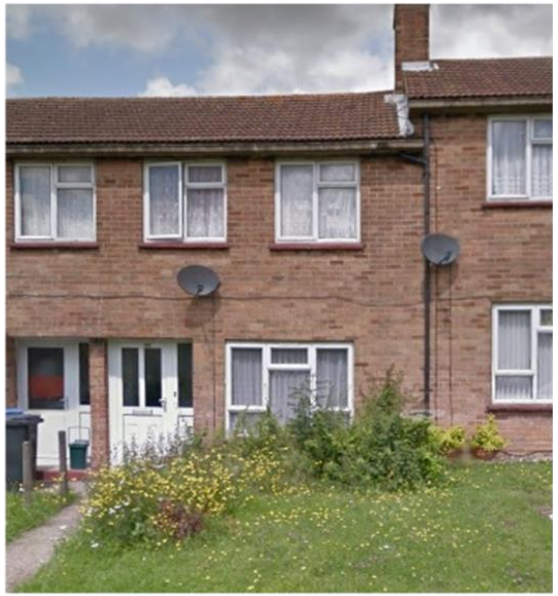
savills

C

Harlow Council - Housing Stock Energy Study

Summary of Archetypal Dwelling Energy Efficiency Assessments
to Achieve SAP 80 and 50% CO_2 Emissions Reduction

Dwelling: 162 Spring Hills, Harlow, CM20 1TD
Dwelling type: House, Mid-terrace, 1930-75, gas heating system



UNIMPROVED DWELLING

Energy Ratings:

SAP Energy Rating: 69 SAP CO_2 emissions (kg/yr): 2987
EPC Band C 50% CO_2 Reduction (kg/yr): 1494

Estimated annual fuel use, fuel costs and CO_2 emissions

End Use	Energy (kWh/yr)	Fuel Cost (£/yr)	CO_2 (kg/yr)
Space Heating - Main	5860	298	1849
Space Heating - Secondary	0	0	0
Water heating	3969	138	857
Pumps and fans	165	22	86
Lighting	376	50	195
Standing Charges	-	120	-
Totals	10370	627	2987

Dwelling: 162 Spring Hills, Harlow, CM20 1TD

RECOMMENDED IMPROVEMENTS - TO ACHIEVE SAP 80

Improvement		Capital Cost (£)	Saving (£/yr)	CO_2 Saving (kg/yr)
S1:Full scaffold to front and back of houses / maisonettes	Walls, windows	£1,650	£216	1294
W3/W5:Wall insulation (internal/external)	U: 0.5 - 0.2	£3,683		
R1:100 mm mineral fibre (between/over joists in loft, top up insulation	U: 0.16 - 0.11	£432		
D2:Proprietary insulated loft hatch		£170		
R10:Boarded loft space (3 sq.m)		£75		
G5:New windows - PVCu frames (Whole unit U=1.2)	U: 4.8 - 1.2	£3,708		
G13:New proprietary insulated external door and frame (U=1.0) to outside	x2	£760		
V1:Install extract fan in kitchen		£190		
V2:Install extract fan in bathroom		£190		
H2:Replace gas-fired condensing combination boiler		£1,450		
H16:Add thermostatic radiator valves (TRVs)	x8	£320		
H18:Programmable Wireless Room Thermostat (Honeywell)		£100		
H19:Weather Compensator		£300		
HW12:Pipe Lagging - House / Maisonette		£125		
LA1:Low Energy Light Bulb(s)	x2	£8		
Take out hot water cylinder				
Overall Package		£13,160		
Cost per tonne CO_2 saved		£10,174		

Improved Energy Ratings:

SAP Energy Rating: 79 CO_2 emissions (kg/yr): 1693
EPC Band C CO_2 emissions reduction: 43.30%

Improved annual fuel use, fuel costs and CO_2 emissions

End Use	Energy (kWh/yr)	Fuel Cost (£/yr)	CO_2 (kg/yr)
Space Heating - Main	4515	157	975
Space Heating - Secondary	0	0	0
Water heating	2381	83	514
Pumps and fans	75	10	39
Lighting	318	42	165
Standing Charges		120	
Generation Savings	0	0	0
Totals	7289	412	1693

Energy Analysis

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

Ft

Harlow Council - Housing Stock Energy Study

Summary of Archetypal Dwelling Energy Efficiency Assessments

to Achieve SAP 80 and 50% CO_2 Emissions Reduction

Dwelling: 35, Edmunds Tower, Harlow, CM19 4AD
Dwelling type: High Rise: Top Floor Flat, 1930-75, gas (indiv) heating

UNIMPROVED DWELLING

Energy Ratings:

SAP Energy Rating: 54 SAP CO_2 emissions (kg/yr): 4053
EPC Band E 50% CO_2 Reduction (kg/yr): 2027

Estimated annual fuel use, fuel costs and CO_2 emissions

End Use	Energy (kWh/yr)	Fuel Cost (£/yr)	CO_2 (kg/yr)
Space Heating - Main	12828	446	2771
Space Heating - Secondary	0	0	0
Water heating	4617	161	997
Pumps and fans	165	22	86
Lighting	384	51	199
Standing Charges	-	120	-
Totals	17994	800	4053

Dwelling: 35, Edmunds Tower, Harlow, CM19 4AD

RECOMMENDED IMPROVEMENTS - TO ACHIEVE SAP 80 & THE EMISSIONS REDUCTION TARGET (50%)

Improvement		Capital Cost (£)	Saving (£/yr)	CO_2 Saving (kg/yr)
S3:Intermediate scaffold - for single measures - external walls, windows; Single storey dwellings	Walls, windows	£700	£466	2851
W3/W5:Wall insulation (internal/external)	Ext walls: U: 1.7 - 0.3	£1,240		
W3:Dry lining - thermal board (PU) 100 mm +12.5mm plasterboard	Corridor walls: U: 1.01 - 0.3	£1,800		
R7:200 mm PU on flat roof and refinish	U: 1.5 - 0.18	£8,960		
G5:New windows - PVCu frames (Whole unit U=1.2)	U: 3.1 - 1.2	£2,895		
G14:New proprietary insulated door and frame (U=1.0) to corridor - flats	x1	£650		
V1:Install extract fan in kitchen		£190		
V2:Install extract fan in bathroom		£190		
H2:Replace gas-fired condensing combination boiler		£1,450		
H16:Add thermostatic radiator valves (TRVs)	x4	£160		
H18:Programmable Wireless Room Thermostat (Honeywell)		£100		
H19:Weather Compensator		£300		
HW13:Pipe Lagging - Bungalow / Flat		£100		
LA1:Low Energy Light Bulb(s)	x3	£12		
Take out hot water cylinder				
Overall Package		£18,747		
Cost per tonne CO_2 saved		£6,575		

Improved Energy Ratings:

SAP Energy Rating: 81 CO_2 emissions (kg/yr): 1202
EPC Band B CO_2 emissions reduction: 70.35%

Improved annual fuel use, fuel costs and CO_2 emissions

End Use	Energy (kWh/yr)	Fuel Cost (£/yr)	CO_2 (kg/yr)
Space Heating - Main	2418	84	522
Space Heating - Secondary	0	0	0
Water heating	2132	74	460
Pumps and fans	165	22	86
Lighting	257	34	134
Standing Charges		120	
Generation Savings	0	0	0
Totals	4972	334	1202

Summary

	SAP 80	ERT (inc. SAP 80)
Number of dwellings to improve	8,918	4,226
Average improvements per year (over 25 years)	356	169
Average capital cost per dwelling	£12,712	£14,419
Average capital cost per year (over 25 years)	£4.53 million	£288,558
Total improvement cost (excluding assessments)	£113.4 million	£120.6 million
Total improvement cost (including assessments)	£114.6 million	£121.8 million
Value of improvement work recently completed	£4.8 million	£4.8 million
Value of improvements included in budgeted plan	£5.8 million	£5.8 million
Unbudgeted improvement cost (excluding assessments)	£102.8 million	£110.0 million
Unbudgeted improvement cost (including assessments)	£104.0 million	£111.2 million
Average fuel cost saving per household	£252/yr	£300/yr
Annual fuel cost saving (when complete)	£2.25 m/yr	£2.44 m/yr
Average CO_2 emissions reduction per household	1.50 t/yr	1.68 t/yr
Annual CO_2 emissions reduction (when complete)	13,337 t/yr	14,129 t/yr
Total potential ECO funding	£0.19 million	£0
Total potential FiT funding	£2.18 million	£0
Total potential DIY PAYS funding	£18.2 million	£0

Implementing the Strategy

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

- Basic costs - unaffordable
- Assessment of SCS over 30 years – what's covered?
- Potential External Funding streams FIT/ECO/RHI/PAYS – nothing guaranteed !
- Fuel poverty assessment by occupancy profile
- Different results under the 2 definitions !
- Total cost to identify work to SAP80 – can model to lower standard
- Enables specific targeting of energy efficiency works to mitigate fuel poverty
- Enables management of lettings to mitigate fuel poverty
- Creates long term energy efficiency strategy: 20 – 30 year plan, not 5 year
- Incremental approach

Must form part of wider Asset management Strategy – informed decisions

RICKABY THOMPSON ASSOCIATES
ENERGY + SUSTAINABILITY CONSULTANTS

savills

Harlow Council's Affordable Warmth Matrix

Peter Rickaby

Affordable Warmth Matrix

RICKABY THOMPSON ASSOCIATES ENERGY + SUSTAINABILITY CONSULTANTS

savills

- Fuel poverty results from a *combination* of
  - A dwelling with high fuel costs
  - A household with low income
- The Affordable Warmth Matrix tabulates household types against dwelling types
  - *Worst case* household income (from benefits)
  - Fuel costs under household type occupancy (from HSES and NHER)
- Display
  - Combinations in fuel poverty shown in red
  - Combinations at risk of fuel poverty shown in amber
  - Combinations with affordable warmth shown in green
- Calculations according to LIHC or 10% definition
  - Fuel costs and household income can be projected to 2020, 2025, 2030…

Demonstration…

RICKABY THOMPSON ASSOCIATES
ENERGY + SUSTAINABILITY CONSULTANTS

savills

Tackling Fuel Poverty and Seasonal Ill Health in Islington

26th January 2016

Toby Morgan
Seasonal Health and Affordable Warmth Team
London Borough of Islington

Background stats - Islington

- Population of 222,000 (2014 est.)
- 19th most deprived local authority area in England
- High rates of respiratory & cardiovascular illness
  - Below average healthy life expectancy
- 15-20% fuel poverty (London definition)
- 60 excess winter deaths each year
- ~7 emergency hospital admissions per death
- Mostly hard-to-insulate stock

The central role of local authorities

- Are trusted - 73% trust local councils to “make decisions about how services are provided”, 15% trust central government
- Cover the whole country
- Are housing authorities
- Are often social landlords themselves
- Are public health authorities
- Are energy conservation authorities
- Are social care authorities
- Are planning authorities
- Are extensive commissioners of services from private and third sectors
- Have important relationships with the NHS
- Have a great deal of local intelligence

Warm Healthy Homes Programme

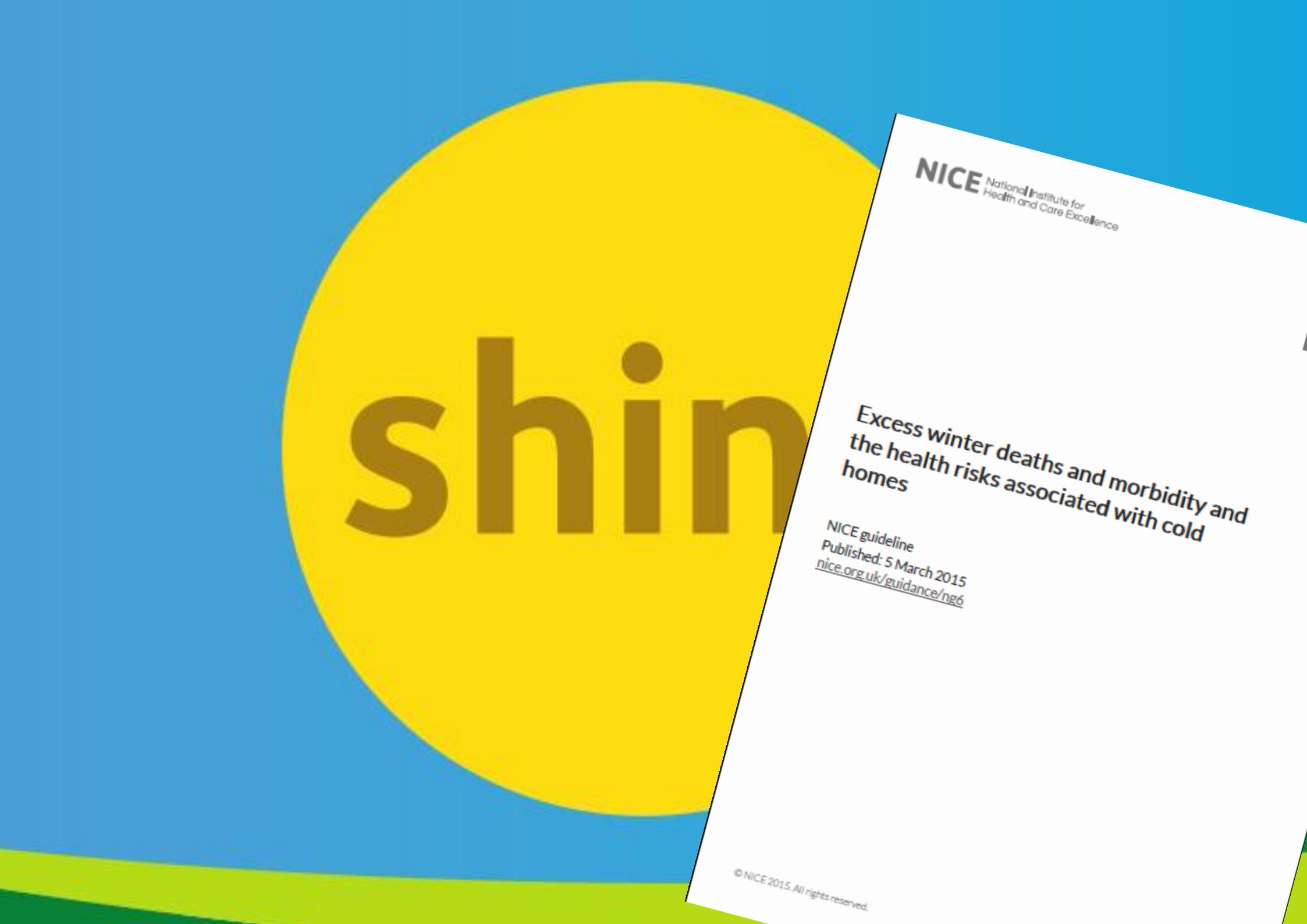
- Over 21,500 homes improved since 2010
- Energy Advice Service and popular home energy visitor service
- Well Winter Campaigns every year since 2011
- *Seasonal Health Interventions Network* (**SHINE**) – multidisciplinary approach to reducing excess winter mortality, morbidity & fuel poverty
- Private sector heating and insulation grants
- Bunhill decentralised energy plant
- Solid wall insulation programmes

Solid Wall Insulation Programme

- 1950s solid brick, 10 blocks comprising of 269 units
- Total cost £2.1m, part funded through ECO and Green Deal Cashback
- Works September 2013 – May 2014
- Resident evaluation – 95% or respondents stated their flat was warm enough after works, compared to 49% before
- 4 more blocks in Islington identified for EWI works, commencing 2016

Holly Park before the installation of EWI

Holly Park after the installation of EWI


shin
NICE National Institute for Health and Care Excellence
Excess winter deaths and morbidity and the health risks associated with cold homes
NICE guideline
Published: 5 March 2015
nice.org.uk/guidance/ng6
© NICE 2015. All rights reserved.

ISLINGTON

Seasonal Health Interventions

- Initial energy advice
- Energy Doctor in the Home
- Energy efficiency grants
- Bill discounts
- Telecare
- Fire safety check
- Home security check
- Handyperson Service
- Private sector housing support
- Benefit check
- Debt advice and relief
- Disabled Facilities Grant
- Medication review
- Medicines use review
- Flu jab
- NHS Health Check
- Message in a Bottle
- airTEXT – pollution alerts
- Falls assessment
- Older people's enablement service
- Vulnerable utility customer register
- Support for people with disabilities
- London Taxicard
- Befriending services
- Mental health enablement service
- Stop Smoking Service

Key target groups

Groups include:

Older people

People with respiratory disease

People with cardiovascular disease

Young children

People with limited mobility

SHINE: The story so far

- Over 10,000 referrals to date (2,489 in 2014/15)
- Around 45,000 seasonal health interventions to date
- 90 partner organisations
- £3 million saved on bills.
- Successful in targeting right groups –
  - 31% aged over 65
  - 65% are people with disabilities
  - 34% have respiratory or cardiovascular illness
- Bill discount campaign – 2,500 signed up
- Emergency PPM top-ups introduced 2013
- Expanded to Hackney

ISLINGTON

Some of our network members

University College London Hospitals NHS Foundation Trust

Whittington Health NHS

Camden and Islington NHS Foundation Trust

Alzheimer's Society – Leading the fight against dementia

LFB London Fire Brigade

Metropolitan Police

North London Cares

Islington age UK

nationalgrid

citizens advice bureau

UK Power Networks

newlon Housing Trust

mind for better mental health | Islington Mind

Targeting those most in need

- Pharmacy campaigns
- Mailings through GPs
- Targeted mass mailings of older people, parents of young children, people with disabilities
- Using ‘hooks’ such as small measures and bill discounts
- Private rented sector street surveys
- Text messages to parents through schools
- Making the most of a large network

Warmth on Prescription

- Joint Dept of Energy & Climate Change/Islington funded
- Targeted improvements at those with serious health conditions
- Using data from SHINE referrals
- Most referred by health and social care professionals
- Will be evaluated for health impacts
- Those in greatest need often not appropriate for intervention…

ISLINGTON

Links with health service

- Referrals received various local NHS services
  - Respiratory and mental health teams particularly helpful
- Membership of locality health and social care MDTs – targeting ‘frequent flyers’
- GP, pharmacist training
- Inclusion of both fuel poverty and seasonal health in Joint Strategic Needs Assessment
- Making Every Contact Count with training with PH – sensory cues

Case study

- Family with 3 severely disabled children
- Living in a large council Victorian solid wall property - ‘Old and cold’
- Referred by social worker to SHINE
- Assessed for ‘*Warmth on Prescription*’
- Internal SWI installed
- Underfloor insulation
- Secondary glazing
- Heating upgrades

Key points

- Fuel poverty/cold housing rarely occur as an isolated problem
- Requires good partner relationship management
  - SHINE works with over 130 different teams and organisations
  - Receiving referrals from 500+ individuals
- No hard and fast eligibility criteria
- Direct referrals where possible without signposting
  - Signposting loses the most vulnerable

ISLINGTON

Thank you!

Seasonal Health and Affordable Warmth Team

T: 020 7527 8203

E: shine@islington.gov.uk

W: www.islington.gov.uk/seasonalhealth

Twitter: @shine_network

Questions and discussion