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Decarbonising Wales' Private Rented Sector

Dissemination Webinar
28th July 2022



Catherine May

TTC Intro



Project Team



Sustainable
Design
Collective



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Context

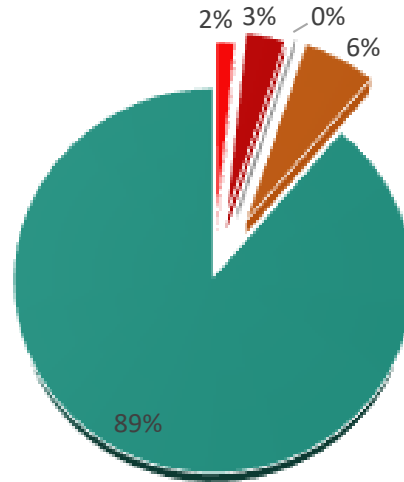
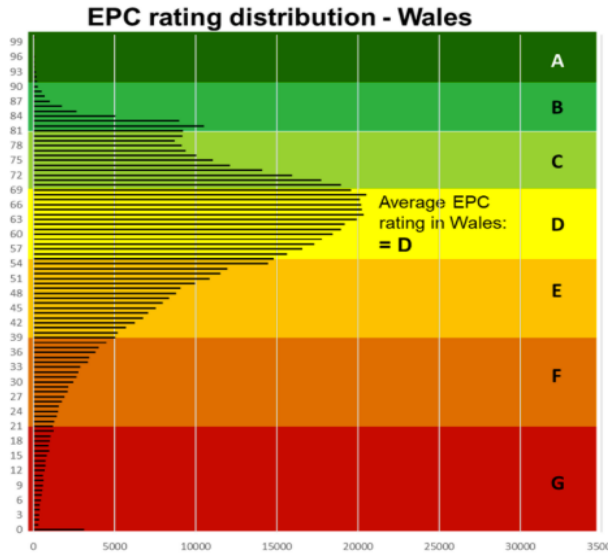
- ▶ Wales has among the oldest and least efficient housing in Western Europe, with 32% built before 1919 and just 6% built in the last 35 years
- ▶ Wales has highest investment needed to reach Energy Performance Certificate (EPC) “C” of any UK region £1,450 per capita
- ▶ Wales also has the lowest gross disposable household income (GDHI) of 12 UK regions at £15,754 per head of population



Scale of Challenge

- Most homes in Wales EPC “D” or worse
- Private Rented Sector (PRS) worst performing with highest share in fuel poverty
- Welsh PRS EPC “C” will cost an expected £846m
- Net Zero PRS estimated £3.7- 4.5bn
- Large funding gap!

£846m cost of EPC "C" in Welsh PRS

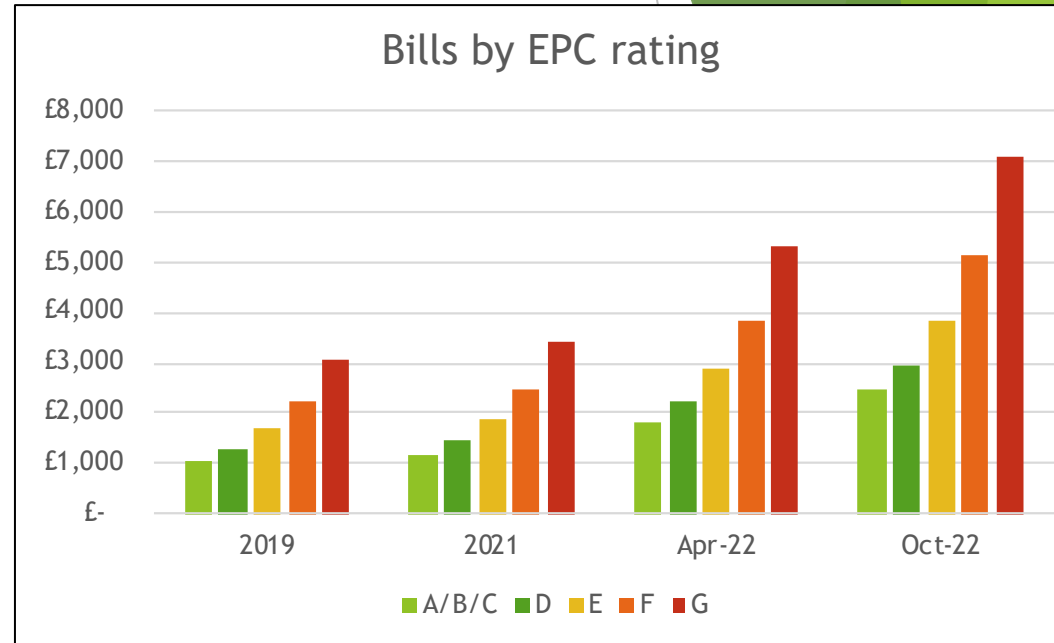


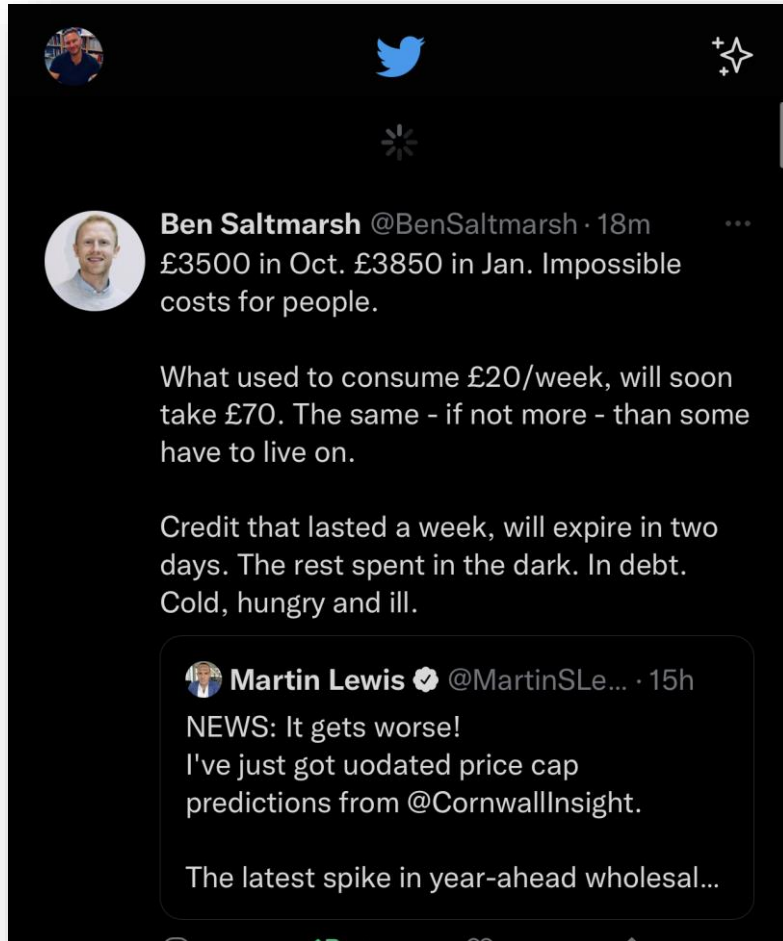
- ECO3
- Small programs
- ECO 4
- Warm Homes Program
- 2030 EPC "C" funding Gap



Impact of 2022 Energy Crisis

- 1st of April 2022 price cap increased by 54% with further 32% expected in October
- E (18%) rated properties expect to be paying £3,853 from the autumn, G rated (2.4%) £7,098!!
- Welsh Government estimate up to 45% (614,000) population in fuel poverty from April
- 98% (217,700) of low-income households expected fuel poverty with up to 91,700 (41%) in severe fuel poverty
- Wipes out a decade of gains in fuel poverty reduction in Wales





Ben Saltmarsh @BenSaltmarsh · 18m
£3500 in Oct. £3850 in Jan. Impossible costs for people.

What used to consume £20/week, will soon take £70. The same - if not more - than some have to live on.

Credit that lasted a week, will expire in two days. The rest spent in the dark. In debt. Cold, hungry and ill.



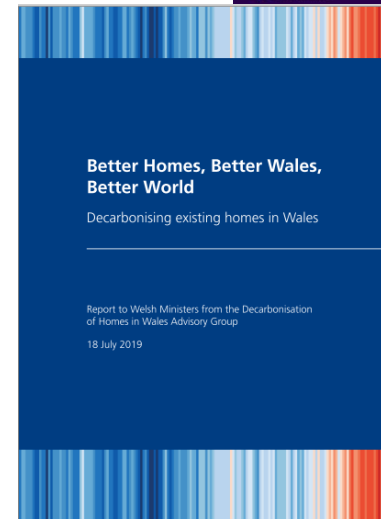
Martin Lewis  @MartinSLe... · 15h

NEWS: It gets worse!
I've just got udated price cap predictions from @CornwallInsight.

The latest spike in year-ahead wholesal...

Policy Targets

- Committee on Climate Change Outline how all rental homes should be EPC “C” by 2028 to meet Net-Zero Targets
- UK Government aims to meet EPC “C” in all homes by 2035, & consulted on MEES at “C” for PRS by 2028
- The Better Homes, Better Wales, Better World Report, argues Welsh housing must meet >SAP90 and EPC Band “A” rating by 2050
- The report recommends an EPC Band “A” for social housing and homes in fuel poverty by 2030



‘Whole-house retrofit’ approach is needed

- Involves multiple, complementary measures
 - Demand side & behavior change
 - Less invasive measures
 - Invasive fabric measures
 - Low carbon heat
 - Renewables
- Treats building as a system rather than focus on isolated measures
- Factors ventilation, moisture, air quality, thermal bridging - not just CO₂

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

Insulation

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

Hot water

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



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

Source: (DECC, 2012)

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

Benefits of Welsh retrofit program

FGC 2021 Central Scenario

- Energy bill saving of £418 per year, a total **£3.19bn** in Wales by 2030.
- Cumulative benefits for Wales
 - £763m for avoided CO₂,
 - £654m in health and comfort and
 - £298m in improved air quality
- Combined total of **£1.72bn** by 2030, with benefits continuing through the 2030s
- GDP multiplier x1.4 CAPEX i.e. **~£20.31Bn**
- Increased taxes ~0.6 of CAPEX roughly **~£8.85bn** or **~£3.95bn** net gain in tax revenue
- Creates ~26,500 new jobs in Wales



What we did

Quantitative modelling: SERO

- ▶ A decarbonisation pathways for 4 PRS archetypes: 3-bed semi-detached; 3-bed terraced; 2-bed apartment; 4-bed detached
- ▶ Scenario for the entire Welsh PRS (CAPEX, £ savings, CO₂)
- ▶ Sensitivity analysis of removing electricity levies, time of use (TOU) tariffs and grid carbon factors

Qualitative interviews: Severn Wye

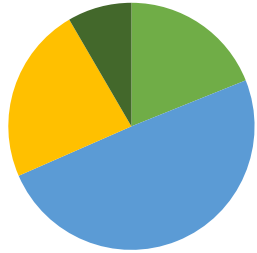
- ▶ Interviews with 4 landlords and 4 tenants
- ▶ Supplemented with 19 interviews by University of Sussex in 2021-2022

Stakeholder workshop

- ▶ On 18th May 2022 we ran an engagement workshop with key stakeholders, focused on developing policy solutions to the following issues:
 - ▶ Household and landlord engagement
 - ▶ Installer and supply chain coordination
 - ▶ Funding and finance
 - ▶ Regulation and enforcement



Proportion of Welsh PRS



- 3-bed semi-detached
- 3-bed terraced
- 2-bed apartment
- 4-bed detached

2 bed Flat



3 bed Terrace



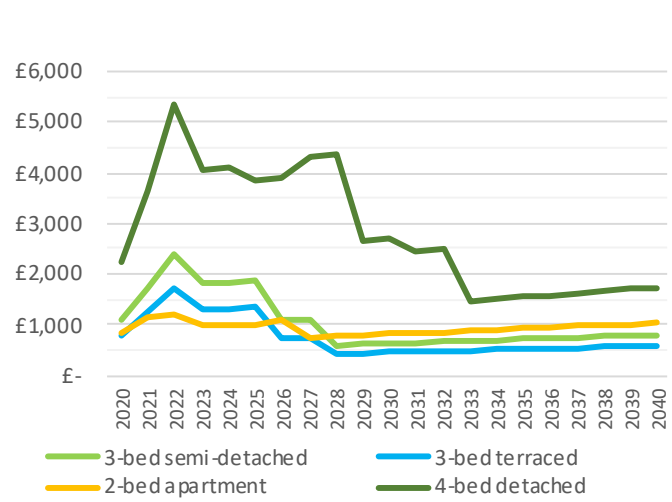
3 bed Semi-Detached



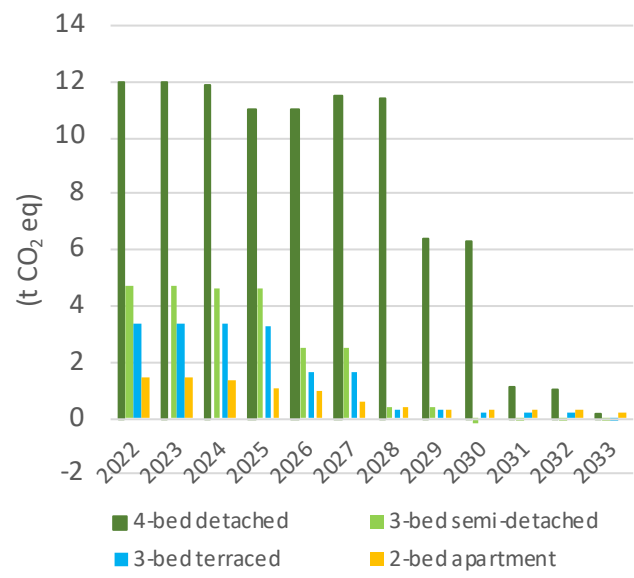
4 bed Detached



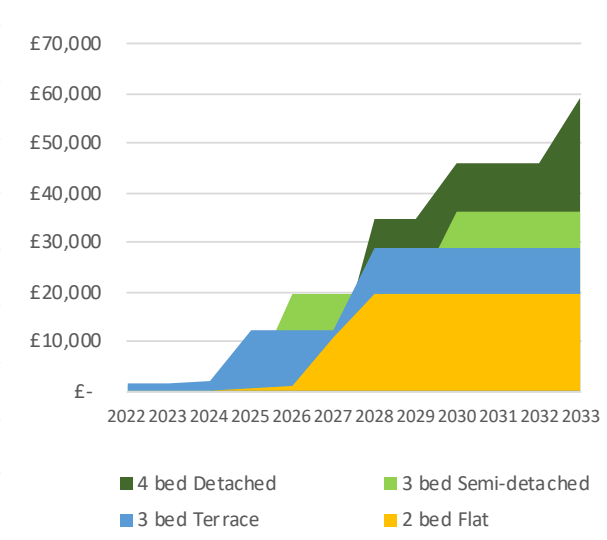
Measure	2 bed Flat		3 bed Terrace		3 bed Semi-Detached		4 bed Detached	
	Cost	EPC	Cost	EPC	Cost	EPC	Cost	EPC
IES Installation	£500	D	£500	D	£500	D	£2,500	E
Low Energy Lighting	£150	D	£240	D			£400	E
Loft Insulation			£600	D	£650	D	£650	E
Decentralised ventilation	£500	D	£500	D			£500	D
Draft proofing	£400	D	£400	D	£400	D	£400	E
EWI	£6,100	C			£10,000	C	£20,000	D
IWI			£5,000	C				
Doors & Windows	£3,000	C	£5,000	C	£8,000	C	£10,000	D
Heater replacement	£1,240	C						
ASHP			£6,010	C	£8,770	D	£11,530	B
Cylinder			£2,190	C	£2,190	D		
Battery Storage	£5,000	C	£5,000	C			£5,000	C
PV Panels	£2,456	B	£3,274	B	£5,730	B	£8,185	C



Energy Bills (£/year)



CO₂ emissions



Investment £

Impact on bills, carbon and investment



Impact on policy targets

- ▶ Large cost range for meeting EPC “C” with 2 archetypes >£10,000
- ▶ Net Zero much cheaper once grid is zero carbon
- ▶ Massive bill savings from invasive fabric + PV
 - ▶ Paybacks much better now than before Ukraine
- ▶ Heat pumps provide majority of carbon savings

Preliminary conclusions

- ▶ Fixed cost of compliance (i.e. EPC “C” <£10,000) problematic
 - ▶ Penalises smaller properties
 - ▶ Many large homes will not meet EPC “C” under current MEES proposals
- ▶ New forms of financing to share costs and benefits of net zero are needed

	2-bed flat	3-bed terrace	3-bed semi	4-bed detached
EPC “C”	£7,650	£7,240	£11,550	>£34,450
Net-zero in 2035	£8,990	£20,444	£30,510	£45,980
Net-zero in 2022	£19,346	£28,714	£36,240	£59,165
Bill savings: Invasive fabric	£375/a	£712/a	£922/a	£351/a
Bill savings: + solar & battery	£443/a	£1,110/a	£1,538/a	£3,219/a
Heat Pump reduces CO ₂	n/a	51%	47%	46%



Tenant and landlord engagement

We found...

- ▶ A lack of targeted information & advice for both landlords and tenants on how to undertake a retrofit
- ▶ Low trust and communication between landlords, tenants and letting agents drives disengagement

“I don't know whether I took the right decision or not...it would be really handy if there were companies who were...advising...what's needed”- Landlord 3

“So I think [landlords] can, almost, Impose any conditions that they want, and they know that they'll still get a a tenant at the end of the day.” – Tenant 3

“They might mind the disruption ... because it would obviously take time and they'd have to move out for a couple of weeks “– Landlord 1

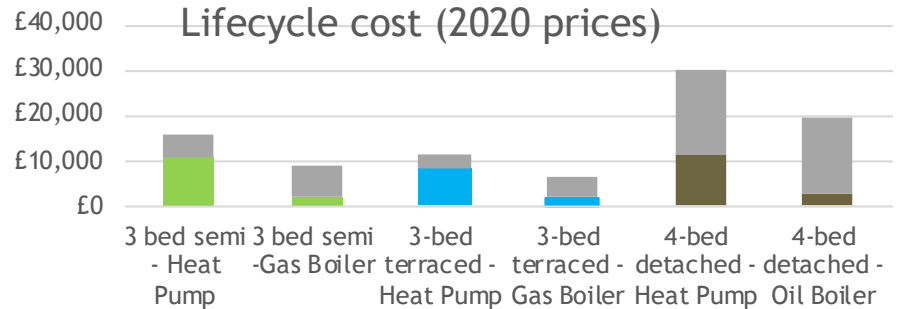
“when they send the handyman round, he's a bit sort of...clueless, honestly.”– Tenant 2

Installer and supply chain coordination

- ▶ Skills Gap & foundational economy: an additional 12,710 contractors are needed in Wales by 2025, rising to 24,025 with indirect jobs.
- ▶ Retrofit technical, legal, and quality standards often lacking or poorly enforced
- ▶ Current total ownership cost of air source heat pump (ASHP) 55-73% higher than gas boiler

“You could clad it with something but the conservation department would have a hissy fit” – Landlord 1

“internal insulation would be a lot more disruptive for us” – Tenant 1



“I mean obviously it's very expensive, much more expensive than replacing a highly efficient gas boiler.” – Landlord 2

Funding and Finance

- ▶ Energy crisis & fuel poverty lacks sufficient funding
- ▶ Tenants don't request improvements, as are fearful of rent increases
- ▶ Split incentives mean landlords under invest
- ▶ Low value homes <£162k unlikely to recoup costs of meeting EPC "C" in value uplift

"I mean it, it has been a worry. Our gas bills have gone up quite significantly" - Tenant 4

"basically there's no insulation so that it's really cool in the summer, which is great. It's also freezing in winter, which is less great. Tenant 2

"We don't tend to bother [adding more insulation], you know, it was obviously someone else is paying the heating bill." – Landlord 4

"I appreciate that the government has not got a bottomless pit. I know that. But I just think there's so many people who don't have the money to spend on [retrofit]." – Landlord 3

Regulation and enforcement

- ▶ Policy uncertainty is holding back landlord action
- ▶ Poorly enforced regulation: only <6% of councils across are currently enforcing MEES
- ▶ EPC's not fit for decarbonisation drive
- ▶ Lack of eviction protection for tenants

"I would be interested in improving the thermal efficiency of those properties. But you know, we would also be looking to see if there are government grants or ways to make it more affordable" – Landlord 2

"people aren't gonna do it unless ... They're forced to do it..., otherwise it's not gonna happen" – Tenant 4

"But no, I don't remember ever seeing an EPC for any of the properties." – Tenant 1



A photograph showing several Welsh national flags (feudrddraig) flying from tall poles at a public event. The flags are white with a red dragon on a green and white background. In the foreground, the heads and shoulders of a crowd of people are visible, some looking towards the camera. The background shows a clear blue sky and the dark silhouette of a building.

Welsh Govt. Policy Recommendations

1. Develop a National Retrofit Strategy

Welsh government must develop a long-term plan for the decarbonisation of the housing stock and the evolution of the PRS

2. Engage landlords and tenants on this journey

This plan must be inclusive and bring both landlords and tenants on this journey, allowing them to co-create how programmes are designed in their local areas.

3. Reform Warm Homes Programme & double funding

The WHP needs reform to focus on energy efficiency and low carbon heat. Double funding to ~£732m for 2020s, urgently targeted at the worst properties and those in extreme fuel poverty.



Welsh Govt. Policy Recommendations cont.

4. Trial Property Linked Financing

To share NZ costs and benefits beyond MEES price cap between landlords & tenants. DBW would be well placed to trial using energy bills or council tax as a repayment channel.

5. Building Renovation Passports & Smart EPC's

- a. Develop whole house plan for every Welsh home
- b. Record and track progress via BRPs
- c. Adopt smart EPCs and measured energy savings

6. Resource and Train a Welsh Supply Chain

Welsh Government should allocate an increased £2-3m/year for training.

7. Ban New Fossil Fuel Heating by 2030

Provides certainty to industry and drive investment and innovation, seen with the petrol and diesel ban.

Local Govt. policy recommendations

8. Resource & Enforce MEES Legislation

Increase resourcing for MEES EPC “E” enforcement, adopting emerging best practice delivered across Wales for <£1m annually.

9. Develop Local One Stop Shops

Area based mix tenure delivery, led by local authorities with integrated and tailored offer to both landlords and tenants. Costing around £12m per 500,000 homes retrofitted, or £33m for entire Welsh programme.

10. Integrate Funding Streams

Existing low-income funding streams are piecemeal & fragmented, creating confusion. We suggest integrating under a single offer to landlords, coordinated by One Stop Shops.



UK Govt. Policy Recommendations

11. Regulate for EPC "C" in PRS

UK Government to increase MEES to EPC "C" for all tenancies by 2028

- ▶ If unwilling, WG explore implementation of higher MEES standards in Wales only.

12. Create Fiscal Incentives for Landlords to Invest

Various 'fiscal incentives' may be needed, the UK government should re-instate the Landlord Energy Savings Allowance (LESA), that provided up to £1,500 of tax relief.

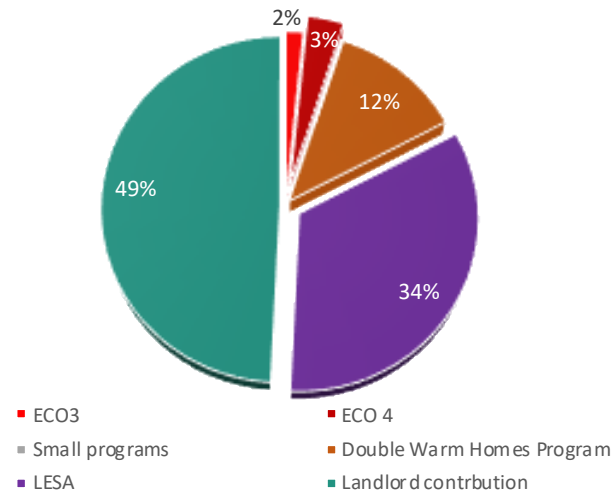
13. Level Playing Field for Heat Pumps

Heat pumps have the potential to create bill savings and have a lower cost of ownership than gas boilers, requiring the following policy changes:

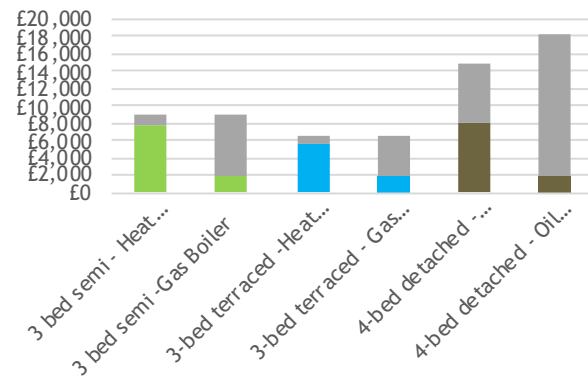
- Removing environmental levies from electricity bills
- Require suppliers to offer time of use, smart heat tariffs
- Industrial policy to reduce ASHP install costs by 30% by 2030

Total cost of ASHP ownership would be between only 1% higher and 24% lower than the fossil alternatives.

Proposed funding cost of EPC "C" in Welsh PRS

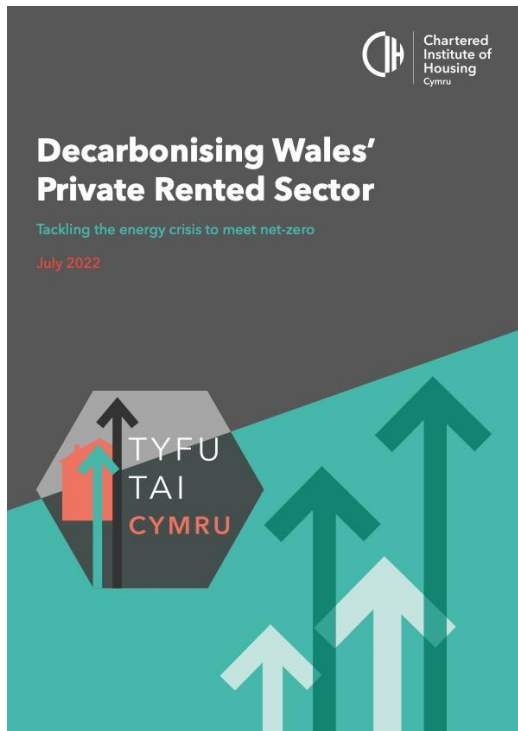


Policy impact on lifecycle costs



Thank you!





Headline Messages

1. Welsh Government should develop a long-term strategy for energy efficiency, fuel poverty and decarbonisation of the private rented sector (PRS) and integrate with broader objectives surrounding housing quality, fire safety and landlord licensing
2. Welsh Government should engage with landlords and tenants in this process, including communicating the benefits of the programme alongside tailored support, advice, funding, and delivery via local 'One-Stop-Shops'
3. New regulations and standards are needed to drive the uptake of energy efficiency in the PRS, and in meeting net zero objectives. This will require increased resource and better enforcement, especially for Local Authorities
4. Increased grant funding and new forms of financing are needed. The affordability crisis means fuel poverty funding should increase significantly, alongside new property linked financing and tax incentives for landlords
5. A massive retrofit skills drive is needed, requiring public investment in new apprenticeships and a Welsh supply chain for low carbon technologies

Decarbonisation of the PRS will require low carbon heat, especially via heat pumps, requiring government to create a level playing field, encouraging new business models, policy changes and a subsidy regime to drive down costs