The background of the image features a repeating pattern of overlapping circles in a light gray color. The circles are arranged in a grid-like fashion, with each circle partially overlapping its neighbors, creating a tessellated effect.

Turley



The Future of our Homes: Energy and Beyond

September 2025



Turley

Our Services

Trusted independent advisors with restless ambition to shape a more sustainable future.

An employee-owned business, we work collaboratively with our clients to deliver places and communities that thrive.

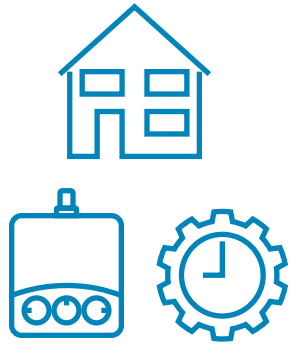


How we got
here..... And where
we are going

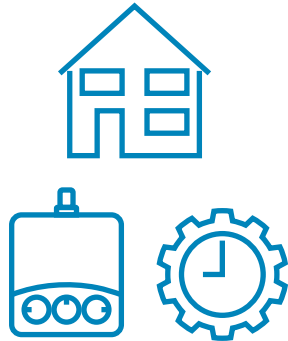


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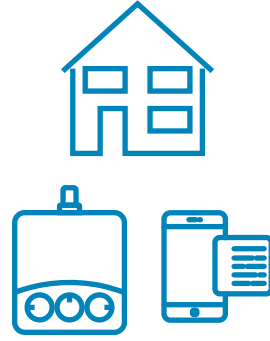
2020s is when it happens



2000



2010



2020



2027

Now



Turley

Future Homes Standard

Probable Route – Option 1



Notional Fabric Standards

External wall:	0.18 W/ m²K
Roof:	0.11W/ m²K
Floor:	0.11W/ m²K
Windows:	1.2 W/ m²K
Doors:	1.0 W/ m²K
Air tightness:	4 m³/ h.m²



Energy Efficiency & Renewables

Heating: **No fossil fuels (heat pumps)**

Typical ventilation: **Mech. Extract**

Renewable energy: **PV ~ 4KWp – (ave.)**

Waste water heat recovery (WWHR): **Yes**



Challenges & risks

- Sudden increase in heat pump supply
- **Build costs uplift on Part L 2022: £6K**
- Local grid capacity (all electric + EVs)

Part O

Overheating Risk

- Simplified Method
 - Or
- Dynamic modelling
- Important for city centre flats & noisy locations – Check early



Part S

EV Charging Points

- Require new homes to have EV charger
- Same for major renovations



Energy Performance

Energy Performance Certificates Consultation

- Proposed Headline Metrics
 - Energy cost
 - Fabric Performance
 - Heating System
 - Smart Readiness
- Lot hanging on this (in theory)

This property's current energy rating is E. It has the potential to be E.

[See how to improve this property's energy performance.](#)

Score	Energy rating	Current	Potential
92+	A		
81-91	B		
69-80	C		
55-68	D		
39-54	E	47 E	47 E
21-38	F		
1-20	G		

The graph shows this property's current and potential energy efficiency.

Properties are given a rating from A (most efficient) to G (least efficient).

Properties are also given a score. The higher the number the lower your fuel bills are likely to be.

For properties in England and Wales:

- the average energy rating is D
- the average energy score is 60

Other things



Realistic Industry
Pressure?



The 10 Elephants in the
Room

The Numbers

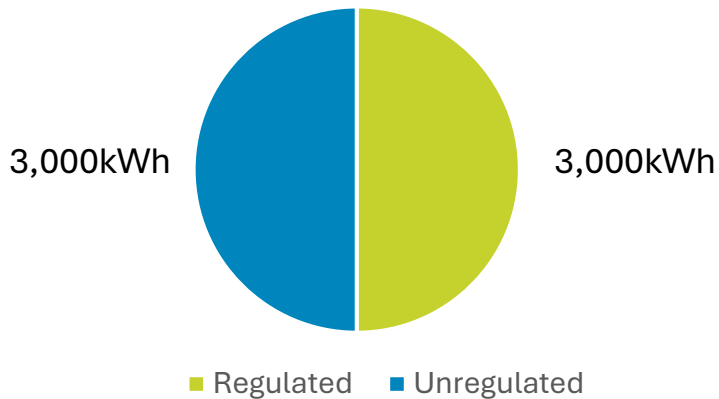


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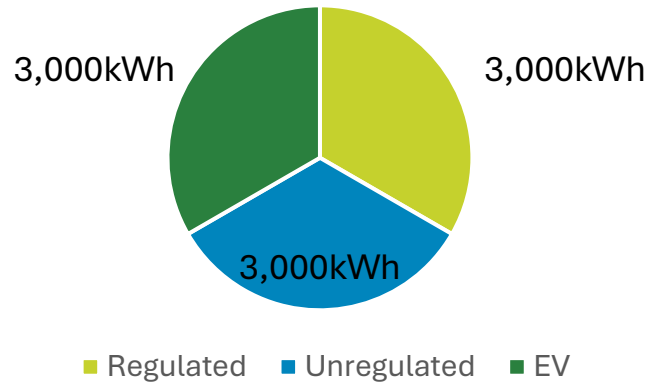
FHS – The Rule of 3,000

Electricity Consumption

Part L Consultation

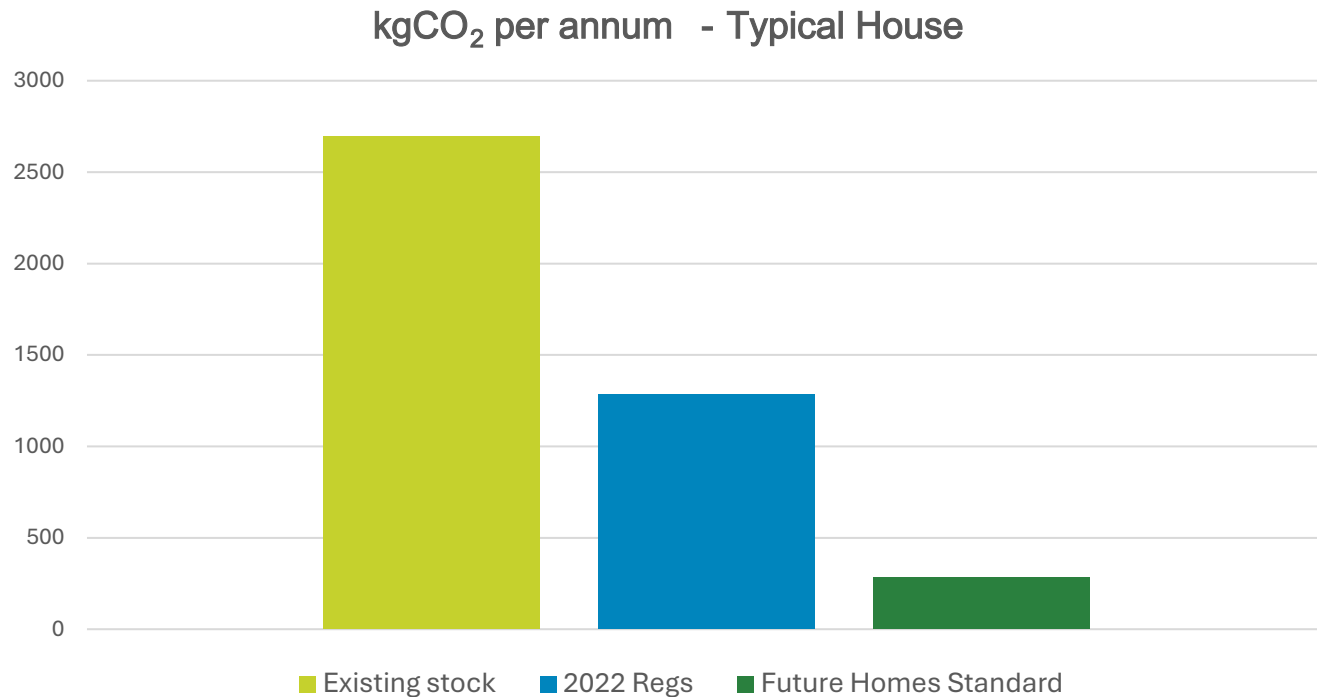


Plus the Electric Vehicle

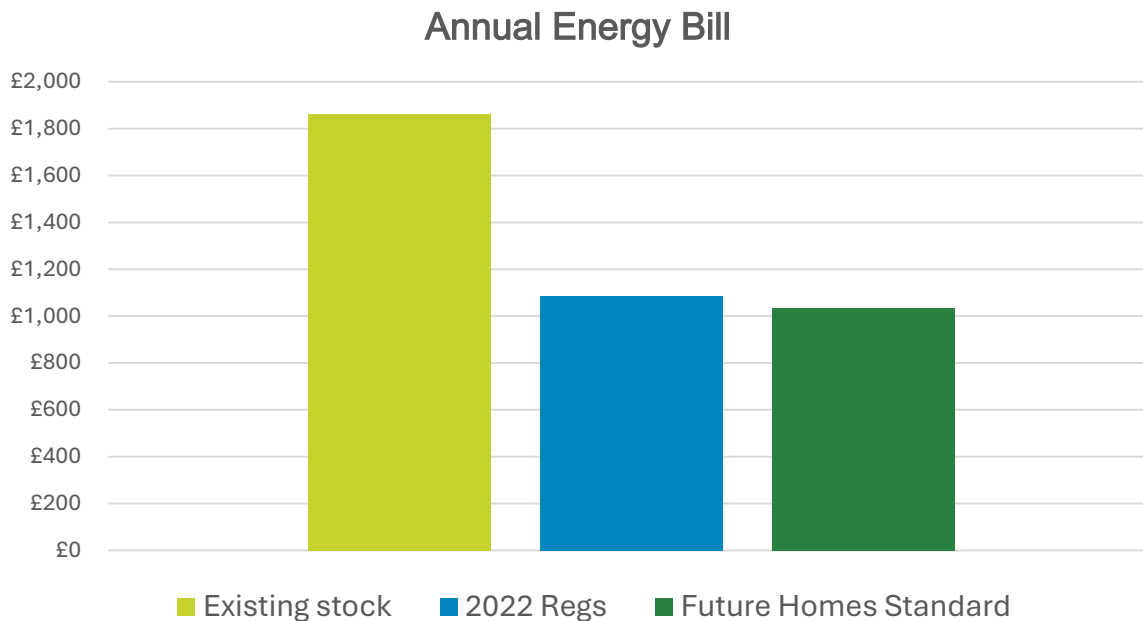


Average rooftop solar generates 3,000kWh

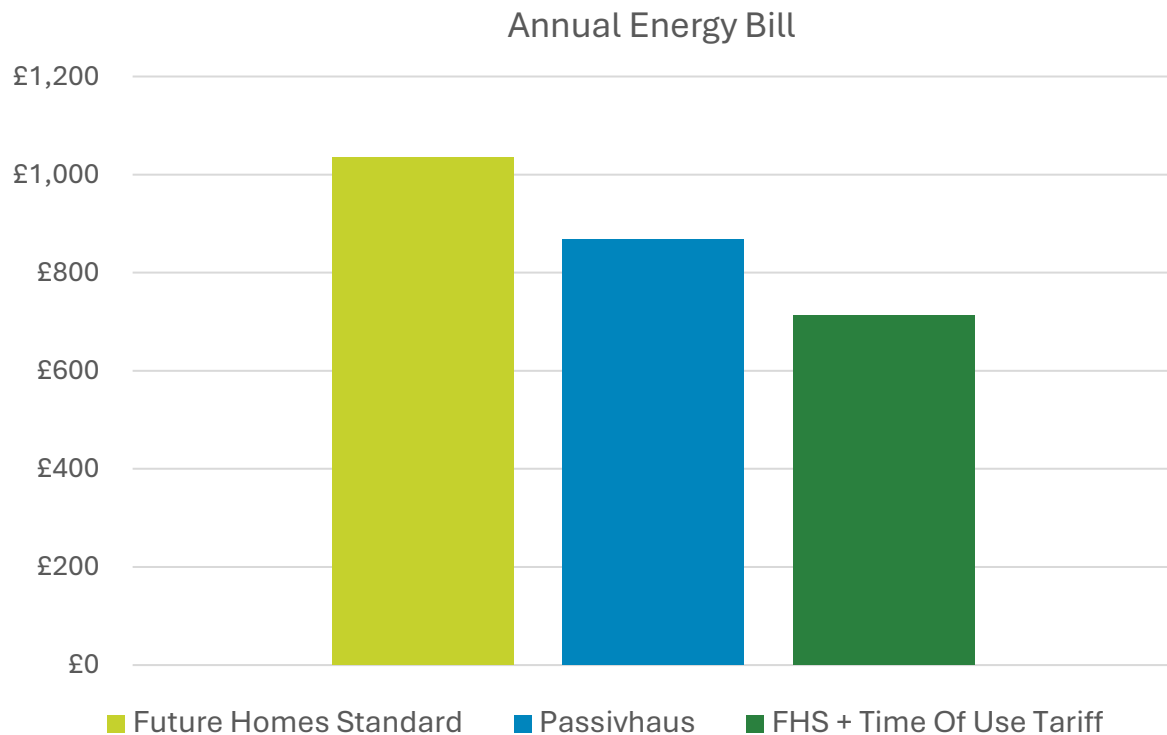
The Post-Carbon World - (operational)



Running Costs – Standard Tariff

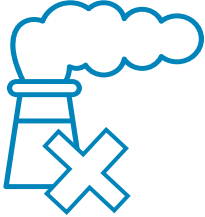


It's not what you do, it's when you do it



It is going to be wonderful!

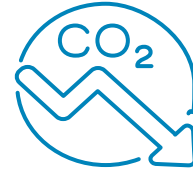
Healthier
environment



End fuel poverty



Net zero ready



More desirable –
Higher value



Creates Energy Bill Paradox

Big flashy house + electric
Ferrari 911 attached



Tiny flat with cheap
EV not attached



Which one has the bigger
energy bill?

The Grid Wars – ADMD and All That

- As we electrify everything, growing demand on the grid.
- Estimating home electricity peaks has got complicated
- This is:
 - costing the industry & the public a lot of money,
 - reducing no. of homes built
 - slowing the energy transition.

The Good Old Days

- Gas boiler + Petrol car
- ~1.5kVA

Chaos

- Heat pump, solar, EV
- 6.4, 4.5, 4.8, 3.2kVA
- Etc.

Some Clarity

- INA Guidance – 2024
- 2.2-4 kVA

Sunlit Uplands

- ~2kVA?*

*Just my unqualified maths

The Future

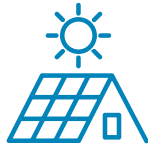
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We are all players in the same game



Semi-flexible
energy user



4kWp Intermittent
power generator

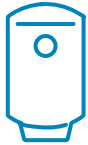


Flexible energy user

- Dishwasher
- Washing machine
- Fridge / Freezer



Home Control
Centre



8kWh of thermal
storage

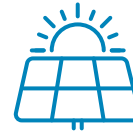


80kWh of energy
storage

200MWh of
energy storage



NESO Control Centre



200MWp intermittent
generator



2GW flexible power
generator



3.2GW Inflexible
power generator



2GW Intermittent power
generator

Opportunities – Microgrids

Microgrids

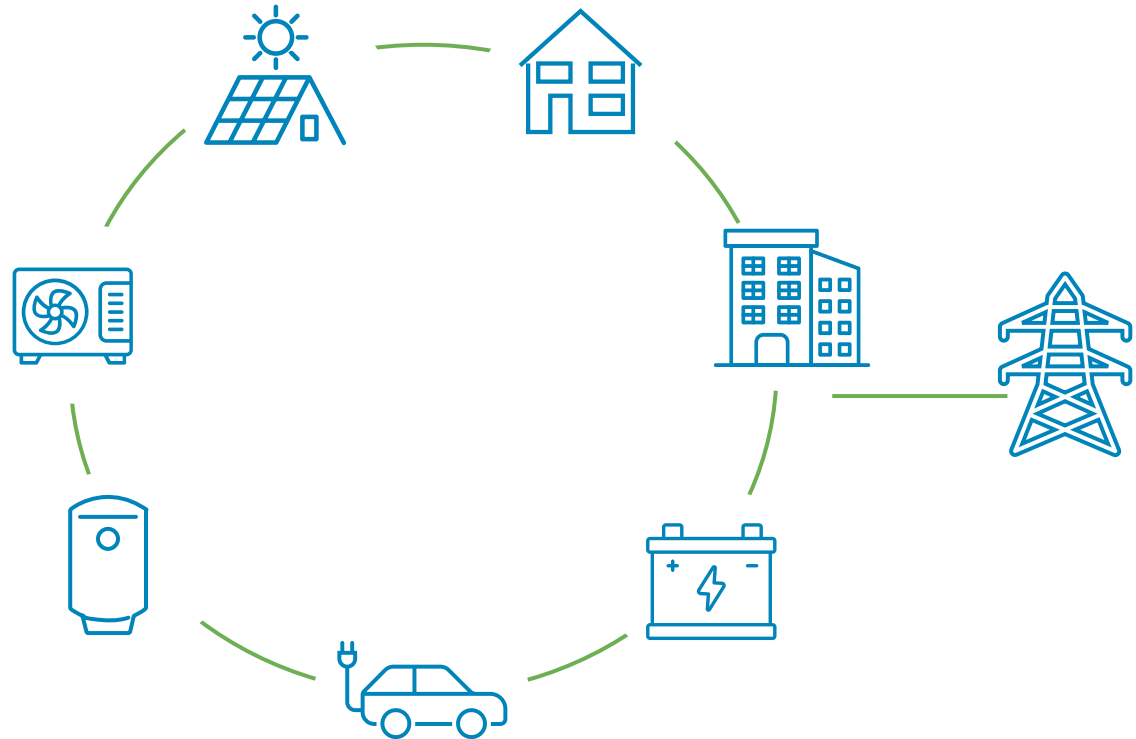
All homes, businesses, charging and generation on single network.

Reduce grid connection size further

Sharing energy so flats can benefit

Charge cars on terraced streets for same price as at home.

Zero Bills Communities?



Opportunities – Future Movement



Standard approach is holding back good development



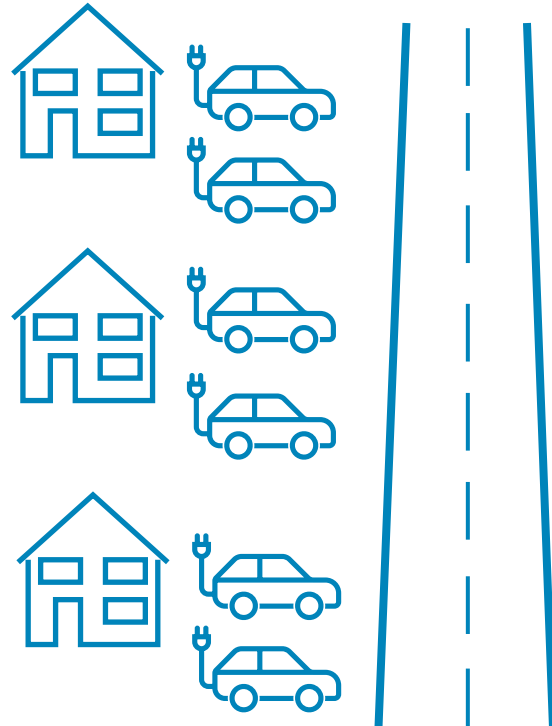
Public transport and bikes can't solve that alone



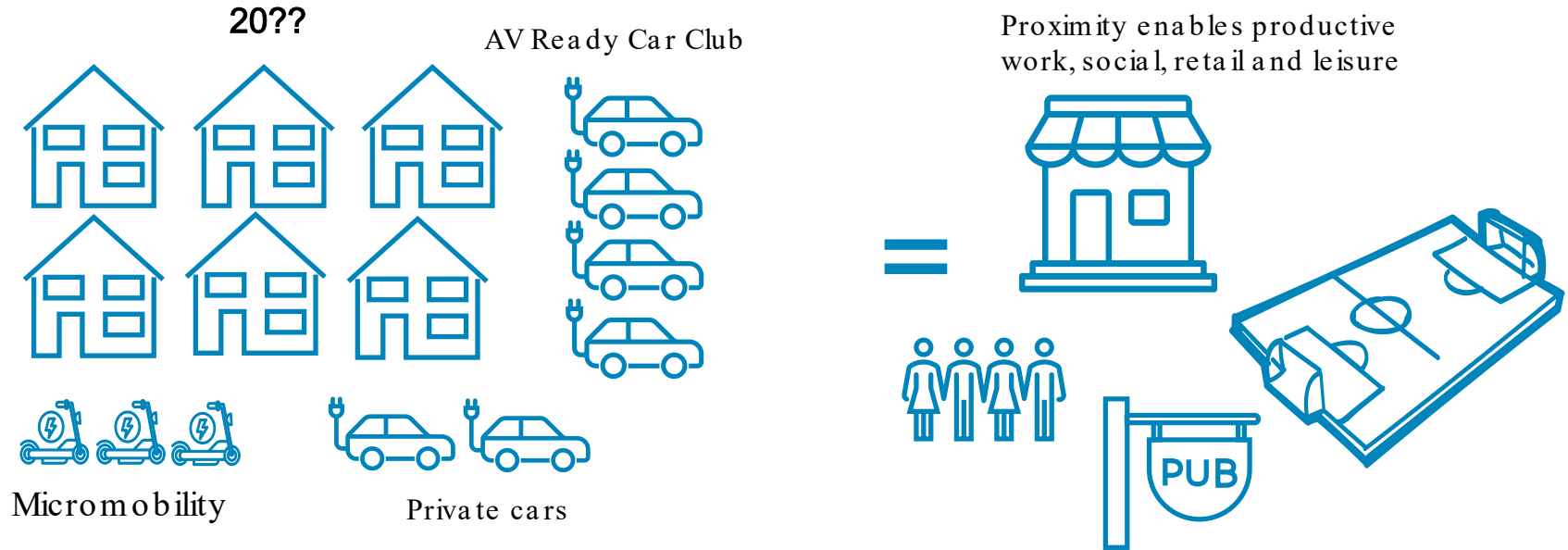
Shared mobility and micromobility can change everything



Need development that embeds this



The Mobility Opportunity



Thank you

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