Conscious showering;

Understanding the cost and carbon impact of different showering solutions

Housing Scotland - 2nd October 2025

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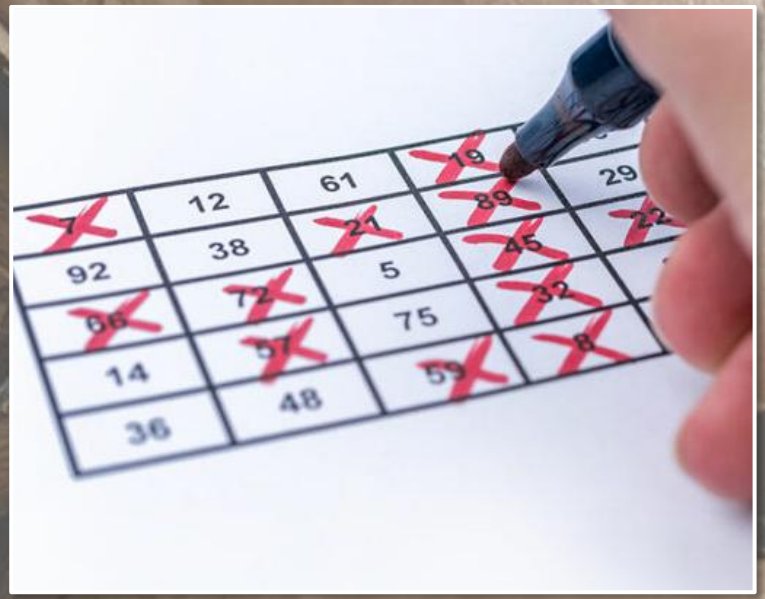

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Cost-of-living crisis v Climate crisis

V

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Dan Lintell – Sustainability Manager

Industrial Designer (BSc)

25+ years design development experience

6 years at Triton (initially NPD)

Long-standing passion for Sustainability

GlaxoSmithKline

SANOFI

Pfizer

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UK Manufacturer

From a garage in Atherstone in 1975, to a company of over 300 staff, we manufacture and supply showers and showering-related products to the whole of the UK, Eire, plus a growing number of other markets around the world

SILVER | Top 15%
ecovadis
Sustainability Rating
APR 2025

MADE IN BRITAIN

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Triton's purpose

"Inspiring everyone to shower sustainably, because every drop makes a difference"

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Net Zero: 2035

(Near-term target: 2028)

Absolute, 1.5°C aligned

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The 2 key parts to a shower's footprint

EMBODIED (typically 5-10%)

The GHG emissions associated with the **manufacturing, transportation, installation, maintenance**, and **disposal** of a product

OPERATIONAL (typically 90-95%)

The GHG emissions associated with the '**use-phase**' of a product
(for the full anticipated life-span of the product)

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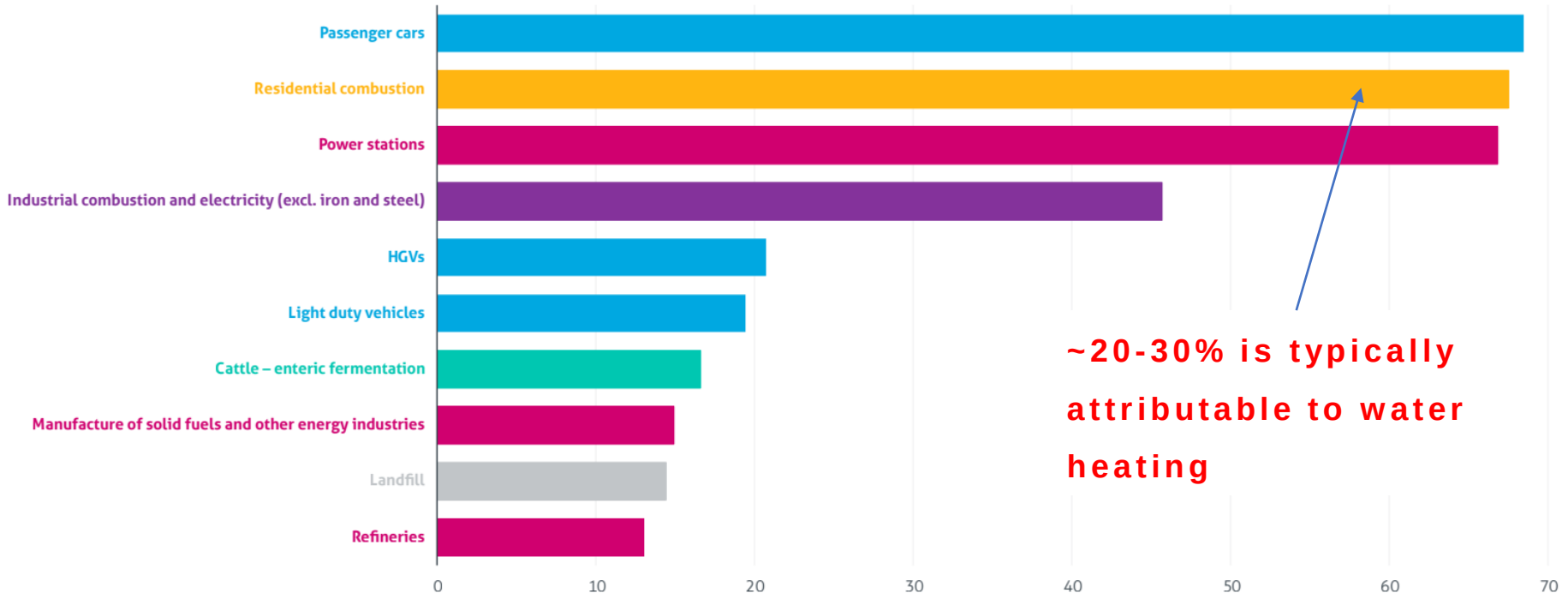
Current focus is on space heating as the #1 source of household emissions (but water heating is #2…)

Figure 1 **Top 10 sources of UK terrestrial greenhouse gas emissions in 2019**



Source: Institute for Government analysis of Department for Business, Energy and Industrial Strategy, '2019 UK greenhouse gas emissions: provisional figures', 3 June 2020

Heating water is **very** energy intensive

Substance	Specific heat capacity in JKg^{-1} K^{-1}
Lead	130
Mercury	139
Brass	380
Zinc	391
Copper	399
Iron	483
Glass (flint)	504
Aluminium	882
Kerosene	2100
Ice	2100
Sea Water	3900
Water	4180

HOW MUCH water we heat, matters

WHERE that energy comes from, matters

Detailed mathematical modelling of different showering 'Eco-systems' (schematic)

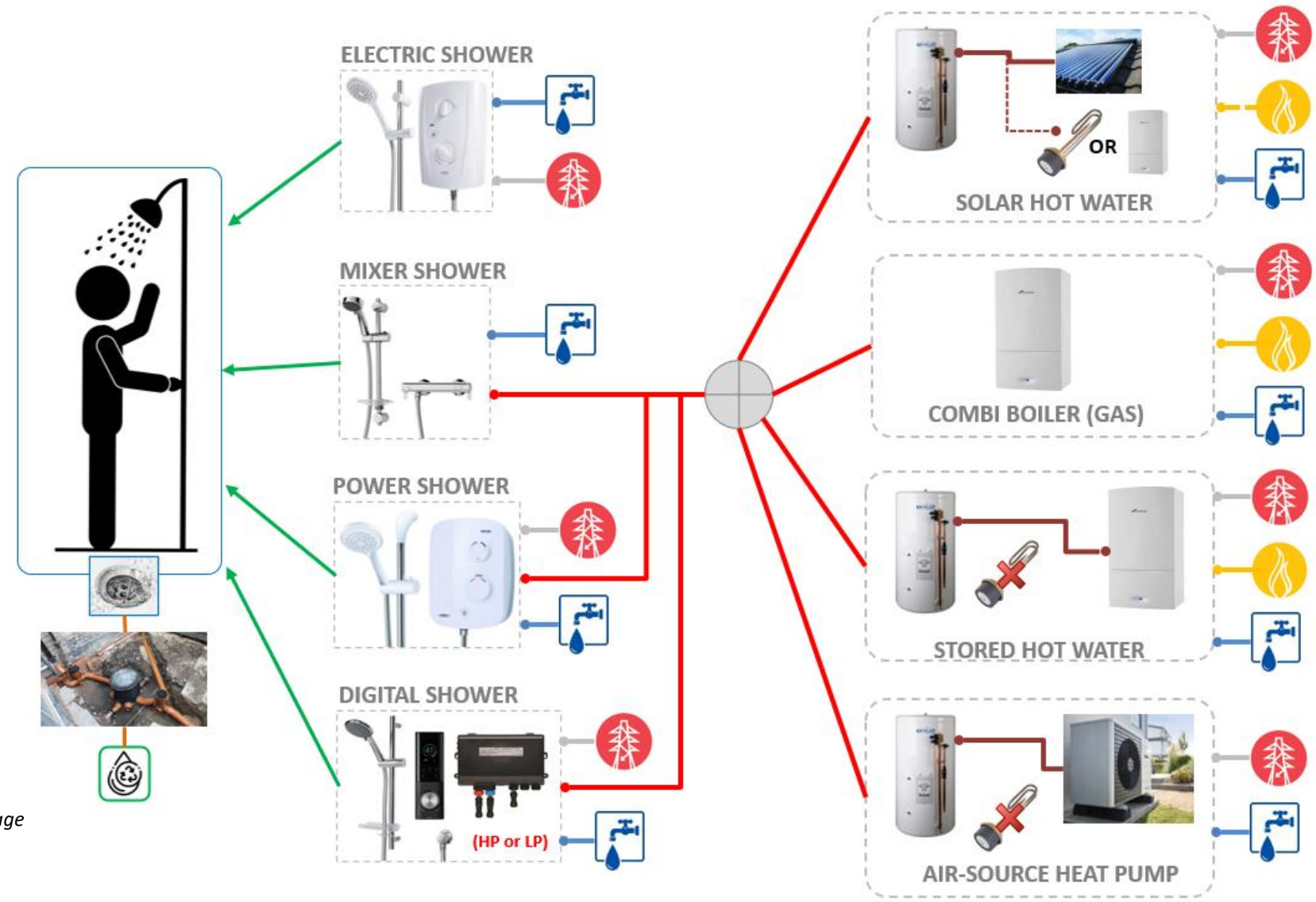
DUTY CYCLE VARIABLES

- # Showers per person, per week
- Shower duration (average)
- Showering temperature (average)
- Temperature of cold water supply
- Flow rate

UTILITIES VARIABLES

Electricity	Supply rate (£ per kWh) Standing charge (£ per day)* Carbon footprint (kg CO_2e per kWh, including T&D losses)
Gas	Supply rate (£ per kWh) Standing charge (£ per day)* Carbon footprint (kg CO_2e per kWh)
Water	Supply rate (£ per m^3) Standing charge (£ per day)* Carbon footprint (kg CO_2e per m^3)
Sewerage	Rate (£ per m^3)** Standing charge (£ per day)* Carbon footprint (kg CO_2e per m^3)

** Pro-rata standing charges as an estimated % of utility usage attributable to showering versus total household usage*
*** This is assumed to be = water supply*



Functional unit: 1 year's showering

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Illustrative comparison of 3 different showering 'eco-systems'

Gas: 6.29p / kWh
Elec: 26.35p / kWh

3-person household, 5 showers pppw, 7.5 min average duration @ 41°C

Cost	Water (litres)	Carbon (kg CO_2e)
£ 428.14	21,226	232

(A-Rated Combi)

Cost	Water (litres)	Carbon (kg CO_2e)
£ 376.61	54,498	610

(ASHP, COP 3.0)

Cost	Water (litres)	Carbon (kg CO_2e)
£ 410.25	54,498	204

Functional unit: 1 year's showering

Assumptions: >1st October 2025 energy price cap, Scottish Water – Unmetered charges 25/26, Band E Council Tax

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Waste Water Heat Recovery (WWHR)

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WWHR – Typical types

‘VERTICAL’ (60-70+% eff.)

Gravity-fed

Pumped

‘HORIZONTAL’ (40-60% eff.)

In-tray

Under-bath / tray

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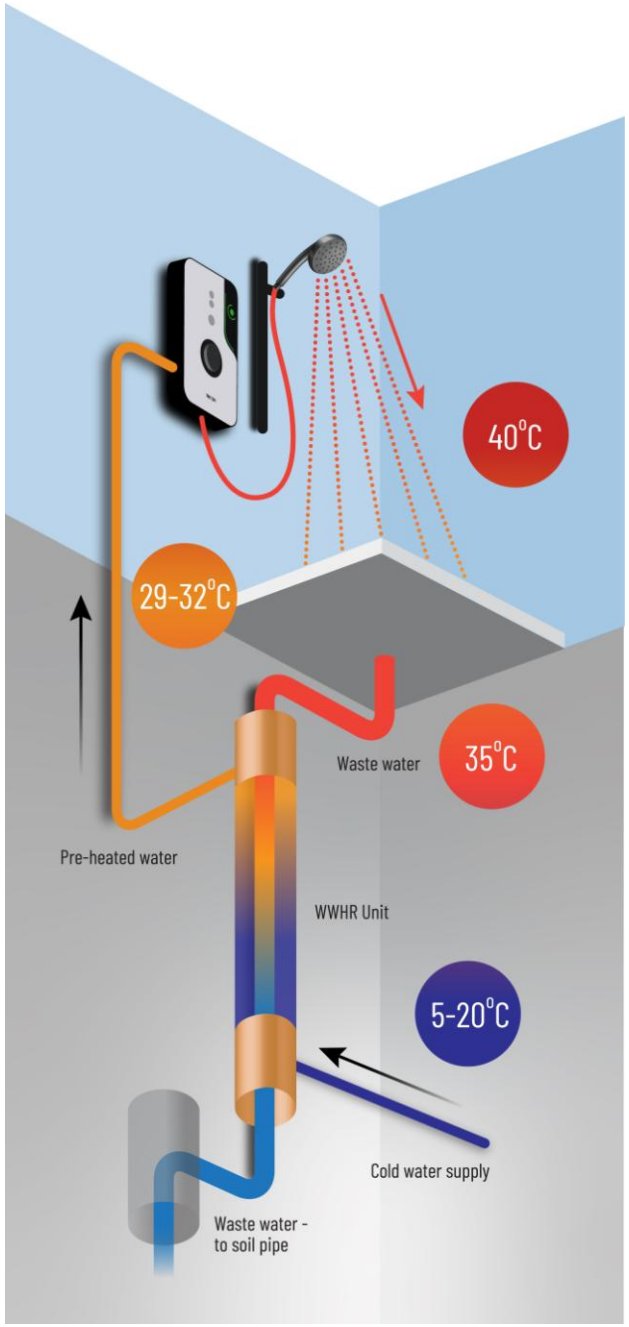

Passive, real-time heat recovery technology

WWHRS is a simple heat recovery technology that captures the otherwise wasted energy (heat) from the shower wastewater to preheat the incoming cold water to the shower (and/or water heater).

Saves £ and CO2e

Reducing hot water demand lowers CO_2 emissions and reduces household energy bills every time the shower is used.

Typically maintenance free

WWHRS typically have no moving parts and no power – so are promoted as ‘fit and forget’, working silently in the background without the need for turning on or off, or any maintenance.

SAP benefits

Recognised by BRE in SAP since 2008 (with Mixer valves*). Typically results in 6-10% improvement on DER in SAP

**Appendix Q application process underway for use with Electric showers*

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WWHR – What are the benefits for TENANTS / HOUSEHOLDERS?

Gas: 6.29p / kWh
Elec: 26.35p / kWh

3-person household, 5 showers pppw, 7.5 min average duration @ 41°C

ENlight® | heat repeat®

Cost	Water (litres)	Carbon (kg CO_2e)
£ 334.07	27,062	136
-£ 94.08	*5,836*	*-96*

-£ 1,110.83 (10 yr, 3%)

9l/min

(A-Rated Combi)

Cost	Water (litres)	Carbon (kg CO_2e)
£ 281.30	54,498	287
-£ 95.31	*-*	*-323*

-£ 1,125.39 *(10 yr, 3%)*

9l/min

(ASHP, COP 3.0)

Cost	Water (litres)	Carbon (kg CO_2e)
£ 302.47	54,498	92
-£ 107.78	*-*	*-113*

-£ 1,272.60 *(10 yr, 3%)*

Functional unit: 1 year's showering

Assumptions: >1st October 2025 energy price cap, Scottish Water – Unmetered charges 25/26, Band E Council Tax

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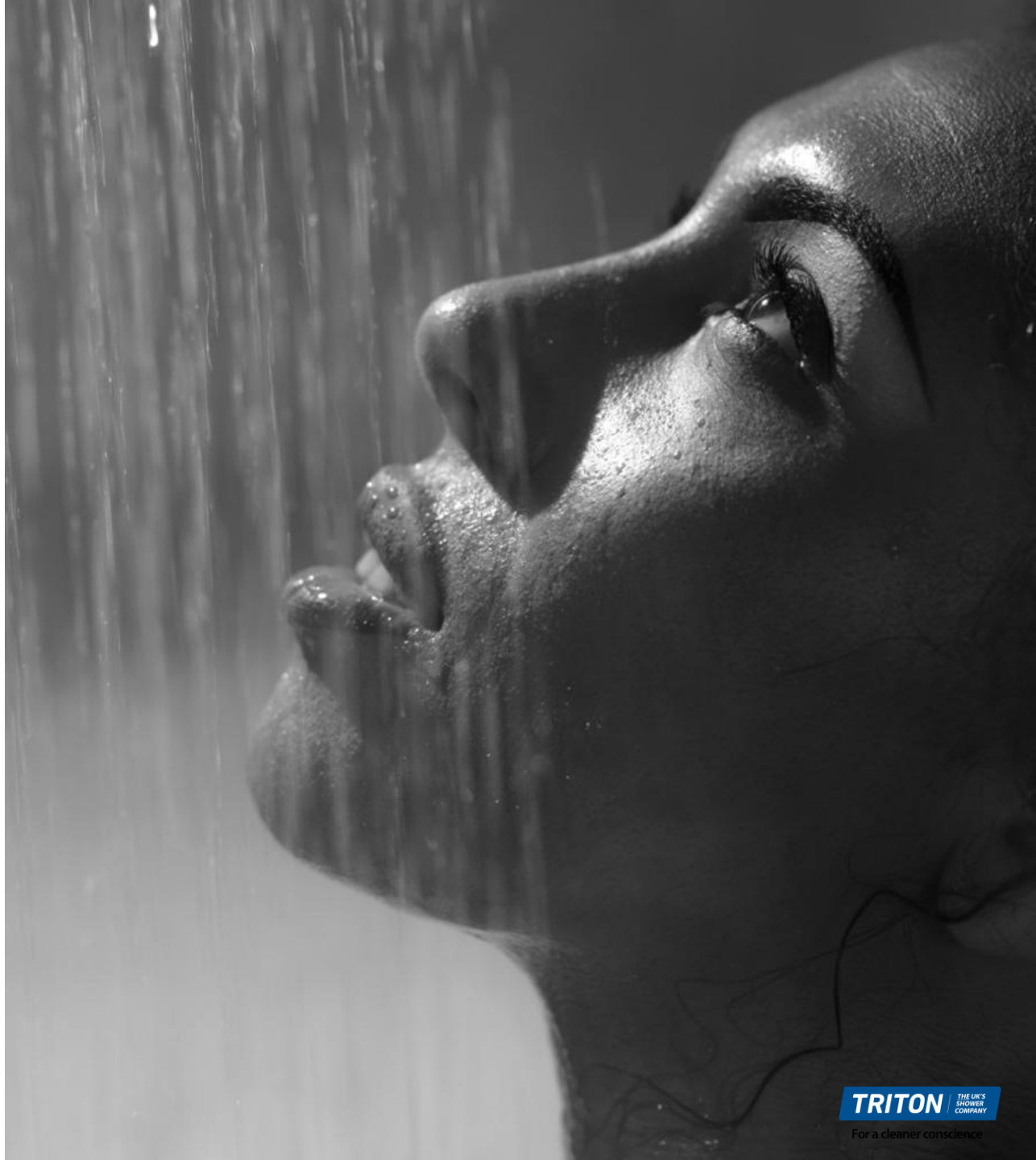
Key take-aways

- Don’t overlook showering in your Net Zero plans



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Key take-aways

- Don’t overlook showering in your Net Zero plans
- Consider showering options as part of ‘whole-house’ heating eco-system design
- Where-ever possible, adopt a ‘Fabric first’ approach
- Engage residents, but don’t just rely on behavior change
- For a Net Zero future, energy source **REALLY** matters

Over to you…

How can you apply what you have learned today to your professional role…?

Thank you

“The most reliable way to predict the future is to create it”

Abraham Lincoln

#everydropmakesadifference

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