

2019

Business innovation in sustainable thermal systems

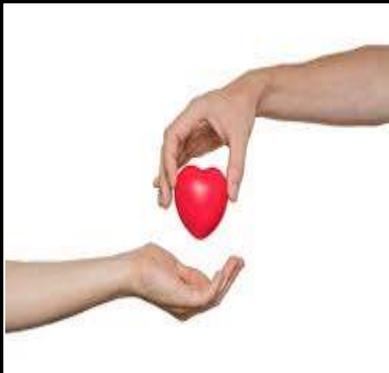
Building Model, Engineering and Energy

ASDA
Save money. Live better.

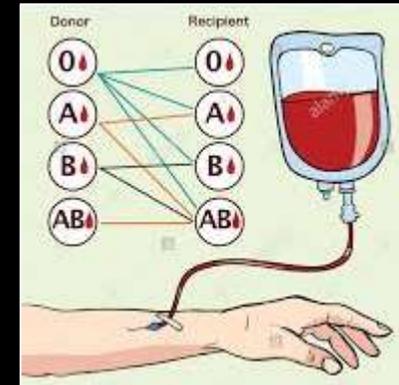
Supermarket managing thermal and energy management system

It's complicated

F-GAS 2022
Full organ replacement

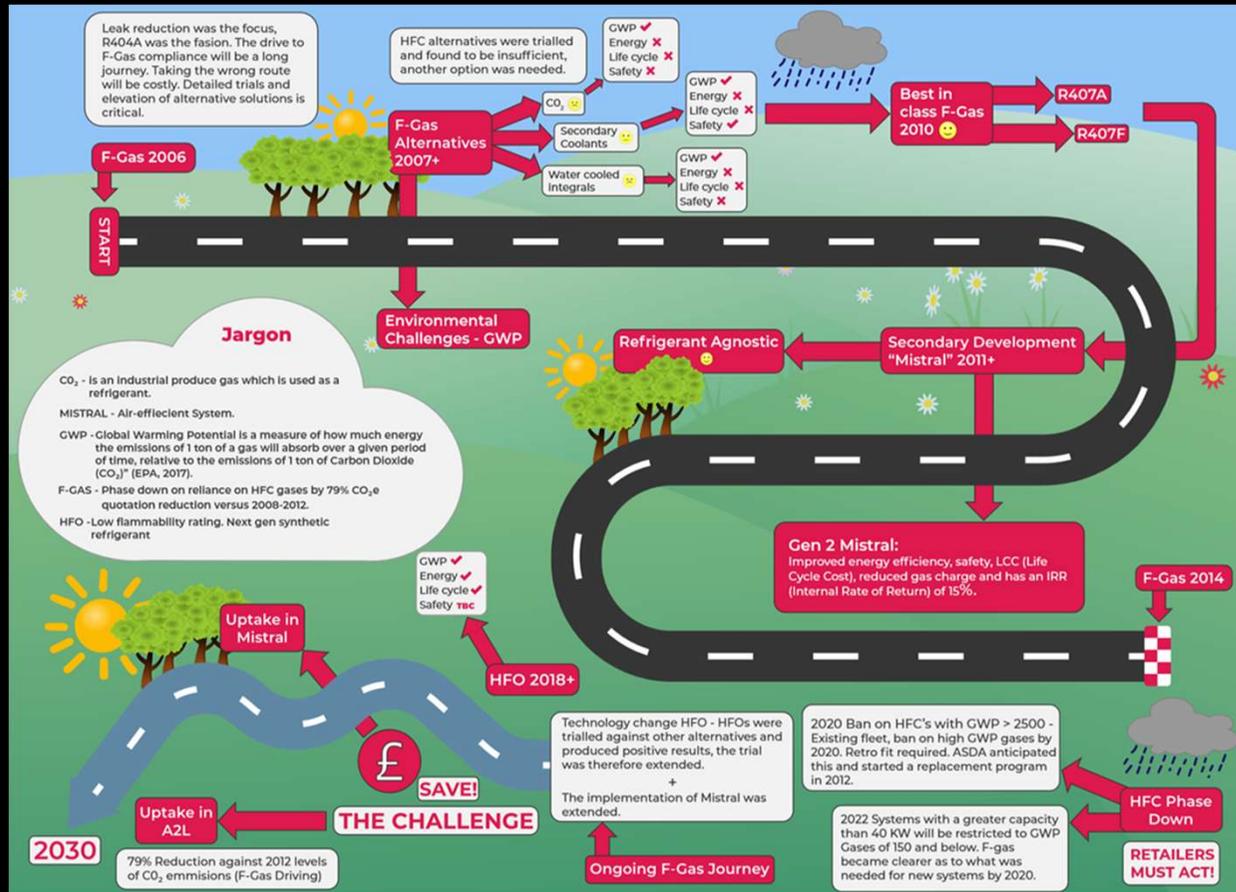


F-GAS 2020
Blood transfusion



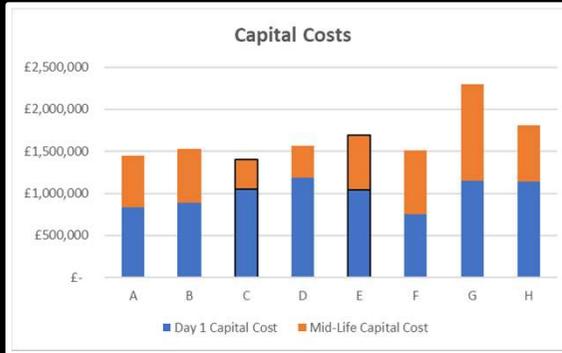
It's like trying to play a game of Whack a Moll whilst carrying out on mass blood transfusions knowing major organ replacement is needed.

ASDA's Refrigeration Strategic Journey



Life Cycle cost impact of alternative tech

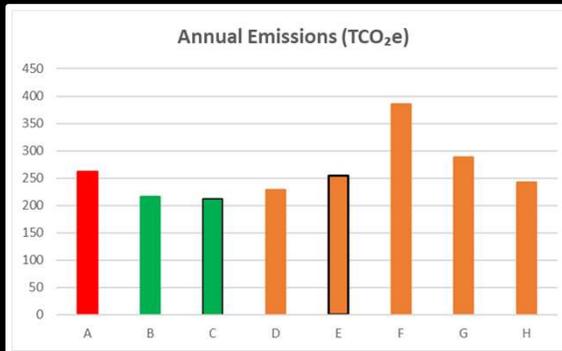
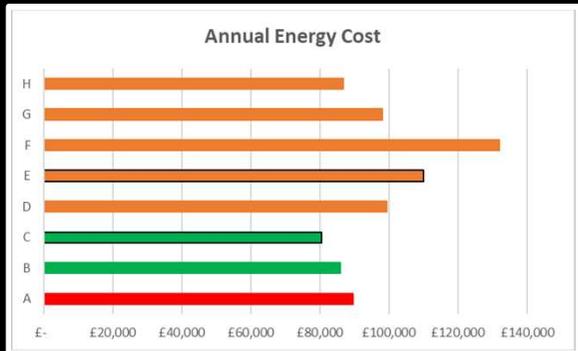
Based on 20 years - Model store



Glossary

- A Non-compliant tech post 2022
- B HFO – Mildly flammable (Model Option)
- C Mistral / HFO (Model)
- D Mistral / CO₂ option
- E CO₂ (Industry Driven Option)
- F Plug-in fridge tech option (air-cooled)
- G Plug-in fridge tech option (water-cooled)
- H Secondary Glycol

Annual Energy & Emissions – per store



Why?



https://ec.europa.eu/clima/policies/f-gas/legislation_en

Innovation in cooling

Removed data

Mistral ducted display



Worlds first - HFO
design standard

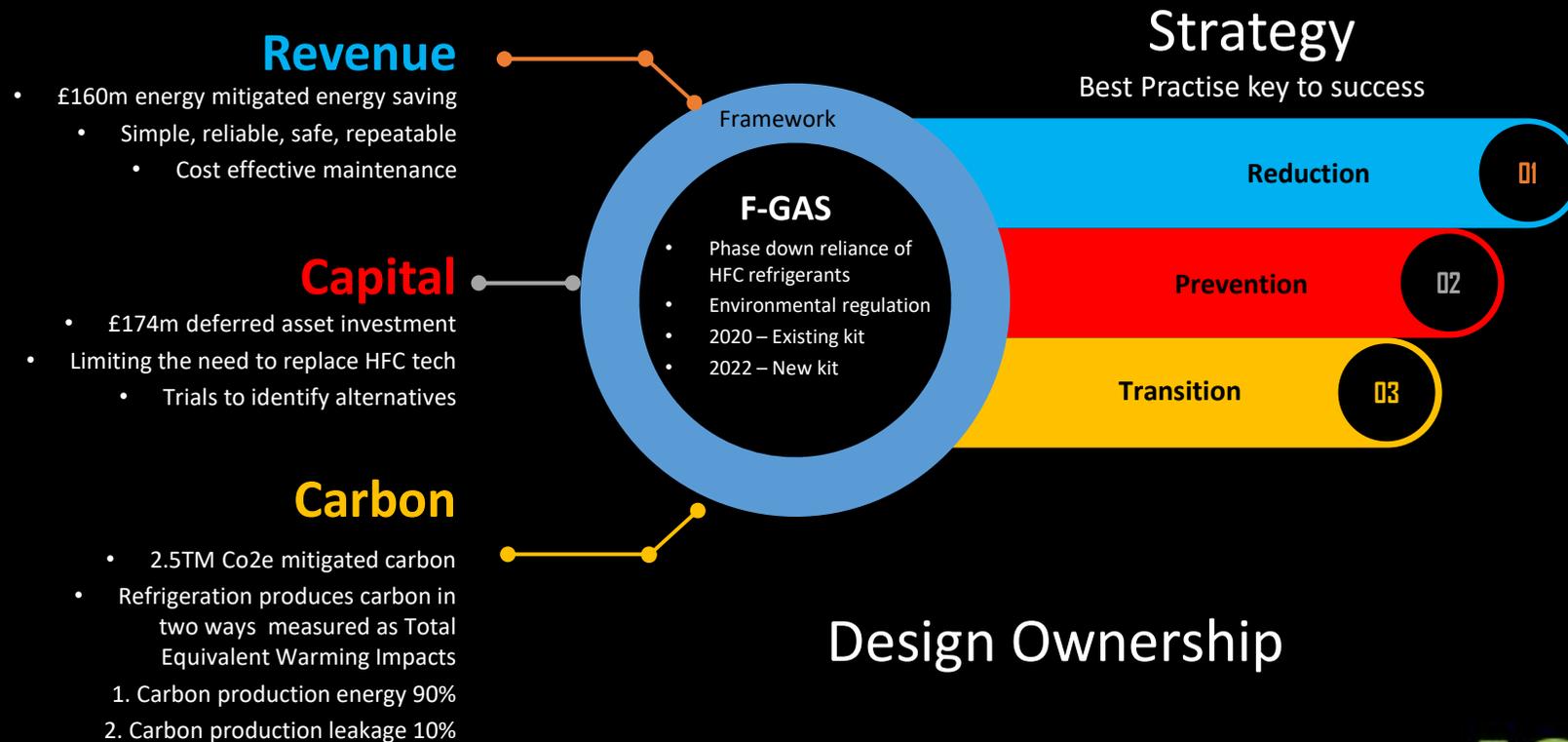


TCO benefit versus
CO2 estate wide
£600M
Circa 20% lower
emissions

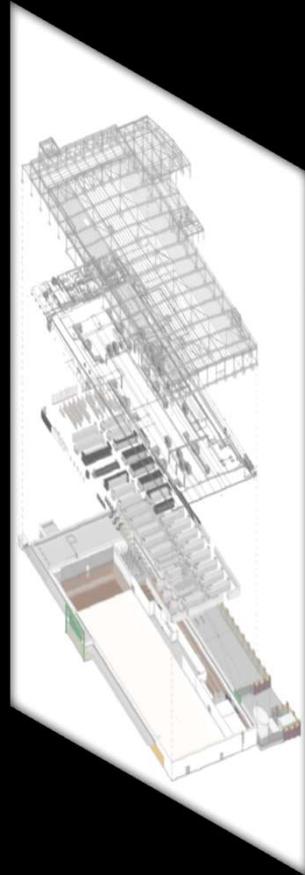
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F-Gas focus

10 years of savings - get it right and save



Internet of Things – Building Performance – Systems Thinking



Data Environment

Performance

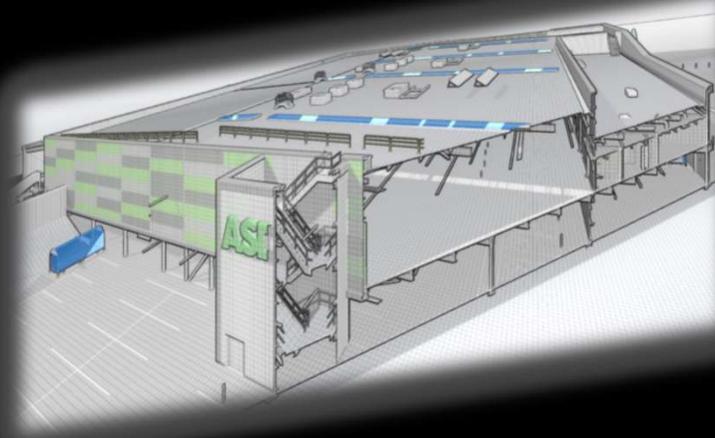
Energy
Heating
Cooling
Lux levels

Asset data (80%)

Repair/Replace

Roofs
Floors
Bakery
Refrigeration
HVAC
Lighting

UniModel
BIM - Building Information Modelling
Specification, Scoping, New & Existing space
Safe, Legal & trading



AIMS 2
ASDA Integrated Management System gen 2
Remote Building control/monitoring systems.
Input and output data
Safe, Legal & trading

Mercury
Asset data base LCC – End of Life
Informed decisions
Safe, Legal & trading

ASDA
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Overlaying Asda's assets to DSM value streams

Store frequency response

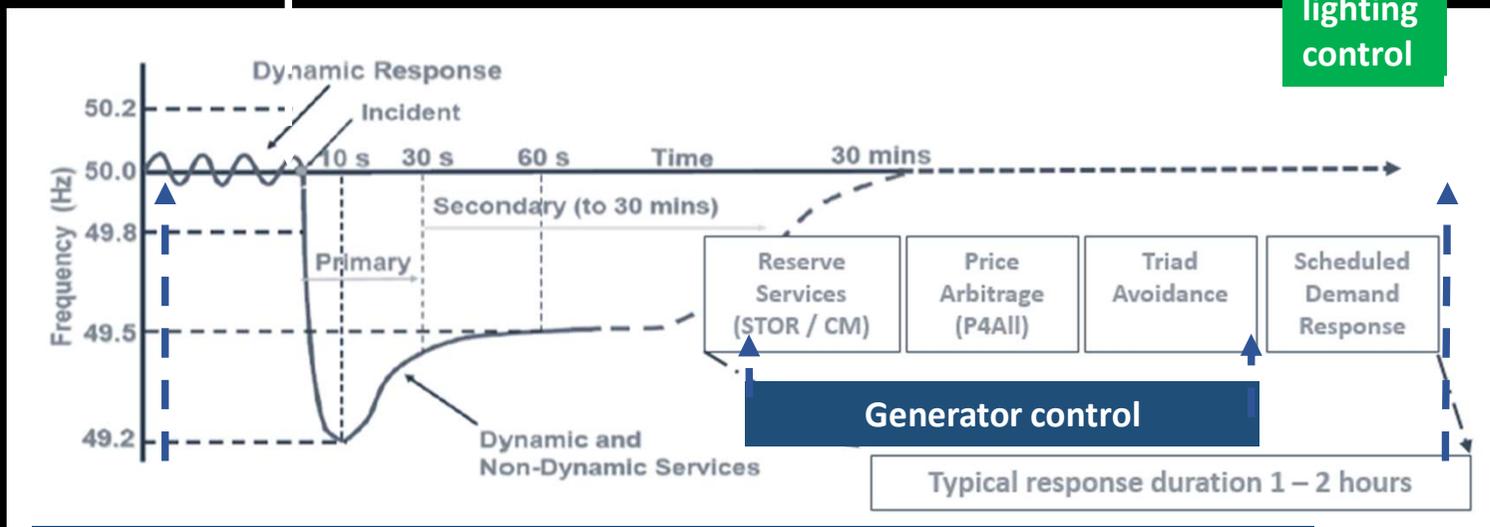
Depot frequency response

Transitional fridge control

Fridge defrost / trim control

HVAC load shedding

Central lighting control



Battery storage