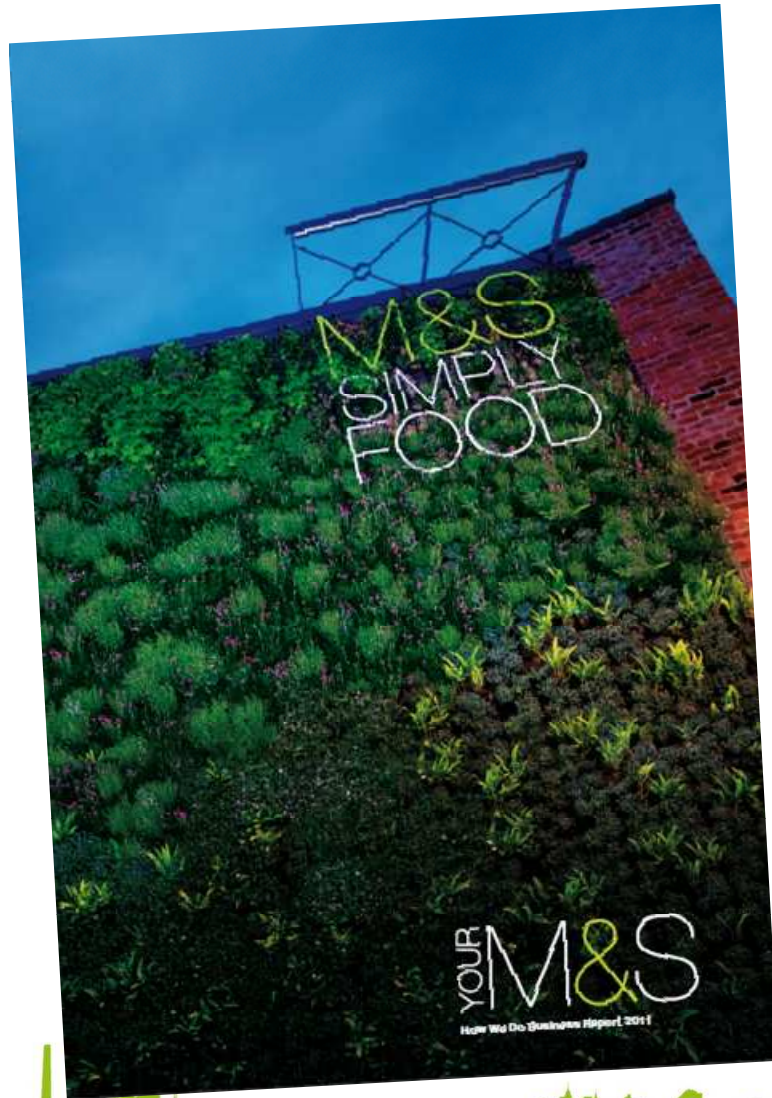


Marks and Spencer's **PLAN A** and experience with alternative refrigerants

by
Bob Arthur
Refrigeration Technologist





Plan A

commitments

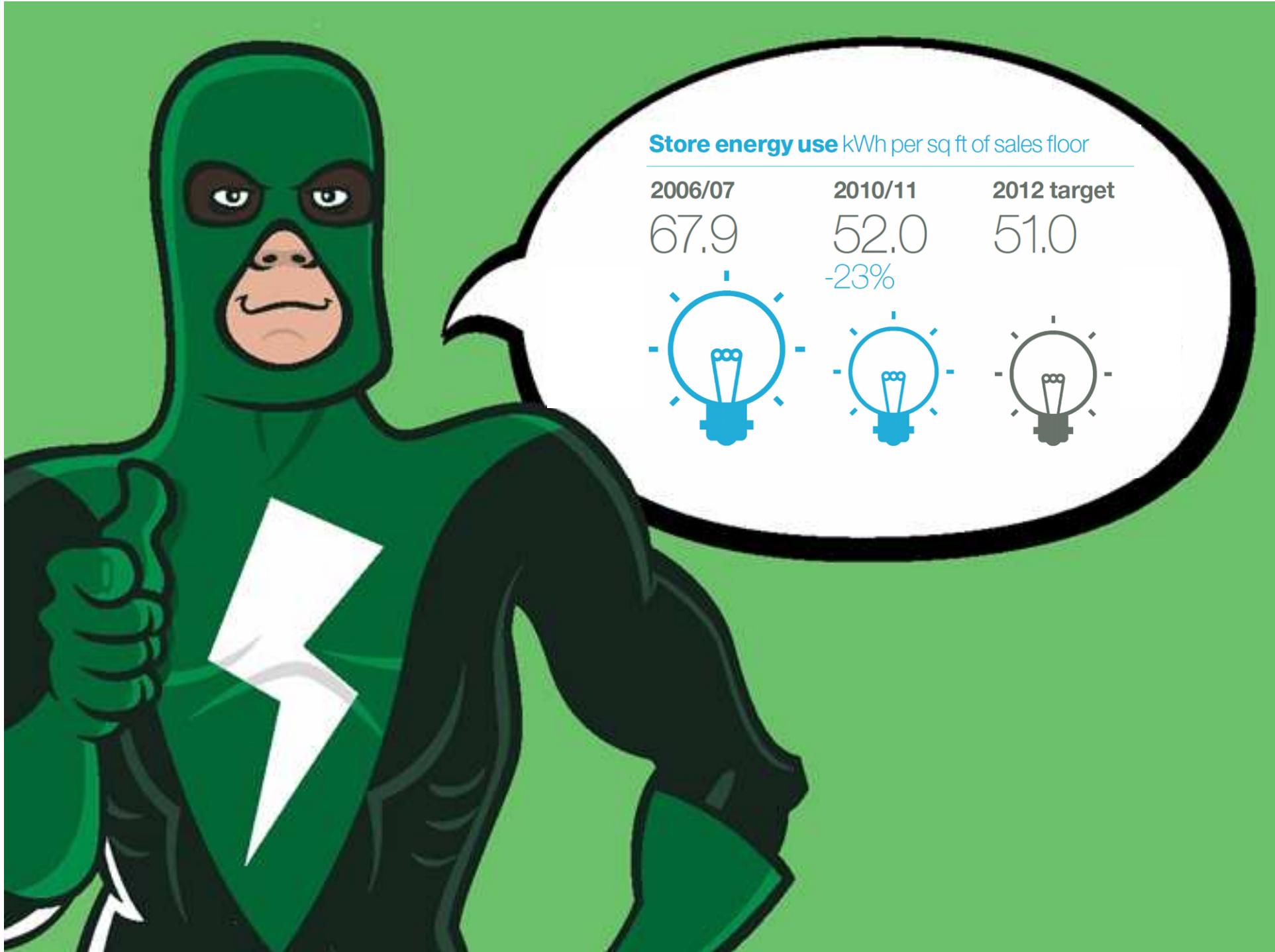
100

180

95

COMPLETED





Store energy use kWh per sq ft of sales floor

2006/07	2010/11	2012 target
67.9	52.0	51.0

-23%





Ecclesall Road Sustainable Learning Store

Commitment 10.15 – Store Refrigeration

- 1. Replacing the HCFC refrigerants by 2014.**
- 2. Extend the roll out of replacing R404a refrigerant with the lower GWP - R407a.**
- 3. From 2010 all new installations will use CO2 secondary systems wherever possible.**
- 4. We are aiming to progressively reduce our total refrigeration greenhouse gas emissions by 50% by 2015.**
- 5. To remove HFC refrigerants from our refrigeration and air conditioning systems by 2030**





Store refrigeration and air conditioning emissions tonnes CO₂e per 1000 sq ft

2006/07

2010/11

9.4

6.5

-31%



At M&S, we are committed to reducing the refrigeration gas carbon emissions of our refrigeration systems by 50%



By 2030 we are targeting to use no HFC gases in our Refrigeration, Heating and Air Conditioning systems.





Secondary Refrigeration CO2 Pumpstation



The **Plan A** way to cut carbon emissions



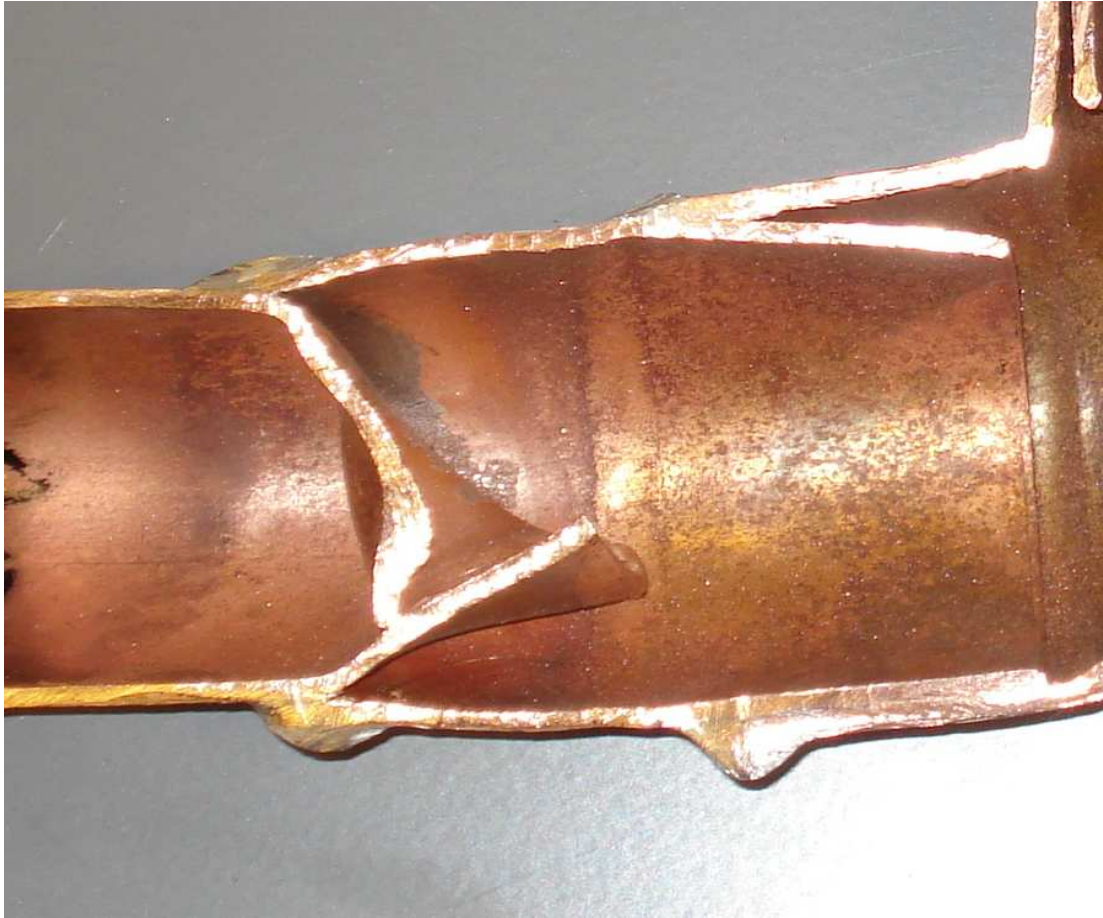
The **Plan A** way to cut carbon emissions



- Development HC and CO2 Assembly



M&S



Quality control and better standards.



Innovation by:

Leadership

Language

Collaboration

Learning

Value

Pace





2015

World's most sustainable major retailer

QUESTIONS ?

Bob Arthur

Refrigeration Technologist

