



**COLD CHAIN
INSIGHT**

Webinars for Cold Chain Professionals
CLIMATE CHANGE WEEK DAY 2: INNOVATION
STARTING AT 10:30AM

SUPPORTED BY:

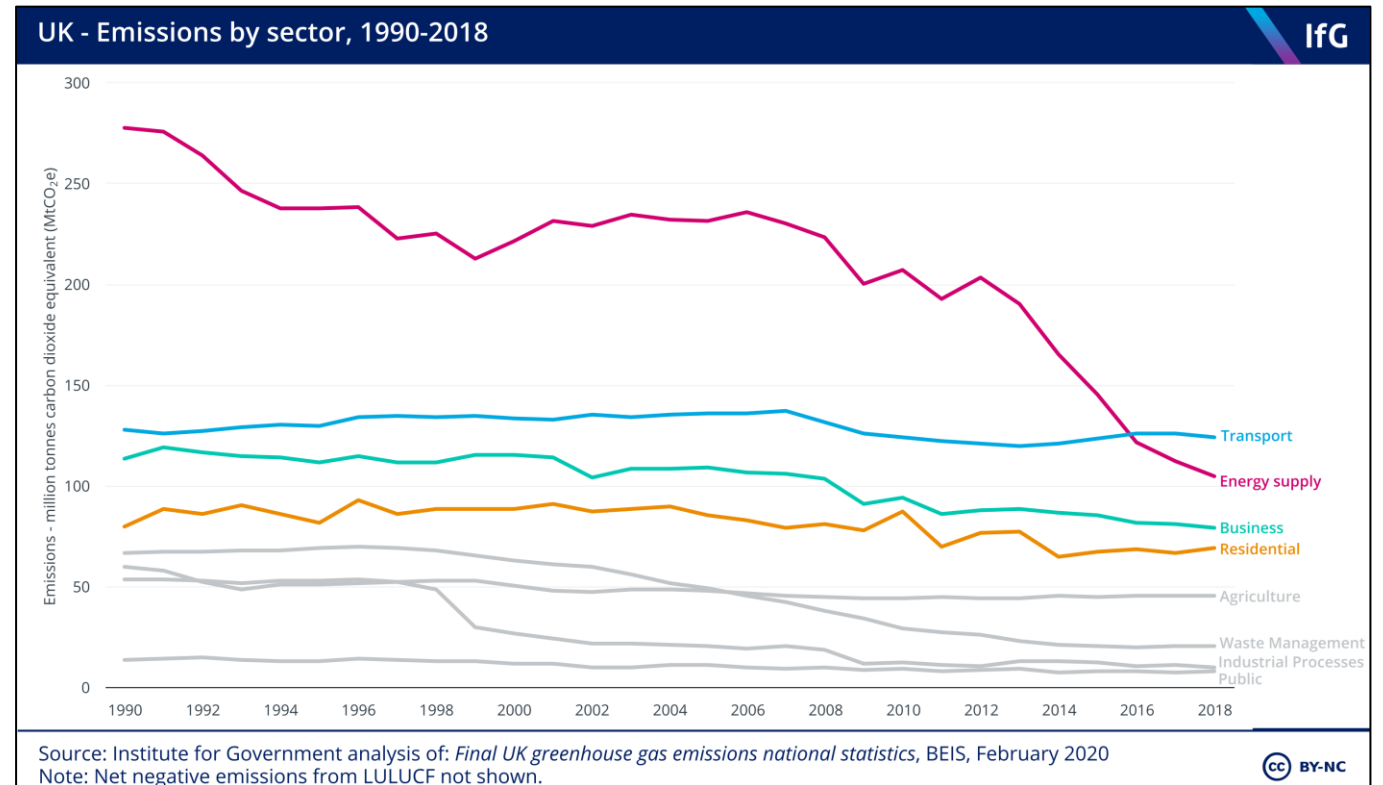


TOM SOUTHALL
POLICY DIRECTOR
COLD CHAIN FEDERATION







RECAP FROM DAY 1

- COP26
- UK NET ZERO STRATEGY AND TARGETS
- IMPACTS ON THE COLD CHAIN
- RESEARCH INTO NET ZERO COLD CHAINS



TODAY: SUSTAINABILITY, INNOVATION AND FUNDING THE TRANSITION


10:35 – 11:00	Coop and Coop Power: the journey to sustainability	 It's what we do
11:00 – 11:25	Investing in solar: experiences from the cold chain	 
11:25 – 11:50	Funding the transition	 Onsite Energy projects
11:50 – 12:00	Reflection and close	







File View Help



Audio

Sound Check  ?

Computer audio
 Phone call
 No audio

Microphone Array (Conexant SmartA... ▾

Speakers (Conexant SmartAudio HD) ▾


Talking: **Shane Brennan**

Questions

[Enter a question for staff]

Send

CCF - COVID 19 - INTELLIGENCE EXCHANGE
Webinar ID: 308-161-843

 GoToWebinar



It's what we do

COOP AND COOP POWER: THE JOURNEY TO SUSTAINABILITY

With Alex Pitman, Carbon and Energy Performance Manager

Towards zero

May 2021

Alex Pitman

Alex.Pitman@co-op.co.uk



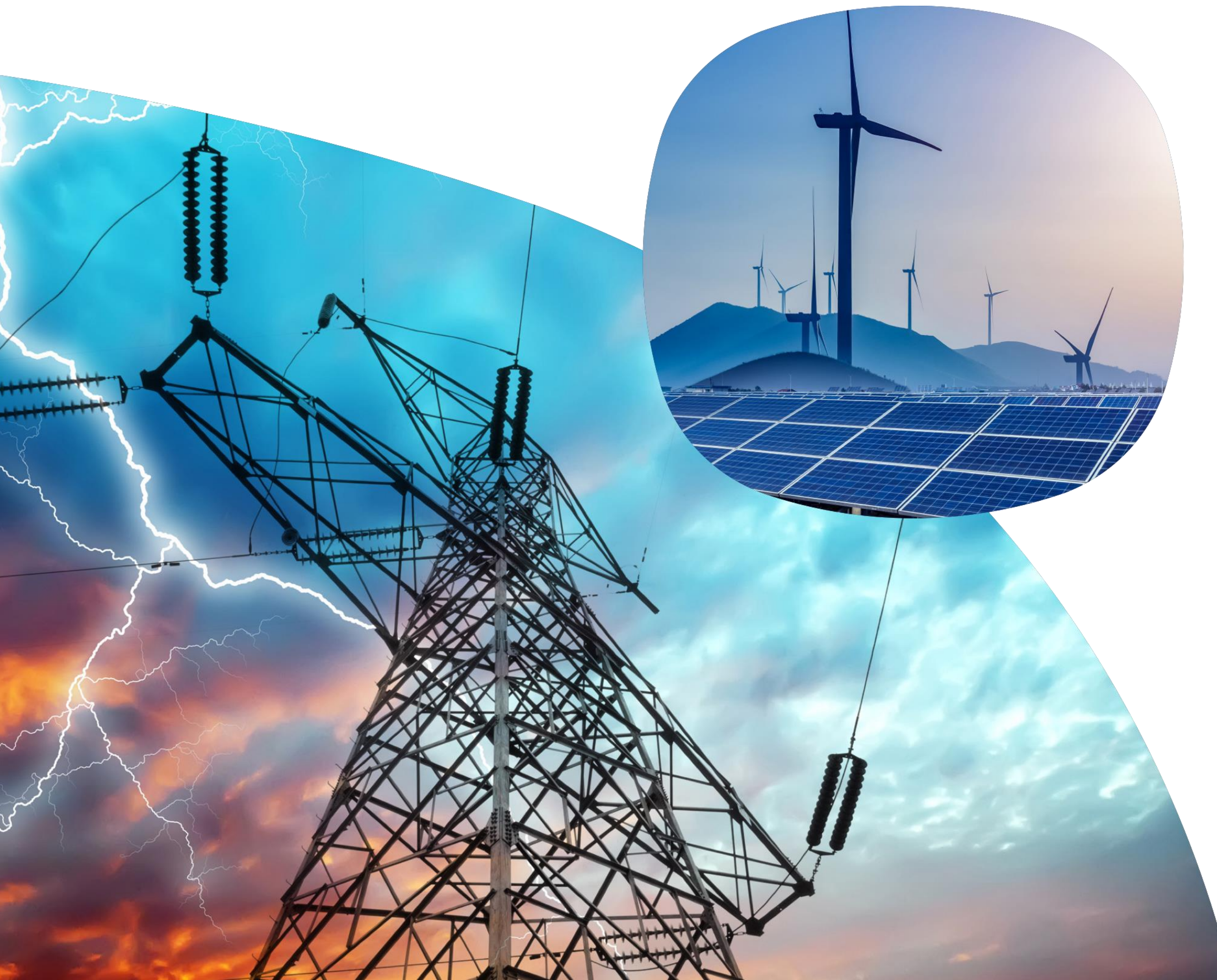
It's what we do

Co-op and Carbon



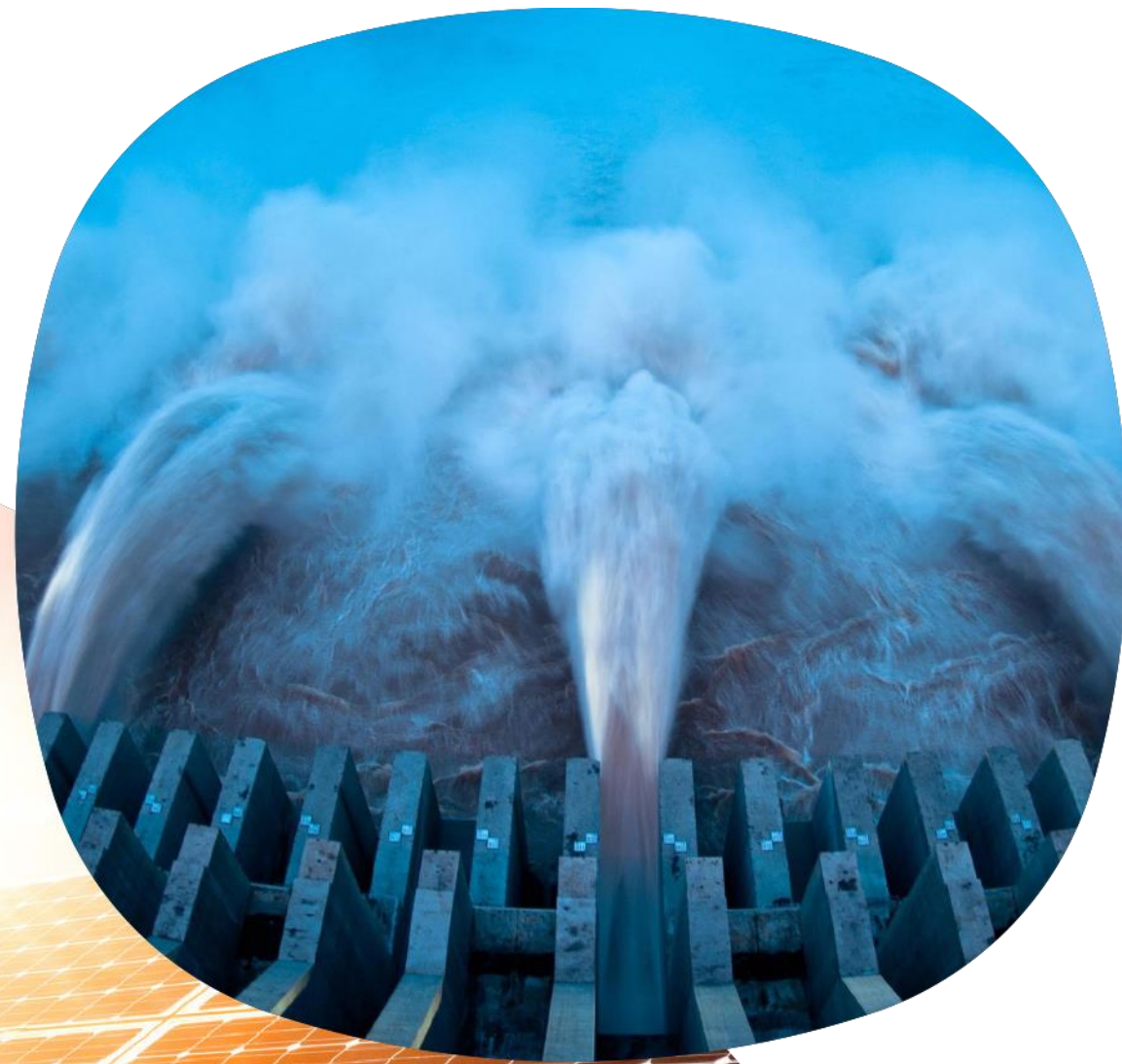
- Progress so far
- 10 point plan
- Co-op Power
- Future?

Carbon reduction



- Track record of reporting and improving carbon for over a decade
- Halved scope 1&2, on track to halve again by 2025 in line with Science Based target
- Buy 100% green – report as grid average “location” based

Wider action on carbon



- 11% cut in supply chain emissions as part of Science based target
- Scope 3 now reported
- Offsetting of products and some business units
- Co-op Power started



Our plan is grounded by three principles:

We'll follow the science in our target setting and decision making. Above all else we must rapidly reduce the carbon we put into the air.

We'll work for a fair and just transition for people and planet. Solving the climate crisis can't come at the expense of those who can least afford it.

We'll co-operate to drive systems change because we recognise that we are stronger and more effective when we work with others.

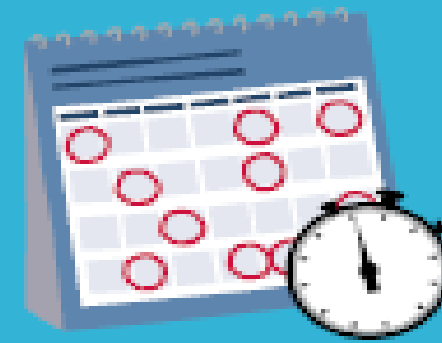
1. Make long-term changes to how we do business

We will be a net zero business by 2040, for our operations and for our products.



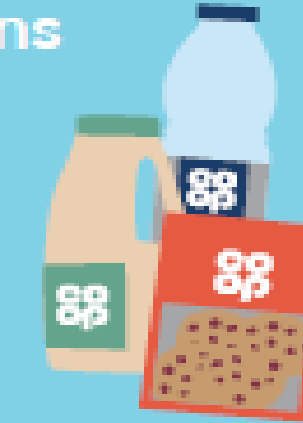
2. Set clear short-term milestones

We will reduce the impact of our operations by 50% and our products by 11%, both by 2025.



3. Rapidly reduce carbon from our operations and products

We will take clear, practical steps to reduce carbon from the running of our business and the products we sell.



4. Compensate for our climate impact

Our operations will be carbon neutral from 2021 and our own-brand products by 2025.



5. Make lower carbon choices easier for customers

We will support our customers and members to make lower carbon choices.



Ten-point climate plan



It's what we do

6. Direct our finance to reducing carbon

We will align our finance, including carbon offsets and pension funds, to low carbon investments.



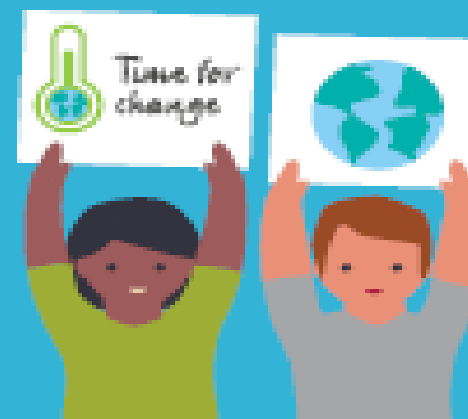
7. Help suppliers on the front line of the climate crisis

We will support our Fairtrade producers to adapt to climate change realities and to become more climate resilient.



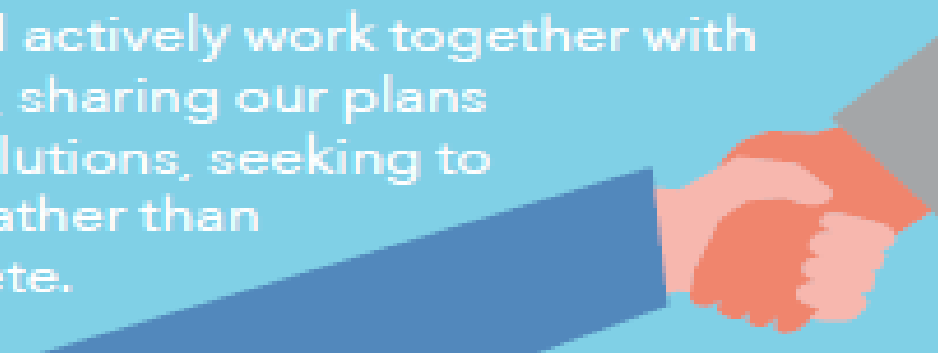
8. Campaign for climate action

We will lobby and advocate with Government to press for the necessary systemic change.



9. Co-operate for change at scale

We will actively work together with others, sharing our plans and solutions, seeking to align rather than compete.



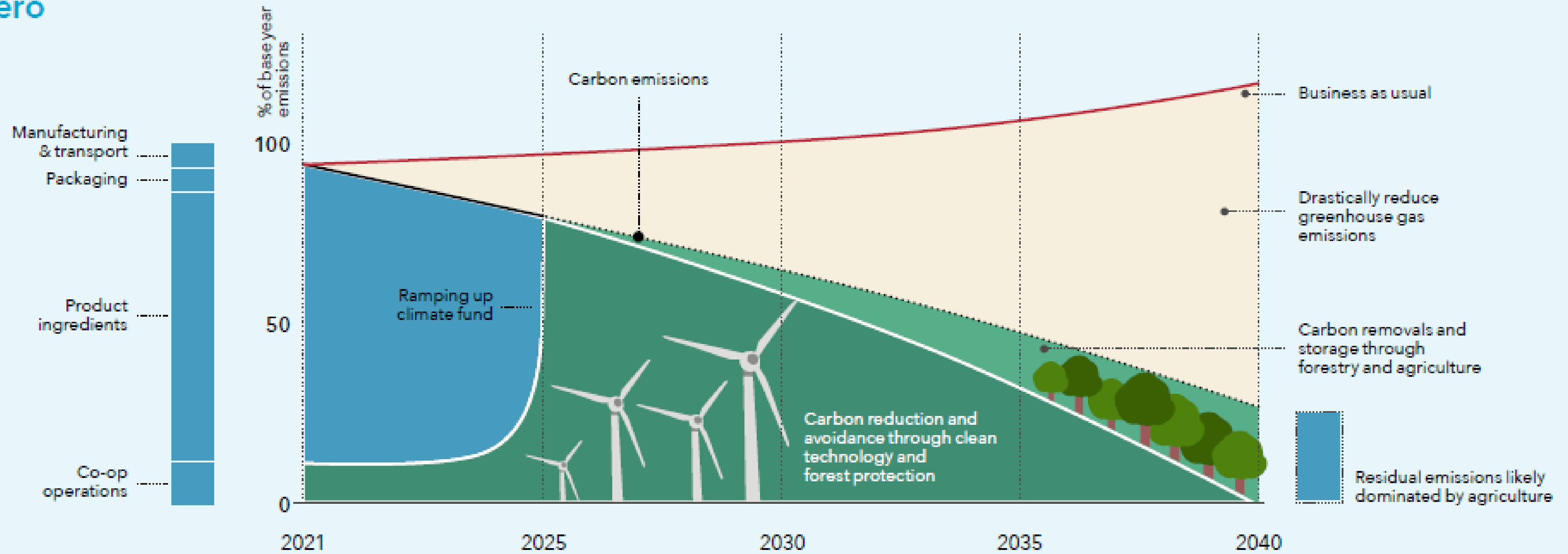
10. Make our climate plan a priority

Underpinning these goals, we are linking the pay of our Food CEO to achieving our carbon reduction targets.



1. Long term changes

Co-op's pathway to net zero



Residual emissions refer to the unavoidable remaining carbon emissions, typically agreed at a country and global level by policymakers, which may continue in balance with the natural or technological removal of carbon from the air. This is both a scientific and political distinction.

9. Co-operate at scale for change – Co-op Power



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roadchef

The **Midcounties
Co-operative**

Emirates

**OXFORD
INSTRUMENTS**
The Business of Science®

SMG

Supplying a
'community of
communities' - a
consortium of over
10,000 sites

yha
be inspired

worldpay

hctgroup

**National
Trust**


The **co-operative**
academy of Leeds


Nationwide
Building Society


The **co-operative**
academy of Manchester

Co-op Power



- Started as buying group
- Good quality green power at good prices
- Energy and carbon services
- How do we work together on Carbon?

What are we seeing - energy?

Level	Energy Policy	Organising	Training	Performance Measurement	Communication	Investment
4	Energy Policy, Action Plan and regular reviews have active commitment of top management	Fully integrated into senior management structure with clear accountability for energy consumption	Appropriate and comprehensive staff training tailored to identified needs, with evaluation	Comprehensive performance measurement against targets with effective management reporting	Extensive communication of energy issues within and outside of organisation	Resources routinely committed to energy efficiency in support of organisational objectives
3	Formal policy but no active commitment from top management	Clear line management accountability for consumption and responsibility for improvement	Energy training targeted at major users following training needs analysis	Weekly performance measurement for each process, unit, or building	Regular staff briefings, performance reporting and energy promotion	Same appraisal criteria used for energy efficiency as for other cost reduction projects
2	Un-adopted policy	Some delegation of responsibility but line management and authority unclear	Ad-hoc internal training for selected people as required	Monthly monitoring by fuel type	Some use of organisational communication mechanisms to promote energy efficiency	Low or medium cost measures considered if short payback period
1	An unwritten set of guidelines	Informal, mostly focused on energy supply	Technical staff occasionally attend specialist courses	Invoice checking only	Ad-hoc informal contacts used to promote energy efficiency	Only low or no cost measures taken
0	No explicit energy policy	No delegation of responsibility for managing energy	No energy related staff training provided	No measurement of energy costs or consumptions	No communication or promotion of energy issues	No investment in improving energy efficiency

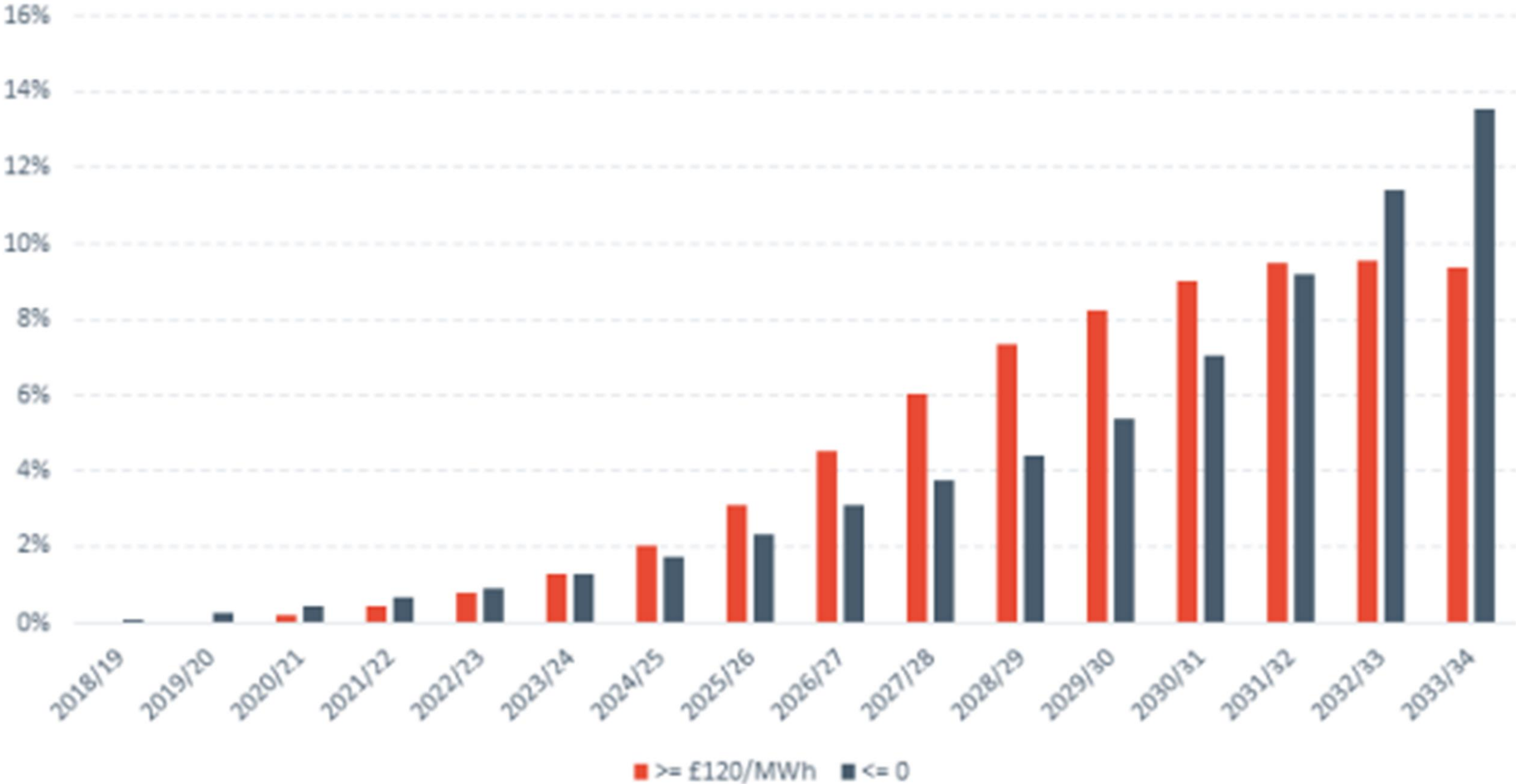
What are we seeing - carbon?

Level	Efficiency and Effectiveness	Direct emissions	Green power	Green travel	Scope 3	Offsetting and Removal
5	Recognised as leader beyond your sector. Public advocate of smart energy use as key to tackling climate change. Actively sharing best practice.	Recognised as leader beyond your sector. Public advocate of your approach as key to tackling climate change e.g. Avoidance of F-gas usage. Actively sharing best practice.	Recognised as leader beyond your sector. Public advocate of your approach as key to tackling climate change. Showing full additionality for all energy use. Actively sharing best practice.	Recognised as leader beyond your sector. Public advocate of your approach as key to tackling climate change. Showing path to zero carbon and actively sharing best practice.	Recognised as leader beyond your sector. Public advocate of your approach as key to tackling climate change. Showing sustained reductions in line with 1.5 and on course for zero. Actively sharing best practice.	Recognised as leader beyond your sector. Public advocate of your approach as key to tackling climate change. At zero on SBTi definition and plan in place to address historical emissions
4	Recognised as leader in your sector. Delivering results aligned to 1.5 C target. Savings driven by energy effectiveness- doing the right things right, not just efficiency.	Recognised as leader in your sector. Delivering results aligned to 1.5 C target. Savings driven by emissions avoidance as well as reduction e.g. phasing out f-gas not just reducing leaks	Recognised as leader in your sector. Complete energy usage is green including gas. Additionality shown year on year	Recognised as leader in your sector. Active travel reduction as well as modal shift in place. Delivering sustained reduction in scope 3 travel e.g. reducing travel by car to your sites	Recognised as leader in your sector. Active travel reduction as well as modal shift in place. Delivering sustained reduction in scope 3 travel e.g. reducing travel by car to your sites	Recognised as leader in your sector. Plan in place to get to zero based on SBTi standards. Some of operation at zero
3	Embedded in all projects and fully treated as a variable cost	Track record of reduction and avoidance	Renewable and PPAs integrated to deliver additionality. Green gas or gas removal plans in place	Future transport strategy aligned with climate goals and fuel transition e.g. EV	Externally validated target and reduction strategy aligned to 1.5 C	Offsetting plan in place to get to external standard based on operational carbon
2	Planned reduction delivered year on year	Active strategy to reduce	Good quality green on consolidated contract	EV strategy in place	Scope 3 mapped	Offsetting and insetting plan in place
1	Energy efficiency focused on avoiding waste	Non energy direct emissions reported	Buying some green power	Started green travel planning	Informal review of scope 3	Tactical offsetting started

Future £?

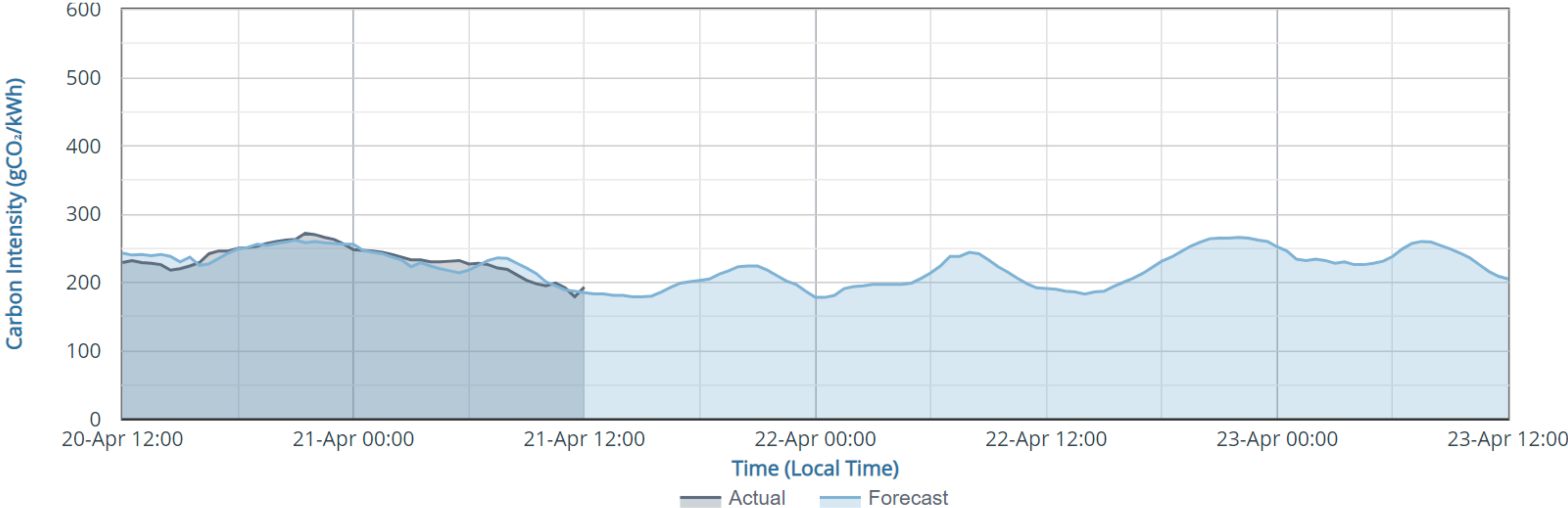
Figure 12: Annual frequency of $\leq \text{£}0/\text{MWh}$ & $\geq \text{£}120/\text{MWh}$ price periods 2018 through 2034

Source: Cornwall Insight

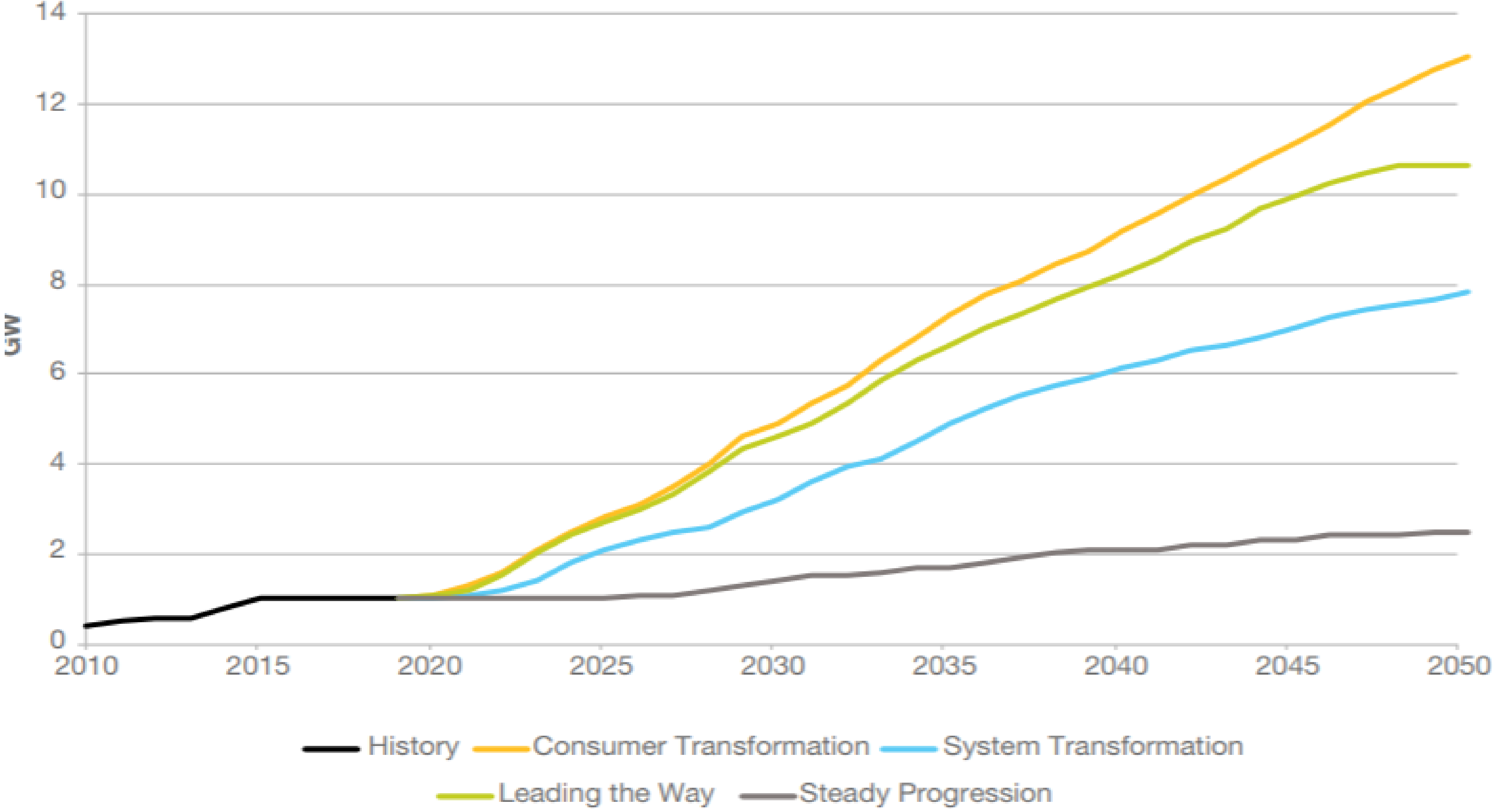


Future CO2?

Carbon Intensity Forecast (-24hrs to +48hrs)



Future – more £ through balancing?



Innovation



- Time of use
- End of TRIADS/TCR
- Machine learning
- More Power Purchase Agreements
- Fleet decarbonisation
- More on site generation



INVESTING IN SOLAR: EXPERIENCES FROM THE COLD CHAIN

With Neil Stott, Business Development Manager

and Tony Pinder, Plant Manager, Andrew Johnson Knudtzon



Cold Chain & Climate Change –
Finding Pragmatic Solutions



pragmatic

/prag'matik/

adjective

dealing with things sensibly and realistically in a way that is based on practical rather than theoretical considerations.

Similar:

practical

matter-of-fact

realistic

sensible

down-to-earth



- relating to philosophical or political pragmatism.
- LINGUISTICS
relating to pragmatics.

Sensibly and realistically

- Does a solar PV pay for itself?



Yes, for a typical cold store it's a 4-6 year payback BEFORE any AIA/Super Deduction Allowance

Sensibly and realistically

- Have I got enough space to generate a material amount of electricity?



Yes, there are 678 cold stores in the UK over 50,000sq ft in size, averaging 200,000sq ft. That's enough for 10,000 panels. Even using 60% of this equates to generation of 2 Million kWh pa

Sensibly and realistically

- Does solar PV materially reduce CO2?

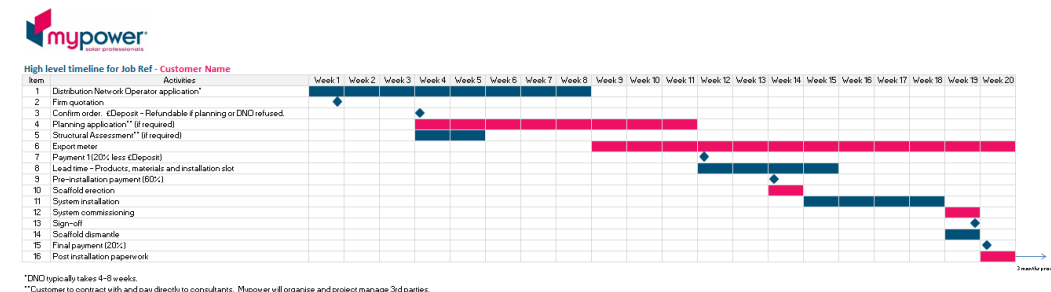
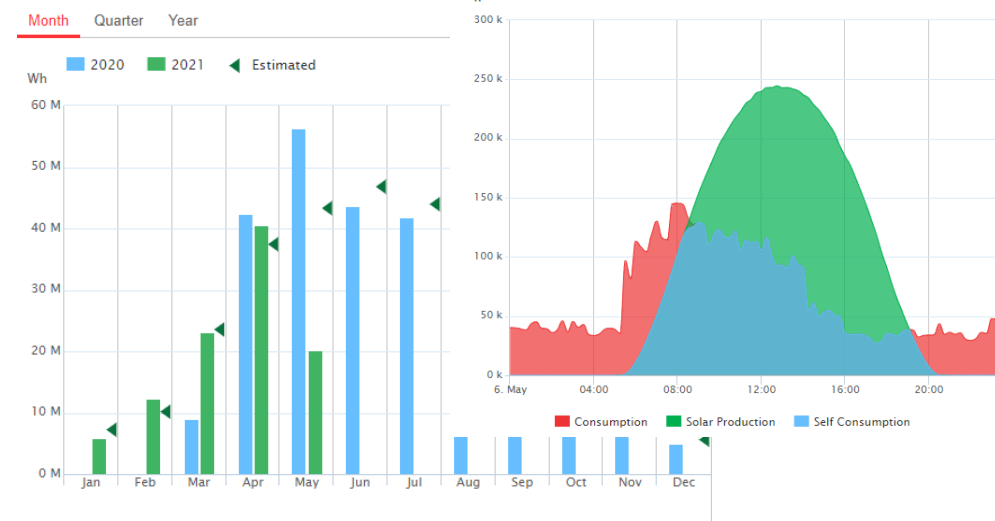
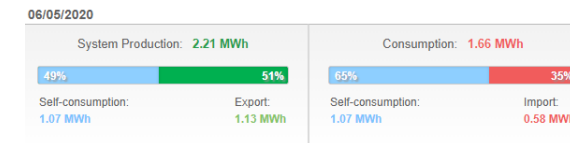


Yes, using 2020 DEFRA figures the 2M kWh would help avoid over 467 Tonnes of CO2e per annum.



Practical rather than theoretical

- Do we get enough sunshine?
- What actual generation will we see?
- Installation costs
- Ongoing maintenance



*DND typically takes 4-8 weeks.
**Customer to contract with and pay directly to consultants. Mypower will organise and project manage 3rd parties.

Is solar PV right for my business?

Initial budgetary 'desktop' assessment

- Identify best solution for your business needs

Identify potential constraints and agree solutions

- Grid application
- Structural survey

Solar site survey

- Electrical
- Installation plan
- O&M considerations





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www.mypoweruk.com



FUNDING THE TRANSITION

With David Kipling, Director

Is the energy transition **wagging your tail?**

We provide practical solutions to save £££ and reduce CO₂ emissions:

- on or near site generation
- energy efficiency measures
- transparent capex or zero capex proposals
- off-balance sheet solutions
- net zero strategy



Your Partner for the
Energy Transition

www.on-site.energy or email info@on-site.energy



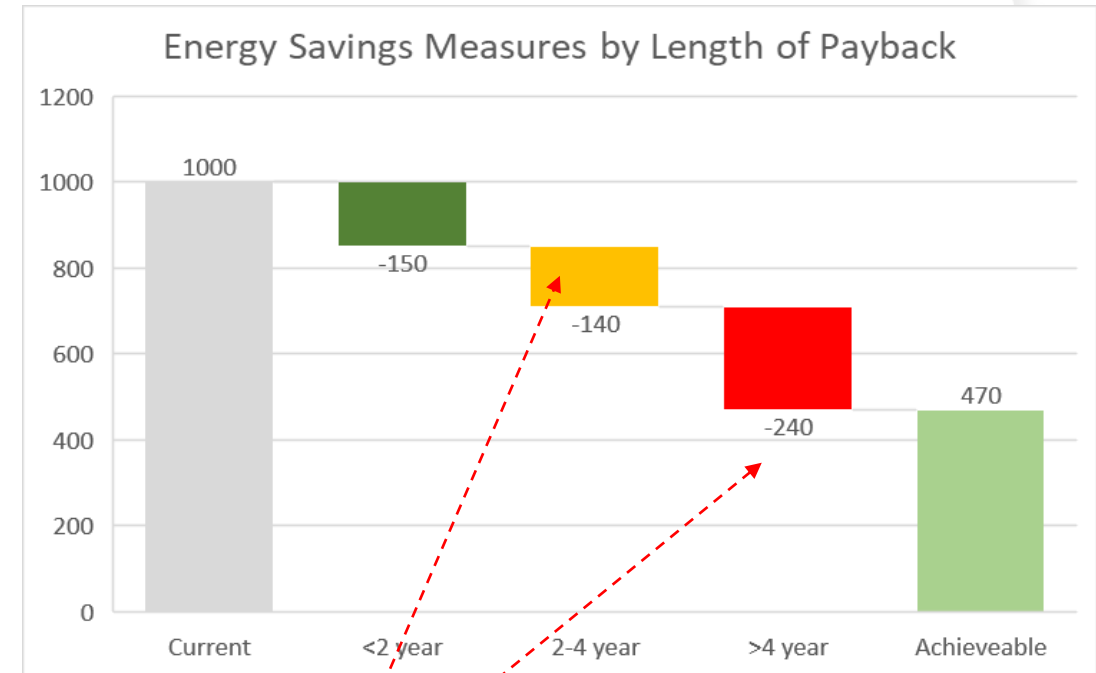
Funding the Energy Transition

David Kipling
CEO, Onsite Energy Projects Ltd

The Energy Transition Is Underway

- Transition to a low carbon economy is underway
 - Government has announced 68% CO₂ reduction by 2030
 - Climate Change Agreement scheme renewal in 2025
 - Expect more pressure on efficiency and savings
 - Expect more pressure via carbon pricing, CCL, and other mechanisms such as regulation and increased efficiency targets

- For energy intensive cold chain this is a particular challenge:
 - “Quick wins” – probably already done
 - Next steps require innovation and may require significant investments, often with longer paybacks
 - Competition for capital generally limits payback to 2 years



Without a solution to funding these measures may not be implemented - representing up to 40% saving

What could be the measures ?



	Controls Upgrades	Energy Efficiency / Equipment Upgrades	Resilience Improvements	Low Carbon & Renewable Energy Generation
Typical Payback	0 - 18 months	6 - 24 months	2 – 8 years	2 – 8 years
Energy Saving %	Up to 6%	6% - 20%	10% - 25%	15% - 35%
	<ul style="list-style-type: none"> ✓ Set-point changes ✓ Metering ✓ New controls ✓ AI based control 	<ul style="list-style-type: none"> ✓ Smart control ✓ VSDs and energy efficient motors ✓ Upgraded compressors or cooling towers ✓ Voltage optimisation or Power Factor correction ✓ Door seals ✓ LED lighting 	<ul style="list-style-type: none"> ✓ Batteries ✓ Upgrade electrical infrastructure 	<ul style="list-style-type: none"> ✓ Solar PV ✓ CHP ✓ Fuel Cells

Pros and Cons of Funding Options

TRADITIONAL FUNDING

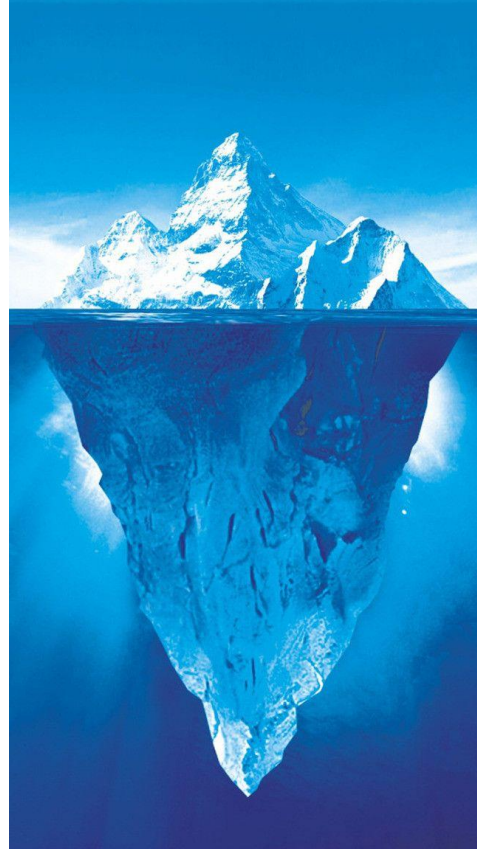
(Use cash in the business, Loan, HP or Lease)

PROS

- ✓ Full P&L benefit
- ✓ Full CO₂ reduction benefit
- ✓ Cheaper interest rates
- ✓ Can be linked to wider company facilities
- ✓ Ownership (but lender may take security)
- ✓ Claim Capital allowances (?)

CONS

- ✗ Linked to wider company facilities (security, personal guarantees etc) and limited in term
- ✗ On balance sheet, so may limit borrowing for other purposes. Could impact credit-standing
- ✗ Distraction to core business activity, and may involve considerable resources to deliver it
- ✗ Unfamiliar technology. Fear of unknown.
- ✗ Specification, Construction and Performance risk of the measures are on the business
- ✗ No savings or income if the asset stops working. Who takes responsibility for poor performance ?
- ✗ Banks have less understanding of these assets and don't understand or accept "exotic" income streams (e.g. capacity market, FFR)



OFF-BALANCE SHEET

PROS

- ✓ Focus on your business not on running an energy plant
- ✓ Involves less project management resource
- ✓ Off-balance sheet, so all you see is agreed lower P&L costs
- ✓ Full CO₂ reduction benefit
- ✓ Leaves cash in the company for customer facing investment
- ✓ Improved credit standing (as more profitable)
- ✓ Provider keeps specification, construction and performance risk, including maintenance and insurance
- ✓ Service levels provided
- ✓ Provider is usually a specialist who can manage the asset and commodities

CONS

- ✗ Commits the business for longer periods than loans (typically 10+ years, solar PPA can be up to 25 years)
- ✗ Term may not match with unexpired lease term, or could impede re-development plans if not flexible
- ✗ Initial documentation / legal process
- ✗ Watch out for "take and pay" and "hell and high water" clauses, or hidden costs

How does funding qualify as off-balance sheet ?

Relies on not falling within the definition of a Lease (IFRS 16)

.....an agreement IS A LEASE (and so is ON balance sheet) if:

- Customer has right to control use of the asset
 - Determines when off/on
 - Customer carries all / most of the economic risks and benefits

AND

- Its an identified asset

Generally, there are also fixed payments in the agreement, which are not linked to performance

Example of the benefits of an Energy Supply Agreement

OEP provides transparent, data-backed alternatives to the customer

EXAMPLE CUSTOMER PROPOSAL

		CAPEX		ZERO-CAPEX	
Current Energy Cost	13.3 p/kWh*	£	873,949	£	873,949

REVISSED COST WITH CHP	kWh			CHP Elec p/kWh
CHP electricity generated	5,049,792		£	580,726
Electricity offset with waste heat	141,543			
Residual grid electricity	727,116	£	96,706	£
Gas saved with waste heat	2,659,286			
Residual gas	1,908,864	£	36,268	£
Gas for CHP	13,196,154	£	250,727	
CHP Maintenance		£	90,789	
CHP Admin & permitting		£	15,000	
Revised Energy Cost		£	489,491	£
		£	713,701	

SAVING TO CURRENT COST		£	384,458	£	160,248
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Capex Required	£	1,441,797
Payback (Years)		3.8

44% saving but payback may be unaffordable to the customer

CHP Elec p/kWh
11.50

* - Typically "non-energy" costs represent 40%-55% of energy bills, and are avoidable by onsite generation

Customer can benefit from 18% saving without capex
Customer savings over 10 years = £2.95m

plus benefits after the end of the ESA term ?



Onsite Energy projects

David Kipling
Chief Executive Officer

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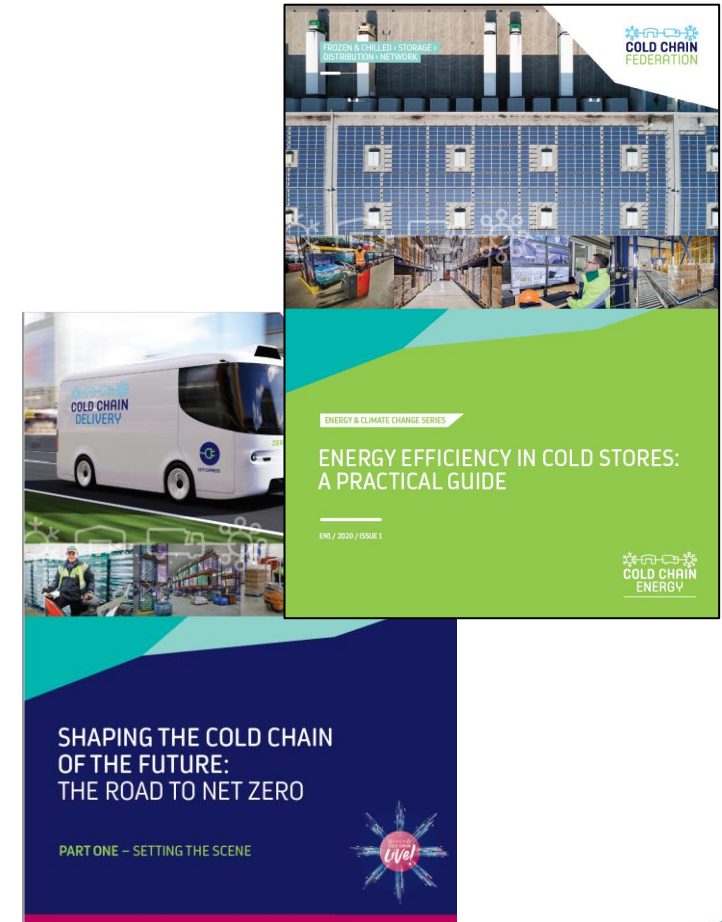
CLOSING THOUGHTS

CCF NET ZERO PROJECT

Our commitment to support our industry through the transition to Net Zero

- PUBLICATIONS: Defining, vehicles, buildings, cold chain ecosystem
- INSIGHT & RESEARCH:
 - keeping our members up to date with the latest in climate change strategy and policy.
 - Supporting research into sustainable cold chains
- EVENTS
- ADVISING THE GOVERNMENT: THE VOICE OF THE COLD CHAIN

<https://www.coldchainfederation.org.uk/cold-chain-net-zero-project/>



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**COLD CHAIN
INSIGHT**

6-7th JULY

**DELIVERING A SECURE &
SUSTAINABLE FOOD SUPPLY
CHAIN**




**COLD CHAIN
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