



# Scottish Engineering



## Roadmap to net zero

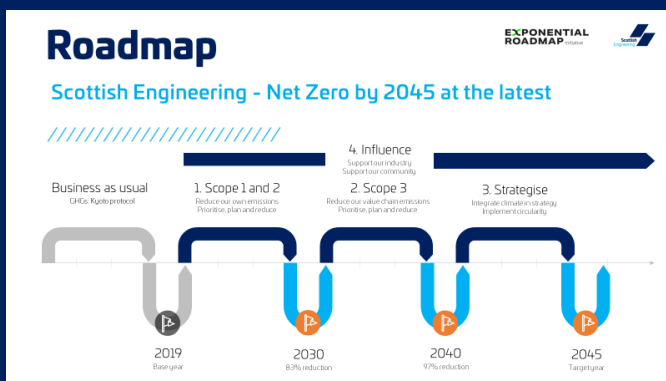
Findings and learnings on our  
journey

# House keeping



- > Please place your microphone on mute and camera off
- > Session will be recorded
- > Recording and slides will be made available on the Scottish Engineering Net Zero micro-site: <https://www.scottishengineering.org.uk/net-zero-skills/>

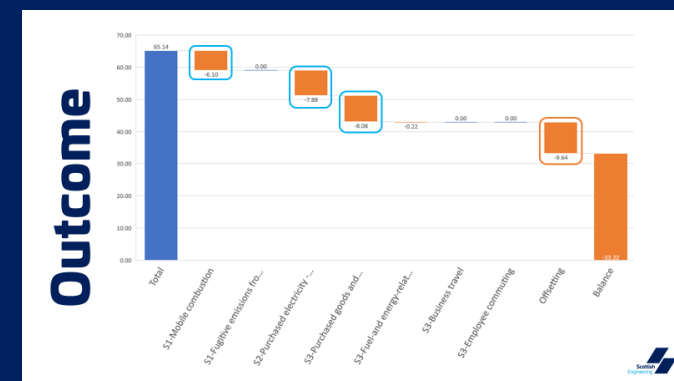
# From Ambition to Solutions



**Ambition**

Lean thinking (5Ws & H)	Tool	Design thinking
Why	Point of View	Define
How	How may we...	Focus
What	Brainstorming (6-3-5)	Ideate
Where	Affinity diagram	Organise
When	Multi-voting	Prioritise

**Ideation**



**Solutions**



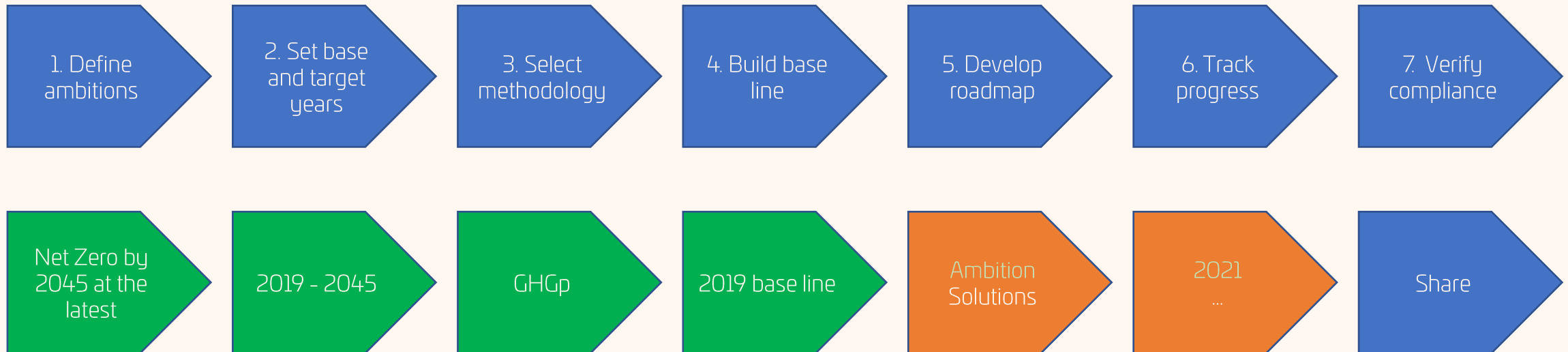
# Context



- Roadmap - Ambition
- Tracker
- Main emission contributors

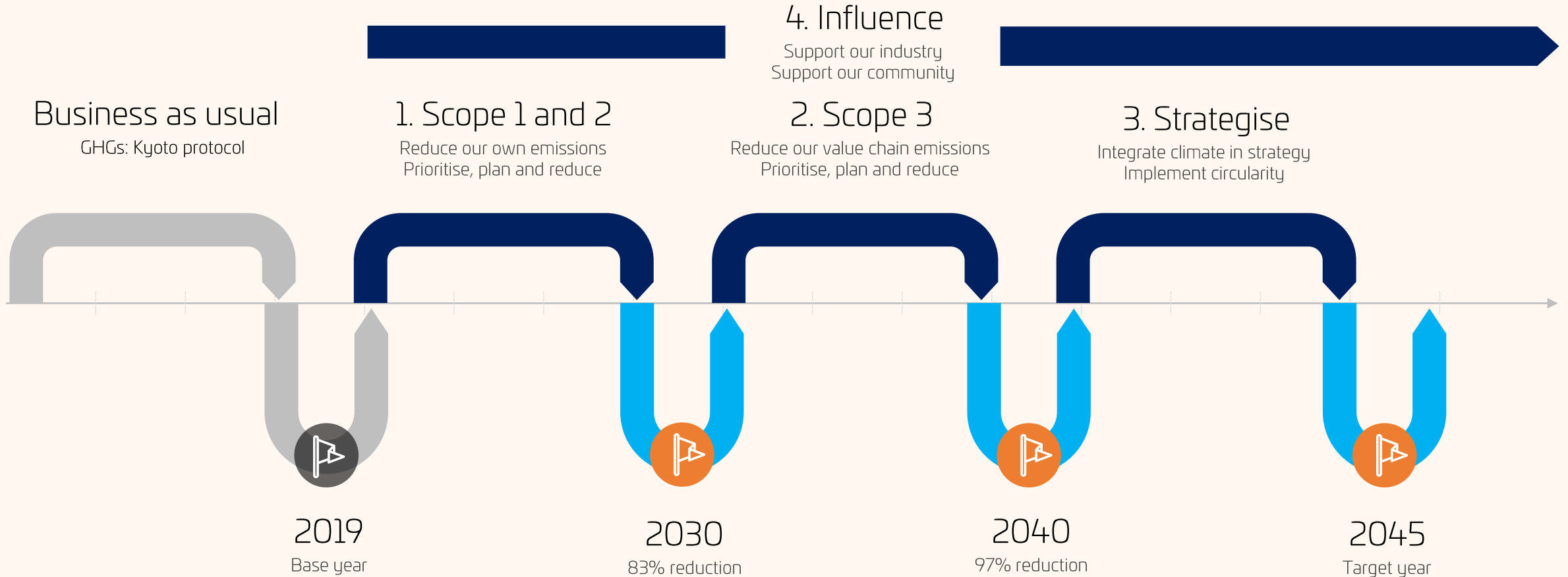
# Roadmap (webinar 10)

## Scottish Engineering - Net Zero by 2045 at the latest

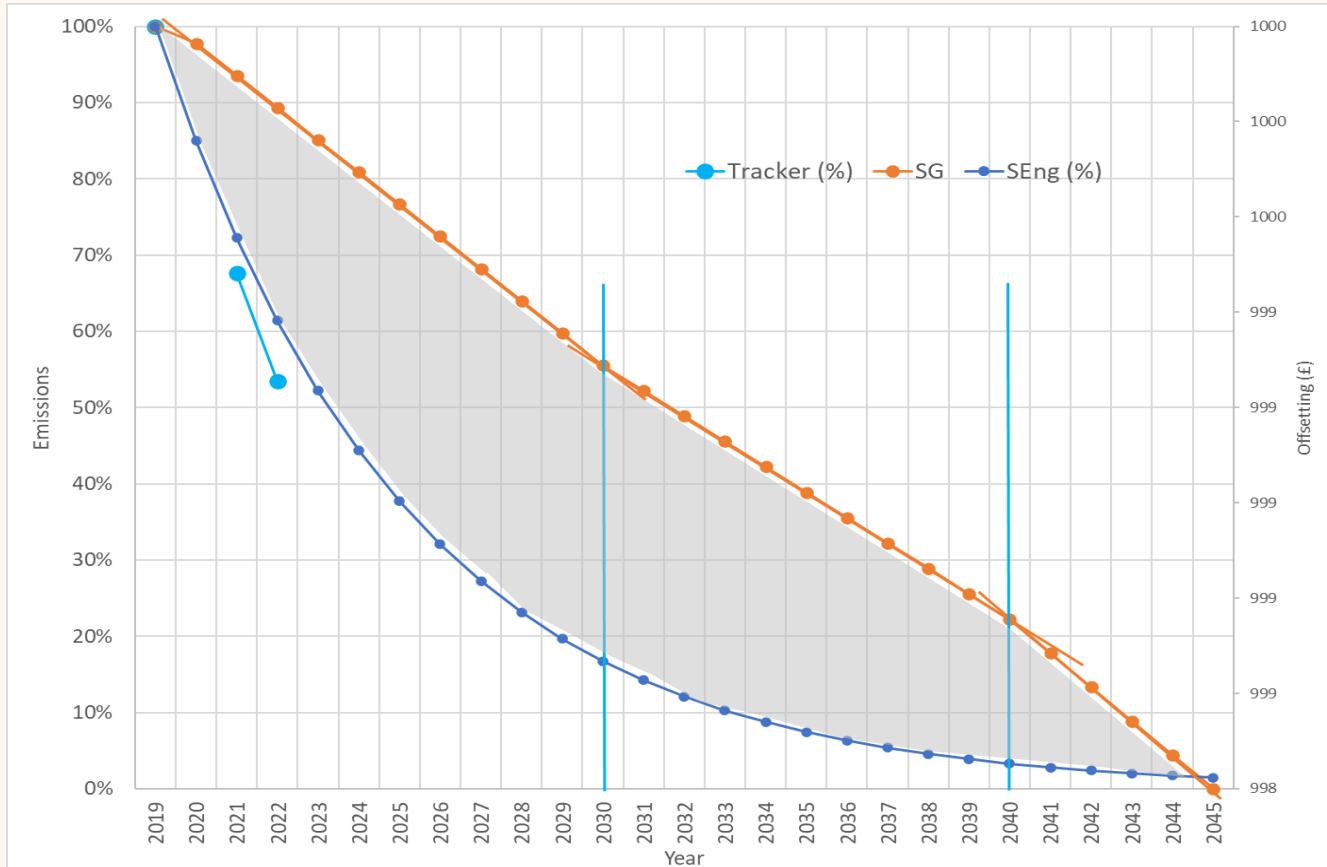


# Roadmap (webinar 10)

## Scottish Engineering - Net Zero by 2045 at the latest



# Tracker



	year	SEng (%)	SEng (tCO2e)	Tracker (%)	Tracker (tCO2e)
0	2019	100%	96	100%	96
1	2020	85%	82		-
2	2021	72%	70	68%	65
3	2022	61%	59	53%	52
4	2023	52%	50		
5	2024	44%	43		
6	2025	38%	36		
7	2026	32%	31		
8	2027	27%	26		
9	2028	23%	22		
10	2029	20%	19		
11	2030	17%	16		
12	2031	14%	14		
13	2032	12%	12		
14	2033	10%	10		
15	2034	9%	8		
16	2035	7%	7		
17	2036	6%	6		
18	2037	5%	5		
19	2038	5%	4		
20	2039	4%	4		
21	2040	3%	3		
22	2041	3%	3		
23	2042	2%	2		
24	2043	2%	2		
25	2044	2%	2		
26	2045	1%	1		

# GHG Emissions (tCO<sub>2</sub>e)

## 2019 to 2022 YTD

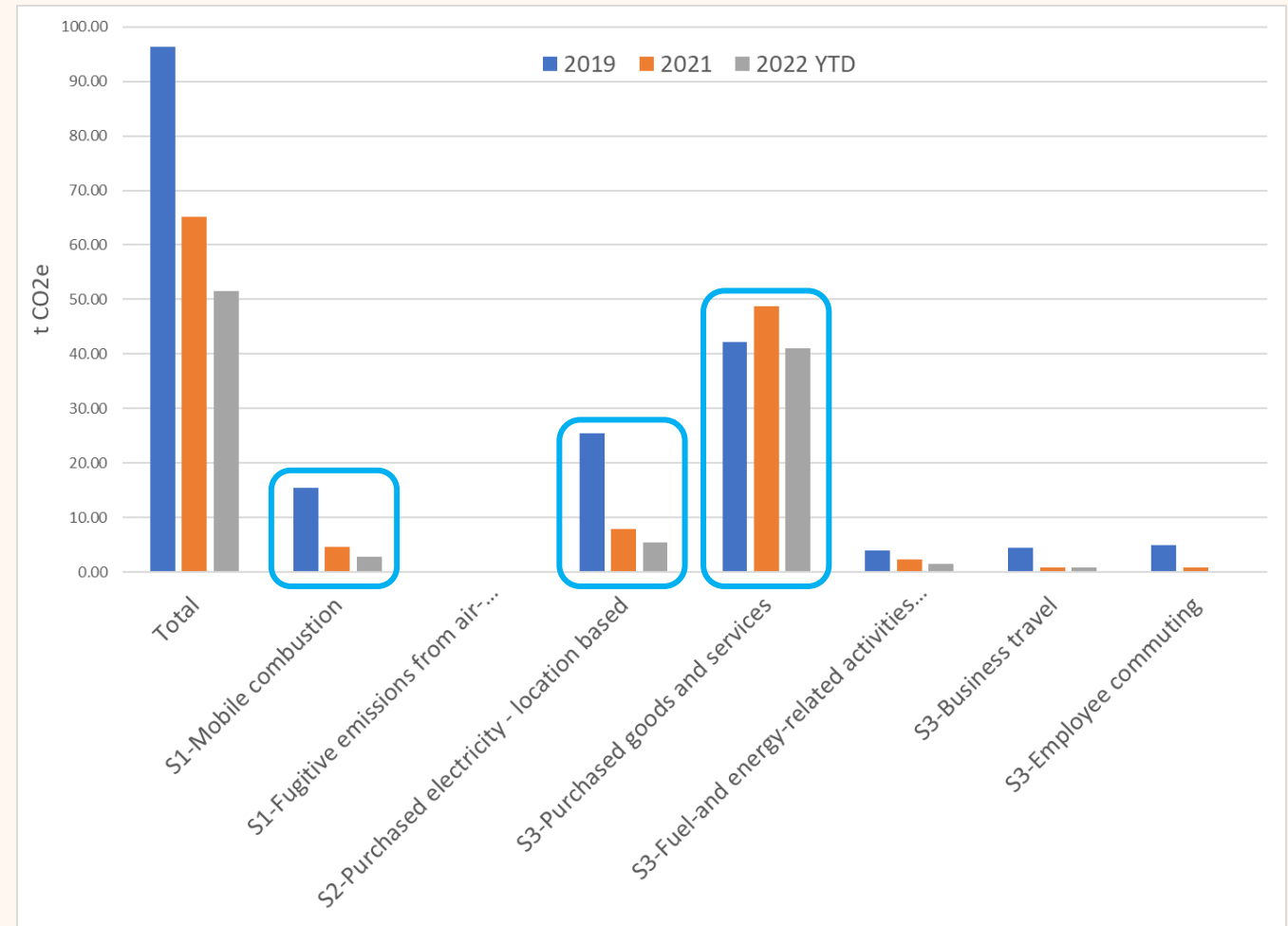


Emissions:

- 2019 – 96 tCO<sub>2</sub>e
- 2021 – 65 tCO<sub>2</sub>e
- 2022 H1 – 52 tCO<sub>2</sub>e

Main contributors:

- > Scope 1: Mobile combustion
- > Scope 2: Purchased electricity
- > Scope 3: Purchased goods and service

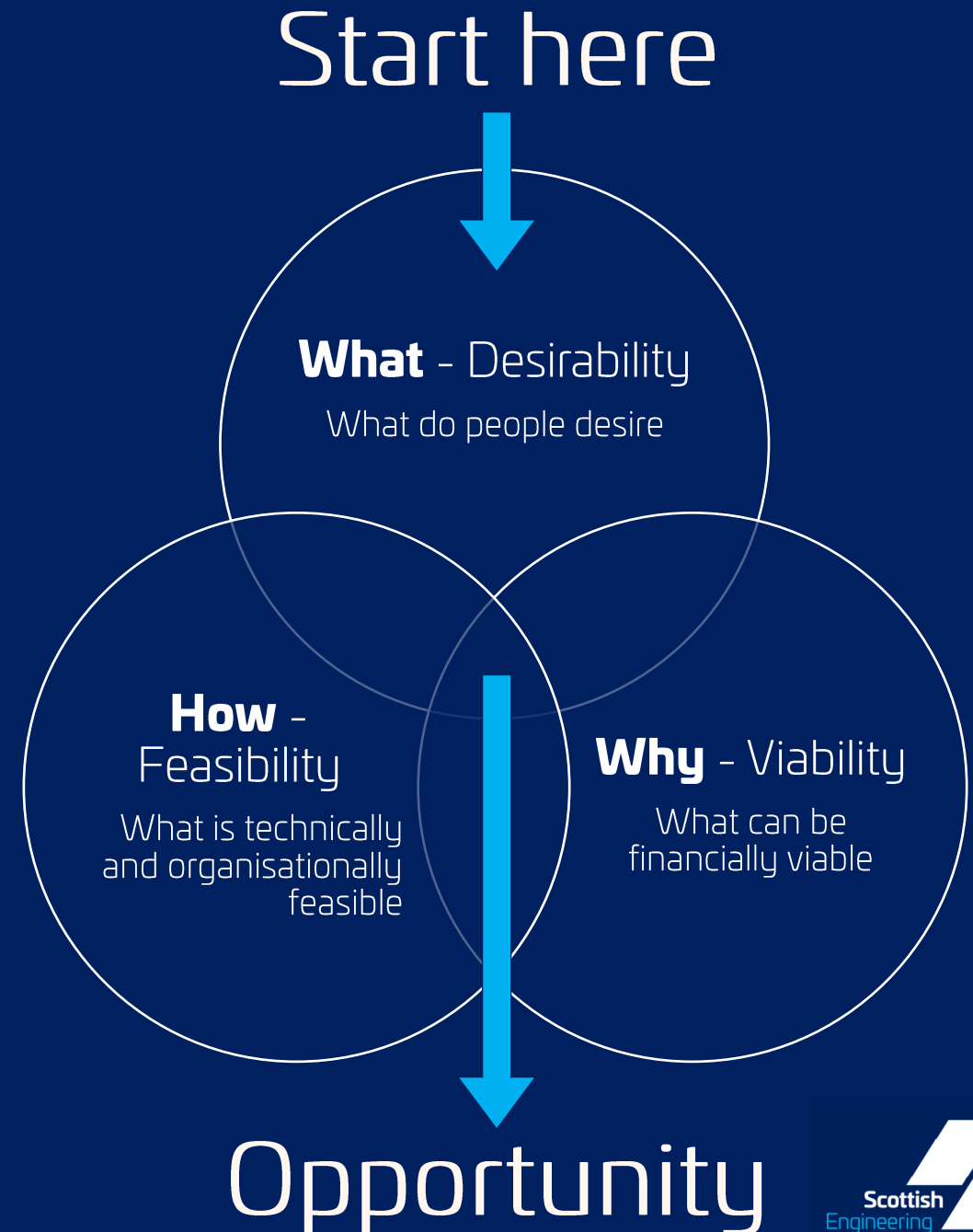




# Define Point of view



- **User-centered:** should be about the people the team is trying to help, rather than focusing on technology, monetary returns or product specifications.
- **Broad enough for creative freedom:** should not focus too narrowly on a specific method regarding the implementation of the solution.
- **Narrow enough to make it manageable:** should have sufficient constraints to make the project actionable.



# Point of View

## Objectives



- It defines the **users**, their **need** and **why** the need is important to these users.
- It should allow to ideate and solve a challenge in a goal-oriented manner, keeping a **focus** on the users, their needs and the insights about them.
- It should **not lead towards a specific solution**; nor should it contain any indication about how to fulfill the users' needs in the service, experience or product planned to be offered.

# Point of View

## Net Zero by 2045 at the latest



User	Need	Insight
Scottish Engineering	<ul style="list-style-type: none"><li>• To reach Net Zero by 2045 at the latest</li><li>• To deliver added value to our members</li></ul>	<ul style="list-style-type: none"><li>• The growth of the better business, <b>eco-consciousness</b> trend</li><li>• The ambition of the <b>Scottish</b> Gvnt to reach Net Zero by 2045.</li><li>• The opportunity to lead by example as the captain of the <b>Engineering</b> sector.</li><li>• Our unique network and our <b>unique</b> position in this network.</li><li>• The <b>confusion</b> of our members on Net Zero (what and how).</li></ul>

**Scottish Engineering** needs to leverage its **unique position** and **lead** by example by reaching **Net Zero by 2045** at the latest, delivering **added value** to our members because of the growth of **eco-consciousness** and the **confusion** on Net Zero.

# Focus

## How may we...



- ...break up the larger challenge of the PoV into smaller actionable pieces
- ...broad enough for a wide range of solutions, but narrow enough that specific solutions can be generated.

# How may we...

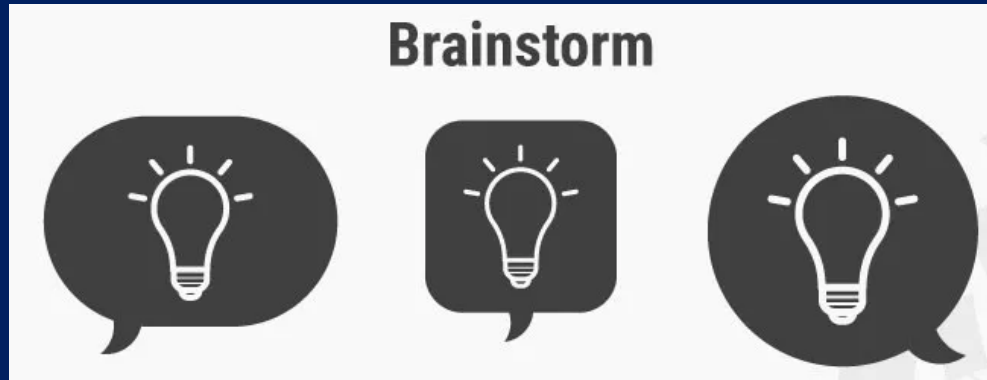
Best way to open up an ideation session where ideas to solve a specific challenge can be explored in an innovative and user-centered way.



- “**How**” suggests that we do not yet have the answer.
- “**Might**” emphasises that the responses are possible solutions, not the only solution.
- “**We**” immediately brings in the element of collaboration.

⇒ **How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers**

# Ideate Brainstorming



- Ideas, not solutions
- Quantity, not quality
- Convergence, not divergence



## Defer Judgment

Creative spaces are judgment-free zones—they let ideas flow so people can build from each other's great ideas.



## Encourage Wild Ideas

Embrace the most out-of-the-box notions. There's often not a whole lot of difference between outrageous and brilliant.



## Build on the Ideas of Others

Try to use "and" instead of "but," it encourages positivity and inclusivity and leads to tons of ideas.



## Stay Focused on the Topic

Try to keep the discussion on target. Divergence is good, but you still need to keep your eyes on the prize.



## One Conversation at a Time

This can be difficult—especially with lots of creative people in a single room—but always think about the challenge topic and how to stay on track.



## Be Visual

Use colored markers and Post-its. Stick your ideas on the wall so others can visualize them.

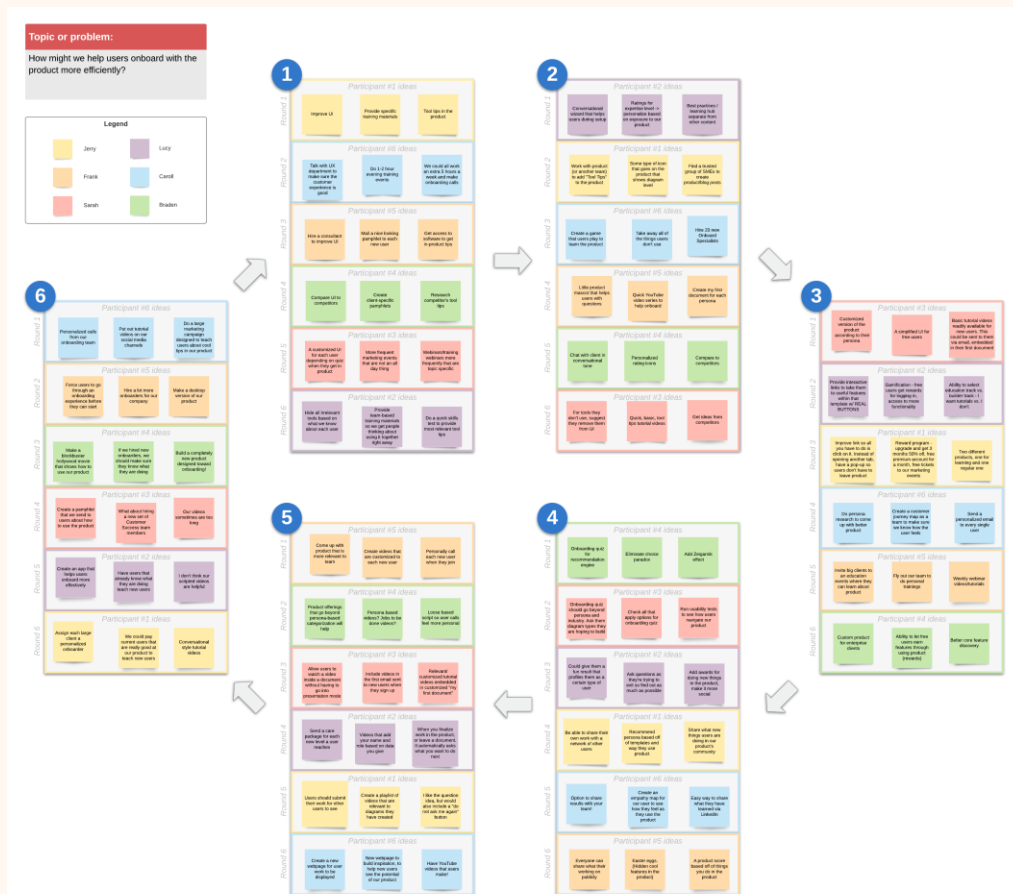


## Go for Quantity

Crank your ideas out quickly. For any 60-minute session, you should try to generate 100 ideas.

# 6-3-5

## How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers



### Do's

- 6 sheets x 3 ideas x 5 minutes x 6 rounds = 108 ideas in 30mins
- Carefully and accurately define the problem: POV
- Focus: HMW.. questions

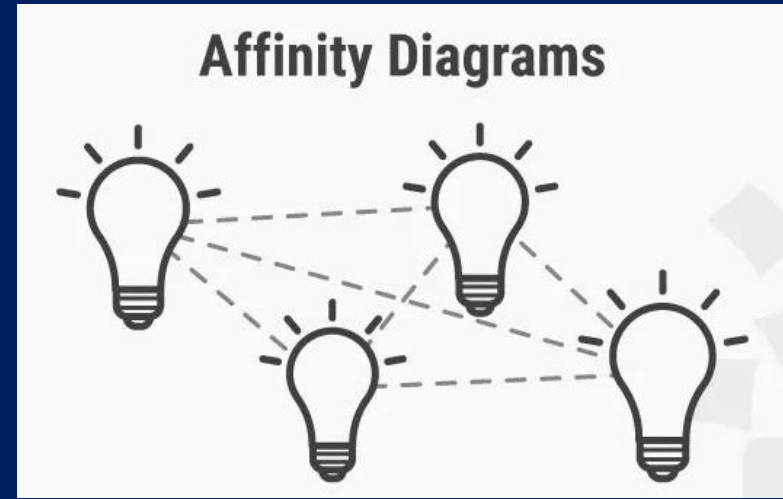
### Dont's

- Repeat ideas that you have already added
- Repeat ideas are already on the sheet

### Tips and Tricks

- Use POV and HMW already shared
- 6 people who are qualified to address the problem, have knowledge of the issue and have experience in this area.
- 6 colours of post-it
- Number the rounds

# Organise Clusterisation

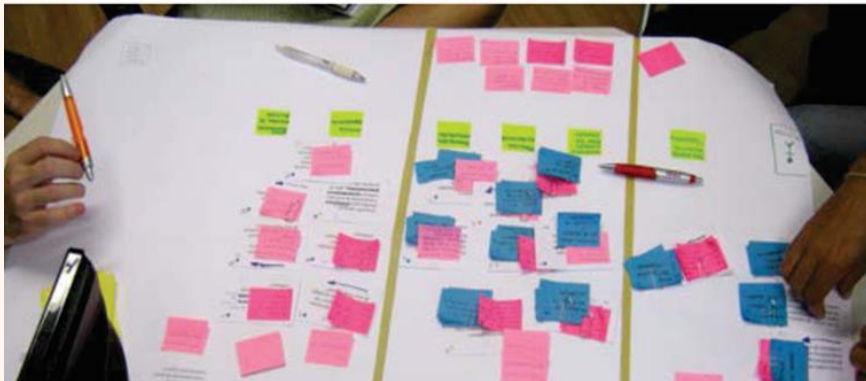


- ...making sense of a large volume of mixed information and data, i.e. ideas



# Affinity diagram

## How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers



### Do's

- Allow people to silently group the ideas
- Once clustering is completed, name it

### Dont's

- Don't rely on the opinion of another when you are moving cards, do it at your own will, without talking.

### Tips and Tricks

- If you cannot agree of where an idea belong, duplicate it and put in both clusters

# Prioritise Multi-voting



- Ideas are evaluated, compared, ranked and even ditched in an attempt to pull together a few great ideas to act on.
- The aim is spotting potential winners, or combinations of winning attributes, from a number of ideas.

# Multi-voting

## How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers



### Do's

- Rule of thumb: votes equal to 1/3 of the total number of items
- Optional: rank ordering of selected cluster

### Dont's

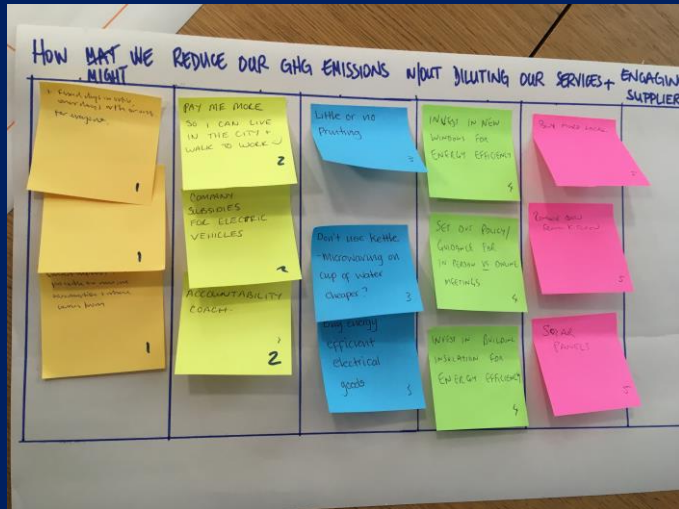
- The group is not to discuss the merits of any idea, just clarify and make sure everyone understands the meaning of each option

### Tips and Tricks

- Easiest method: marker vs Confidential method: slip of paper
- Stickers: one colour each
- Free to place all your votes on one item or split your votes across all the items
- Get the buy-in
- Voting on cluster then voting on ideas within cluster
- Hang onto unused ideas, they may prove useful in future ideation sessions

# Outcome

## How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers



### Scope 1

#### Direct GHG emissions



#### Scottish Engineering

- > Company vehicles should be electric vehicles
- > Review way of working: WFH, hybrid, online, remote,...
- > Review way of commuting: active, public, sharing, avoid

Cluster	Vote	Idea
Vehicles	5	Make all fleet of cars electric in office
Vehicles	5	Company subsidies for electric vehicles
Vehicles	5	Electric vehicles incentive
Vehicles	5	All company cars electric
Vehicles	5	Electric cars
Way of working	1	Set out policy guidance for in person vs online meetings
Way of working	1	Hybrid working, less commuting
Commute	0	Invest in online events to create amazing experience without commuting
Commute	0	Incentivise use of public transport where possible
Commute	0	Buy a couple of cars and use them to pool instead of having numerous cars
Commute	0	Have set days/weeks when all employees have to use public transport/walk
Commute	0	Cycle to work scheme or similar
Commute	0	Use public transport as first option as mode of transport
Commute	0	Electric bike incentive for employee commuting
Commute	0	Car pooling to and from member visits
Commute	0	Incentivise least impacting commuter planning
Commute	0	Hybrid working, less commuting
Commute	0	Promote cycle to work scheme
Commute	0	More public transport to members
Shame	0	Team buy own cars then classed in Scope 3, not Scope 1

# Roadmap

Net Zero by 2045 at the latest

## How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers



### Ambition

#### 1. Scope 1 and 2

Reduce our own emissions  
Prioritise, plan and reduce

#### 2. Scope 3

Reduce our value chain emissions  
Prioritise, plan and reduce

2019  
Base year

- > Review company car policy: type, size, fuel, lease,...
- > Review electricity supply agreement
- > Review ways of working: hybrid, teleworking/wfh, 4-day week,...



2030  
83% reduction

- > Primary data from goods and services suppliers
- > Behavioural change towards emissions, energy use and consumption

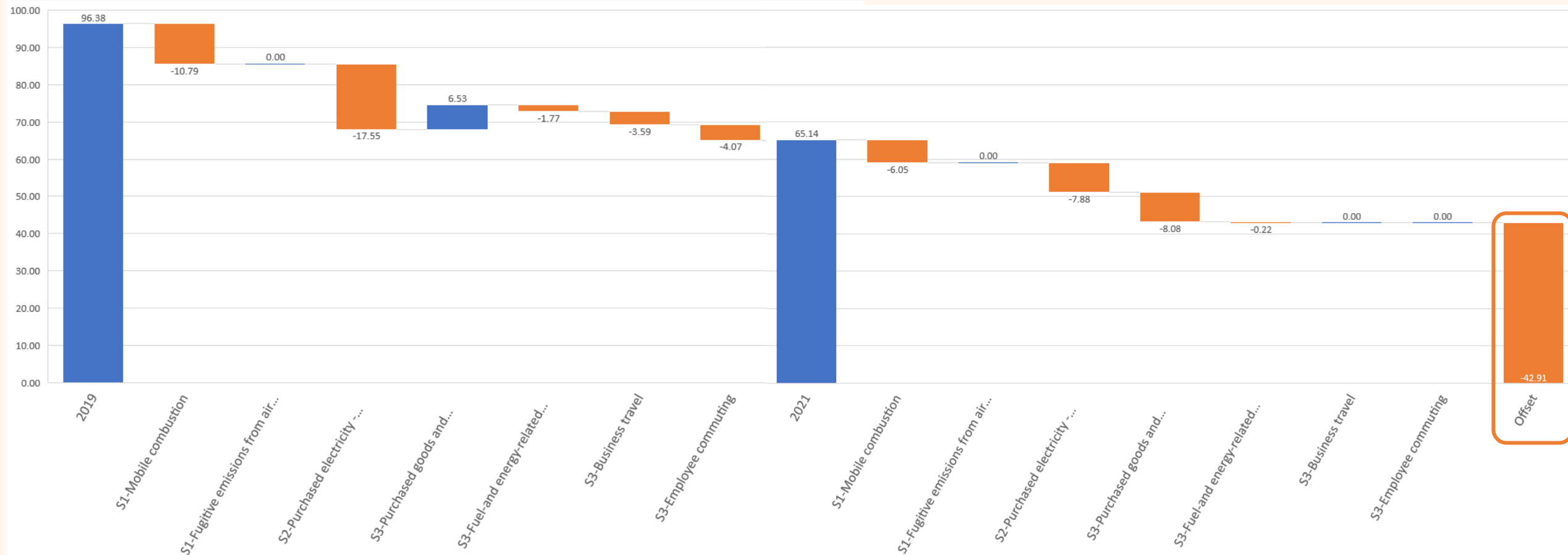


2040  
97% reduction

### Solutions

# Outcome

## How might we reduce our GHG emissions without diluting our offerings whilst engaging our suppliers
















# Net-Zero Support Programme



## Webinars



 Progressing your Net Zero Journey	 Building a SMART Roadmap to Net Zero	 2021 Programme Recap Webinar
 Understanding Net Zero Standards Webinar	 Session 6 – Land Use, Land Use Change & Forestry (LULUCF) and Agriculture	 Session 5 – Building, Transport and Industry
 Session 4 – Electricity and Negative Emission Technologies (NETs)	 Session 3 – Waste and the Circular Economy	 Session 2 – The Path to Net-Zero 2
 Session 1 – The Path to Net-Zero	<p>&gt; <a href="https://www.scottishengineering.org.uk/net-zero-skills/path-to-net-zero-webinars/">https://www.scottishengineering.org.uk/net-zero-skills/path-to-net-zero-webinars/</a></p>	

## One-to-One

- > Please make a note of interest to:
  - > [scoteng.org.uk](https://www.scoteng.org.uk)
  - > 0141 221 3181

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# Thank you



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