



# Route map to net zero by 2045

Securing a Green Recovery  
on a Path to Net Zero

# Skills for a green Recovery

What does **Net Zero** mean?



## Part 1 - **Why** now?

- > Who cares



## Part 2- **What** now?

- > Opportunities in each of the 8 key sectors identified



## Part 3 - **How** now?

- > What, Why, Who, When, Where, How, How much

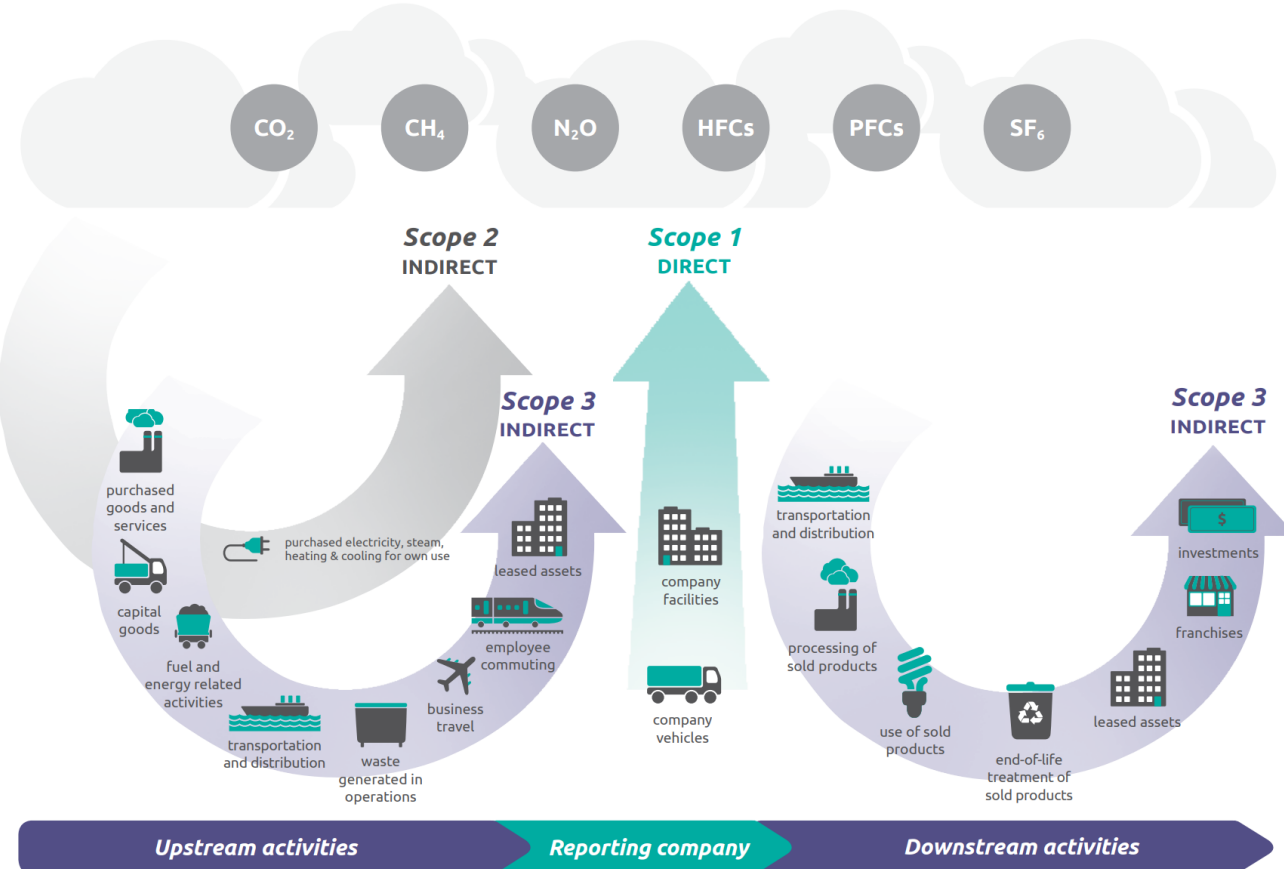


## Part 4 - **Resources**

- > Policy, references, publications

# Skills for a Green Recovery

What does **Net Zero** mean?



## Upstream or downstream

### Upstream scope 3 emissions

### Downstream scope 3 emissions

## Scope 3 category

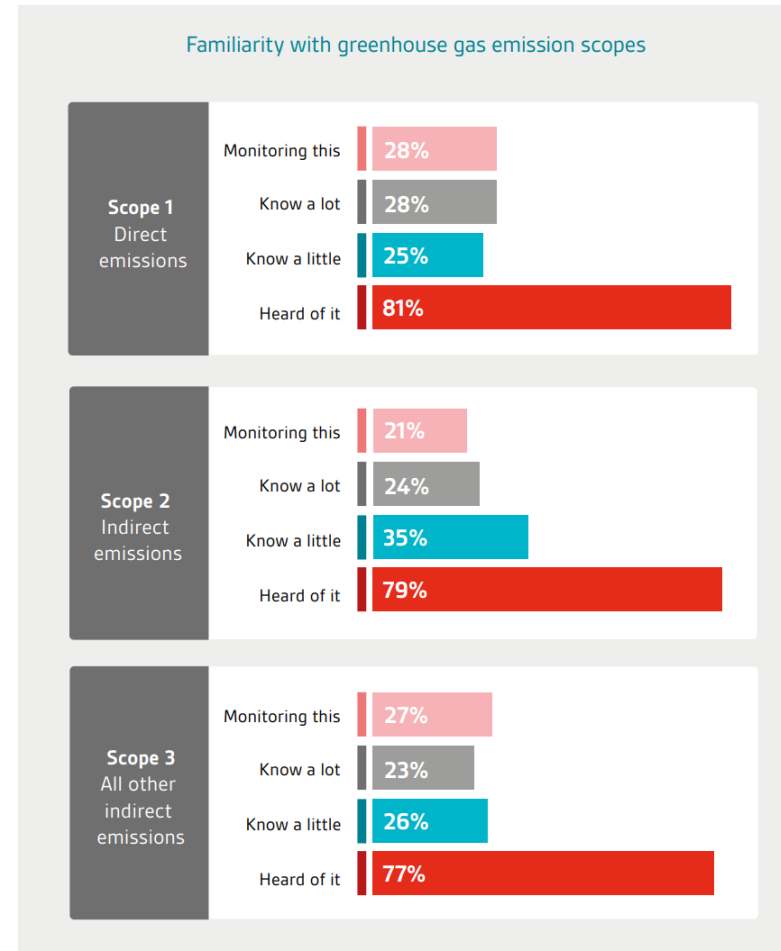
1. Purchased goods and services
2. Capital goods
3. Fuel- and energy-related activities (not included in scope 1 or scope 2)
4. Upstream transportation and distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Upstream leased assets
9. Downstream transportation and distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Downstream leased assets
14. Franchises
15. Investments

# Skills for a Green Recovery

## Part 1 - **Why** now?



- > Your customers care
- > Your employees care
- > Your competitors care
- > You care
- > The World cares
- > Europe cares
- > The UK cares
- > Scotland cares



### Type of risk

Regulatory

Supply chain costs and reliability

Product and technology

Litigation

Reputation

### Type of opportunity

Efficiency and cost savings

Drive innovation

Increase sales and customer loyalty

Improve stakeholder relations

Company differentiation



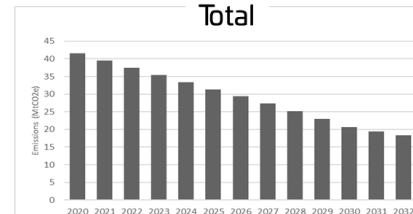
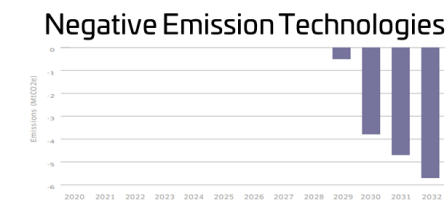
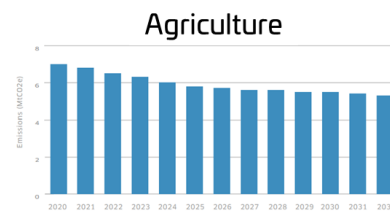
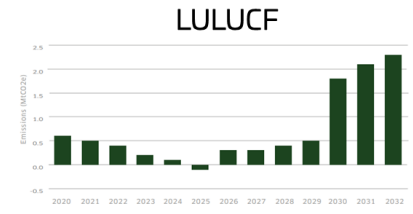
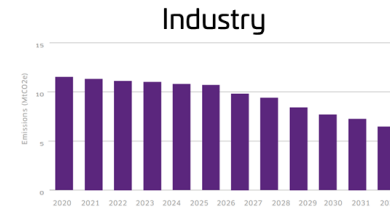
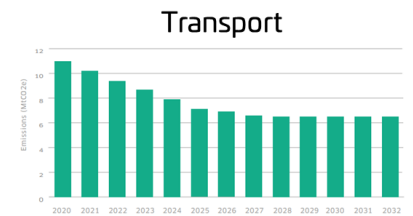
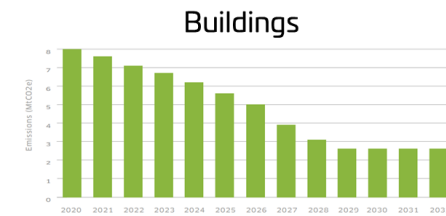
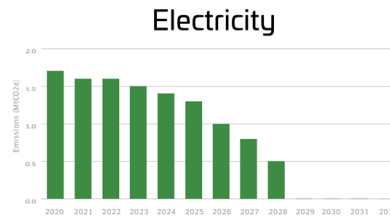
# Skills for a Green Recovery

## Part 2- **What** now?



Opportunities: governmental ambitions and actions

- > Electricity
- > Buildings
- > Transport
- > Industry
- > Waste and Circular Economy
- > Land use and Forestry
- > Agriculture
- > Negative emissions technologies (NET)



# Agenda – Part 3 & 4

## Break



### Part 3 – **How** now?

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
- > When – Skills needed
- > How – On-the job / Social / Formal (OSF)
- > Where – Academia, In-house
- > How much - Funding



### Part 4 – **Resources**

- > Policy
- > Websites
- > Publications
- > Acronyms



Start here

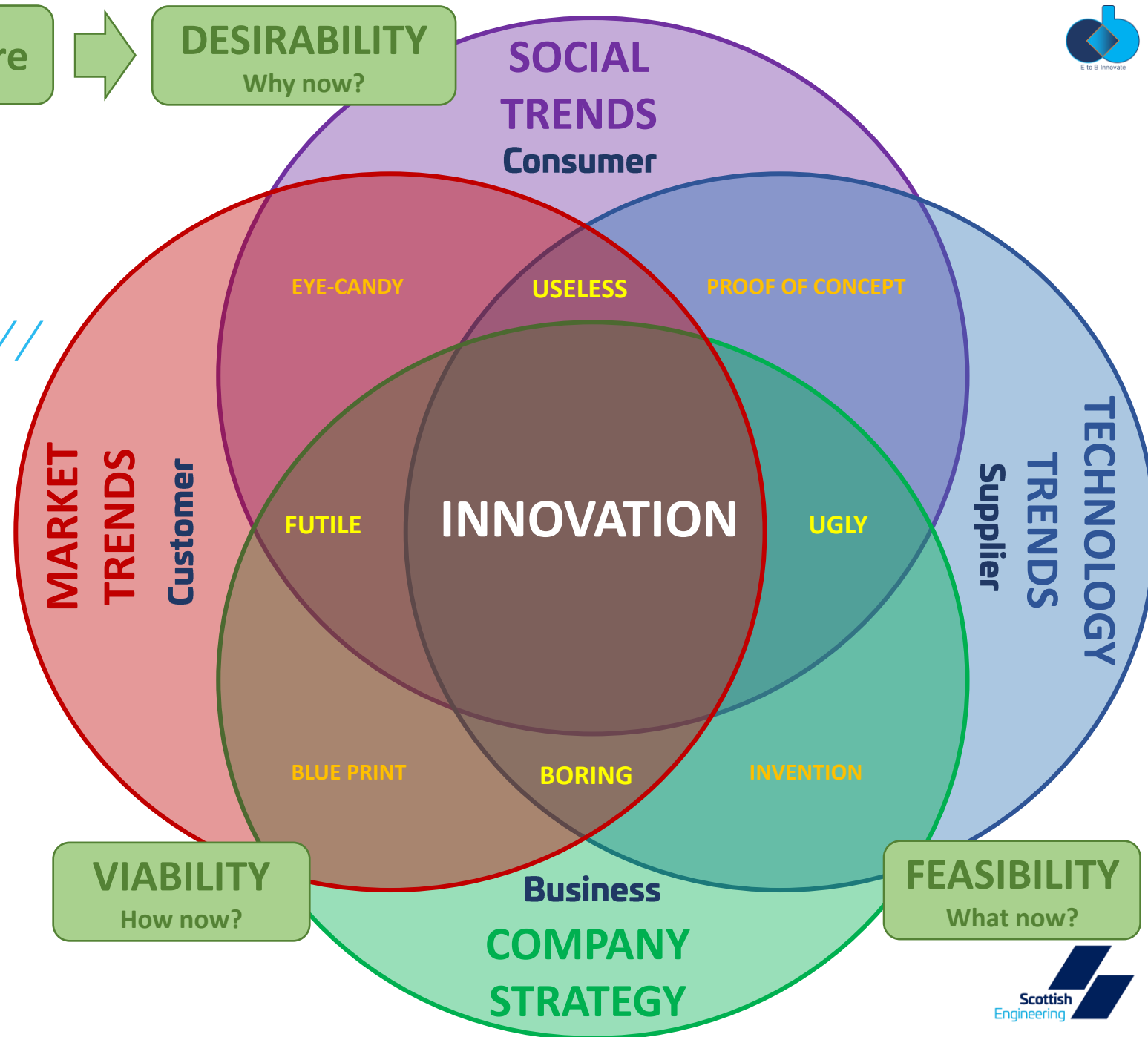


**DESIRABILITY**  
Why now?

# Innovation



## Does your business have the skills?



# Part 3

## How now?



### Skills

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
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# Part 3

## How now?



### **What** – Skills action plan

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
- > When – Skills needed
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# Route to 2045

## Scottish Government policy commitments

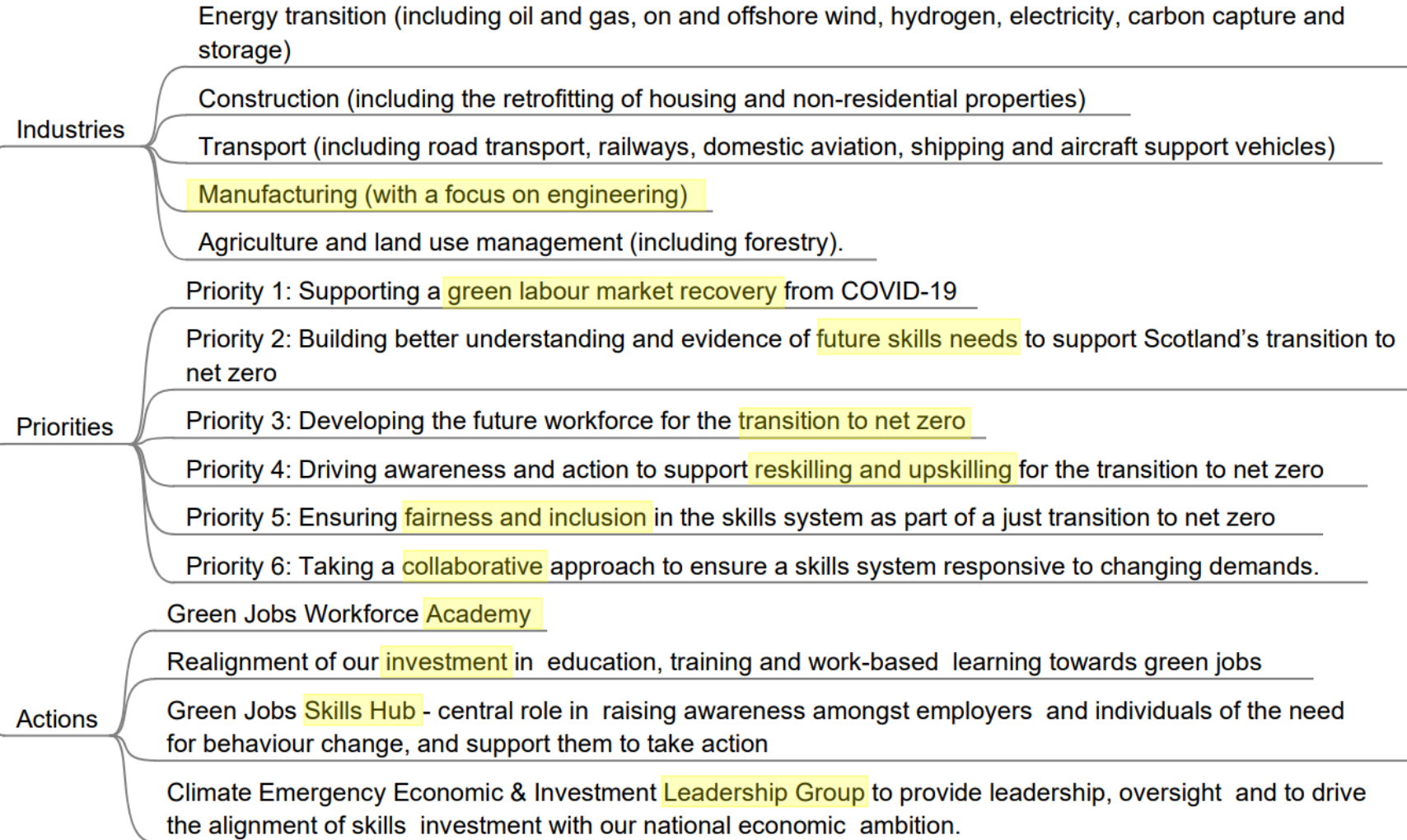
- 2020** ▶ £500 million investment in **active travel** projects over five years, £500 million to improve bus priority infrastructure and £9 million Scottish low emission **bus** fund.
  - ▶ £62 million **Energy Transition** Fund and £34 million Scottish Industrial Energy Transformation Fund (SIETF) launched.
  - ▶ £1.6 billion **Heat in Buildings** fund announced, to be invested over the next Parliament.
- 2021** ▶ Legislation to restrict supply of specified single-use **plastic** items comes into force.
  - ▶ £70m fund to improve local authority **recycling** collection infrastructure established.
  - ▶ Energy Strategy Update published.
  - ▶ **Hydrogen** Action Plan published.
  - ▶ **Low Carbon Manufacturing** Challenge Fund launched.
- 2022** ▶ Updated Electricity Generation Policy Statement (or “Clean Power Plan”) reviewed and published.
  - ▶ **Carbon Capture and Utilisation** Challenge Fund initiated, concluding in 2024.
  - ▶ Implementation of **Deposit Return Scheme (DRS)** for single-use drinks containers.
- 2023** ▶ Regional **Land Use** Frameworks developed.
  - ▶ **Bioenergy** Action Plan published.
  - ▶ Local Heat and Energy Efficiency Strategies launched across all local authorities.

- 2024** ▶ 18,000 hectares of new **woodlands** created annually.
  - ▶ New Build Zero Emissions from Heat Standard.
- 2025** ▶ **Food waste** reduced by 33% from 2013 baseline and 70% of all waste recycled. Landfilling of biodegradable municipal waste has ended.
- 2030** ▶ **75% GHG emissions reduction target.**
  - ▶ Need for new petrol and diesel cars and vans phased out and **car mileage** reduced by 20%.
  - ▶ All **renewable** energy in Scotland accounts for the equivalent of 50% of our energy demand across electricity, heat and transport.
  - ▶ At least 250,000 hectares of **peatland** restored.
  - ▶ At least 50% of Scotland’s building stock is heated using zero emission systems.
- 2035** ▶ Scotland’s passenger **rail services** fully decarbonised.
- 2040** ▶ **90% GHG emissions reduction target.**
  - ▶ Eliminate emissions from heating and remove energy efficiency as a driver of fuel poverty.
  - ▶ World first net-zero **aviation** region.

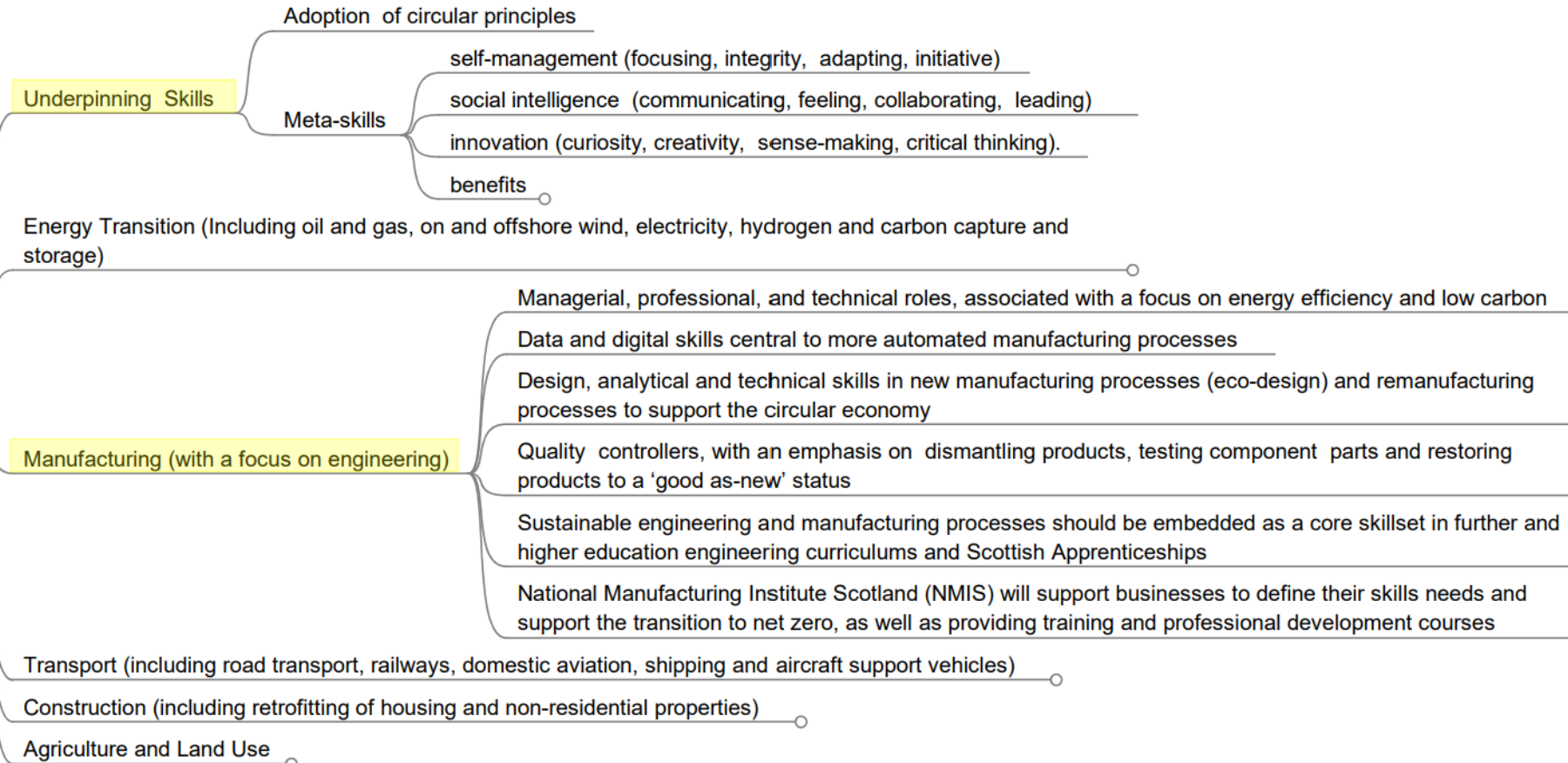


**2045** ▶ **Net-zero emissions in Scotland.**

# SDS priorities and commitments



# Skill requirements identified by SDS





# Part 3

## How now?

### Skills for a green economy

A report on the evidence

#### Why – Skills for a green recovery

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
- > When – Skills needed
- > How – On-the job / Social / Formal (OSF)
- > Where – Academia, In-house
- > How much - Funding

Skills for a green economy	Skills needs
Skills supporting resource <b>efficiency</b>	<ul style="list-style-type: none"> <li>• Strategic business management including preparation for new <b>regulations</b></li> <li>• Business/financial accounting services around carbon and natural <b>environment accounting</b></li> <li>• Skills to design and adopt <b>new technologies</b>, products and processes</li> <li>• Project management skills with clear understanding of <b>resource efficiency</b></li> <li>• <b>Operator</b> level actions to maximise resource efficiency (e.g. reducing waste in production)</li> </ul>
Skills supporting <b>low carbon</b> industry	<ul style="list-style-type: none"> <li>• Scientists and engineers with training or transferable knowledge for nuclear and <b>renewable energy</b> (including wind and marine)</li> <li>• Technicians with training or transferable knowledge to <b>install, retrofit and maintain</b> energy efficiency measures</li> <li>• Skills to design and adopt <b>technologies</b>, products and processes to minimise carbon emissions</li> <li>• <b>Operator</b> level actions to minimise carbon emissions (e.g. driving in a fuel efficient manner).</li> </ul>



Skills for a green economy	Skills needs
Skills supporting climate resilience	<ul style="list-style-type: none"> <li>• <b>Scientific and technical</b> skills such as modelling and interpreting climate change projections</li> <li>• <b>Risk management</b> such as assessments of future resource availability</li> <li>• Skills to design and adopt <b>technologies</b>, products and processes to improve climate resilience</li> <li>• <b>Operator</b> level actions to improve climate resilience (e.g. retrofitting water efficient technologies in households).</li> </ul>
Skills to manage natural assets	<ul style="list-style-type: none"> <li>• <b>Accounting</b> services for the natural environment</li> <li>• Understanding of environmental <b>impact</b> assessments</li> <li>• Understanding and interpretation of environmental <b>legislation</b> targets and land use planning</li> <li>• Skills to design and adopt <b>technologies</b>, products and processes to manage natural assets.</li> </ul>



# Part 3

## How now?



### Who – Employees

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
- > When – Skills needed
- > How – On-the job / Social / Formal (OSF)
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**65%**

*think technology will improve their job prospects in the future.*

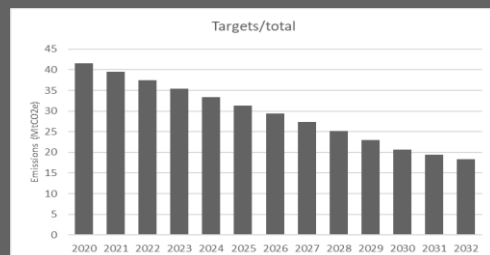
**74%**

*are ready to learn new skills or completely retrain in order to remain employable in the future.*

**74%**

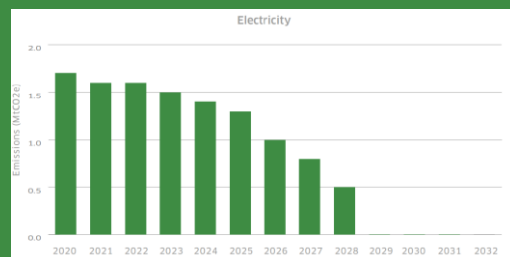
*believe it's their own responsibility to update their skills rather than relying on any employer.*

## Business generic skills needs



- Business management skills such as **lifecycle** analysis/costing; carbon literacy for **procurement**; **impact** assessment and **risk** management;
- **Scientific** and **technical** skills such as modelling, using climate change projections and impacts;
- There is a need for lecturers, trainers and assessors to **teach** in some relevant curriculum areas
- Financial services, with carbon and natural environment **accounting** skills.

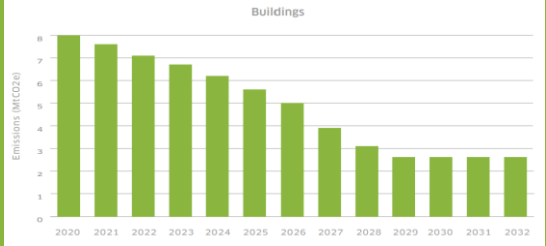
## Energy supply and utilities

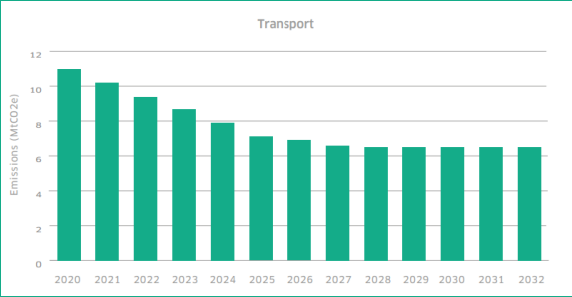


- In **marine energy**, skills include: energy efficiency and use of micro-generation; smart meter installation and insulation; increasing generation capacity; retrofitting and increasing resilience; energy conservation and management.

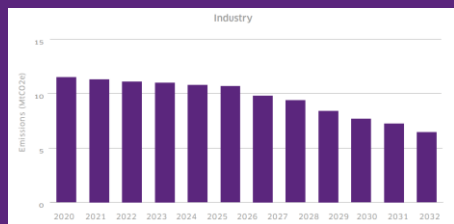
## Renewables

- **Wind energy** needs: postgraduate mechanical, electrical and structural engineers; turbine technicians; geologists; civil and aeronautical engineers; and project managers.
- **Offshore wind**: sub-sea high voltage engineering and for coping with harsh marine environments.

Economic sector	Summary assessment of skills needs																												
<p>Construction</p>  <table border="1"> <caption>Buildings Emissions (MtCO2e)</caption> <thead> <tr> <th>Year</th> <th>Emissions (MtCO2e)</th> </tr> </thead> <tbody> <tr><td>2020</td><td>8.2</td></tr> <tr><td>2021</td><td>7.8</td></tr> <tr><td>2022</td><td>7.4</td></tr> <tr><td>2023</td><td>7.0</td></tr> <tr><td>2024</td><td>6.6</td></tr> <tr><td>2025</td><td>6.2</td></tr> <tr><td>2026</td><td>5.8</td></tr> <tr><td>2027</td><td>5.4</td></tr> <tr><td>2028</td><td>5.0</td></tr> <tr><td>2029</td><td>4.6</td></tr> <tr><td>2030</td><td>4.2</td></tr> <tr><td>2031</td><td>3.8</td></tr> <tr><td>2032</td><td>3.4</td></tr> </tbody> </table>	Year	Emissions (MtCO2e)	2020	8.2	2021	7.8	2022	7.4	2023	7.0	2024	6.6	2025	6.2	2026	5.8	2027	5.4	2028	5.0	2029	4.6	2030	4.2	2031	3.8	2032	3.4	<ul style="list-style-type: none"> <li>• New environmental <b>legislation</b> targets; ecosystem services design and management; designing and managing multi-functional spaces;</li> <li>• Land use planning and development <b>planning</b>; developing and using computer-aided design and GIS; life cycle assessment/costing; carbon and water footprinting.</li> </ul>
Year	Emissions (MtCO2e)																												
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Building services, engineering and property management	<ul style="list-style-type: none"> <li>• <b>Renewables</b> sector - general upskilling in construction.</li> <li>• Specific training for architects and planners on the impact of new materials on <b>sustainability</b>.</li> </ul>																												
Building products, coatings, extractive and mineral processing	<ul style="list-style-type: none"> <li>• Clear <b>incentives</b> to train would be needed, along with public/private investment to develop conversion courses. There was insufficient recognition across the <b>supply chain</b> of the need for low carbon or resource efficiency skills.</li> </ul>																												

Economic sector	Summary assessment of skills needs																												
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2032	6.8																												
<p>Freight logistics industries</p>	<ul style="list-style-type: none"> <li><b>SAFED</b> (safe and efficient driving); alternative fuels development; carbon accounting; data management; efficient equipment design and maintenance; water re-use/recycling; green purchasing; life cycle thinking; and refrigerated storage skills.</li> </ul>																												
<p>Automotive industry (including manufacturing and retail)</p>	<ul style="list-style-type: none"> <li>Ultra-low carbon <b>vehicles</b> (ULCV): to develop and design advanced new materials and components and to maintain new vehicles.</li> <li><b>Management</b> skills to oversee and embed these developments and to improve overall efficiency and sustainability.</li> <li><b>Specialist</b> skill sets : alternative fuels distribution; and hybrid/electric vehicles.</li> </ul>																												

## Chemicals and pharmaceuticals, oil and gas etc



- Retention/renewal of existing **oil and gas skills** – chemical engineering, economics, finance, HR and broad science qualifications – will be necessary.
- Limited development in **biofuels**.

## Food and drink manufacturing and processing

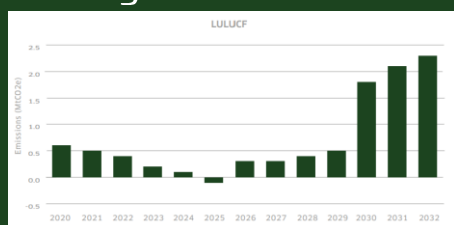
- Need to adopt new **technologies** and processes for sustainability.
- More **food** scientists, food technologists and engineers are needed.

## Waste and water



- In waste, the priority is to **minimise** and manage waste and to prevent pollution.
- Skills are needed throughout the hierarchy of waste **management**.

## Land management



- Business **management**; animal husbandry; crop and livestock nutrition;
- Carbon management; climate change adaptation; conservation; flood management;
- **Agronomy** and soil sciences; plant design, operation and maintenance; crop diversification;
- **Carbon** capture and storage

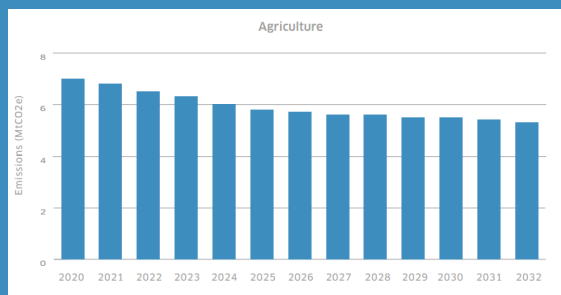


## Economic sector

## Summary assessment of skills needs

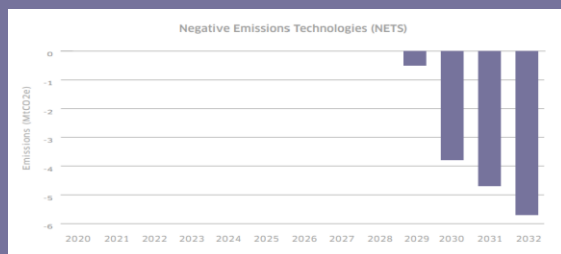


### Biomass/biofuel



- Skills shortages across the whole **supply chain** from production to the installation of systems including biomass feedstock and efficient fuel delivery and storage.;
- Architects and builders; **systems** design; mechanical handling;

### Carbon capture and storage



- Today's **operators** lack the skills to operate power plant with carbon **capture and storage**.
- Build on the chemical process training and qualifications.

### Anaerobic digestion

- **Anaerobic digestion** is a relatively new area and there are therefore likely to be skills gaps.

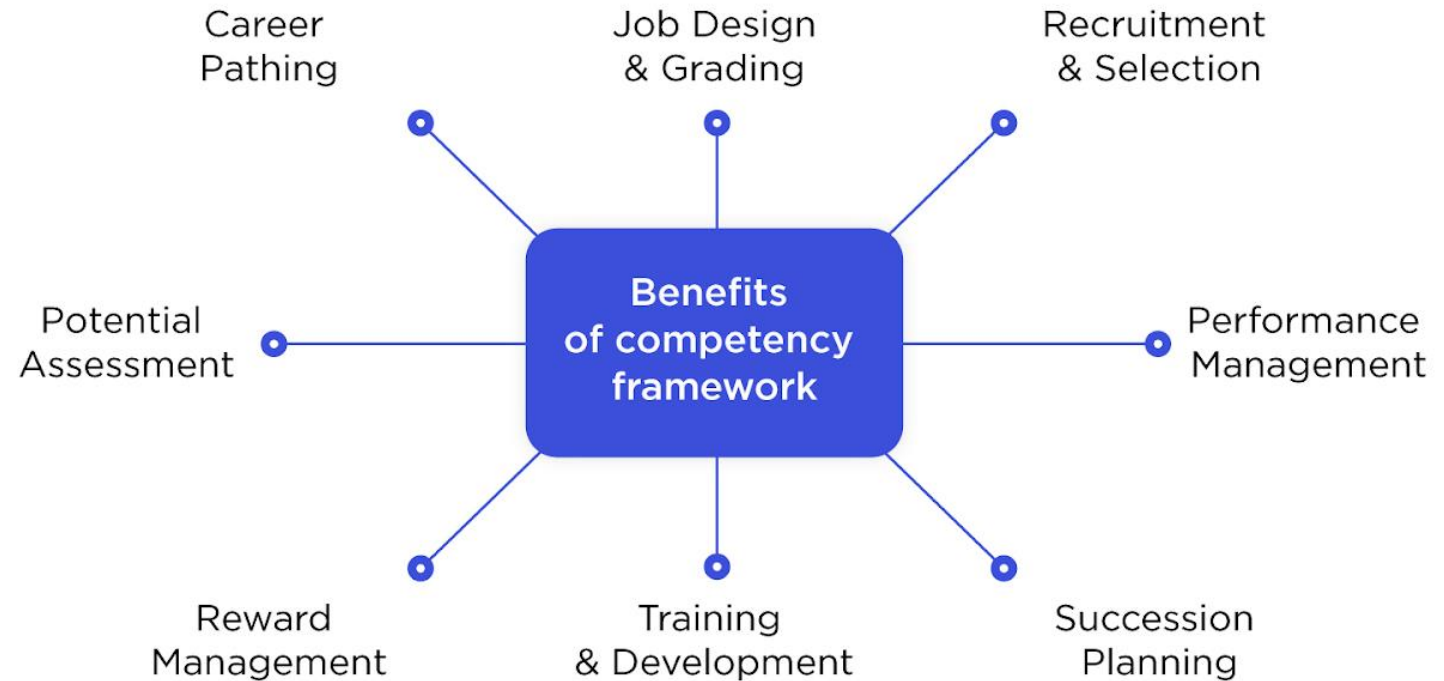
# Part 3

## How now?



### When – Skills needed

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
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# When – Skills needed

## Team skills matrix



Consider:

- > Skills required to deliver the business goals (what)
- > The reason these skills are required (why)
- > The duration these skills will be required for (when)
- > The employee's interest in these skills (who)
- > Where and how these skills can be acquired (where & how)
- > Costs and RoI of implementation (how much)

Step 3 – Find ways to develop the missing skills

Skills required	Required from	Duration	Reason	Skill Level	Peter	Jörg	Sandra	Hendrik	Skill Level	Action
...	...	...	...	...	...	...	...	...	...	...
JS Testing	now	permanently	JS > 60% of code-base, needs comprehensive testing	<div><div></div><div></div></div> <div>14</div>	<div></div>	<div></div>	<div></div>	<div></div>	...	Pairing of Jörg and Sandra with the others
JCA	Aug	From Aug on, permanently	Sales / Alternates / Account Implementation und Support	<div><div></div><div></div></div> <div>22</div>	<div></div>	<div></div>	<div></div>	<div></div>	...	Send Peter and Jörg to a training, summary in subsequent tech talk
Oracle DB tuning	Oct	Max. 2 days	Hope to gain better performance for users	<div><div></div></div> <div>1</div>	<div></div>	<div></div>	<div></div>	<div></div>	...	Hire Oracle Consultant to review DB Configuration and Queries
Scrum	Sep	permanently	SM will be on 2 months vacation in Sep / Oct	<div><div></div></div> <div>1</div>	<div></div>	<div></div>	<div></div>	<div></div>	...	Ask SM from Team X to support our Team, test rotating Retro facilitation
...	...	...	...	...	...	...	...	...	...	...

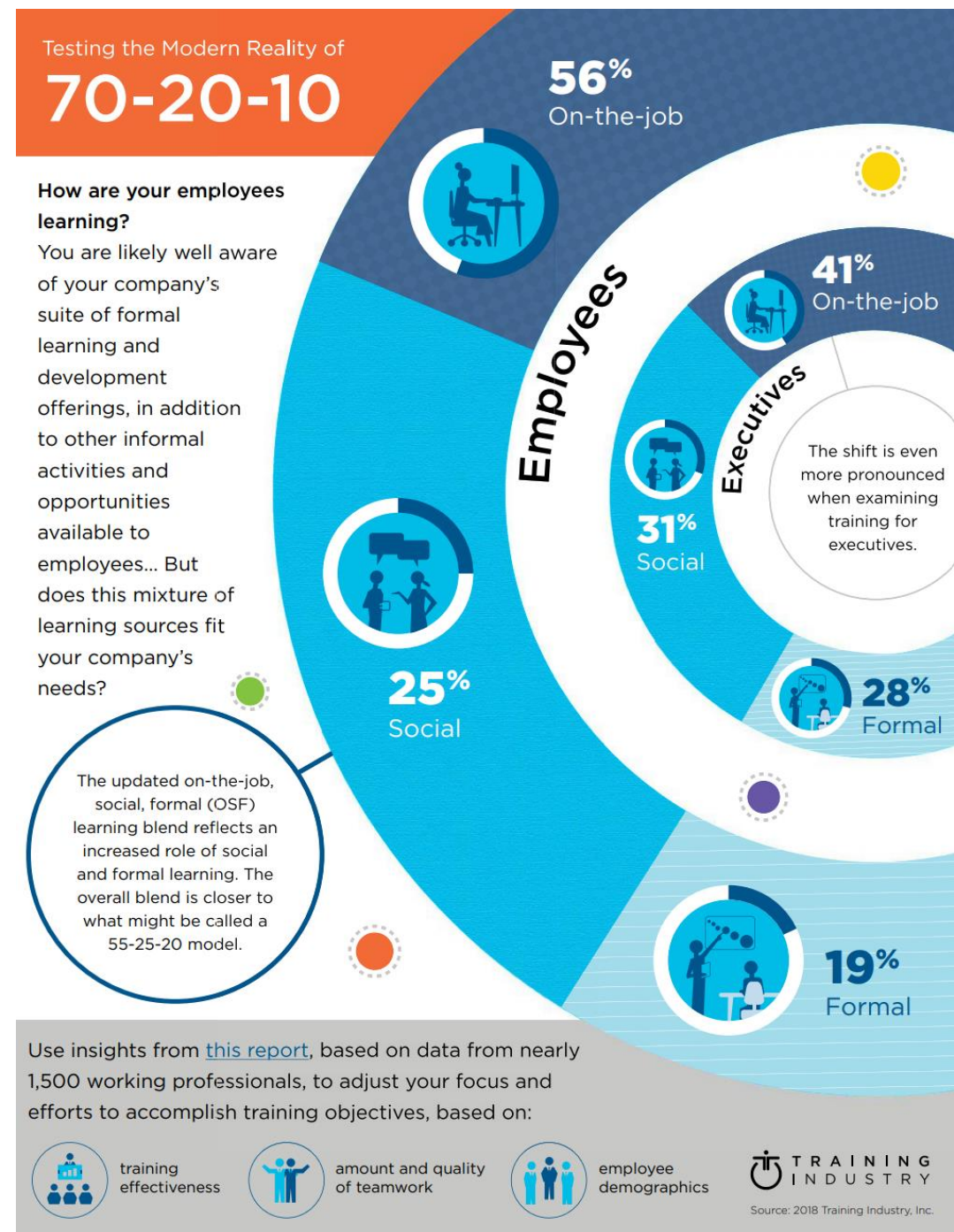
Expert Knowledge Practitioner Novice

# Part 3

## How now?

### How – O/S/F

- > What – Action plan
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## How – O/S/F

from 70/20/10 to 55/25/20



1980's - 70/20/10 model:

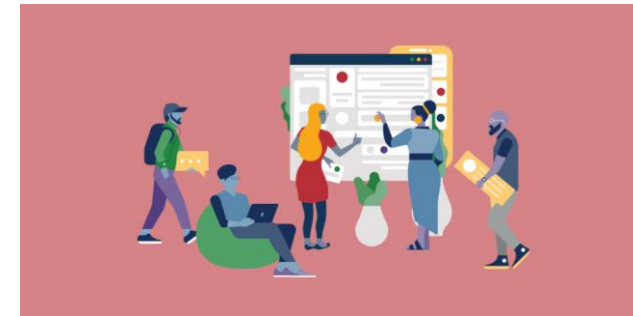
- > 70% of their knowledge from job-related experiences
- > 20% from interactions with others
- > 10% from formal educational events

2020's - 55/25/20 model:

- > 55% of learning occurs on the job (O)
- > 25% occurs in social (S) interactions
- > 20% occurs in a classroom or formal (F)

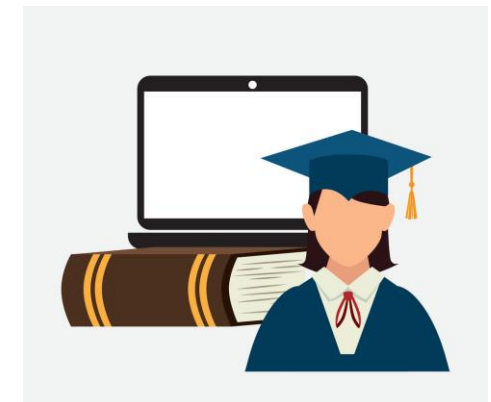


On the job



Social

Formal



# Part 3

## How now?



### Where – Academia

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
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- > How – On-the job / Social / Formal (OSF)
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Home - Opportunities

## Opportunities

Positive change is driven through new ideas and innovation. But innovation is complex. Sometimes projects need connected with new opportunities or looked at from new perspectives to make the difference. This is where KTN comes in.

If you're looking for experienced input into your idea, product, service, research or challenge, then invite us to get involved. We will not only work with you in understanding your market or challenge but will also direct you to the latest funding opportunities available, and how you can apply.

### Knowledge transfer partnerships (KTP): 2021-22, round 2

UK academic institutions, RTOs or Catapults can apply for a share of up to £6m to fund innovation projects with businesses or not-for-profits.

**Opens: 19/04/2021 Closes: 30/06/2021**



The KTP scheme has been helping businesses to innovate and grow for the past 40 years. It does this by enabling the **business**, an **academic** expert and a **graduate** to work on a specific project, transferring knowledge from the university and **embedding** it into your organisation.  
*Sheena MacKenzie, Strathclyde University*





# 13 WAYS UNIVERSITY OF GLASGOW RESEARCH IS ADDRESSING THE NET-ZERO CHALLENGE

From rewilding Arctic soils to self-healing construction materials and winged-devices that mimic fish tails, researchers at University of Glasgow’s Centre for Sustainable Solutions are developing new technologies and methods to help achieve ambitious net-zero targets.

## Academic Panel



Our academic panel allows us to connect with relevant research institutes and academics for the technologies OGTC is focusing on.

The panellists provide OGTC with technical feedback and advise on roadmaps, projects and technologies under evaluation. Panellists contribute to our discussions surrounding digital platforms, broadcast content and participation within universities, when applicable.

UNIVERSITIES



### About ESP

ESP is a collaboration of Scotland’s colleges and industry partners established to increase Scotland’s capability and capacity to deliver the right skills for the energy, engineering and construction sectors to meet industry demand.

As the college sector agency for energy, engineering and construction we work a cohesive partnership across Scotland’s colleges to demonstrate a responsiveness and collective capability to provide the skills required by industry.

Scotland’s colleges – delivering skills for :

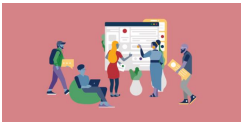
- energy
- engineering
- construction



### ESP aims to:

- Develop and deliver demand led skills programmes
- Promote careers in the energy, engineering and construction sectors
- Develop pathways through schools to college to university
- Build capability and capacity across Scotland’s colleges
- Promote and support innovation in education
- Support economic development
- Interface with government and agencies
- Influence and support developments across Scotland’s colleges

COLLEGES







# NMIS

## National Manufacturing Institute Scotland

# NMIS

National Manufacturing Institute Scotland

[Home](#) [About us](#) [NMIS Group](#) [What's happening](#) [Get in touch](#)

## Manufacturing Skills Academy

Through our Manufacturing Skills Academy, we are transforming the workforce of today and tomorrow.

The Manufacturing Skills Academy, set to be housed in the flagship National Manufacturing Institute Scotland facility, offers advanced manufacturing training and development opportunities for individuals at all levels of their career.

But, you don't need to wait until the building is open, the transformation has already begun with a number of upskilling opportunities available for the manufacturing and engineering community.

### Free support for individuals

If you work in manufacturing and are facing an uncertain future or perhaps you're looking to take the next step in your career, we are here to help.

[Read more](#)

### Continuous Professional Development

The National Manufacturing Institute Scotland's CPD programme of courses will give you and your colleagues the skills and knowledge to tackle and embrace the concept while also realising the tangible benefits.

[Read more](#)

### Industry Doctorate Programme in Advanced Manufacturing

Successfully launched in 2019 with the Scottish Research Partnership in Engineering (SRPe) - the pan-Scottish university research pool in engineering - and with the backing of industry sponsors, our Industry Doctorate Programme now has over 30 projects underway with over 20 manufacturing and engineering businesses from across the sector.

[Read more](#)

### Foundation apprenticeship in digital manufacturing

A new range of partnerships is giving school pupils in Renfrewshire the opportunity to get ready for the world of a work while obtaining a qualification equivalent to a Higher.

[Read more](#)

# Part 3

## How now?



### Where – In-house



- > What – Action plan
- > Why – Green recovery
- > Who – Employees
- > When – Skills needed
- > How – On-the job / Social / Formal (OSF)
- > Where – Academia, In-house
- > How much - Funding



# Apprenticeship



- > Government to fund eco-apprenticeships
- > Thousand apprenticeships created for Scottish low carbon sector

Level	② (Modern apprenticeships)	③ (Technical apprenticeships)	④ (Technical apprenticeships)	⑤ (Professional apprenticeships)
Qualification 	SVQ or CBQ	HND or PROFESSIONAL QUALIFICATION or SVQ / CBQ	PROFESSIONAL QUALIFICATION or SVQ / CBQ	
SCQF level	② SCQF 5    ③ SCQF 6/7	SCQF 8/9	SCQF 10/11/12	
Examples of equivalent level qualifications	SCQF 5 = Standard Grade (Credit) SCQF 6 = Higher SCQF 7 = Advanced Higher	SCQF 8 = Diploma SCQF 9 = Ordinary Degree	SCQF 10 = Honours degree SCQF 11 = Masters degree SCQF 12 = Doctoral degree	
Mandatory enhancements	Additional components may be added to the main qualification if this is appropriate for the sector, necessary for specific job roles and based on employer demand			
Essential skills for the workplace 	<b>Workplace core skills</b> <ul style="list-style-type: none"> <li>Communication</li> <li>Numeracy</li> <li>Information and communication technology</li> <li>Problem solving</li> <li>Working with others</li> </ul>	<b>Career skills</b> <ul style="list-style-type: none"> <li>Business administration</li> <li>Management, including business continuity and governance</li> <li>Enterprise</li> <li>Customer service</li> </ul>	<b>Career skills</b> <ul style="list-style-type: none"> <li>Business administration</li> <li>Management, including business continuity and governance</li> <li>Enterprise</li> <li>Customer service</li> </ul>	
SCQF level	② SCQF 4    ③ SCQF 5	A total of 15 SCQF credits, which must include units at SCQF level 7 or above	A total of 20 SCQF credits, which must include units at SCQF level 8 or above	
Optional content	<b>Additional learning that is appropriate for the job role, for example:</b> <ul style="list-style-type: none"> <li>Optional units from a relevant vocational qualification</li> <li>Short courses</li> <li>Professional qualifications</li> <li>Languages</li> </ul>			

# STEM graduates



# NMIS

## National Manufacturing Institute Scotland

NMIS launches new scheme to support **STEM** graduates into employment amid pandemic

The scheme, funded by the Scottish Government's National Transition Training Fund (NTTF) and developed by the **NMIS Manufacturing Skills Academy**, will provide those taking part with on the job training and the opportunity to build in-demand skills relevant to the worlds of digital and advanced manufacturing and engineering.

To bolster the programme, NMIS is also collaborating with **small and medium sized manufacturing businesses** across Scotland, giving some of the graduates the opportunity to work and learn with potential employers.

The training will focus on the **in-demand skills** sought by employers in growth areas of the economy such as digital and **net-zero**.



## Training courses (free)



- > Universities, e.g. The Open University
- > Colleges, e.g. Energy Skills Partnership
- > Institutes, e.g. NMIS, EI
- > Resources, e.g. My World of Work

# NMIS

National Manufacturing  
Institute Scotland



## My World of Work



# 74%

*believe it's their own  
responsibility to update  
their skills rather than  
relying on any employer.*



# Part 3

## How now?



### How much - Funding

- > What – Action plan
- > Why – Green recovery
- > Who – Employees
- > When – Skills needed
- > How – On-the job / Social / Formal (OSF)
- > Where – Academia, In-house
- > How much - Funding





# How now? Funding



## Green Jobs Funding



<https://www.scottish-enterprise.com/support-for-businesses/funding-and-grants/business-grants/green-jobs>

### About the green jobs calls

Our green jobs funding is being delivered as competitive funding calls, which are rounds of funding that open and close periodically for fixed amounts of time and from which the best projects will be chosen for support. The green jobs calls aim to support businesses to create and maintain jobs that improve the environment, and to support projects that align to the Scottish Government net zero policies. By 'net zero', we mean the Scottish Government's commitment to achieving net zero carbon and greenhouse gas emissions by 2045.

The first call is aimed at supporting businesses to:

- Create green jobs (these are new jobs that relate directly to the transition to net zero) or facilitate the transition of a job from non-green to green
- Minimise environmental impacts by developing sustainable low carbon products or services

**The first call will open for applications on Tuesday 18 May** and close on Tuesday 15 June 2021. We'll announce a second call later in the year.

We'll be running webinars before 18 May which will give more information about the call and offer an opportunity for you to ask questions.

[Sign up to receive email updates about this call and the related webinars.](#)

### Key information

This call:

- Is for businesses located in the Scottish Enterprise area, or looking to set up a trading location in this area before 1 October 2021 (you can check this in the 'Is my business eligible?' section)
- Offers grants between £50,000 and £500,000
- Can support between 10% and 50% of eligible project costs depending on factors such as company size, location and project activities
- Is for businesses looking to create jobs that are directly related to sustainability and reducing carbon emissions (green jobs)
- Is also for businesses undertaking activities that will result in green jobs, including investing in premises, purchasing capital equipment or conducting research and development
- Involves a claims process rather than a single up-front payment – this means you'll need to pay for your project costs and then claim eligible costs back from your grant
- Is a competitive discretionary grant – applications will be assessed based on their merit against a scoring criteria. Not all eligible applicants will receive funding

# How now? Funding



## Knowledge Transfer Partnership Funding



**Innovate  
UK**

### Funding Details

#### Registration Opens

19/04/2021

#### Registration Closes

30/06/2021

#### Award

We will consider partially funding project costs of any amount if we judge the costs to be appropriate. Typically, projects cost no more than £75,000 per year. A proportion of this will be paid by the business partner.

#### Organisation

Innovate UK

The **Knowledge Transfer Partnership (KTP)** scheme allows a UK registered business or not-for-profit organisation (the 'business partner') to partner with a UK higher education (HE) or further education (FE) institution, RTO or Catapult (the 'knowledge base partner').

This new partnership brings new skills and the latest academic thinking into the business partner to deliver a specific, strategic innovation project. The knowledge base partner will recruit 1 or 2 graduates (known as 'associates') to work on the project.

Each application must be led by a knowledge base, working with a business partner. If you are from a knowledge base that has not yet developed a project, get started by reading the **KTP guidance**. If you are from a business, you must apply through a knowledge base: **contact the KTN's KTP team** to discuss which knowledge base will be most appropriate for you to work with. (KTPs are only open to UK-registered businesses with more than two employees.)

Visit the KTP website to find out more about the **programme** and the current **roles available for graduates**.

This award is provided on a no subsidy basis. This means you must publish or make all project outputs openly available on a non-selective basis. If you decide to commercially exploit project outputs, you can only do so with no selective advantage.

Each KTP is a partnership between the following:

- a UK knowledge base, acting as lead organisation and submitting the application
- a UK registered business or not-for-profit organisation

Your project can last between 12 and 36 months, depending on the project requirements.

[Knowledge transfer partnerships \(KTP\): 2021-22, round 1 - KTN \(ktn-uk.org\)](https://ktn-uk.org/)



# How now? Funding



EPSRC / Innovate UK Funding



**Engineering and  
Physical Sciences  
Research Council**

<https://epsrc.ukri.org/funding/applicationprocess/routes/>

## Pre-announcement: business and academia prosperity partnership

Opportunity status:	Upcoming
Funders:	<a href="#">Engineering and Physical Sciences Research Council (EPSRC)</a>
Funding type:	Grant
Total fund:	£20,000,000
Publication date:	26 February 2021
Opening date:	To be confirmed
Closing date:	To be confirmed

*Last updated: 3 March 2021*

Apply for funding to support an established research partnership between business and academic institutions.

Prosperity partnership programmes must:

- address EPSRC's delivery plan priorities, particularly for delivering economic and social prosperity
- be business led, but co-created and co-delivered between the industrial and academic partners
- support fundamental research with a technology readiness level of one to three.

This co-investment opportunity is part of the EPSRC prosperity partnership strategy.

The industrial partners must match the funding provided by EPSRC for the partnership. EPSRC will fund 80% of the full economic costs (fEC) with exceptions for:

- equipment, at 50% fEC
- studentships, at 100% fEC.

### Timeline

- To be confirmed between July to September 2021  
Opening date
- To be confirmed  
Closing date

### Related opportunities

- ⇒ Prosperity partnerships: fourth round

Print this page

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### Subscribe to emails

Sign up for news and funding alerts.

Email address

Subscribe

# How now? Funding



## Flexible Work Force Development Fund



<http://www.sfc.ac.uk/funding/college-funding/flexible-workforce-development/flexible-workforce-development-fund.aspx>

Funding allocations
▸ Outcome Agreement funding
▸ <b>Funding for colleges</b>
College funding
Flexible Workforce Development Fund
European Social Fund
Student support
Access and Inclusion fund
▸ Funding for universities
▸ Non-core programme funding
▸ Capital funding
Advice for students

### Related material

[Letter of guidance](#)

[Our Strategic Framework](#)

[Support for Gaelic education in FE and HE in Scotland \[Archive\]](#)

[Gaelic language](#)

[Health education](#)

## Flexible Workforce Development Fund

The Flexible Workforce Development Fund (FWDF) is a Scottish Government initiative that enables employers to address priority skills and skills gaps in their organisation by accessing funding to create training programmes that meet their needs. These programmes can be delivered in partnership with their local college, The Open University in Scotland (OUIs) or an independent training provider. SFC administers the scheme on behalf of colleges and OUIs, while [Skills Development Scotland](#) (SDS) administers the scheme on behalf of independent training providers.



### Information for Employers

The FWDF is open both to UK Apprenticeship Levy paying employers and Small and Medium Enterprises (SMEs) in Scotland. Apprenticeship Levy payers have access to a £13 million fund in 2020-21 through the [college sector](#) and can access training up to the value of £15,000. Where specific training needs cannot be provided via a local college, Levy payers have the option to access funding through an independent training provider (via SDS), the total fund available through this route being £2 million. SMEs can work with either their [local college](#) or with the [OUIs](#) to access training up to the value of £5,000.

We have also collated a [Frequently Asked Questions \(FAQ\)](#) document [PDF] which includes links to the colleges and OUIs websites.


# How now? Funding



## National Transition Training Fund



<https://www.myworldofwork.co.uk/national-transition-training-fund>

My career options ▾Learn and train ▾Getting a job ▾Search iconSign inRegister

Home

## National Transition Training fund

Page contents ▾

### What is the National Transition Training fund?

If you are currently under threat of redundancy, or have been made redundant at any time from the 1st March 2020 and are aged 25 or over, you can access an industry recognised qualification to help you gain employment.

The National Transition Training Fund offers training in areas where we expect growth in the labour market, providing you with a strong footing for employment opportunities.

### How to access training

If you are claiming benefits, your DWP work coach will be able to refer you to a local training provider.

If you are not claiming benefits, you can call our SDS helpline on 0800 917 8000 for more information.

### Who is eligible?

Anyone age 25 and over who is facing redundancy or is unemployed.

## Explore your learning options

Learning options

There are lots of different ways to learn. Find out about college and uni, learning on the job, online learning, volunteering and other ways you can attain new skills.

NMIS  
National Manufacturing  
Institute Scotland

# How now? Funding



## Digital Catalyst Fund



<https://funding.ourskillsforce.co.uk/funds/digital-catalyst>



HOME FUNDS ▾ ACCOUNT ▾

You are here: [Home](#) / [Funds](#) / [Digital Catalyst](#)

### Digital Catalyst Fund

#### About this Fund

##### 1. Check this is the right fund for you

The Digital Catalyst Fund provides funding for international and global businesses to invest in bespoke advanced digital learning and skills development opportunities for their employees that mainstream provision cannot fill.

The businesses must:

- be currently or planning to invest and operate in Scotland, and
- where the benefits gained from the fund will support growth, safeguard jobs and/ or grow their business.

You will be required to match the contribution of the fund on a 50:50 match funding basis.

# How now?

## Funding



Apprenticeship employer  
grant

**APPRENTICESHIPS . SCOT**  
From Skills Development Scotland

> <https://www.apprenticeships.scot/for-employers/apprenticeship-employer-grant/>

## APPRENTICESHIP EMPLOYER GRANT

Support for employers when taking on Modern or Graduate Apprentices

Whether it's hiring someone new or developing an existing employee, apprenticeships can help provide the skills your business needs.

The Apprentice Employer Grant (AEG) is available to help you to recruit new Modern or Graduate Apprentices within your business or upskilling existing employees.

- £5,000 for employers taking on or upskilling a 16 to 24-year through a Modern or Graduate Apprenticeship, and for those aged up to 29 years who have a disability, are care experienced or are from a black, Asian or minority ethnic background.
- £3,500 for employers taking on or upskilling an individual aged 25 and over through a Modern or Graduate Apprenticeship.
- If applications are for upskilling existing employees, the grant specifically supports those who have changed job roles within the last four months.

Funding will be available for eligible employers where the apprenticeship start date was on or after 1st December 2020.

Funding will be available until 25th March 2021 and all applications must be submitted by this date.

# How now?

## Funding



Access to higher education  
for adult learners



### Funding for the SWAP Programme

Most SWAP students are entitled to have tuition fees paid for their SWAP programme. Most are also entitled to a college bursary to help with living costs. The funding you are entitled to will depend on your personal circumstances. Decisions on funding eligibility are taken at college level and so it is a good idea to speak to the relevant college student funding team for advice. You don't need to wait until you apply or you have a place on a programme - in fact it's better to contact them before you apply to check that you'll be able to manage financially.

> <https://www.scottishwideraccess.org/national-funding>

# Break





# Part 4 - Resources



- > Policy
- > Websites
- > Publications
- > Acronyms



# Policy



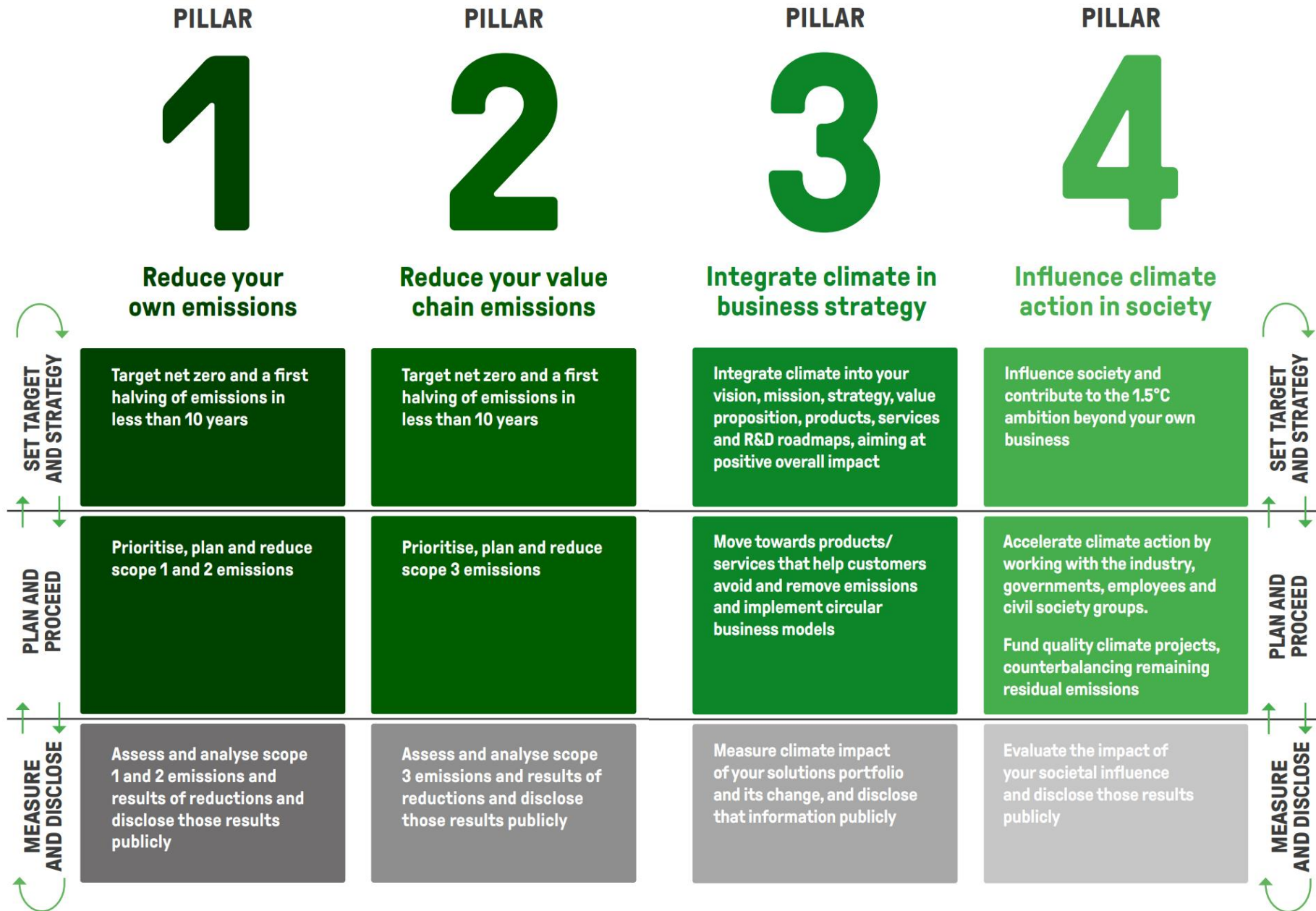
- > The need for a Net Zero policy – conditionality, procurement and supply chain
- > Making a SMART commitment
- > Leveraging standards such as ISO14001

**Mariana Mazzucato** – Member of the Scottish Government's Council of Economic Advisors

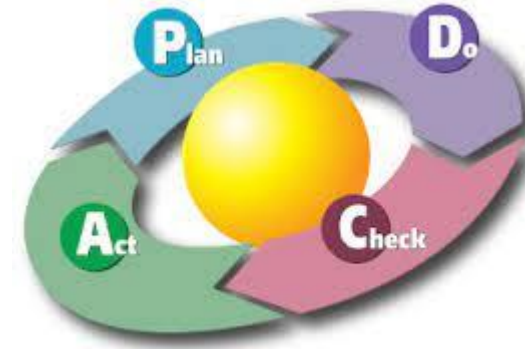
- Advising to develop mission orientated policies
- Advising to include **conditionality** to the policies

**Chris Stark** – Chief Executive UK Committee on Climate Change (CCC)

- Investment will be guided by **green policies**

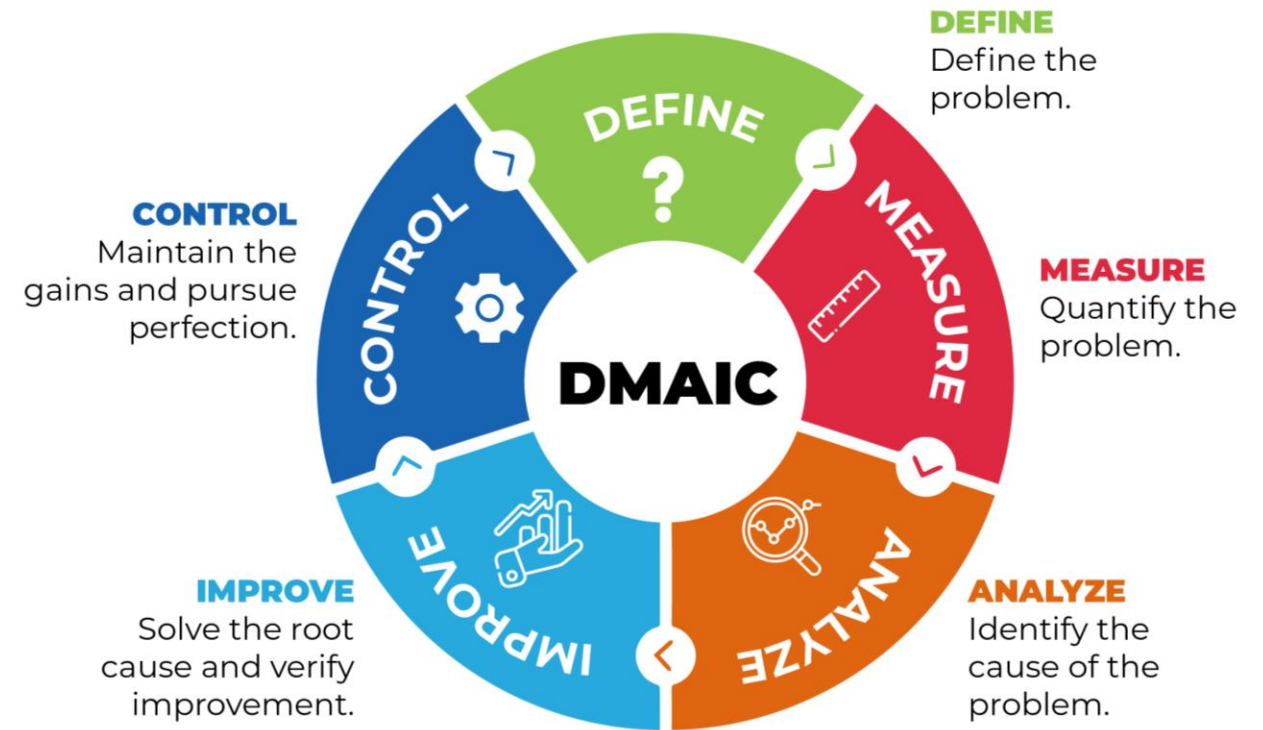


# Leveraging existing processes



## DMAIC and Lean Thinking as a SMART resource

- > Define your commitment
- > Create a measurable, timebound roadmap
- > Analyse and report on the roadmap progress
- > Leverage improvements, accelerations when available
- > Maintain and confirm the progress made



## Leveraging existing certifications

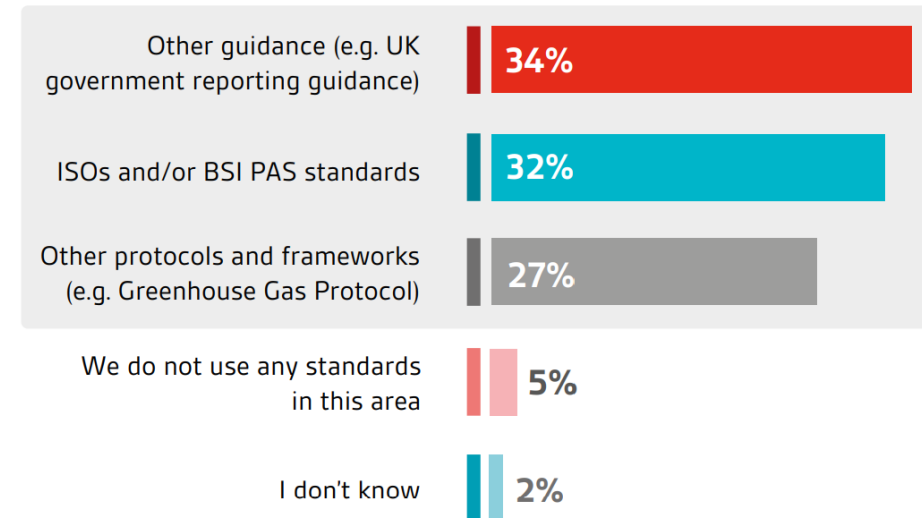
Measure (BS EN ISO 14064-1 & -2), verify (BS EN ISO 14064-3), manage (BS EN ISO 14001) and communicate (BS EN ISO 14021)



- > **ISO 14001:2015** provides a management framework that can be used as the mechanism to drive forward Climate Action, following the Plan-Do-Check-Act model.
- > **BS EN ISO 14064-1** Greenhouse gases. Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- > **BS EN ISO 50001** Energy management systems. Requirements with guidance for use
- > **PAS 2060** Specification for the demonstration of carbon neutrality
- > **PAS 2080** Carbon management in infrastructure
- > **PAS 2050** Specification for the assessment of the life cycle greenhouse gas emissions of goods and services
- > **PAS 2070+A1** Specification for the assessment of greenhouse gas emissions of a city. Direct plus supply chain and consumption-based methodologies



Organizations' use of international standards or guidelines in carbon reduction



**93%**  
adhering to  
recognized  
standards or  
guidelines



[Month XX, 2021]

The Climate Pledge  
Amazon and Global Optimism



Dear Ms. Christiana Figueres and Mr. Jeff Bezos,

[Insert specific language about the importance of joining The Pledge and your sustainability commitments to date. Include ways you plan to reach net zero.]

We believe that climate change demands urgent and universal action. [Name] is proud to sign The Climate Pledge. We stand with Amazon, Global Optimism and the other signatories of The Climate Pledge, in a commitment to being net zero carbon by 2040—ten years ahead of The Paris Agreement. In addition, as a signatory of The Climate Pledge, we will:

- Measure and report greenhouse gas emissions on a regular basis.
- Implement decarbonization strategies in line with the Paris Agreement through real business change and innovations, including efficiency improvements, renewable energy, materials reductions, and other carbon emission elimination strategies.
- Take actions to neutralize any remaining emissions with additional, quantifiable, real, permanent, and socially-beneficial offsets to achieve net zero annual carbon emissions by 2040.

By joining The Climate Pledge, we are reinforcing our commitment to sustainability and we're excited to join a community that will share knowledge, ideas and best practices.

We look forward to working with you on this important mission.

Sincerely,

[Executive/Leader Name], [Title]  
[Company/Organization Name]



## The SME Climate Commitment

Recognising that climate change poses a threat to the economy, nature and society-at-large, our company commits to take action immediately in order to:

- **Halve our greenhouse gas emissions before 2030**
- **Achieve net zero emissions before 2050**
- **Disclose our progress on a yearly basis**

In doing so, we are proud to be recognised by the United Nations Race to Zero campaign, and join governments, businesses, cities, regions, and universities around the world that share the same mission.





## Draft a declaration statement which includes the following:

Our business was designed in a time when there was a different expectation of the role of business in taking climate action. This context has changed. Today we are clear there is a climate emergency which will require immediate and radical action by our business.

We believe based on the facts we know today, it would be a breach of our duties as directors of the company and custodians of our stakeholders' interests to continue as though there is not a climate emergency.

This Declaration requires that the entire business design be rethought in the context of a climate emergency. This includes a commitment to carbon neutrality before 2030 (set a date) with realistic interim milestones along the journey including science based targets.

This declaration commits us to reshape the short, medium and long-term strategy and business model of the company, and that this redesign must embrace the principles of 'just transition' which takes into account people who will be implicated in this declaration.

We must seek to maximise the interests of all stakeholders – shareholders, employees, suppliers, customers – in the context of a total commitment to doing what is required by the climate emergency.

Board Chairman: \_\_\_\_\_

Employee rep. : \_\_\_\_\_

CEO: \_\_\_\_\_

Youth rep.<sup>17</sup> : \_\_\_\_\_

## Policy statement



[Organisation X] is committed to having a positive social and environmental impact, and recognises that staff have an important role to play in responding to the urgent challenge of climate change.

We aim to encourage our employees to 'walk the talk' when it comes to sustainability behaviour, in line with our organisational values and policies.

Research indicates that converting one or more return flights to train, coach or boat is likely to be one of the most powerful actions regular travellers can take to reduce lifestyle carbon emissions, in turn helping to inspire further behaviour change amongst peers.

To help staff make sustainable travel choices, we offer paid travel time, subject to certain criteria.

It is important to note that this is not additional annual leave, but additional time to undertake sustainable travel. Whether employees take up the scheme or not, they remain entitled to the same amount of annual leave. Please refer to the annual leave policy for further information.

# Websites




- > <https://scottishengineering.org.uk/>
- > <https://www.skillsdevelopmentscotland.co.uk/>
- > <https://ktn-uk.org/>
- > <https://esp-scotland.ac.uk/>
- > <https://www.myworldofwork.co.uk/>
- > <https://funding.ourskillsforce.co.uk/>
- > <https://epsrc.ukri.org/>
- > <https://www.energyinst.org/>
- > <http://apprenticeshipguide.co.uk/>
- > <https://www.scottish-enterprise.com/support-for-businesses/funding-and-grants/business-grants/green-jobs?>
- > <https://smeclimatehub.org/uk/>
- > <https://www.theclimatepledge.com/us/en.html>


- > <https://bcorporation.net/>
- > <https://www.climateperks.com/employers>
- > <https://bigcleanswitch.org/business/>

# Publications



  
impact\_of\_automati  
on\_on\_jobs.pdf


  
net-zero-nation-draf  
t-public-engagemen


  
Climate+Perks+++te  
mplate+policy+for+€


  
IRENA\_World\_Energy  
\_Transitions\_Outloo

  
About-the-SME-Cli  
mate-Commitment-v

  
IEMA-Driving-Clima  
te-Action-Through-E

  
1.5C-Business-Playb  
ook-v1.1.1pdf.pdf

  
11-1315-skills-for-a  
-green-economy.pdf

  
update-climate-cha  
nge-plan-2018-2032

  
SDG-Discussion-pap  
er-February-2019.pdf

  
making-scotlands-fu  
ture-recovery-plan-rr


  
bsi-net-zero-barom  
eter-report.pdf

  
KPMG  
towards-net-zero.pdf

  
climate-emergency-  
skills-action-plan-20:

  
BMG\_2081\_UKSA\_S  
pace\_Sector\_Skills\_Su


  
The-Sixth-Carbon-B  
udget-The-UKs-path

  
How\_to\_Declare\_a\_C  
limate\_Emergency\_ar

  
2017-18 ZWS  
Carbon Metric Summr

  
offshore-wind-polic  
y-statement.pdf

  
sds\_energy\_sip\_digit  
al.pdf

  
2020 Net Zero - The  
Guide for Business,pc

  
NewClimate\_Acceler  
ating\_Net\_Zero\_Sept:


  
Thematic-Plan-4-Gr  
een-Jobs.pdf

  
Reducing-UK-emissi  
ons-Progress-Report

  
TCP\_Sample\_Signat  
ory\_Letter\_0121.pdf


  
CERG\_Green  
Recovery\_Final repor

  
Climate Emergency  
Statement.pdf

  
Hydrogen-in-Scotla  
nd-The-role-of-Aconr

  
scotland-sustainable  
-development-goals-

  
closing-the-gap-full  
-report.pdf

  
2016+Cone+Comm  
unications+Employer

# Acronyms



- > CCC – committee on climate change
- > SIETF – Scottish industrial energy transformation fund
- > EETF – emerging energy technology fund
- > CCS – carbon capture and storage
- > CCUS – carbon capture, utilisation and storage
- > NECCUS – North East carbon capture, utilisation and storage
- > NMIS – national manufacturing institute of Scotland
- > DAC – direct air capture
- > DACCS – direct air carbon capture and storage
- > BECCS – bio energy carbon capture and storage
- > ETS – emission trading scheme
- > UKCS – UK continental shelf
- > OGTC – oil and gas technology centre

- > LULUCF – land use, land use change and forestry
- > BEIS – Dept for Business, Energy & Industrial Strategy
- > DRS – deposit return scheme
- > ESP – energy skills partnership
- > PAS – publicly available specification

# Net-Zero Skills Support Programme



Eric Boinard  
Project Lead Net Zero Skills  
[ericboinard@scottishengineering.org.uk](mailto:ericboinard@scottishengineering.org.uk)

## Webinars

- > <https://scottishengineering.org.uk/net-zero-skills/>
- > Skills for a Green Recovery – Part 1&2 (April 27)
- > Skills for a Green Recovery – Part 3&4 (May 4)
- > Skills for a Green Recovery – Topic specific

(note: topics and dates to be agreed)

## One-to-One

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

# Survey – What next







# Thank you



[scoteng.org.uk](http://scoteng.org.uk) | 0141 221 3181