

enda  
energynetworks  
association

she  
safety, health  
& environment  
management  
conference

# Session 3 Environment Culture

Safety, Health and Environment (SHE)  
Management Conference 2023

Hosted by



Supported by





# SHE Management Conference 24-25 May 2023 Croke Park, Dublin



## Future Climate Threats to Energy Systems and how we may Prepare for Them

Sean Wilkinson, Sarah Dunn, Colin Manning, Hayley Fowler  
Special thanks to Carl Ketley-Lowe and Liza Troshka National Grid ED



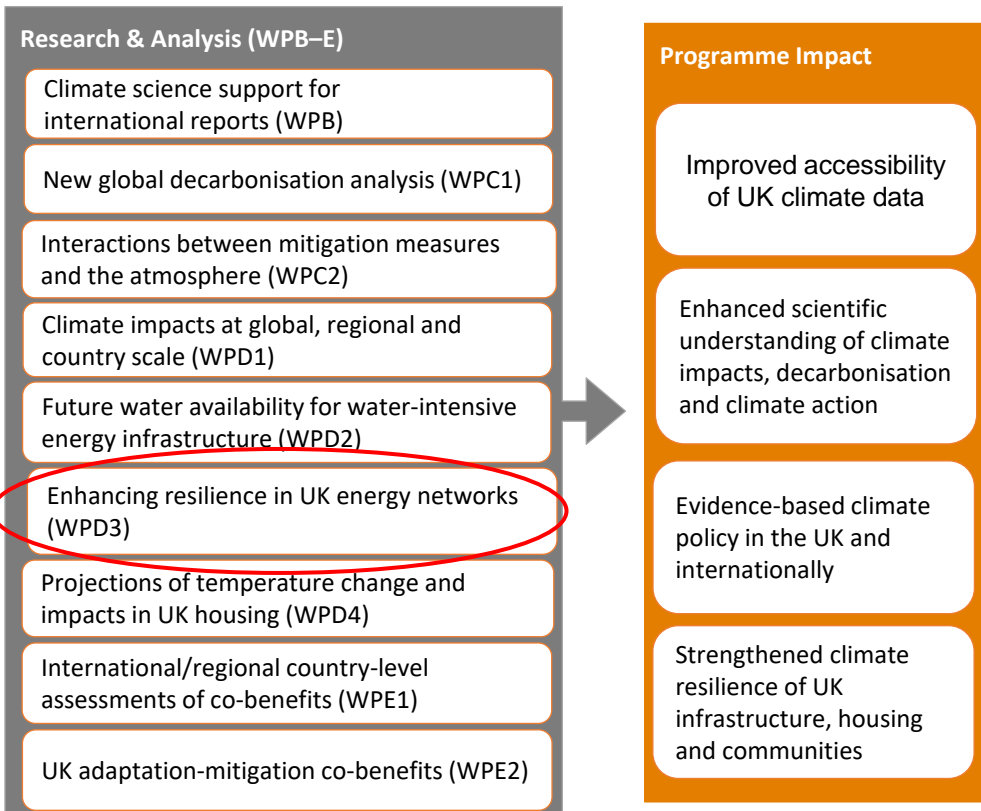
# Talk outline

- **CS-NOW** project Enhancing Resilience in UK Energy networks
- Results of one-on-one meetings
- UKCP18 Climate Projections (What are they, what are they telling us and how can they be used)
- **ACCELERATED** project: NIA project on the current resilience of electricity distribution networks and how this change in the future.
- What can we do to improve this situation.



# CS-NOW Programme Summary

Climate services for a Net Zero resilient world (CS-NOW) is a £5 million research programme that will use the latest scientific knowledge to inform UK climate policy and help us meet our global decarbonisation ambitions...



## DNZES Questions

1. What are the **weather variables of concern** for our energy networks?
2. How are these **weather variables changing** and what are the new events to design for?
3. What will a **future net zero energy network look like** (supply/demand/environmental hazard)?
4. What are existing and new no or low regret options to **enhance climate resilience**?
5. What are the **appropriate metrics** for energy companies to measure resilience?
6. What standards or **levels of service** should energy companies have in place by 2050?

# Summary of the CS-NOW Interim Report

- Purpose was to understand the current capacity for DNOs and gas companies to deal with climate change and to ensure our energy networks maintain resilience, what are the major threats and what activities are taking place.
- We interviewed 7 energy companies and the ENA and NG and asked them questions related to the BEIS tender (the opinions expressed are not necessarily the official opinions of the companies they represent)
- Major findings are:
  - The majority of the energy companies have focused primarily on flood adaptation actions
  - Flooding and wind were of most concern to electricity companies followed by wind
  - **The biggest gap was the lack of resilience metrics, lack of an agreed terminology and lack of guidance from Ofgem on how the resilience of their systems should be assessed.**
  - All the DNOs believed the introduction of energy-network specific metrics would aid in their efforts to understand and increase their climate resilience.
  - Several companies are already using the UK Climate Projections 2018 (UKCP18) outputs and the Environment Agency (future) flood maps to model their future risk scenarios.
  - **DNOs believe there is a large gap between the funding they receive and the level of climate resilience they would like to achieve, with many quoting difficulties in securing funding as one of their main barriers to resilience**
  - It was often implied (or directly stated) by some companies that **developing the networks' resilience to a level where they would be able to withstand the impacts of rare, high impact events may not be economically viable.**

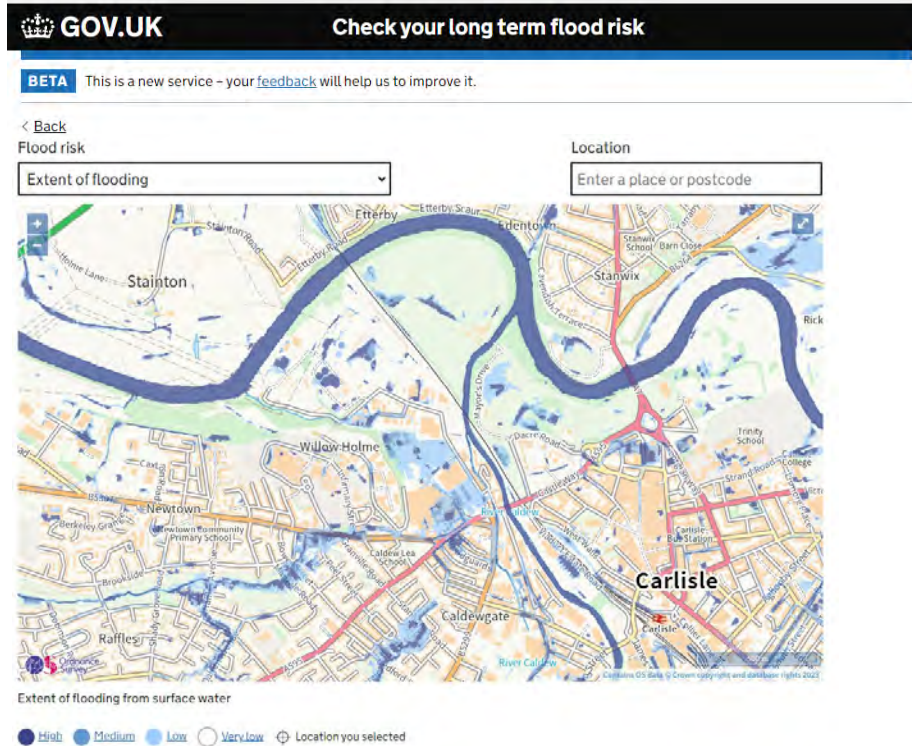
# Climate impacts – initial results

- Extreme windstorms are likely to increase in frequency and intensity over the UK. For example, in South Wales, in the far future TS3 (2061-2080) a 1 in 50 year storm occurring on average approximately every 20 years
- Extremely hot temperatures are very likely to increase in their intensity and frequency with a 1 in 50 year events occurring, on average, every 5 to 10 years for TS2 (2020-2040) and occurring on average every 1 to 2 years for the TS3 (2061-2080).
- Extremely cold temperatures are likely to decrease in their intensity and frequency in the future (cold temperatures impacts will become less frequent in the future). Lying snow will be a rare event in England in the far future.
- Rainfall extremes are very likely to increase in their intensity and frequency. We expect wetter winters and more short duration (1-hour) intense rainfall events in summer. For instance, a 10-year event in TS1 (current climate) is projected to occur every 5 years in TS3 (2061-2080). In some regions we may not see any change

# How do we make the Case for Resilience enhancement

## Resilience/metrics and levels of service – what do we really mean

ETR 138 - 1:1000-year target resilience level being applied for all critical local infrastructure supplying 10,000 customers or more.



Can we come up with an ETR138 for other climate hazards (e.g. windstorm)?

Can we futureproof our Levels of Service?



# UKCP18 Datasets

Dataset	Spatial resolution	Domain	Spatial coordinate system	Regional averages available
Probabilistic projections	25km	UK Channel Islands Isle of Man	British National Grid (OSGB)	Country Administrative Regions River basin regions
Global (60km) projections	60km	Global	Regular latitude-longitude in geographic projection	Country Administrative Regions River basin regions
	60km	UK only Channel Islands Isle of Man	British National Grid (OSGB)	River basin regions
Regional (12km) projections	12km	Europe	Latitude-longitude in rotated pole coordinates	Country Administrative Regions River basin regions
		UK Channel Islands Isle of Man	British National Grid (OSGB)	River basin regions
Local (2.2km) projections	2.2km	UK Isle of Man	Latitude-longitude in rotated pole coordinates	Country Administrative Regions River basin regions
	5km		British National Grid (OSGB)	River basin regions
Marine projections	12km	UK Channel Islands Isle of Man	Regular latitude-longitude in geographic projection	None

Table 4 Summary of geographical characteristics of UKCP18 data

[ukcp18-guidance-data-availability-access-and-formats.pdf \(metoffice.gov.uk\)](https://www.metoffice.gov.uk/research/climate/maps-and-data/data/haduk-grid/datasets)

<https://www.metoffice.gov.uk/research/climate/maps-and-data/data/haduk-grid/datasets>

Variable at the surface (short name in CEDA catalogue)	Units	Marine	Probabilistic	Global (60km)	Regional (12km)	Local (2.2km)	Derived
Cloud cover (clt)	%		✓	✓	✓	✓	
Precipitation (pr)	mm/day		✓	✓	✓	✓ hourly	✓*
Radiation, total downward short wave flux (rsds)	Wm <sup>-2</sup>		✓				
Radiation, net long wave (rls)	Wm <sup>-2</sup>		✓	✓	✓	✓	
Radiation, net short wave (rss)	Wm <sup>-2</sup>		✓	✓	✓	✓	
Relative humidity (hurs)	%			✓	✓	✓	✓
Sea level pressure (psl)	hPa		✓	✓	✓	✓	
Sea water level	m	✓					
Snow: snowfall amount (prsn)	mm				✓	✓	
Snow: lying snow amount (snw)	mm				✓	✓	
Specific humidity (huss)			✓	✓	✓	✓	
Temperature, maximum (tasmax)	°C		✓	✓	✓	✓	
Temperature, Mean (tas)	°C		✓	✓	✓	✓ hourly	✓*
Temperature, minimum (tasmin)	°C		✓	✓	✓	✓	
Wind gusts (wsgmax10m)	m/s					✓ 3-hourly	
Wind speed (sfcWind)	m/s			✓	✓	✓ 3-hourly	✓
Wind speed eastwards (uas)	m/s			✓	✓	✓	✓
Wind speed northwards (vas)	m/s			✓	✓	✓	✓
Time steps		Dataset-dependent	Monthly Seasonal Annual 20/30-year means	Daily Monthly Seasonal* Annual* 20/30-year means*	Daily* Monthly		

Table 5 Available UKCP18 variables for the marine and projections over land. Further variables and metrics such as sea surface temperatures, extreme metrics for precipitation and temperature, weather types are being considered for release. Note that all daily variables are provided on a 360-day year. \*these are available over the UK only \*only daily precipitation and temperature are available for the derived projections †Not all variables are available for CMIP-13 (see Appendix A).



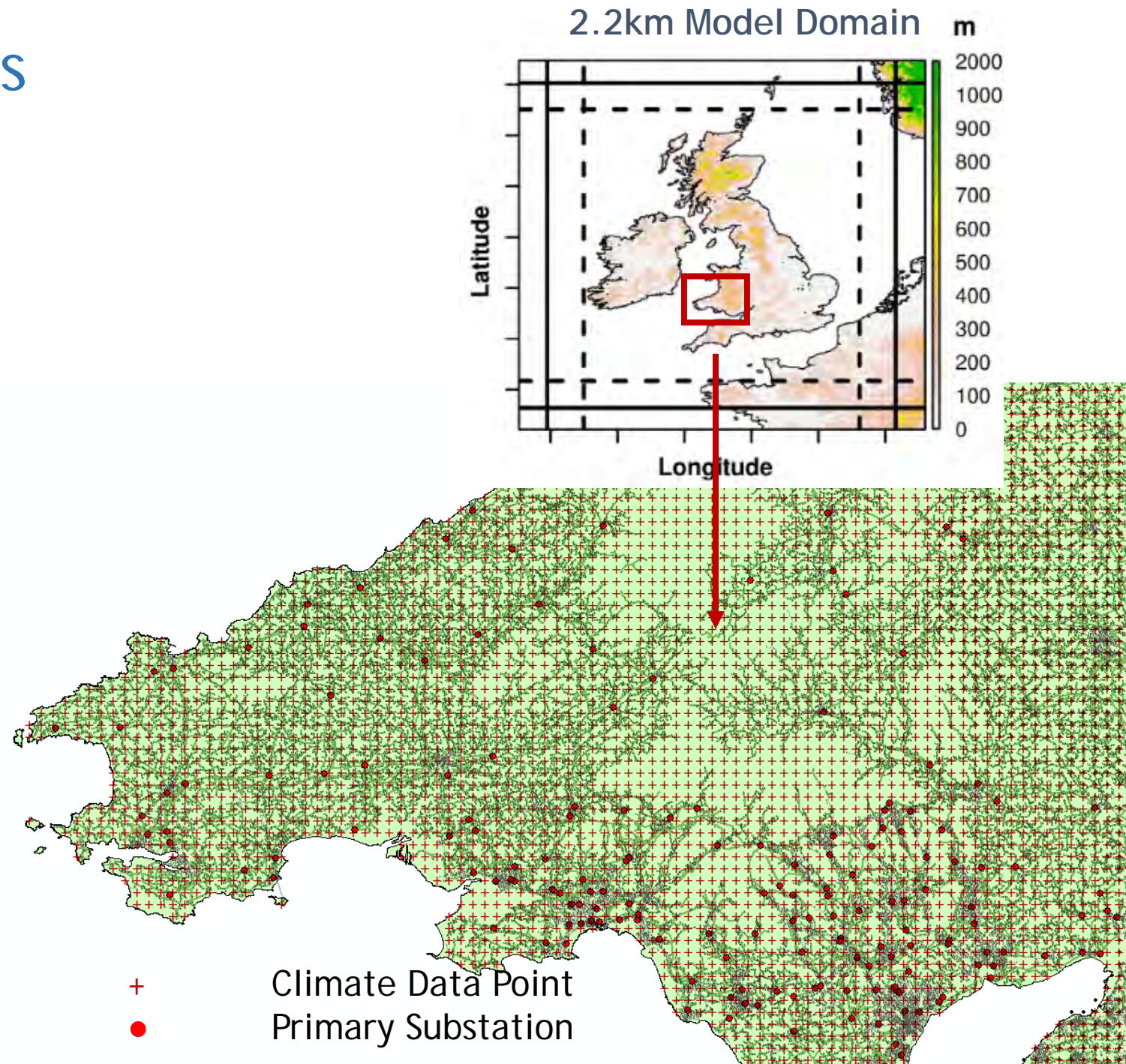
# • UK Climate Projections

## UKCP18 Local Projections 2.2km Grid (RCP8.5): :

- Three 20-year time slices (TS):
  - **TS1: 1981-2000**
  - **TS2: 2021-2040**
  - **TS3: 1961-2080**
- 12 member ensemble
  - 12 x 20 year simulations for each time slice

### Available

- max 3 second wind gusts within 3 hour period)
- Temperature (1-hourly means)
  - Also daily maximum/minimum are available
- Precipitation (1-hourly accumulations)
- Lightning data is not currently available





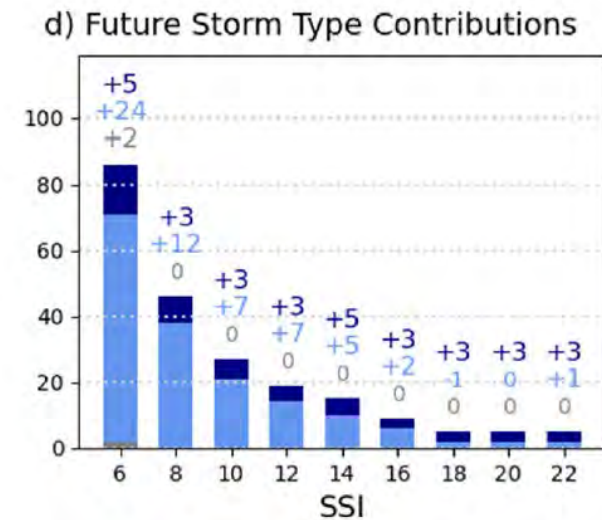
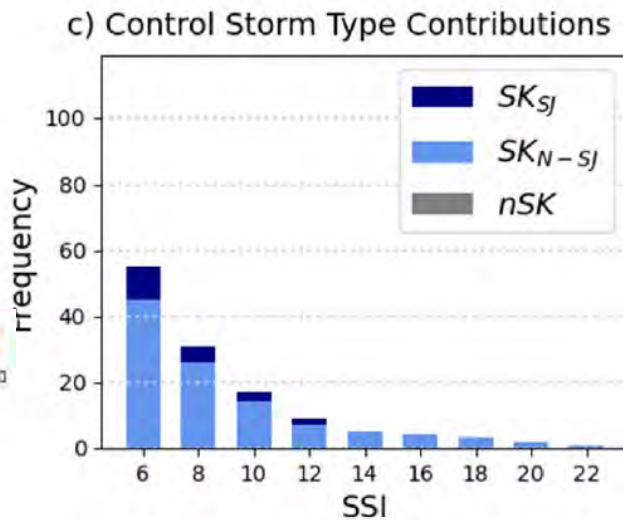
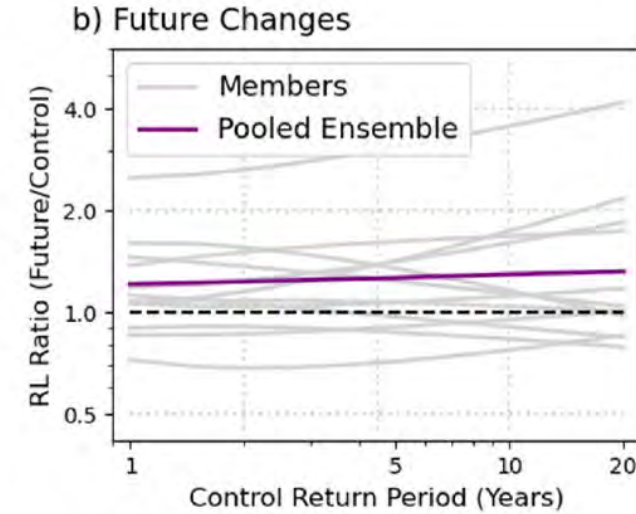
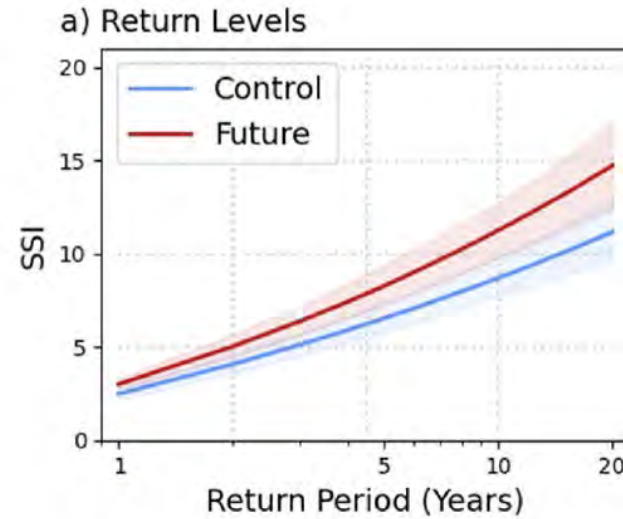
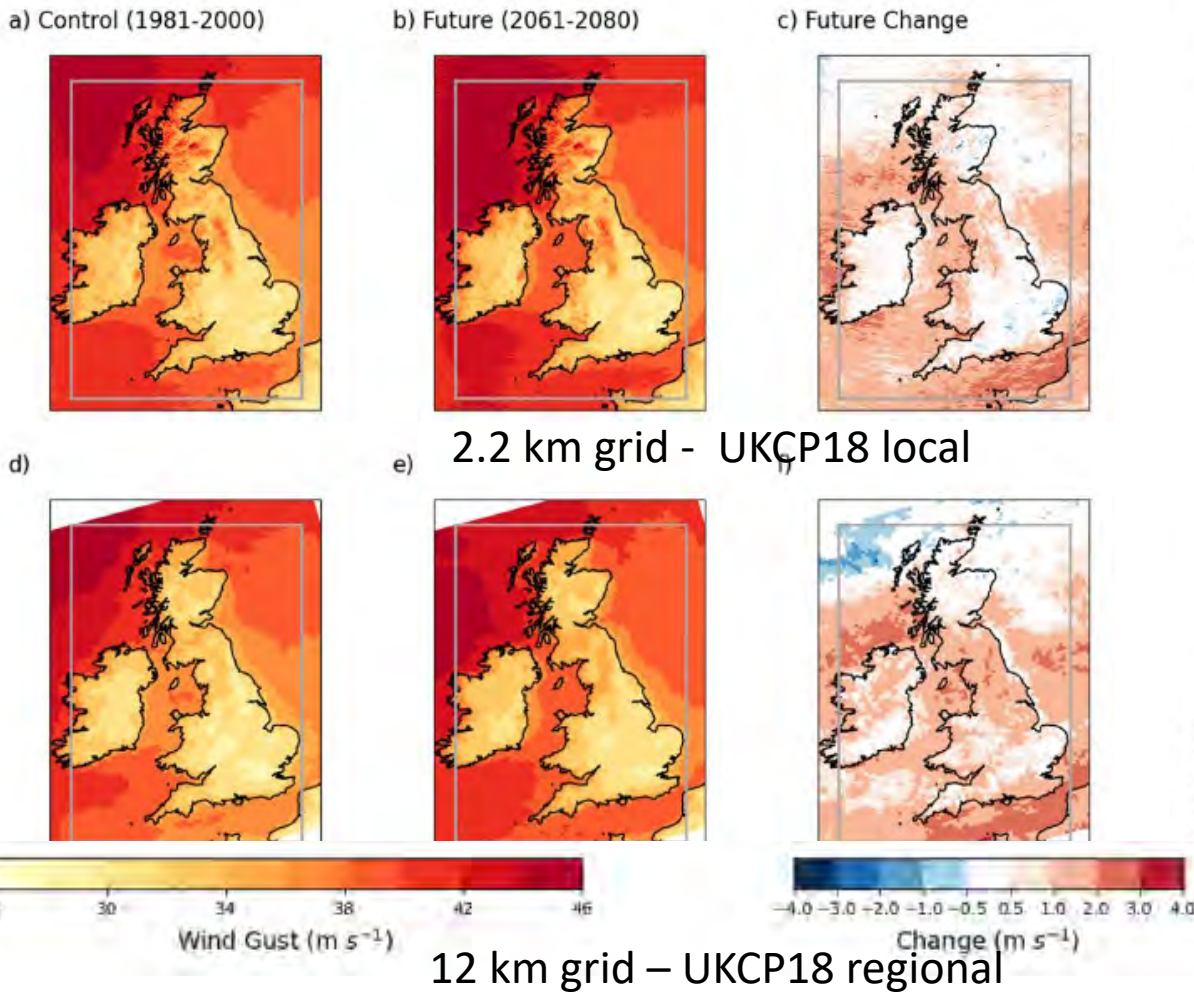
# Projected increase in windstorm severity and contribution from sting jets over the UK and Ireland

Colin Manning<sup>a,\*</sup>, Elizabeth J. Kendon<sup>b</sup>, Hayley J. Fowler<sup>a,c</sup>, Nigel M. Roberts<sup>d</sup>

<sup>a</sup> School of Civil Engineering and Geosciences, Newcastle University, Newcastle upon Tyne, United Kingdom  
<sup>b</sup> Met Office Hadley Centre, Exeter, United Kingdom  
<sup>c</sup> Tyndall Centre for Climate Change Research, Newcastle University, United Kingdom  
<sup>d</sup> Met Office, Met Office@Reading, United Kingdom

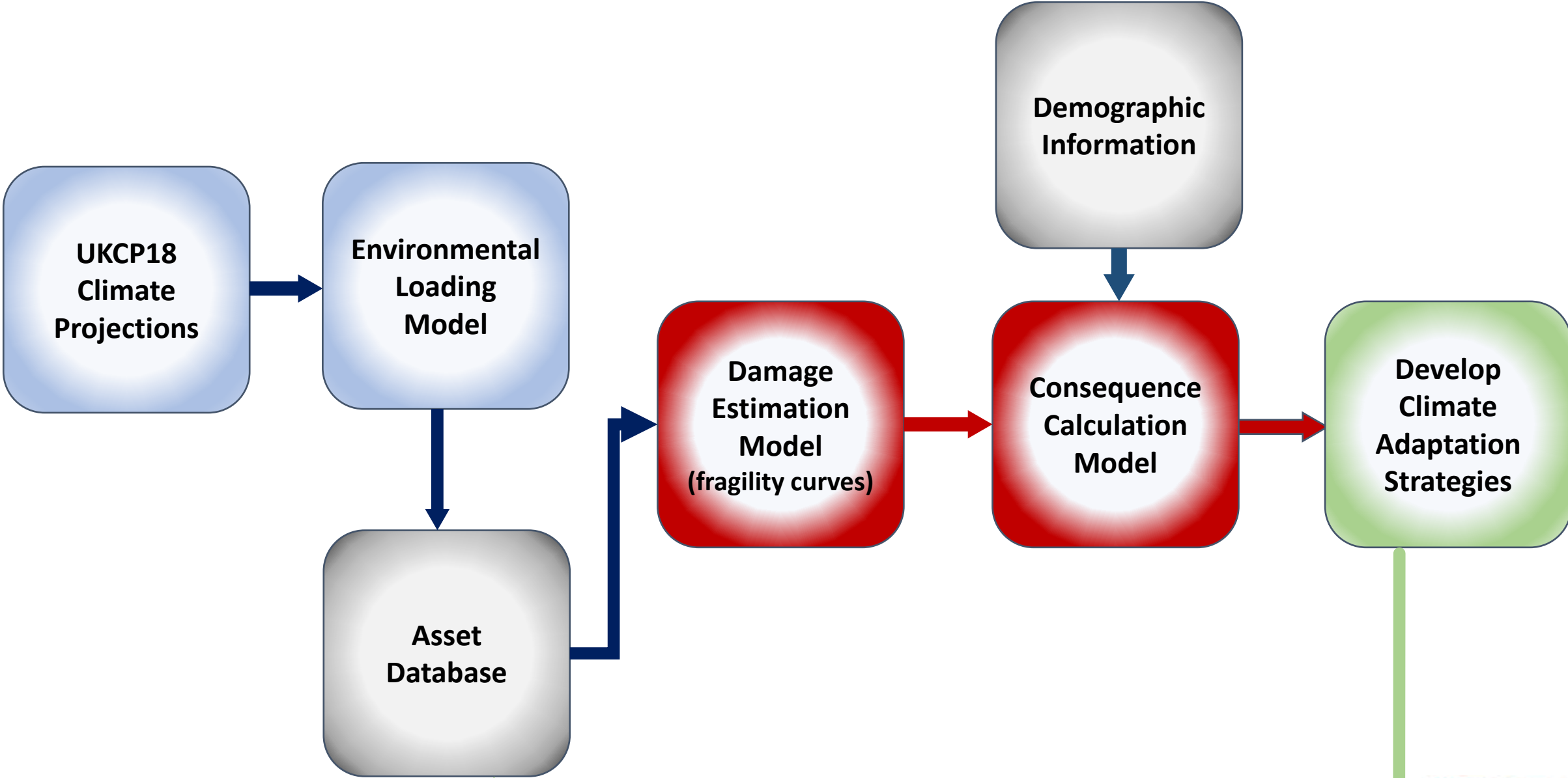


## Max gust wind speed for 3 year return period storms

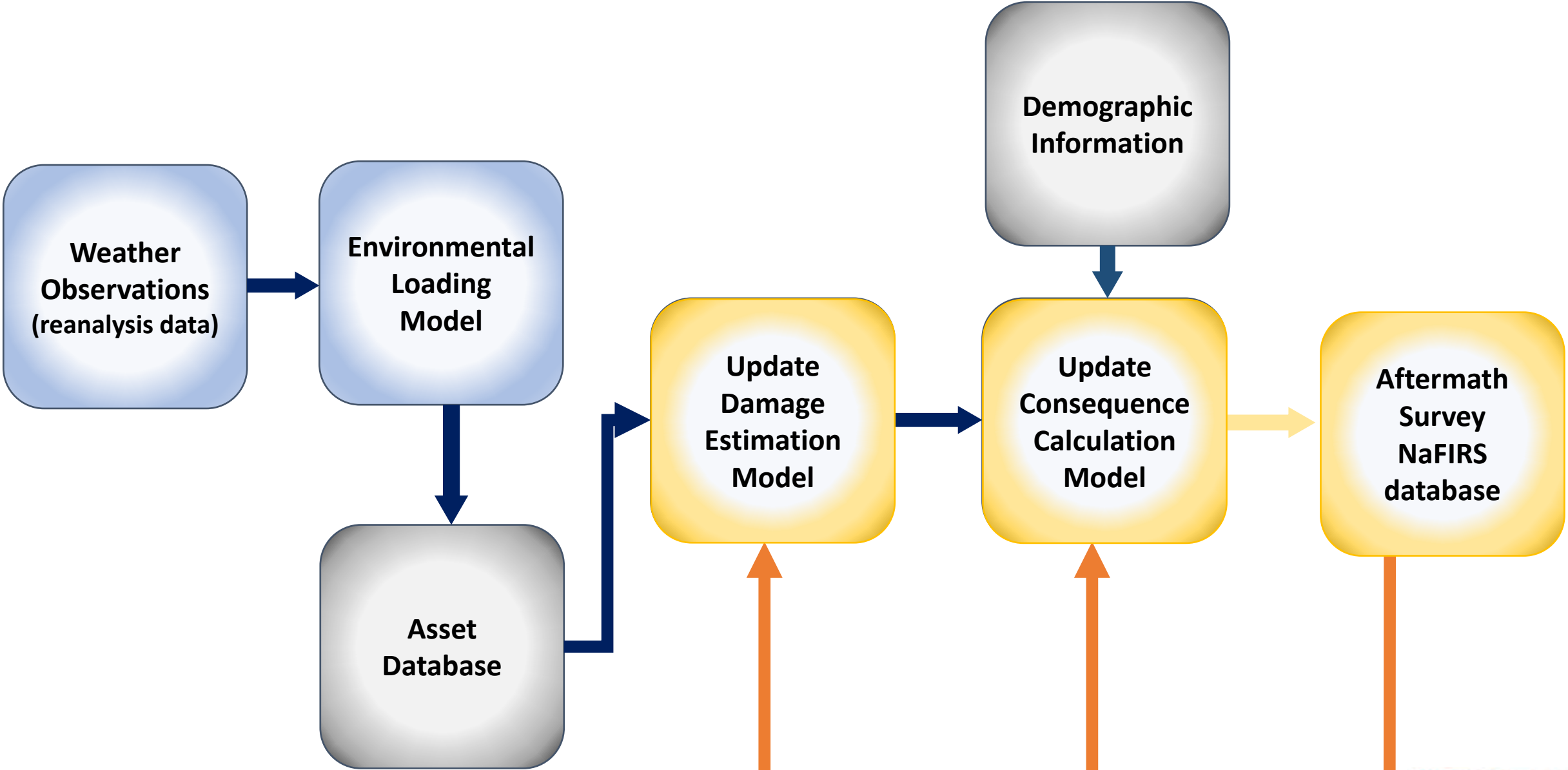




# Consequence Forecasting framework, step 1 calculating impacts and consequences

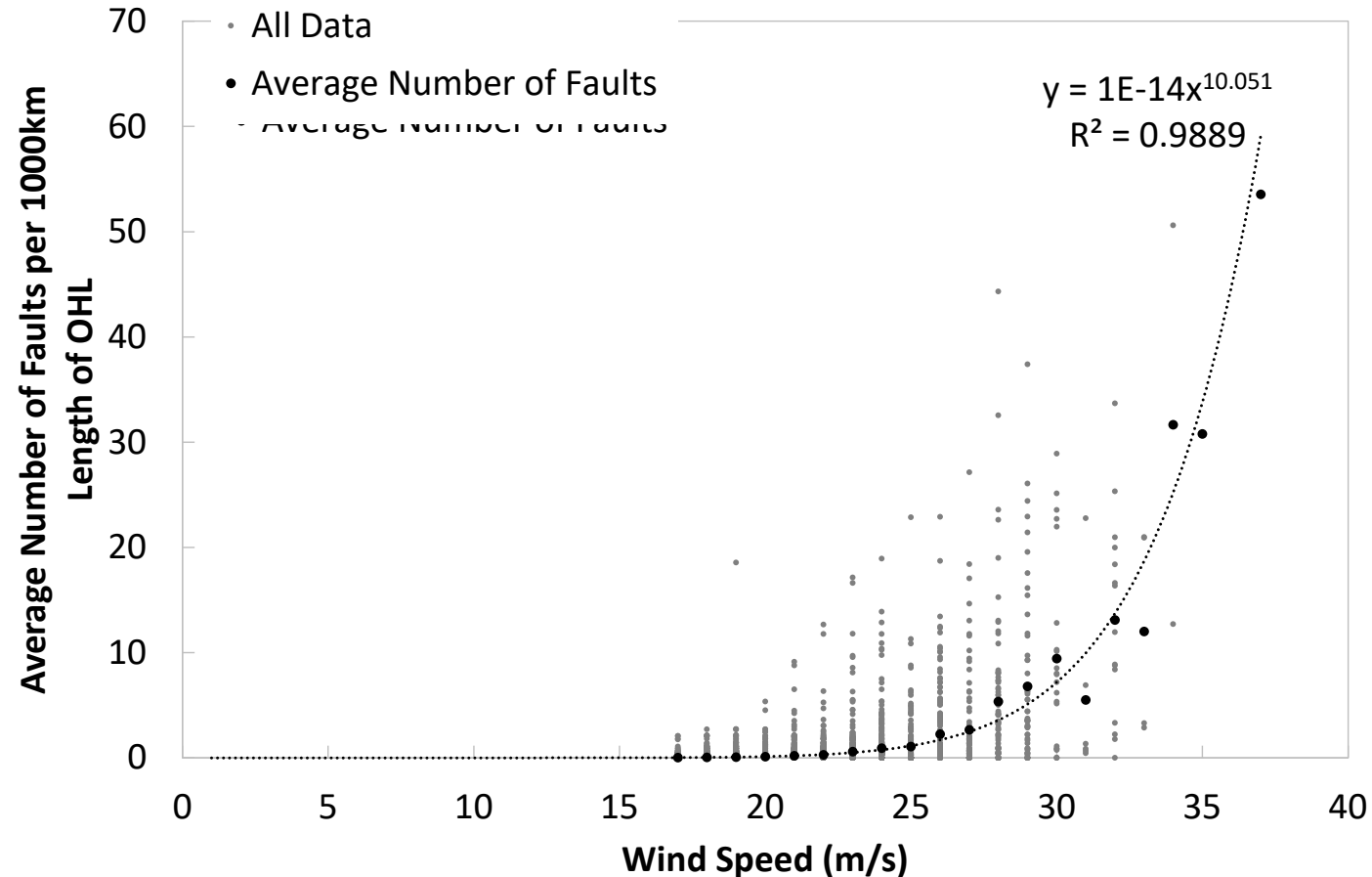


# Consequence Forecasting framework, step 1 impacts and consequences models





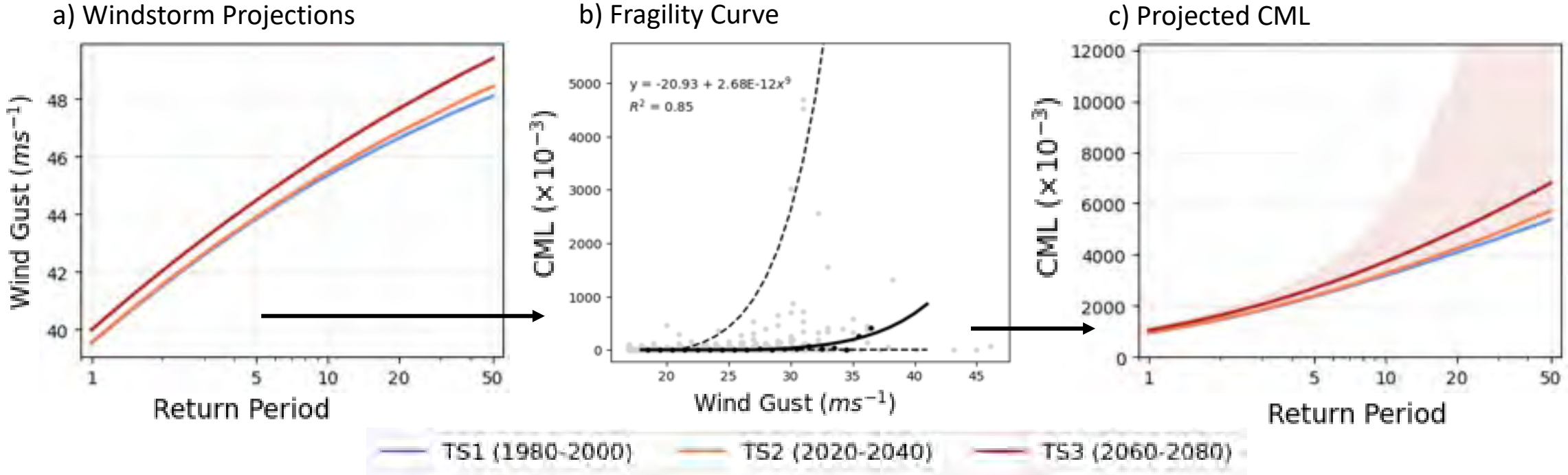
# Fragility / Vulnerability Curves (maximum wind speed)



## Reference:

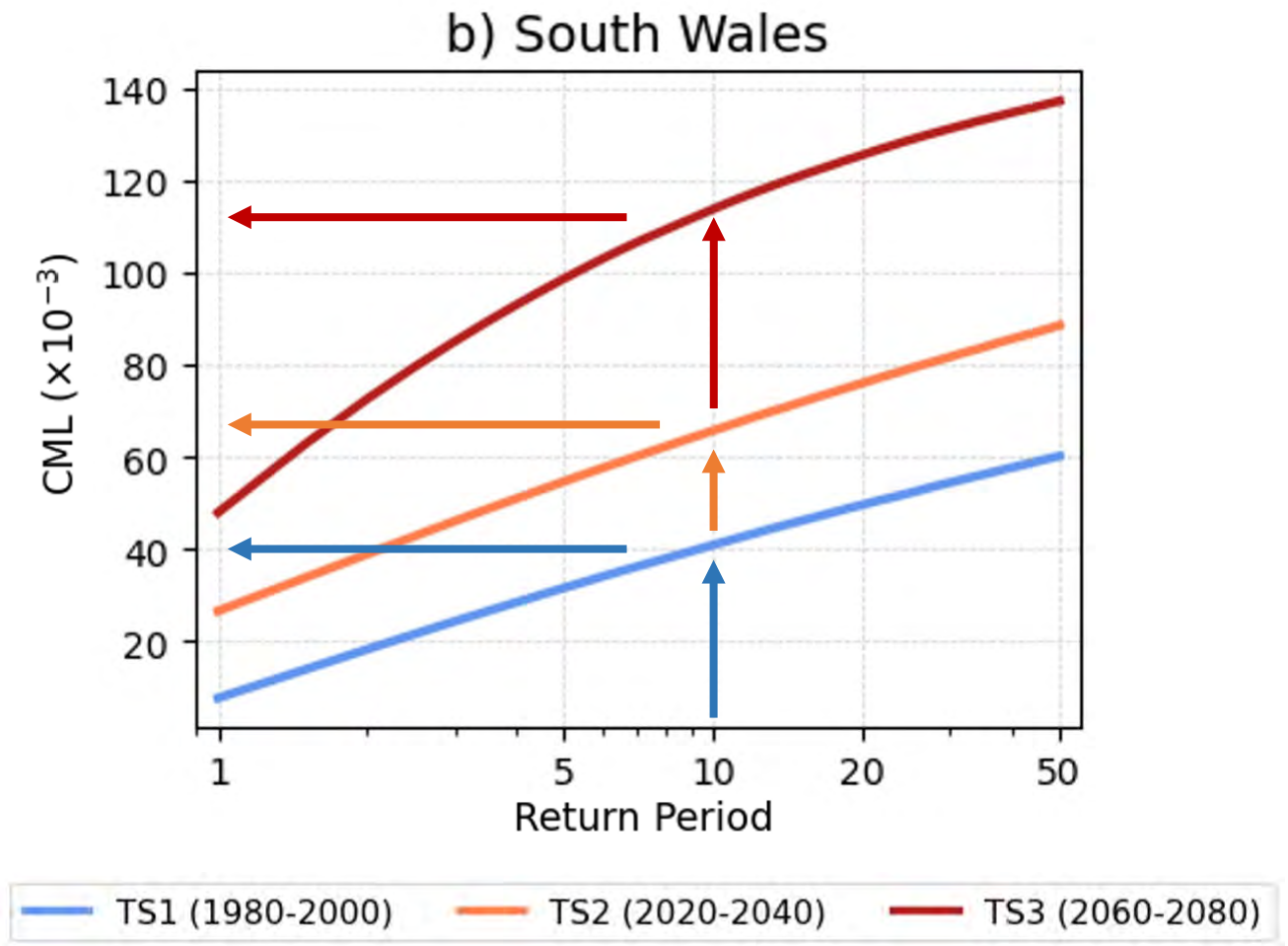
Dunn, S., Wilkinson, S., Alderson, D., Fowler, H. & Galasso, C. (2017) "Fragility Curves for Assessing the Resilience of Electricity Networks, constructed from an Extensive Fault Database". Natural Hazards Review. DOI: 10.1061/(ASCE)NH.1527-6996.0000267.

# Applying UKCP18 Projections to Fragility Curves (customer minutes lost)

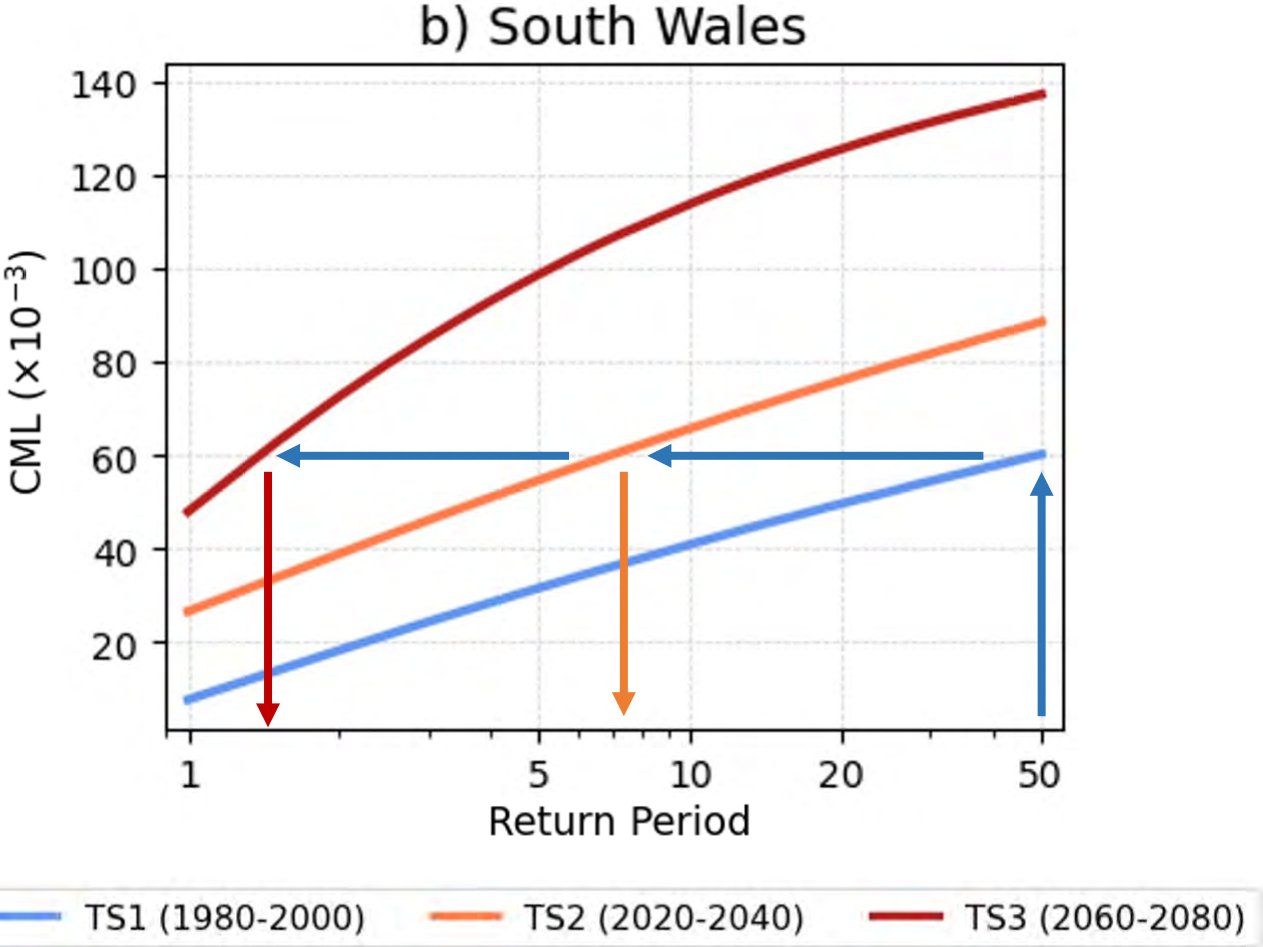




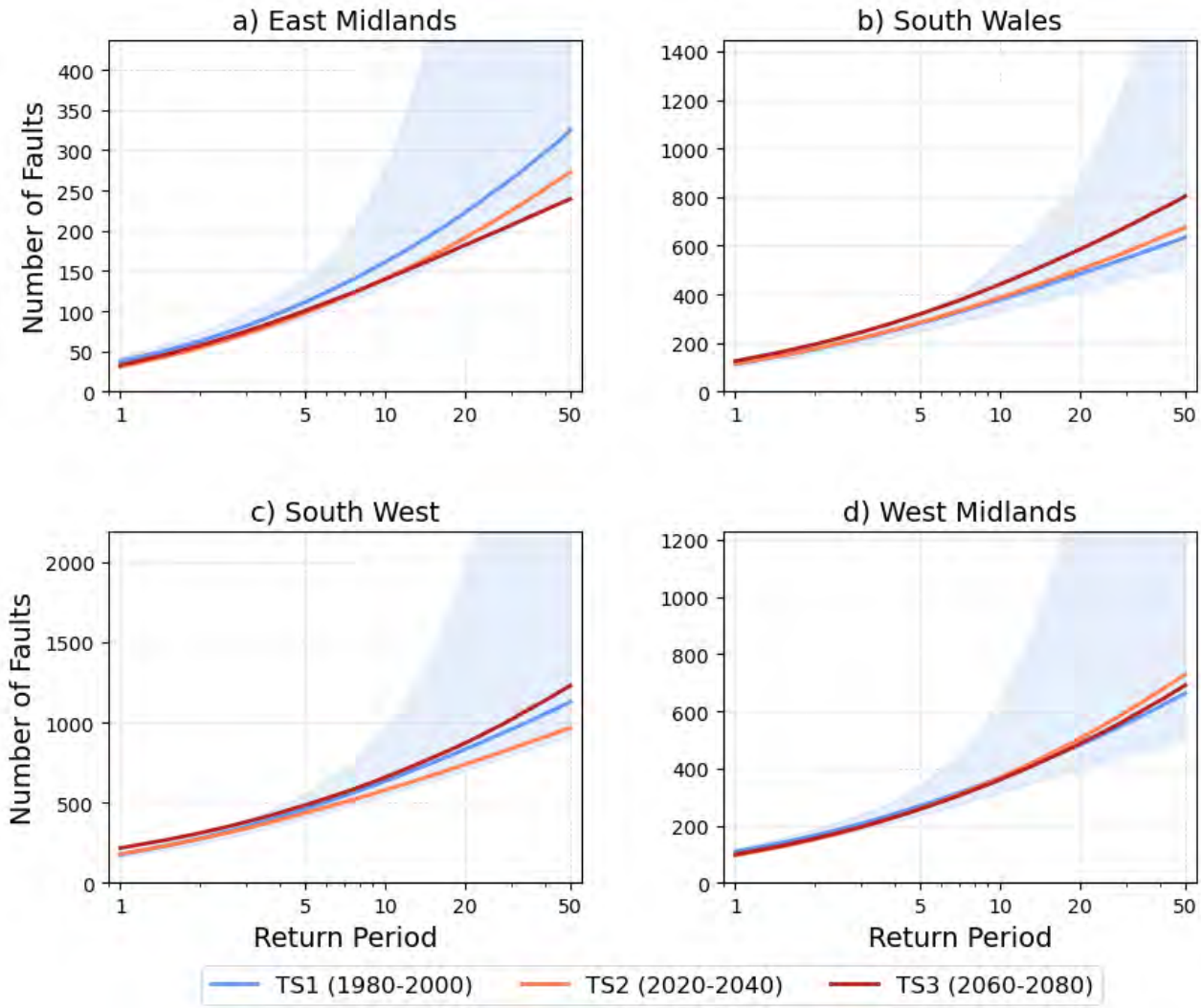
# Customer minutes lost due to hot weather (RCP 8.5)



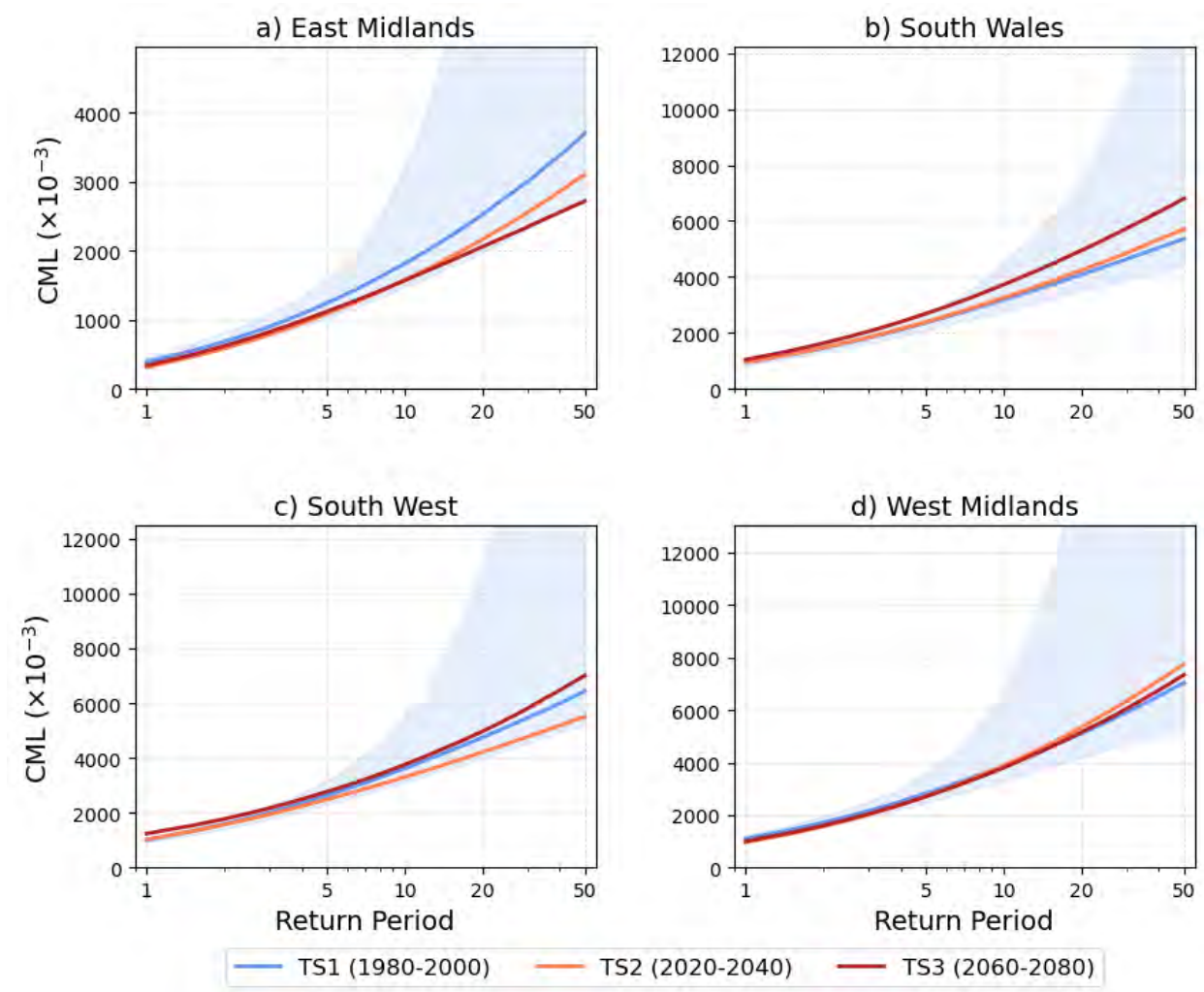
# Customer minutes lost due to hot weather (RCP 8.5)







*Projected fault numbers due to windstorms for 1-50 year events for the three time slices in: a) East Midlands, b) South Wales, c) South West, d) West Midlands. The shaded blue region represents the 95% confidence intervals of the return periods estimated from TS1.*



*Projected CML due to windstorms for 1-50 year events for the three time slices in: a) East Midlands, b) South Wales, c) South West, d) West Midlands. The shaded blue region represents the 95% confidence intervals of the return periods estimated from TS1.*

## Terminology

- **Climate Mitigation** - Activities that reduce the amount of green house gases emissions
- **Climate Adaptation:**
  - **Risk reduction** – prepare for a plausible hazardous event
  - **Response and Recovery** – Post event, how we minimize disruptions in the short term and how we adapt our systems so they are more resilient in the future.
- **Metric** – standard of measurement (e.g. weather intensity (m/s), magnitude (SSI) or CML)
- **Magnitude** – the absolute size of a weather event (e.g. SSI 12)
- **Intensity** – the size of a weather variable at a particular location (e.g. m/s)
- **Climate resilience** – *“a measure of the ability of an energy network not to be negatively impacted by climate hazard”*.
- **climate hazard** all plausible atmospheric phenomena in the climate capable of negatively impacting the physical or operational aspects of energy networks
- **Level of service.** A standard which defines the boundary between acceptable and unacceptable performance (also known as a performance requirement) .
- **Resistance** – the **intensity** of an event that an asset can withstand without faulting or the **magnitude** of an event that the network can withstand without degrading its **level of service**.
- **Vulnerability** = 1/Resistance (**Intensity** that causes a fault or the **magnitude** that results in degradation of system performance)
- **Robustness** (not to fail catastrophically when overcapacity (i.e. capable of delivering a reduced **level of service** once the **resistance** has been exceeded - more usually associated with system performance
- **Climate Impact:** damage to a physical asset (faults – occurs when asset **resistance** is exceeded) or **consequences** when network not sufficiently **robust**
- **Consequences:** the experiences (financial, personal, social) people have as a result of **climate impacts**
- **Risk** – probability of failure (unable to provide the required **level of service**) x **consequence** of failure
- **Reliability** - average time between a **level of service** not being provided (probability of failure)
- **Redundancy:** system properties that allow for alternative options, choices, and substitutions under stress.
- **Response and Recovery** (effectiveness of contingency plans) - average time to restore service to/ability to return to pre-existing conditions).
- **Resourcefulness** (the ability to adapt plans to respond to unforeseen circumstances)
- **Adaptation** is a process, or the result of the action; ability to learn new lessons from previous events and build back better

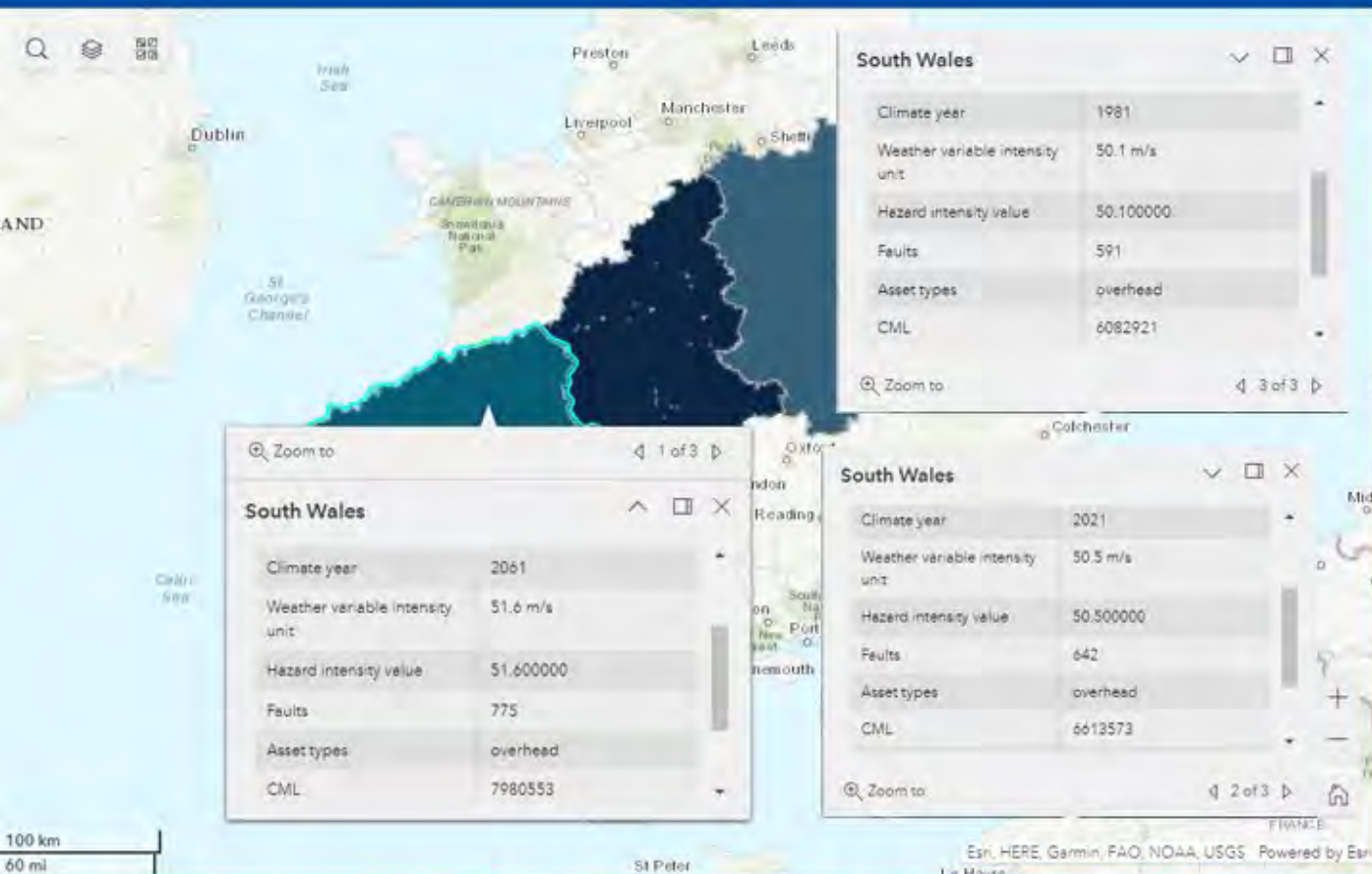


# Potential changes in climate resilience– initial results

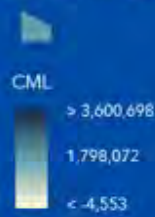
- Extreme windstorms are likely to increase in frequency and intensity over the UK. For example, in South Wales, we are likely to see 1 in 50 year return period storm resulting in **approx 30% more faults in the far future TS3 (2061-2080)** and a 1 in 50 year event occurring on average approximately every 20 years
- Extremely hot temperatures are very likely to increase in their intensity and frequency with a 1 in 50 year events occurring, on average, every 5 to 10 years for TS2 (2020-2040) and occurring on average every 1 to 2 years for the TS3 (2061-2080).
- **This means that heat related CML are set to increase by approximately 30-40% for the TS2 (2020-2040) time slice and double by TS3 (2061-2080).**
- Extremely cold temperatures are likely to decrease in their intensity and frequency in the future, following historical trends (cold temperatures impacts will become less frequently in the future).
- Rainfall extremes are very likely to increase in their intensity and frequency in the future. We expect wetter winters and more short duration (1-hour) intense rainfall events in summer. For instance, a 10-year event in TS1 (current climate) is projected to occur every 5 years in TS3 (2061-2080). **In these regions faults associated with wet spells are projected to increase by approximately 60% in the South West and 80% in South Wales.** In some regions we may not see any change

Licence area

- East Midlands
- South Wales
- South West
- West Midlands



Licence\_Area\_Future\_Climate\_CML



### Asset types

- All (wind, rain, maximum temperature, minimum temperature)
- Other (wind only)
- Overhead (wind only)
- Switchgear (wind only)
- Underground (wind only)

### Return period

- 10
- 50
- 100

### Weather variable

- Rain
- Wind
- Maximum temperature
- Minimum temperature

Date variable

- Base line model: 1981 - 2000
- Medium projection: 2021 - 2040
- Long-term projection: 2061 - 2080

# Conclusion

- We now have the data and tools that can help us to make quantified assessments of the resilience of our energy networks to current and future climate hazard.
- Using them is reasonably straightforward if you know what you are doing (but then again isn't everything, oh and they are models).
- The biggest uncertainty is how our energy networks evolve as we move to a net zero economy.
- We still need to agree: a **terminology**, the correct **metrics** to use and to define appropriate **levels of service**
- We are happy to collaborate with all stakeholders on this project





**CEO Street Works (UK)**

**Clive Bairsto CBE**

**CEO JAG(UK)**

**David Capon**



*24-25<sup>th</sup> May 2023, Croke Park, Dublin*

**SHE Management Conference**

@StreetWorksUK  
@JAGUK\_org

# What is Street Works UK?

- Street Works UK is the UK's only cross-sector trade association representing **gas, electricity, water, and telecommunications** utility companies, their contractor partners, and a range of suppliers within the street works sector.
- Street Works UK is also the utility arm of the Highway Authorities and Utilities Committee (HAUC(UK)), working collaboratively **with JAG (UK)** & roads / local authorities and national and regional governments to drive up standards of road and street works in Scotland, England, Northern Ireland and Wales.

# What do Street Works UK do?

- Work constructively with Ministers, civil servants, policymakers, parliamentarians, business and campaign bodies in supporting the development of street and road work policies - **fair, proportionate and achievable**, without placing unnecessary burdens on utilities and their customers.
- Street Works UK works to **minimise road occupation** through promoting innovation and collaborative working.

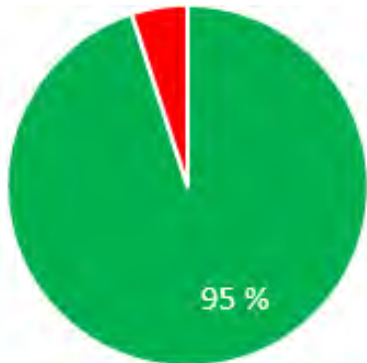


# SAFETY – THE USUAL.....REPORTING OF STRIKES

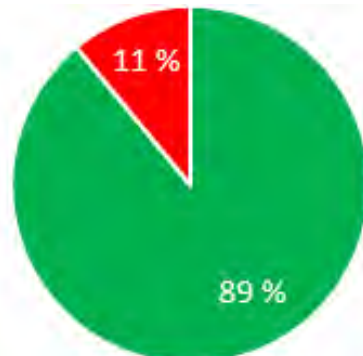
The survey shows a comparable perception between the asset owners and the contractors with regards to how often strikes are reported to relevant parties.

## Reporting of strikes to the asset owner

“Utility strikes are normally reported directly to the affected Statutory Undertaker by the contractor”



Asset owners

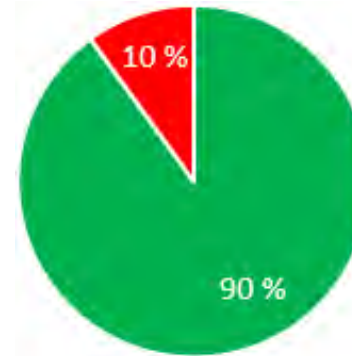


Contractors

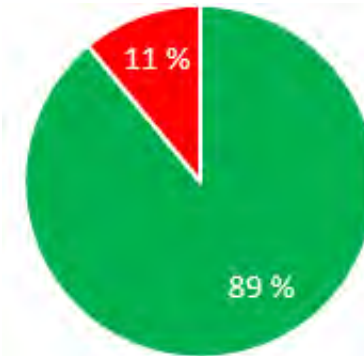
- 95% of Asset owners perceive that strikes are reported to them.
- 89% of contractors' report that this is the case

## Reporting to the HSE - strikes on HV and HP services

“Utility strikes on high-voltage or high-pressure utility services are reported to the HSE as a dangerous occurrence”



Asset owners



Contractors

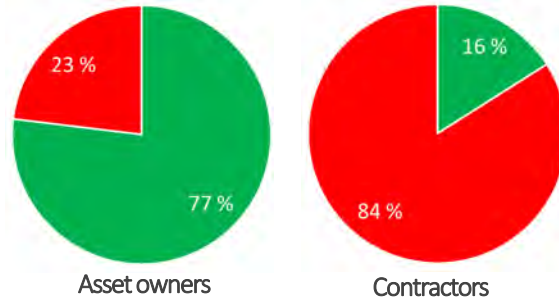
- 89% of contractors and 90% of asset owners says that strikes on high-voltage or high-pressure utility services are reported to the HSE as dangerous occurrences.
- This could indicate that 10% of such incidents remain unreported.

# INSIGHTS.....AVAILABILITY, COMPLETENESS AND ACCURACY OF RECORDS

The survey shows a significant difference in perception between the asset owners and the contractors with respect to accuracy of records and ability to get a complete overview of existing services lines from records.

## Completeness of existing records

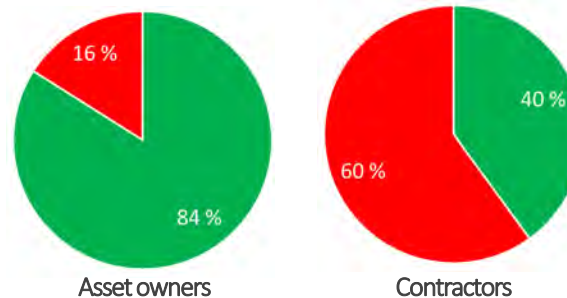
“Statutory records obtained normally show all utility services later found on the work site”



- 77 % of Asset owners and Authorities say that records normally are complete and show all assets found on-site.
- **Only 16 % of Contractors agree.**

## Accuracy of existing records

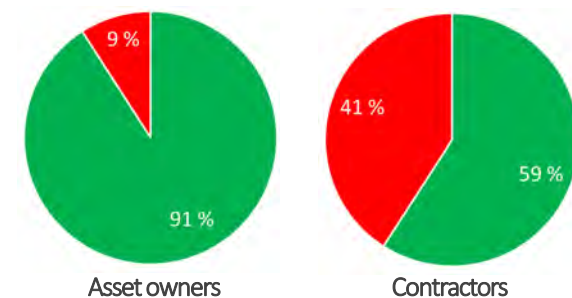
“Services are normally found within +/- 1 metre from documented location”



- 84 % of Asset owners respond that *their* records normally are accurate to +/- 1 metre.
- **Contractors tend to disagree.** Only 40 % say this precision is normally the case.

## Charging for statutory records

“Statutory records are normally delivered without cost for contractor”



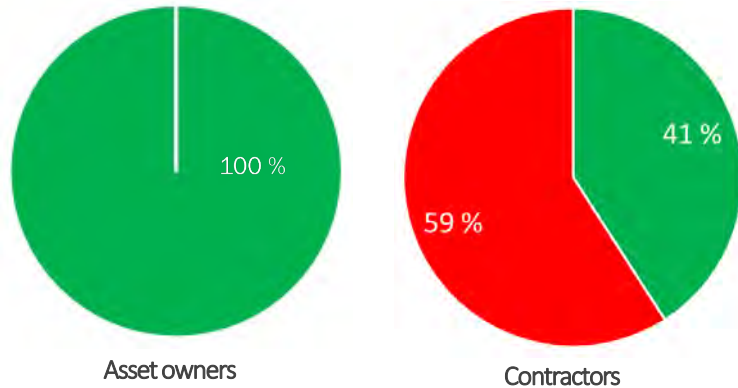
- 81% of asset owners normally distribute records without cost for the contractors.
- 59 % of contractors say that they normally obtain statutory records without cost.

# UNDERSTANDING.....LEVEL OF INTERACTION IN PREVENTING STRIKES

The survey shows a significant difference in perception between the asset owners and the contractors with regards to interaction in preparing for excavation and preventing strikes/ damage.

## Availability for consultation and joint planning

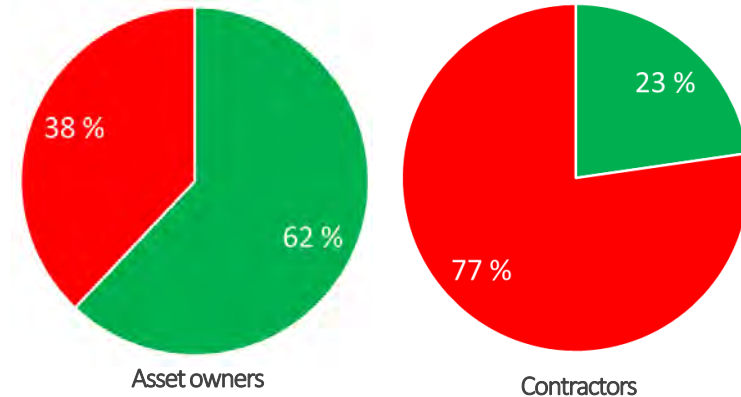
“Affected Statutory Undertakers are easily available for consultation and joint planning if planned work affects their utilities?”



- All (100%) Asset owners report being easily available for consultation and joint planning with 3rd parties' contractors.
- **Contractors' view is opposite to this.** 59% of respondents say asset owners are not easily available.

## Assistance in locating when needed

“Statutory Undertakers in general offer to locate and identify their existing underground asset?”

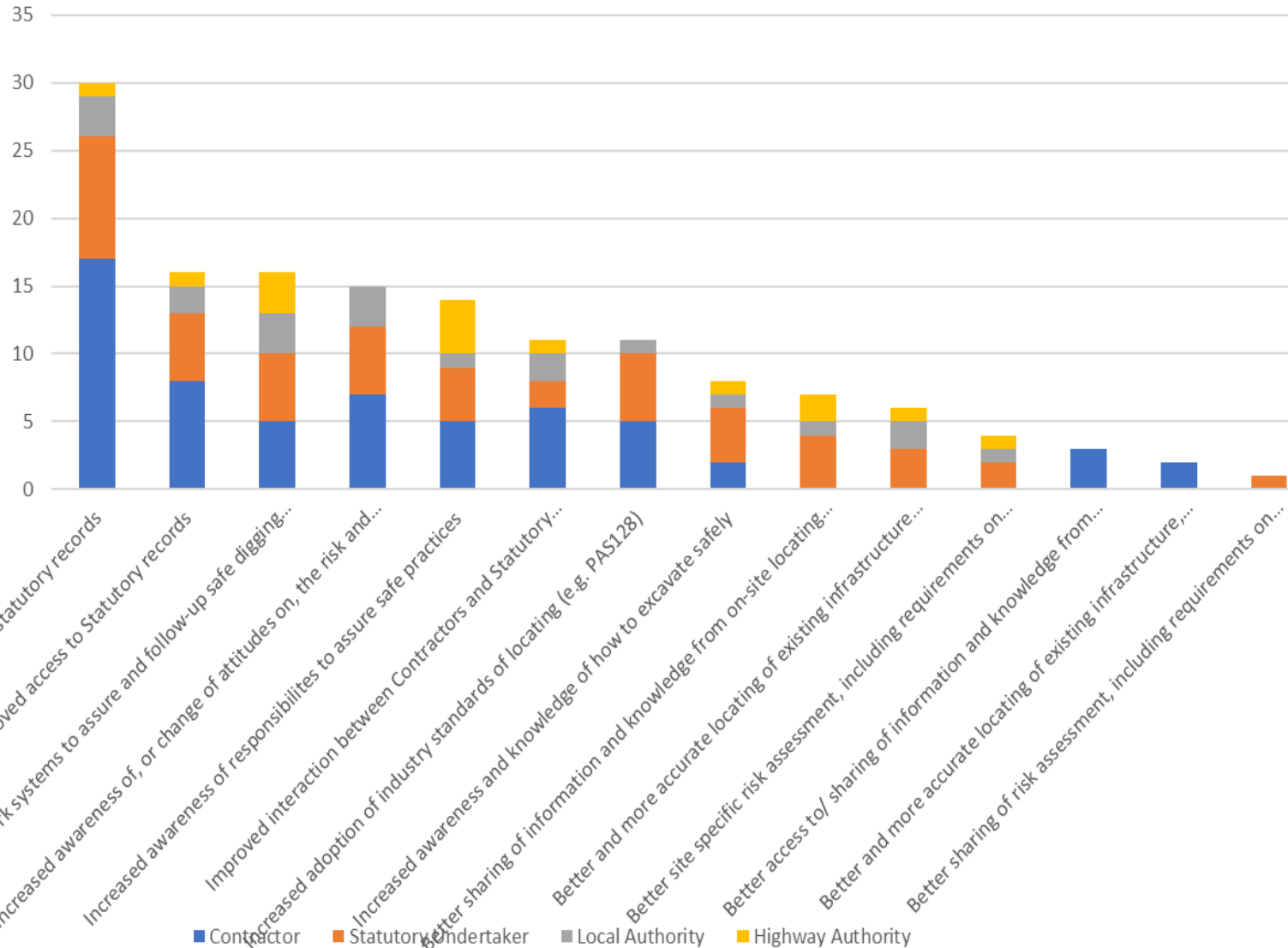


- 62 % of asset owners respondents report they generally offer assistance in locating their assets to 3rd party contractors.
- **Contractors perceive practices differently,** with only 23 % agreeing that such assistance is offered.



# Q33: IN YOUR OPINION, WHAT WOULD BE THE TOP 3 INITIATIVES TO REDUCE NUMBER OF UTILITY STRIKES?

In your opinion, what would be the top 3 initiatives to reduce number of utility strikes?



1. Improved quality of information in statutory records
2. Improved access to Statutory records
3. Improved work systems to assure and follow-up safe digging practices
4. Increased awareness/ change of attitudes on risk and impacts from utility strikes
5. Increased awareness of responsibilities to assure safe practices
6. Improved interaction between Contractors and Statutory Undertakers in the individual construction projects

# A five-year Vision for Street and Road Works in the UK



# 5. Environment and decarbonisation

## Why is it important?

Tackling climate change is a burning issue for so many people that industry and local government engages with. Customers are more aware of it, government has set out ambitious plans for it, and the regulators are setting obligations to help meet it. Taking steps to address it has never been a greater priority, with high expectations on all sectors to deliver a national ambition.



**Our governments have committed to net zero emissions by 2050, a commitment industry and highways authorities welcome and support. Alongside this sits a grave responsibility to ensure are activities do not harm the environment.**





Beautiful isn't it?

THE ROAD TO NET ZERO DISCOVER: DESIGN: DELIVER  
#RTNZ

10

Report : Action Plan

Authors :  
Sebastian Lindmark  
Louise Guthrie  
David Mills

Date : 19/01/2023



# ROAD TO NET ZERØ





# Sector Greenhouse Gas Emissions

Solutions should be prioritised that offer the greatest potential to reduce emissions associated with works whilst also balancing other social, economic and environmental factors. To better understand which solutions should be implemented at scale, we first must understand the key sources of emissions of street and road works. Therefore, efforts have been made to provide an estimate of the sector's emissions.

Initial findings suggests that the annual sector wide emissions are in the range of **~30 to 38 MtCO<sub>2</sub>e**.

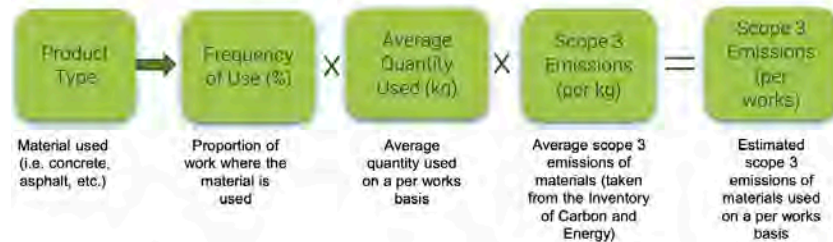
That's the equivalent of 76,000 flights on a B747-400 from London to New York.



The UK territorial emissions in 2021 were 425.5 MtCO<sub>2</sub>e. Meaning that street and road works are responsible for up to 9% of the UK's total emissions



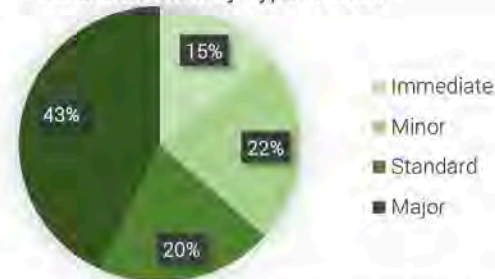
These emissions have been calculated starting with assumptions on the utilisation of "asset type". Working with utility companies from the steering group, estimates were provided on the average utilisation (frequency and quantity used) split into different areas of emissions and types of work. An example is shown below, highlighting the process used to estimate the scope 3 emissions for materials used, note that this would be on a per type of works (i.e. minor works).



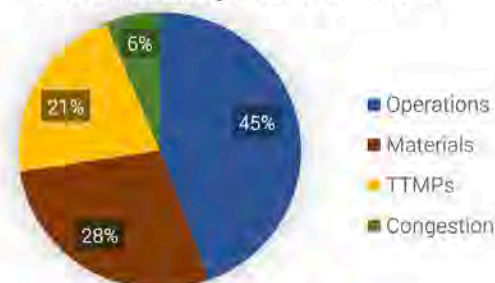
These findings can be broken down to identify the key sources of emissions, Type of Work, Areas of Emissions, Asset Type or even Type of Emissions. Major works contribute to 43% of the total emissions, whilst only contributing to 17% of the total works completed. This is because emissions per work of major works is significantly higher than for other types. Major works require more time, space and resources to complete compared to others, as such the associated emissions will also be higher. What needs to be better understood is where solutions should be targeted on a short- and long-term basis, and how this varies across different types of work.

Due to practical, commercial and technical reasons there will not be a single set of solutions that applies across the entire sector. It is therefore important to understand the key contributing factors to the emissions and how this varies between types of work and areas of emissions. The figures below shows how the emissions can be broken down by Type of Work and Areas Emissions. The Evaluating Solutions Report [1] provides a more detailed breakdown of these emissions, looking at asset type, (i.e. type of vehicle) and type of emissions (i.e. direct or embodied emissions).

GHG Emissions by Type of Work



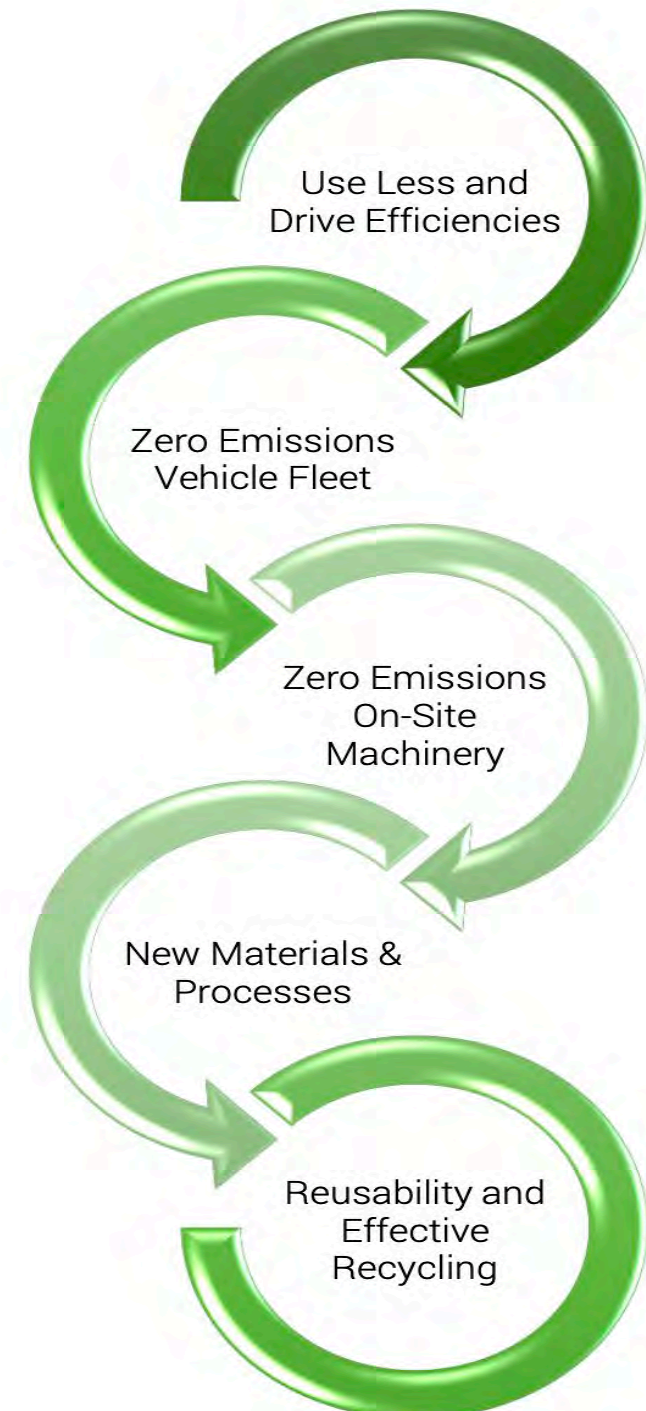
GHG Emissions by Areas of Emissions





So far our study shows:

...Five key steps for change >



# Excavated Waste

Figure 9: Overview Breakdown of Sample Classification

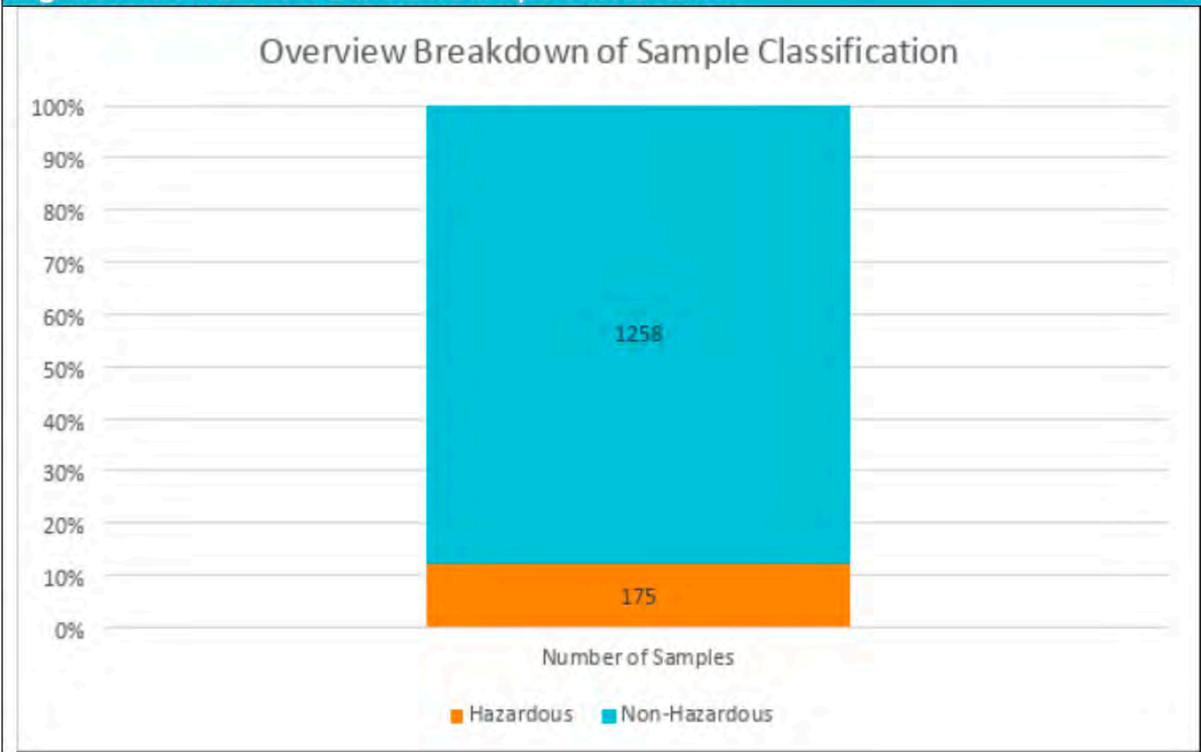
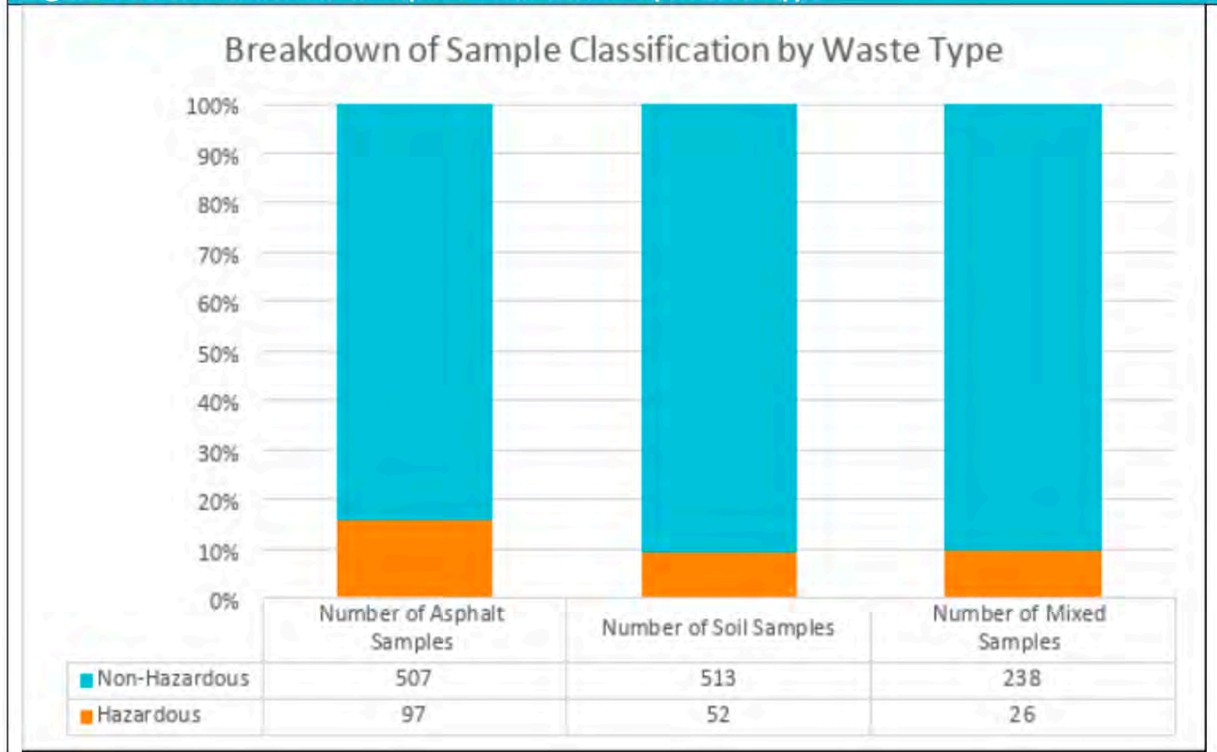


Figure 10: Breakdown of Sample Classification by Waste Type



# Developing Risk Assessments



Q3	Is the binder shiny, sticky to touch and is there an organic odour?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	All three (shiny, sticky and odour) required for a “yes”
Q4	Spray white paint across the surface layer – across the profile. Does the paint turn yellow?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Ensure to spray a line across the depth of the excavation.
Questions – All excavations					
Q5	Has the ground surface been heavily worked previous to this excavation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Look for signs of differing surface layers and previous scars
Q6	Are there any unusual foreign objects in the excavation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Items you wouldn’t expect in the ground such as paint chips or landfilled waste.
Q7	Is the soil stained an unusual colour (such as an orange, black, blue, green)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Compare the discolouration of soil to other parts of the excavation
Q8	If there is water / moisture in the excavation – is there a rainbow sheen / colouration to the water?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Looking for signs of oil in the excavation.
Q9	Are there any pungent odours to the soil?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Think bleach, garlic, egg, tar, gas, pungent, sweet smells
Q10	Does the road name (or nearest road name) suggest the area was once used for industry?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Names like; gas works lane
Q11	Does the material excavated look to be recently backfilled or laid within the last year?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	Look for signs of newer material, for example backfill material may look different to other soils
<b>Other comments:</b>					
<b>Assessor Name:</b>					



# Growing safety challenges

- Environmental work: Excavated waste
- Behaviours of workforce
- ‘Care’ of MoP & Travelling Road Users
- Worker Abuse
- New Safety Code roll out

Street  
**Works**  
UK



**Questions**



Network UK

# Sustainable Business is more than Net Zero

ENA SHE Management Conference  
25 May 2023



# UN GLOBAL COMPACT: OVERVIEW



**21,000+**

businesses committed  
to the Ten Principles  
of the UN Global Compact

**3,800+**

non-business members

**160+**

countries with  
UN Global Compact  
participants

**80**

local networks

**900+**

UK Participants

# Why act?

---

There's a strong moral case, supported by a very strong business case.

## Risk Management

- Physical risk
- Transition risk
- Liability risk

## Investors:

- Access to capital
- Higher Corporate Valuation
- Lower Cost of Capital

## Other stakeholders:

- Customer Loyalty
- Employee Relations
- Operational Efficiency
- Supplier Relations





# What action?

---

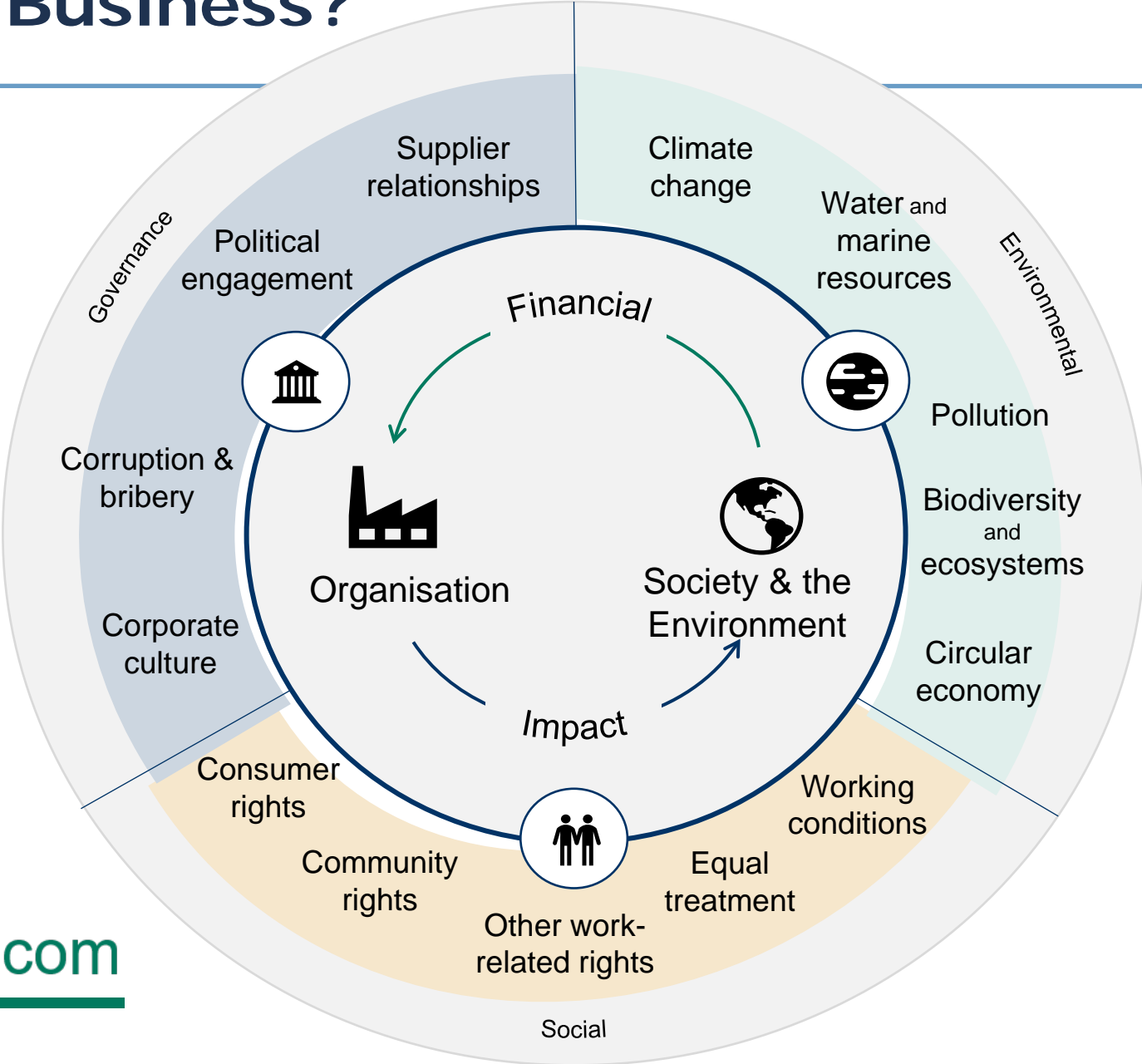
**Urgent decarbonization is essential, adaptation, and finance are also critical.**

1. Science-based targets
2. Nature-based solutions
3. Circularity





# What is Sustainable Business?



[www.erm.com](http://www.erm.com)





# SUSTAINABLE DEVELOPMENT GOALS



# SDG 13 – Climate Action

---

Climate Action can be a critical driver for accelerating progress towards almost all the SDGs.

- Strong links to SDG 7 (Affordable and Clean Energy), 8 (Decent Work and Economic Growth), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 14 (Life Below Water) and 15 (Life on Land).

The impacts of climate change also undermine progress on a range of Sustainable Development Goals and will continue to do so if not urgently addressed.

- The impacts of climate change can increase levels of poverty (SDG 1), threaten food security (SDG 2), and drive inequalities (SDG 10).





# SDG COMPASS



## Step 02 **Defining priorities**

---

Map the value chain to identify impact areas  
Select indicators and collect data  
Define priorities

---



## Step 03 **Setting goals**

---

Define scope of goals and select KPIs  
Define baseline and select goal type  
Set level of ambition  
Announce commitment to SDGs

---



## Step 04 **Integrating**

---

Anchoring sustainability goals  
within the business  
Embed sustainability across all functions  
Engage in partnerships

---



## Step 05 **Reporting and communicating**













---

Effective reporting and communication  
Communicating on SDG performance

---

# SDG Ambition | Benchmarks

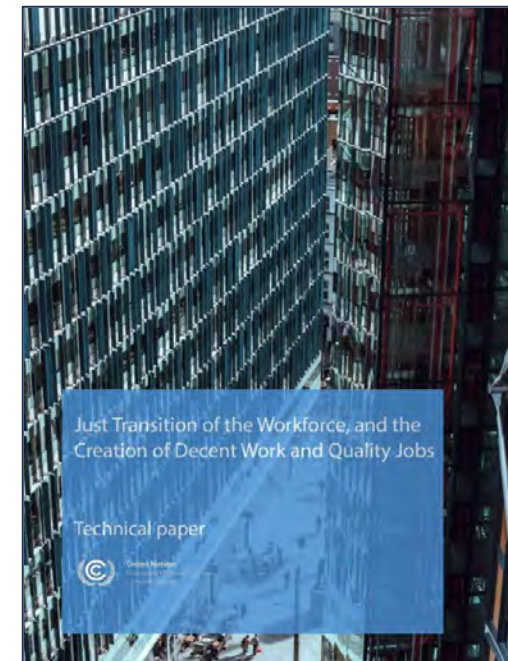
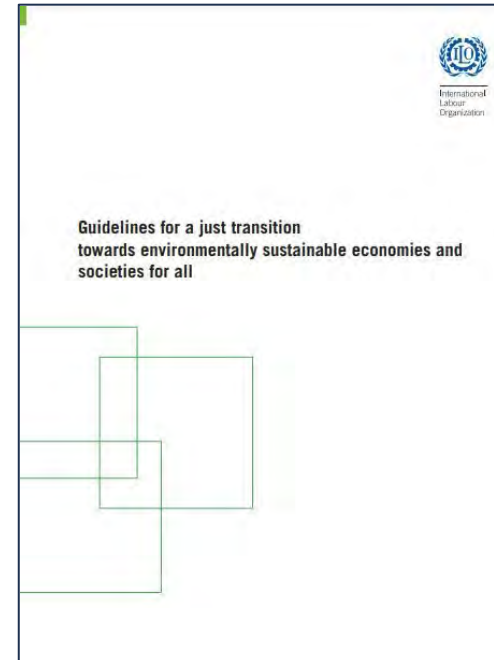
SCOPE

 Gender balance across all levels of management	■
 Net-positive water impact in water-stressed basins	■ ■ ■
 100% of employees across the organization earn a living wage	■ ■
 Zero waste to landfill and incineration	■
 Zero discharge of hazardous pollutants and chemicals	■ ■
 100% sustainable material inputs that are renewable, recyclable or reusable	■ ■
 Science-based emissions reduction in line with a 1.5C pathway	■ ■ ■
 100% resource recovery, with all materials and products recovered and recycled or reused at end of use	■ ■
 Land degradation neutrality including zero deforestation	■ ■ ■
 Zero incidences of bribery	■ ■ ■
 Equal pay for work of equal value	■
 Zero severe and fatal work-related accidents, injuries and diseases	■ ■

KEY: ■ OPERATIONS ■ PRODUCTS & SERVICES ■ VALUE CHAIN

# What is a Just Transition?

- According to the **International Labour Organization**, a Just Transition means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind.
- A people-centred climate response depends on decarbonisation strategies which simultaneously promote social inclusion and support the **four pillars** of decent work: full and productive employment, rights at work, social dialogue and social protection.
- A just transition works to ensure that the transition to net-zero emissions and climate resilience is orderly, inclusive and just, creates **decent work opportunities**, and **leaves no one behind**.
- It depends on a **fair process** built on **social dialogue** and stakeholder engagement among all impacted groups and a universal respect for fundamental labour rights and other human rights.





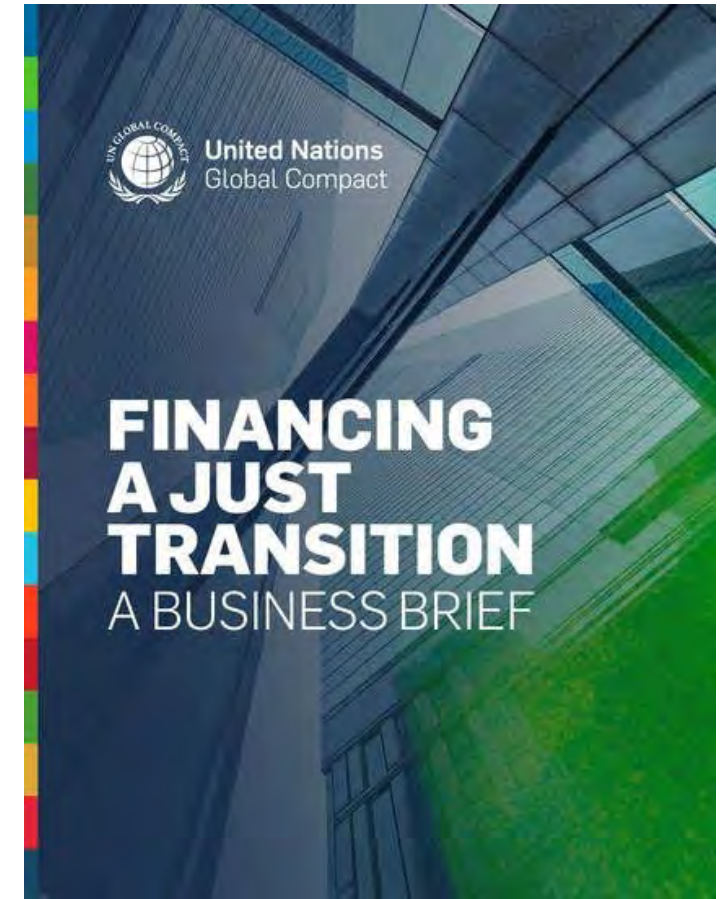
# UN Global Compact Guidance



<https://unglobalcompact.org/library/6093>



<https://unglobalcompact.org/library/6099>



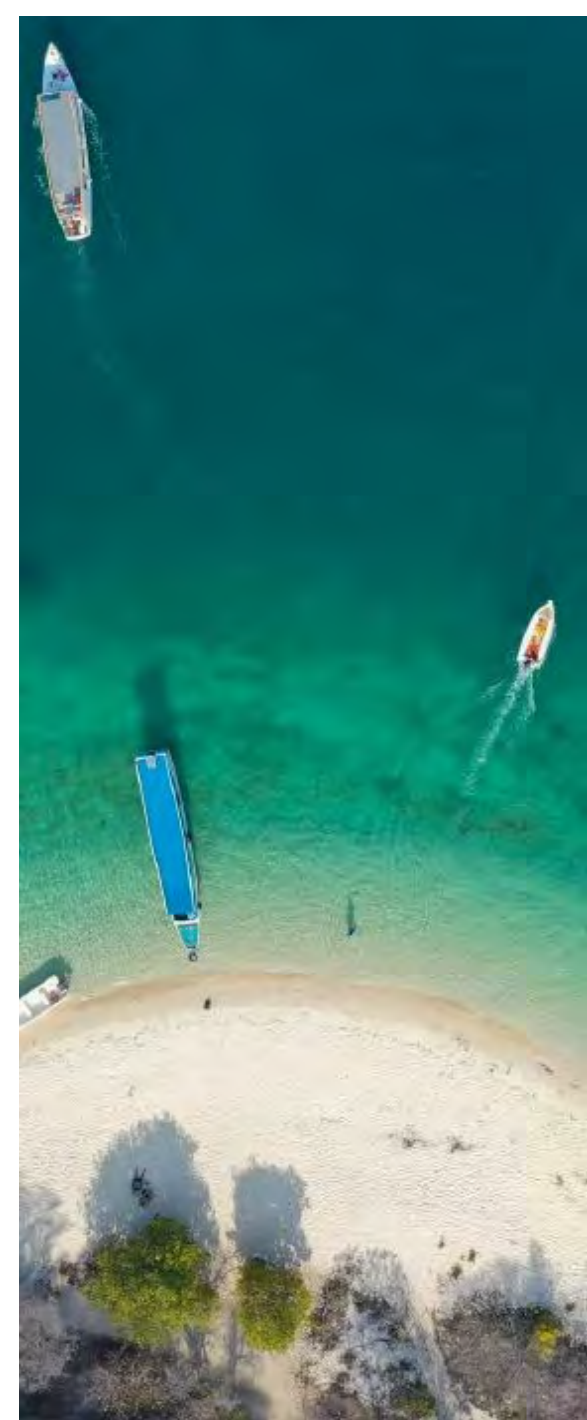
<https://unglobalcompact.org/library/6102>



# Priority Actions

---






1. Make a map of touch points and priorities in just transition;
2. Set a foundation through robust policies and practices to respect rights at work and other human rights and ensure responsible business conduct;
3. Engage with worker organizations, governments, and all affected stakeholders about transition plans;
4. Make long-term business plans that integrate just transition principles, mitigate negative impacts, and maximize opportunities for key stakeholders;
5. Take action to carry out just transition plans;
6. Partner with governments, employer organizations, regional/sectoral initiatives, and across supply chains for more coordinated action;
7. Learn, integrate and communicate by measuring and reporting actions, challenges and impacts related to just transition, to promote learning and accountability.





# Case Study – UN Global Compact Member



SSE'S 20 PRINCIPLES FOR A JUST TRANSITION				
TRANSITIONING INTO A NET-ZERO WORLD			TRANSITIONING OUT OF A HIGH-CARBON WORLD	
 <p><b>SSE'S PRINCIPLES FOR GOOD, GREEN JOBS</b></p>	 <p><b>SSE'S PRINCIPLES FOR CONSUMER FAIRNESS</b></p>	 <p><b>SSE'S PRINCIPLES FOR BUILDING AND OPERATING NEW ASSETS</b></p>	 <p><b>SSE'S PRINCIPLES FOR PEOPLE IN HIGH-CARBON JOBS</b></p>	 <p><b>SSE'S PRINCIPLES FOR SUPPORTING COMMUNITIES</b></p>
<ol style="list-style-type: none"> <li>1. Guarantee fair and decent work</li> <li>2. Attract and grow talent</li> <li>3. Value employee voice</li> <li>4. Boost inclusion and diversity</li> </ol>	<ol style="list-style-type: none"> <li>5. Co-create with stakeholders</li> <li>6. Factor-in whole-system costs and benefits</li> <li>7. Make transparent, evidence-based decisions</li> <li>8. Advocate for fairness</li> </ol>	<ol style="list-style-type: none"> <li>9. Support competitive domestic supply chains</li> <li>10. Set social safeguards</li> <li>11. Share value with communities</li> <li>12. Implement responsible developer standards</li> </ol>	<ol style="list-style-type: none"> <li>13. Re-purpose thermal generators for a net-zero world</li> <li>14. Establish and maintain trust</li> <li>15. Provide forward notice of change</li> <li>16. Prioritise retraining and redeployment</li> </ol>	<ol style="list-style-type: none"> <li>17. Deliver robust stakeholder consultation</li> <li>18. Form partnerships across sectors</li> <li>19. Promote further industrial development</li> <li>20. Respect and record cultural heritage</li> </ol>



# Thanks!

Steve Kenzie LinkedIn:




**Please follow UN Global Compact Network UK at:**

LinkedIn: @un-global-compact-network-uk

Twitter: @GlobalCompactUK

Our vision is for all UK businesses to take ambitious action to create a world we want to live and do business in.

We work with our network of UK businesses and other stakeholders to help companies operationalise their commitment to our Ten Universal Principles for responsible business. We do this by inspiring ambition, enabling action, and collaborating to shape the business environment to support corporate sustainability.



**enda**  
energynetworks  
association

**she**  
safety, health  
& environment  
management  
conference

Thank you  
See you in Jersey for the 2024  
SHE Management Conference

Hosted by



Supported by

