

How Environmental Permitting is helping us all to be better prepared for a changing climate

By Mike Nicholas, Senior Advisor: Climate Change Adaptation

EA approach to helping Operators adapt to Climate Change

- Background
- Why we needed to make changes
- Revised approach
- Related work (e.g. CDOIF) and Next steps

Is your business preparing for climate change?

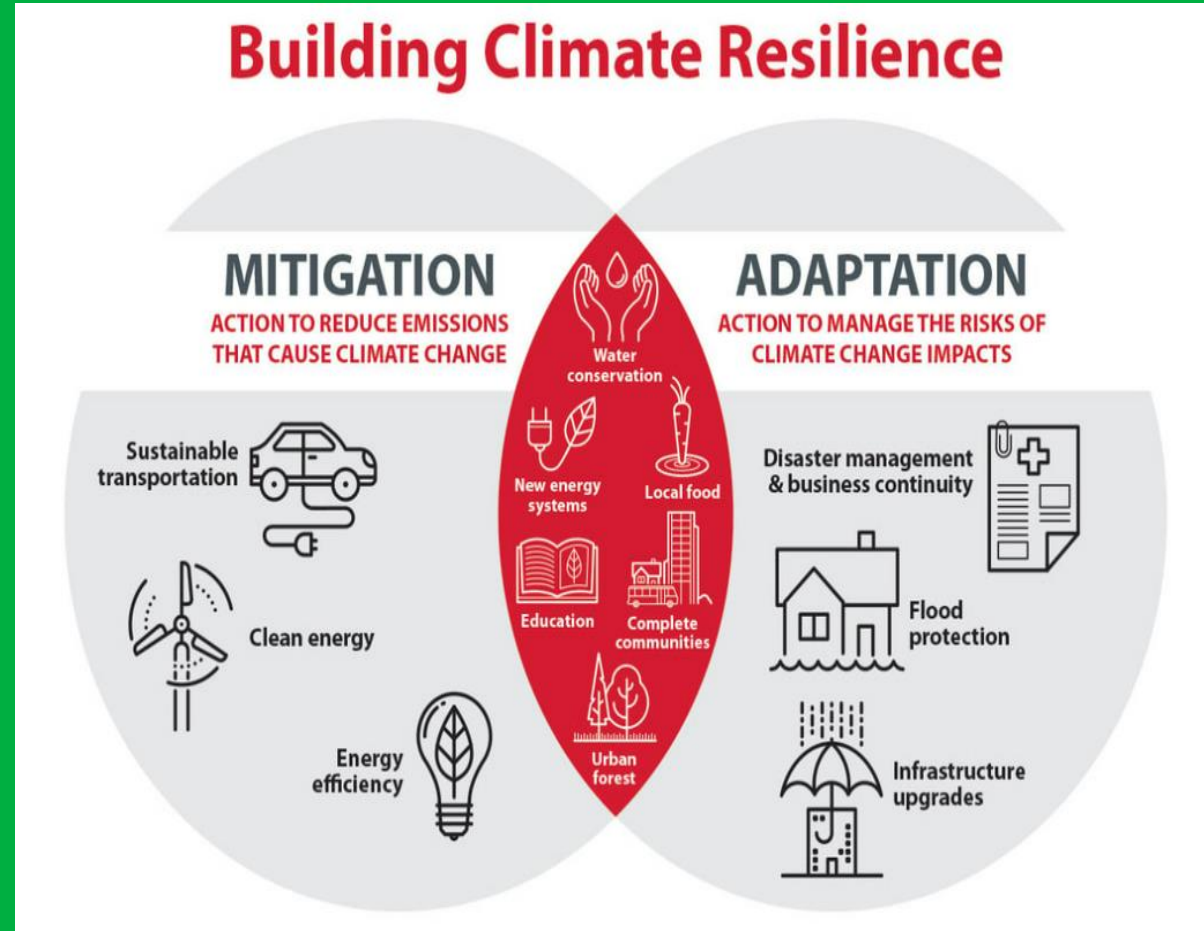
In 2021 the EA published its third adaptation report “Living Better with a Changing Climate”

- “business as usual” is not an option
 - we are helping businesses prepare
 - creating a net zero nation resilient to climate change



Resilient net zero = mitigation + adaptation

- Climate mitigation, resource efficiency and adaptation sometimes seen as separate issues
- Encourage 'integration' or 'systems thinking'
- Consider climate impacts in short, medium and long term on compliance, including during transition to NZ



How can natural hazards impact businesses & environmental protection?

Possible failures / degradation

- **High temperature / Heat wave**
 - Insufficient process cooling, particularly where using ambient air as coolant;
 - Process equipment / instrumentation overheating and malfunctioning;
 - Impact on workforce / reduced human performance;
 - Increased fire risk / material decomposition / material auto-ignition;
 - Increased wildfire risk (either direct impact to establishment or indirect impacts – utilities/emergency response)



How can natural hazards impact businesses & environmental protection?

Possible failures / degradation

- **Flooding**

- Floating of vessels or impact damage to equipment causing loss of containment (potential multiple losses);
- Loss of power / utilities / control and communication systems;
- Compromising secondary/tertiary containment & drainage integrity/functionality;
- Hampering emergency response - unavailable resources or access/egress issues.

- **Sea level rise**

- Increased risk of local sea/estuary defences failing and sites flooding;
- Increased forces on jetties/coastal structures due to changes in marine/estuarine currents.



For more, sector specific examples of how climate impacts can affect industrial installations, see the gov.uk guidance on

[Adapting to climate change: industry sector examples for your risk assessment](#)



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CSG Sandhurst: seat of fire (left) and flooding (below)



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Climate change is influencing how we regulate

Since 2019 EPR new bespoke waste and installations needed an adaptation risk assessment to consider flooding and water use, if operational expectancy > 5 years



A revised approach in 2022: transitioned from permitting to compliance at all sites.

Guidance on gov.uk with revised section “A changing climate”

- *Develop a Management System: environmental permits*

Revised approach to adaptation within EPR

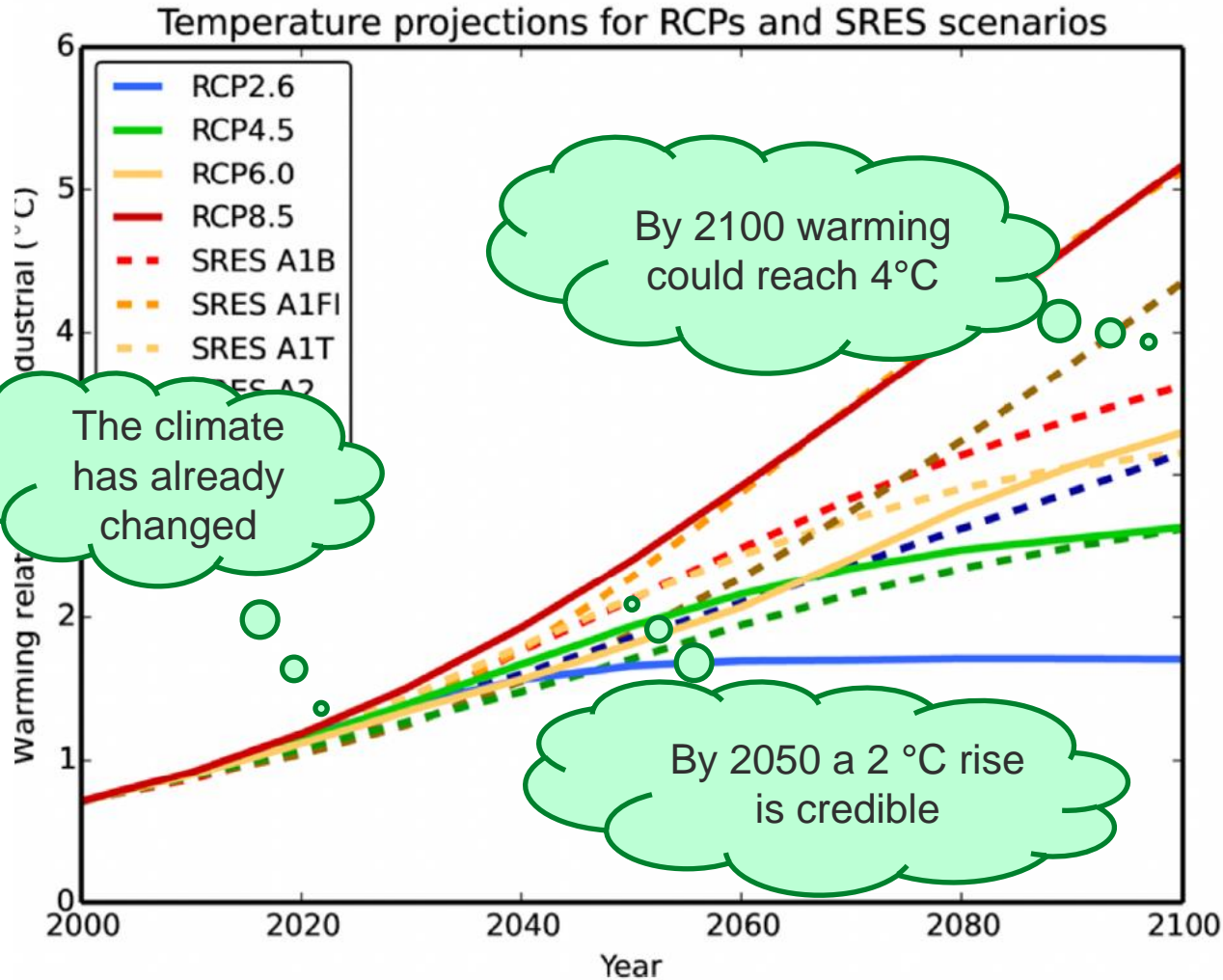
- Updated our management system guidance
 - Greater emphasis on the need for adaptation to be embedded within environmental management systems
 - Linking to UKCP18 and consideration of ISO 14090 and associated standards
- Maintain sector specific risk assessments
- Work with others to develop the tools and support needed to deliver the revised approach
 - Revised guidance document
 - Training for regulatory Officers
 - Ensure we all capture learning points from extreme weather events

What is the ambition?

By 2025 operators will

- ✓ Use climate impacts information, including UKCP18, to understand and manage current risks
- ✓ Assess the risks associated with a 4°C rise by 2100
- ✓ Plan to manage the risks associated with a 2°C rise by 2050
- ✓ Avoid Lock-in (e.g. during transition to Net Zero and exploring more scenarios as necessary)

- Approx 12,000 permitted sites (EA regulated)
- Approx 400-500 permitted sites (LA regulated)



[Met Office \(2018\)](#)

Phased approach for sectors

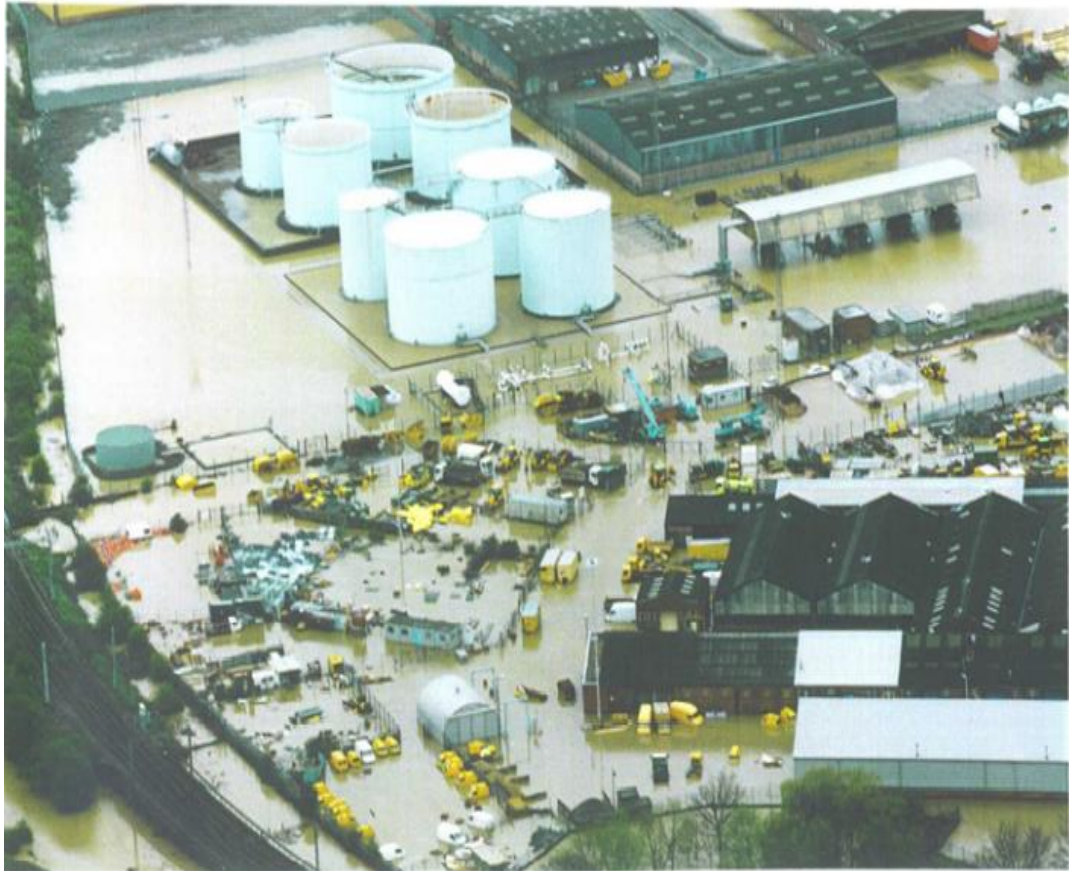
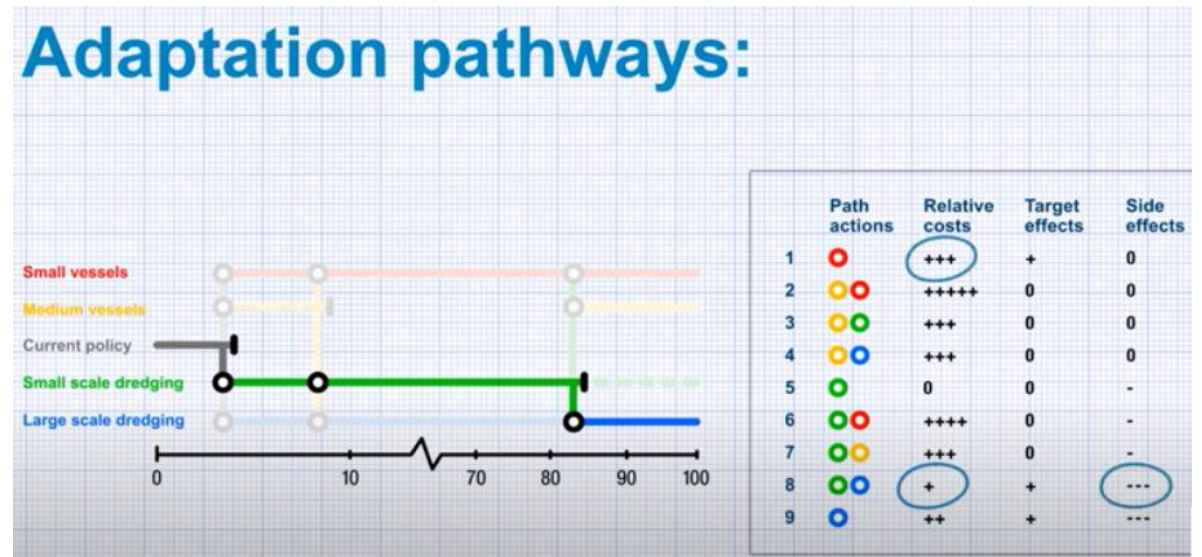


Figure 1. BP Oil (UK) Ltd., Northampton terminal. Easter 1998.

- ✓ Different starting points
- ✓ Challenges – resources and capability
- ✓ Resilience of national critical infrastructure
- ✓ Proportionate to nature and scale of hazard and vulnerability
- ✓ Tiered risk assessment

Piloting the use of ISO 14090 and adaptation pathways



- Firmly centred within existing powers
- Credible & collaborative (BSI)
- Allows proportionality

- Flexible & adaptable
- Manages unknown risks and uncertainty (ISO 14091)

What will regulators expect to see?

Regulators expect operators to manage risks of a changing climate, to maintain compliance with relevant environmental and safety legislation

e.g. The operator of a COMAH establishment would be expected to:

- assess how Major Accident risks associated with extreme weather events and other climate change impacts will vary over the lifetime of their establishment; and
- plan how to respond to these changes, and implement modifications at an appropriate time, to manage both present and longer-term risk to ALARP levels.

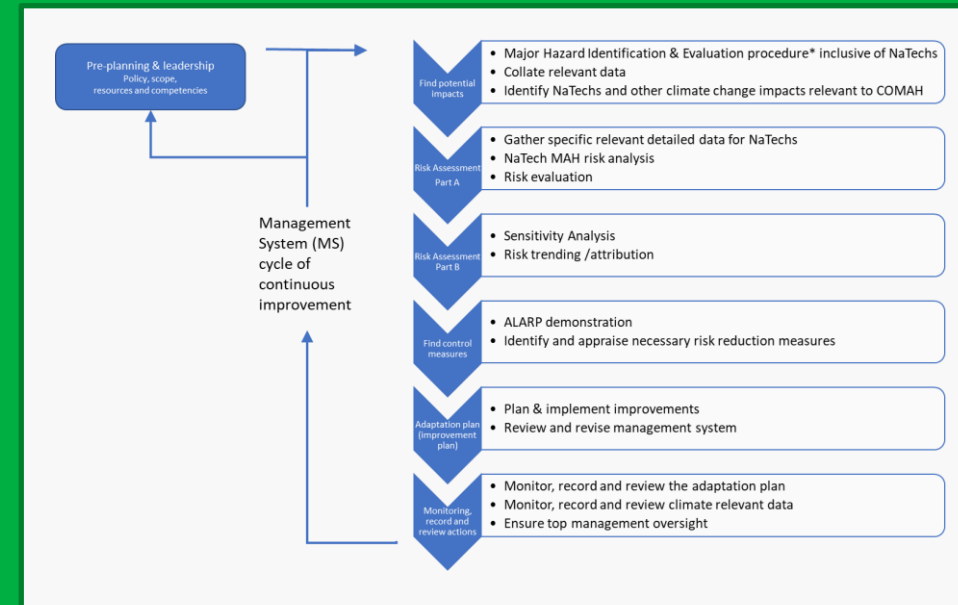
And at Nuclear sites we have developed a Position Statement on the regulator's expectations for [Use of UK Climate Projections 2018 \(UKCP18\) by the GB Nuclear Industry](#)

Regulators expect integration of adaptive management techniques within environmental and safety management systems – i.e. embedding adaptation

Chemicals and Downstream Oil Industry Forum

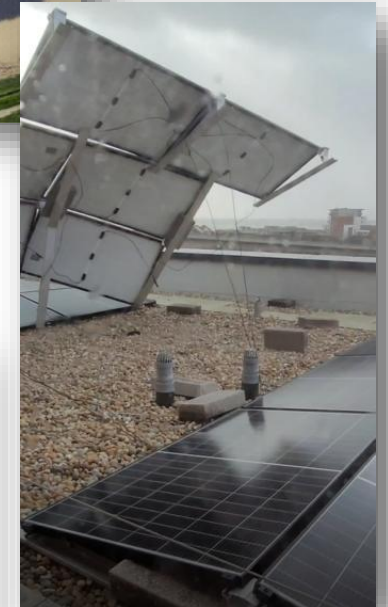
CDOIF – Best Practice guide

- Focus on adaptation for high hazard industries (COMAH)
- Guidance on embedding adaptation into Environmental and Safety Management System
 - Signpost to data and existing guides
- Developing case studies,
 - Sharing best practice and learning lessons from global NaTechs (Natural Hazard Triggered Technological Accidents)



Learning lessons from the range of impacts that have caused previous accidents

- High temperatures
- Prolonged dry weather / Drought
- Heavy Snowfall
- Ice / prolonged cold
- High winds / Storms
- Flooding & sea level rise
- Lightning
- Hail
- Geological impacts
- Etc.....



Where can I get more information?

- Gov.uk guidance (mentioned previously – links in chat)
- Further guidance on climate change adaptation for EPR sites is currently being developed by EA
- In addition to ISO 14090/91 training there is other best practice guidance from professional bodies and trade associations



In summary

- The climate is changing and without adequate management, some risks will increase, affecting safety and the ability of operators to comply with their environmental permits.
- We expect climate change adaptation to be embedded into management systems
- This requires operators to ensure:
 - Leadership, resource and competencies
 - Climate Change Risk Assessment - Assess for 4 °C, plan for 2 °C, and avoid lock-ins.....
.....depth proportionate to risks
 - Plan, monitor, record and review, with top management oversight.....
.....delivering Continual Improvement
- International standards, guidance and case studies are available to support this work – work ongoing to develop regulatory guidance for EPR and CDOIF's Best Practice guidance

“Our thinking needs to change faster than the climate”



EA's Climate Ambition

