The Climate Emergency;

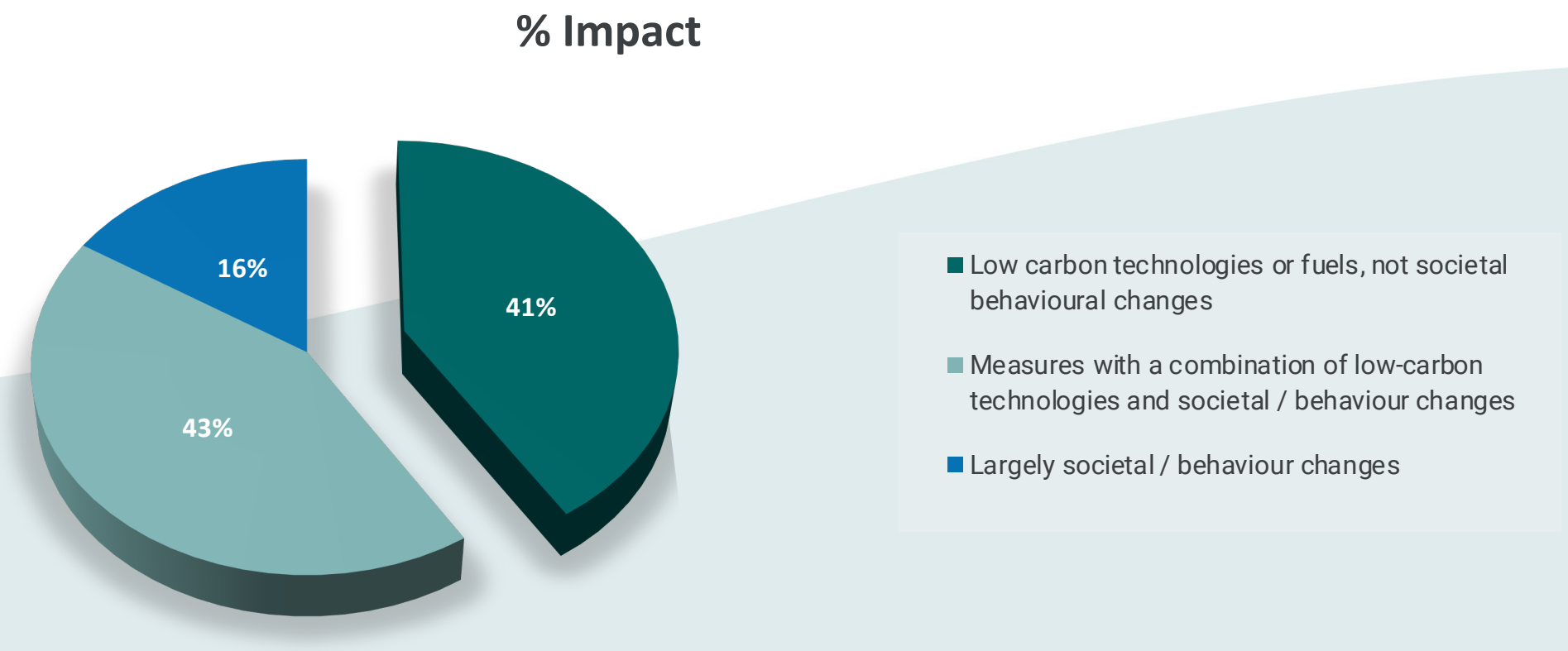
How Science and Technology are leveraging the green agenda

Brendan Day

14th July 2021

Note: The FBCA is committed to working to avert the climate emergency, the views put forward by individual presenters are not necessarily supported by the FBCA

Delivering UK Net Zero



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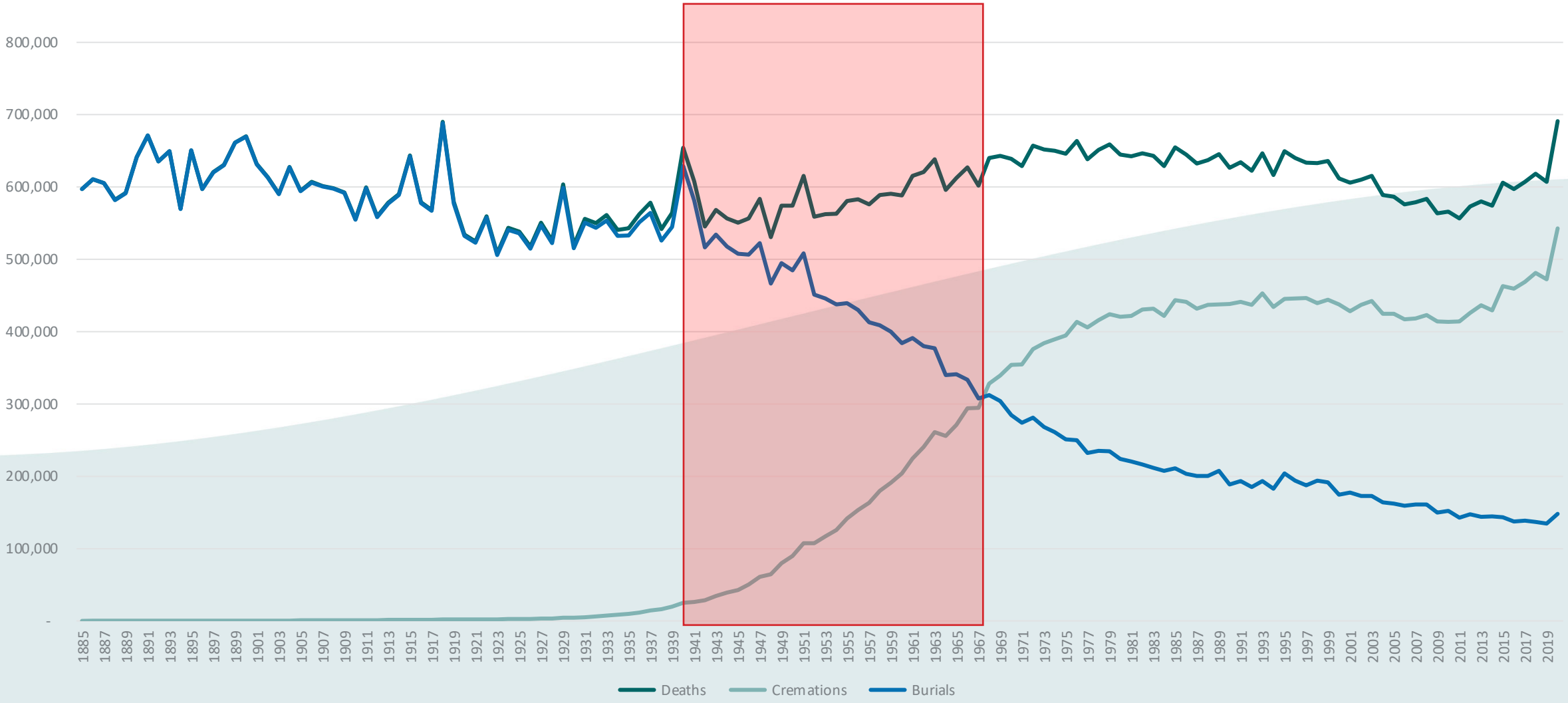
Cremation - the new “tradition” ?



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Our Panelists

Scott Storey
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Douglas Davies
Durham University

Ben Whitworth
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Societal Change and how we respond

Scott Storey

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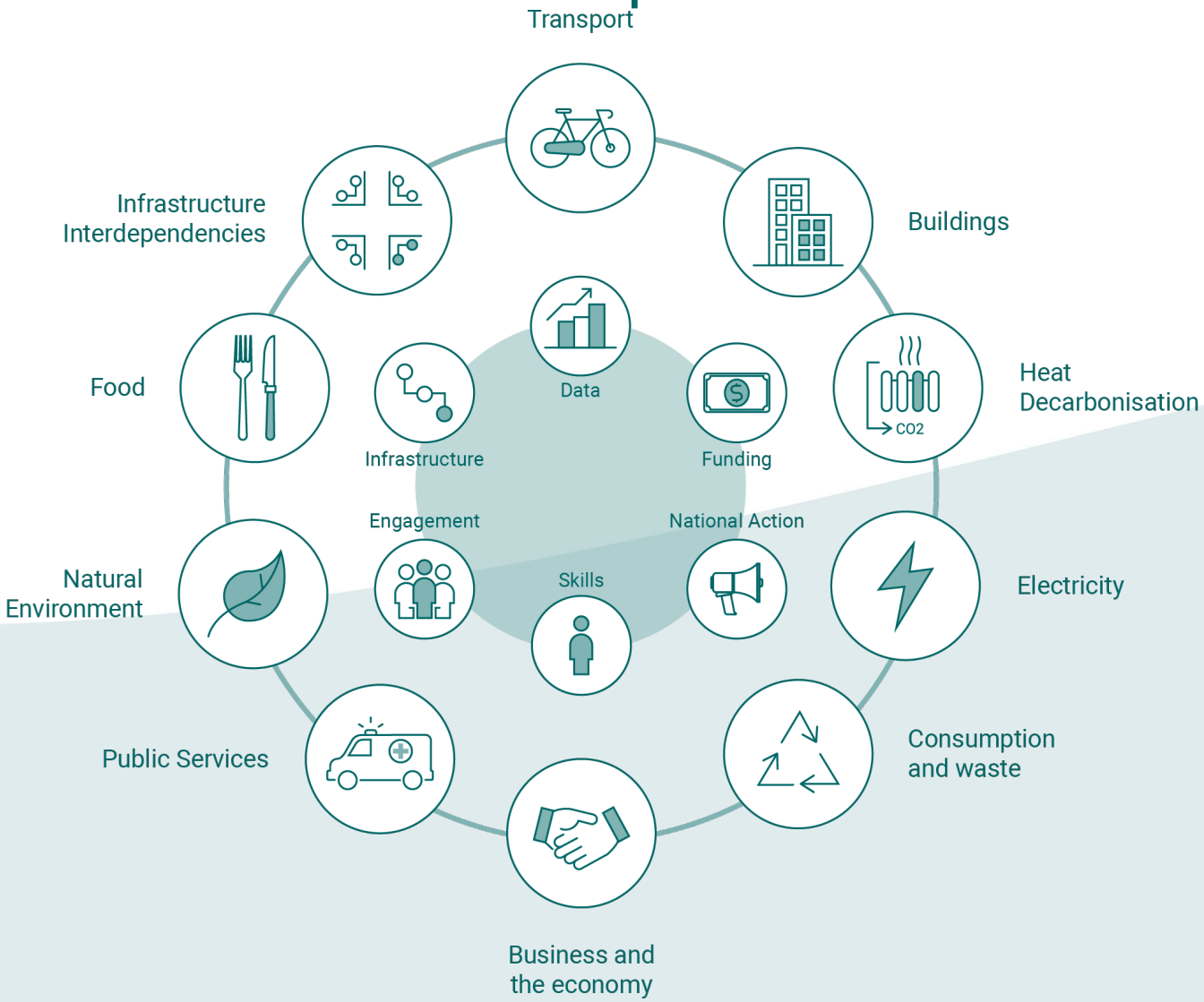
Environmental Impact - What needs to be considered ?



75% of local authorities in the UK have already declared a climate emergency and are implementing plans to address these issues.

Bereavement Services are inevitable and <u>will always</u> have an impact on the environment. This impact must be reduced as part of climate emergency plans.

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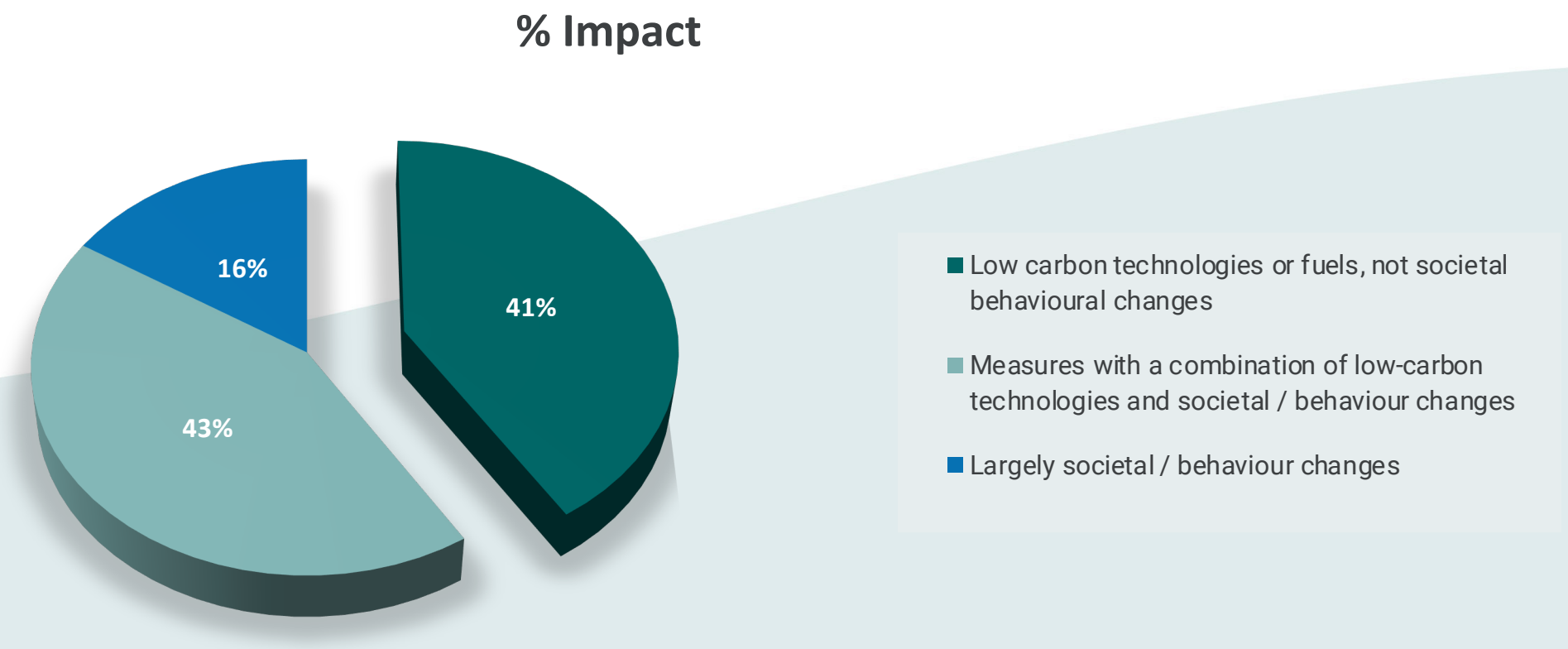
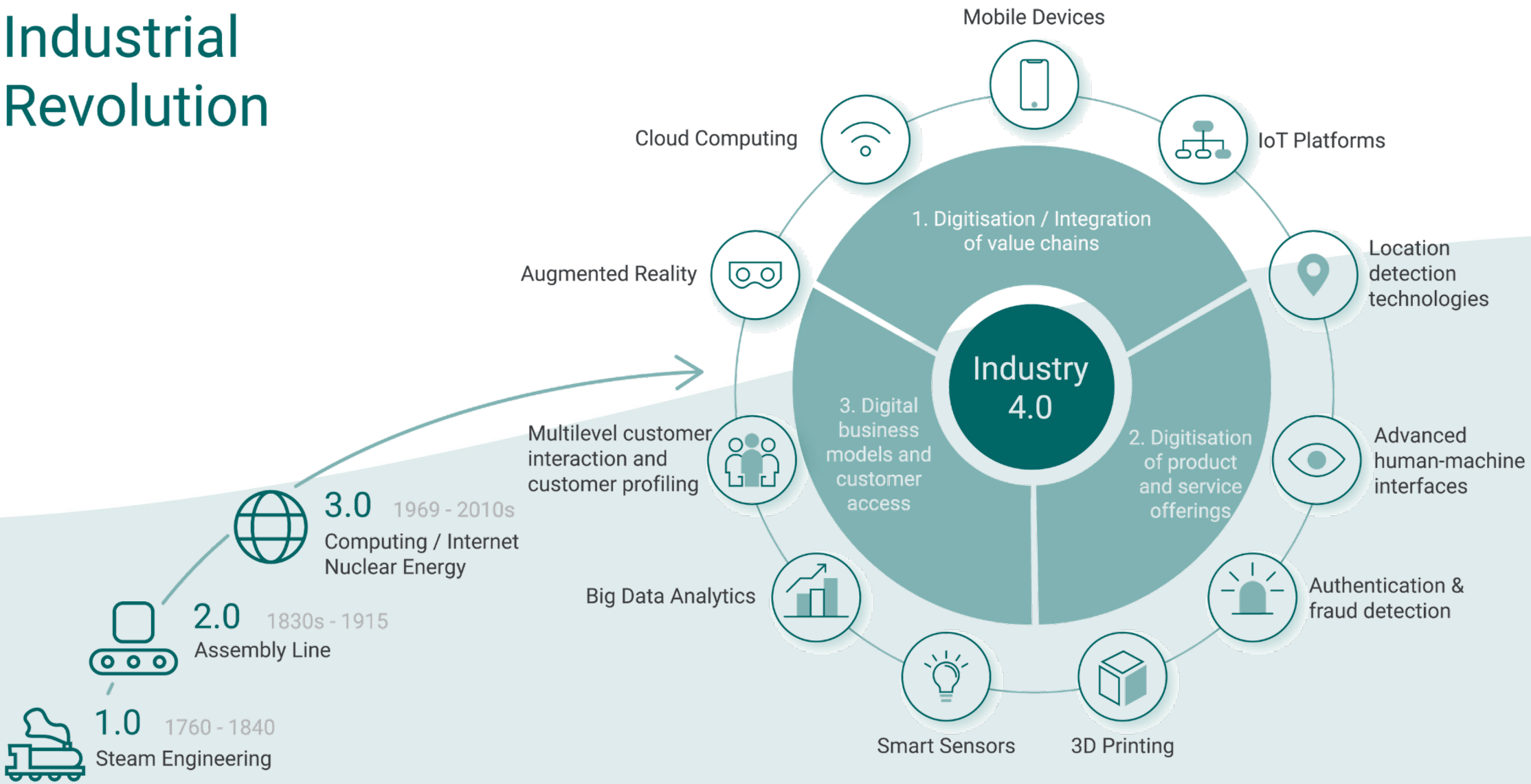
How are we delivering UK Net Zero?



Fourth Industrial Revolution



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Todays Society Profile

Characteristics	Maturists (pre-1945)	Baby Boomers (1945-1960)	Generation X (1961-1980)	Generation Y (1981-1995)	Generation Z (Born after 1995)
Formative experiences	Second World War Rationing Fixed-gender roles Rock n' Roll Nuclear families Defined gender roles (particularly for women)	Cold War Post-War Boom "Swinging Sixties" Apollo Moon landings Youth culture Woodstock Family-oriented Rise of the teenager	End of Cold War Fall of Berlin Wall Reagan / Gorbachev Thatcherism Live Aid Introduction of first PC Early mobile technology Latch-key kids; rising levels of divorce	9/11 terrorist attacks PlayStation Social media Invasion of Iraq Reality TV Google Earth Glastonbury	Economic downturn Global warming Global focus Mobile devices Energy crisis Arab Spring Produce own media Cloud computing Wiki-leaks
Percent of Global Population	5%	15%	20%	27%	32%
Aspiration	Home ownership	Job security	Work-life balance	Freedom and flexibility	Security and stability
Attitude toward technology	Largely disengaged	Early information technology (IT) adaptors	Digital Immigrants	Digital Natives	"Technoholics"- entirely dependent on IT; limited grasp of alternatives
Attitude toward career	Jobs are for life	Organizational: careers are defined by employers	Early "portfolio" careers - loyal to profession, not necessarily to employer	Digital entrepreneurs - work "with" organizations not "for"	Career multitaskers - will move seamlessly between organizations and "pop-up" businesses
Communication media	Formal letter	Telephone	E-mail and text message	Text or social media	Hand-held (or integrated into clothing) communication devices
Communication preference	Face-to-face	Face-to-face ideally, but telephone or email if required	Text messaging or email	Online and mobile (text messaging)	Facetime
Technology Milestone	Car	TV	PC	Smartphone	AR/VR

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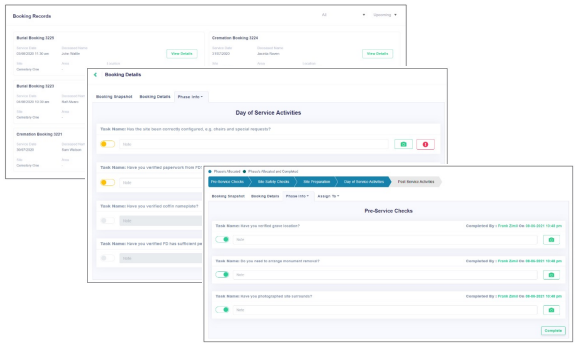
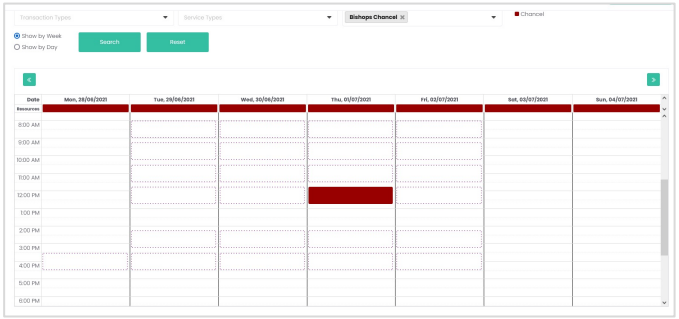
Some of the Digital Services from OpusXenta

Task Manager

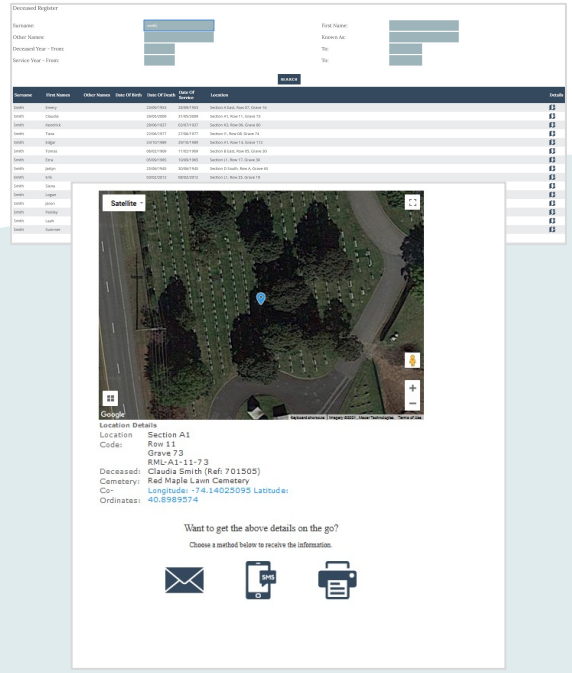


Online Booking



MapMakr

RecordKeepr /Deceased Search



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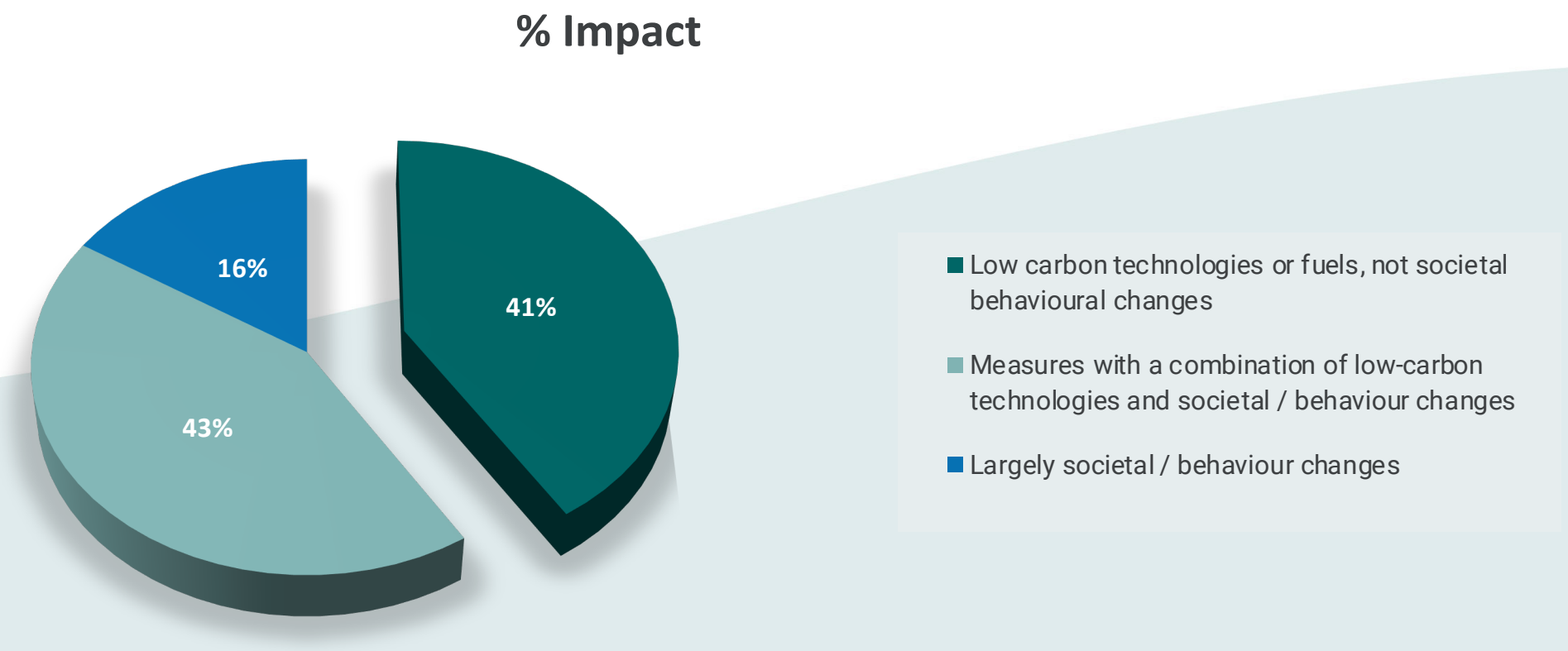

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Embalming And Formaldehyde
Friend or Foe?

Ben Whitworth

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Embalming – What it is?

- Embalming is the science and art of preserving the dead human body, by the application of chemicals, to delay decomposition for a given period of time.
- Embalming may be performed to enable viewing of the deceased before and during funeral services, to enable religious rituals to be performed, such as washing, dressing and resting in a place of worship prior to funeral services.
- For repatriation of the deceased from a place of death to another part of the country or a different country or to enable anatomical examination or study over an extended period of time, for example one to five years.

Embalming – What Are the goals?

- Preservation – The body is sufficiently preserved, and decomposition is delayed to enable funeral services, repatriation or anatomical examination to take place.
- Presentation – The deceased is restored to an acceptable pre-mortem appearance for visitation or viewing by relatives and friends before and during funeral services.
- Sanitation or Protection – The chemical sanitisation of the body to kill potentially harmful bacteria or viruses that could be infective to those handling the body post-mortem, e.g.: Tuberculosis.

Embalming Fluids

- Most Embalming Fluids contain Formaldehyde, which acts as a preservative and disinfectant.
- Formaldehyde is a colourless gas with a pungent odour, which is dissolved in water, along with methanol to stabilise it in solution.
- Formaldehyde kills bacteria, viruses and fungi while at the same time cross linking with tissue protein to render it unsuitable as a food source for the above organisms.
- Commercially available embalming fluid typically contain between 5% to 30% formaldehyde which is then diluted down to make a working solution typically between 0.5% and 4%.

Embalming & burial

- Embalmed bodies that are buried will still decompose. Modern Embalming seeks only to delay decomposition for funeral services.
- Decomposition of an embalmed body will depend on the soil conditions and the natural bacteria found in the soil.
- Formaldehyde reacts with tissue protein and is no longer formaldehyde in its raw form when the body is buried.
- Formaldehyde is readily broken down in the presence of sunlight.
- Formaldehyde is created in the human body as a by-product of metabolism and excreted from the human body by the lungs and urinary system.

Embalming & burial

- There is no evidence that embalmed bodies cause any problem to the cremation process.
- Formaldehyde combusts in the presence of Oxygen at temperatures exceeding 150°C to release CO_2 and H_2O.
- Almost all of the formaldehyde in embalming fluid is absorbed and converted during the reaction of formaldehyde and tissue protein when injected into the dead body.
- Processes in the upper atmosphere contribute over 90% of formaldehyde in the environment.
- Formaldehyde is released as a by-product from combustion of fuel in motor vehicles as well as from burning wood.

Formaldehyde & everyday life

- Formaldehyde can be found in a variety of everyday products, including wood fibres, cosmetics, vaccinations and medicines.
- Formaldehyde is used regularly to fix surgical specimens and tissues taken during autopsy examination to enable detailed pathological study.
- It has been used in the treatment of some Urinary Tract Infections (UTI's) where usual antibiotics have failed, or recurrent infections have developed antibiotic resistance.

Alternatives

- The field of embalming is developing, and manufacturers of embalming chemicals are developing low formaldehyde and formaldehyde free alternatives.
- These have been developed to address concerns over exposure to formaldehyde as well as for use with green burial.
- Low formaldehyde fluids use Synergisms, that allow a lower percentage of formaldehyde to offer effective disinfection and preservation.
- Formaldehyde free fluids use alcohols and additional disinfectants to retard decomposition.
- This new generation of embalming fluids allows for temporary preservation and improved presentation of the deceased for funeral services.

Considerations

- A well embalmed body does not need to be kept in cold storage once embalming is completed.
- Mechanical refrigeration has an environmental impact and will only delay decomposition for a short time.
- Mechanical refrigeration causes dehydration to the dead human body, and this can affect presentation and make final presentation of the deceased more difficult.
- There are manual handling and health and safety consideration when moving a non- embalmed, coffined body to and from refrigerated storage as required.

Questions?

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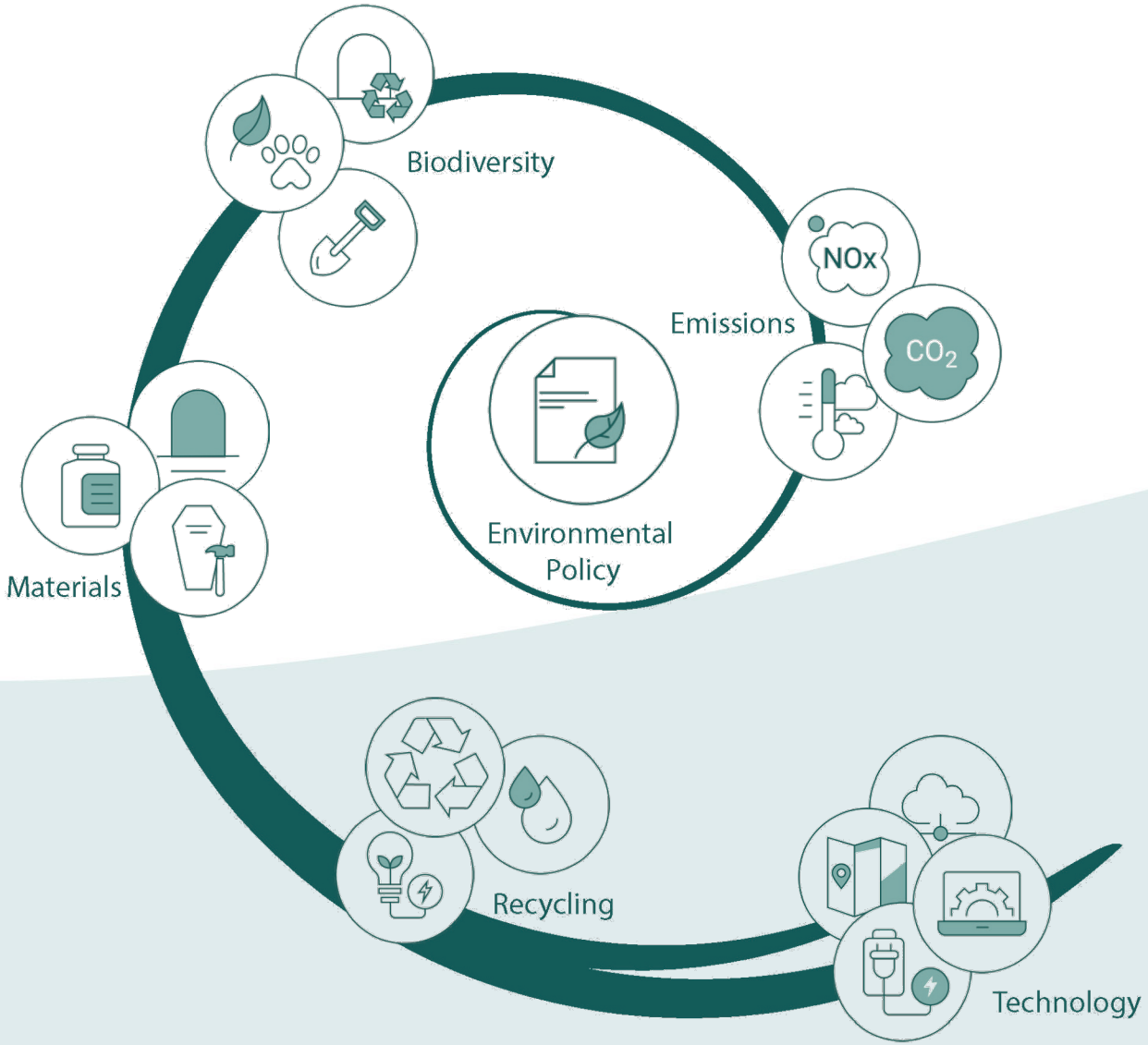
Green Things and Shiny Metal Things

or

Consilience & Mortality

Douglas Davies



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Q&A

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