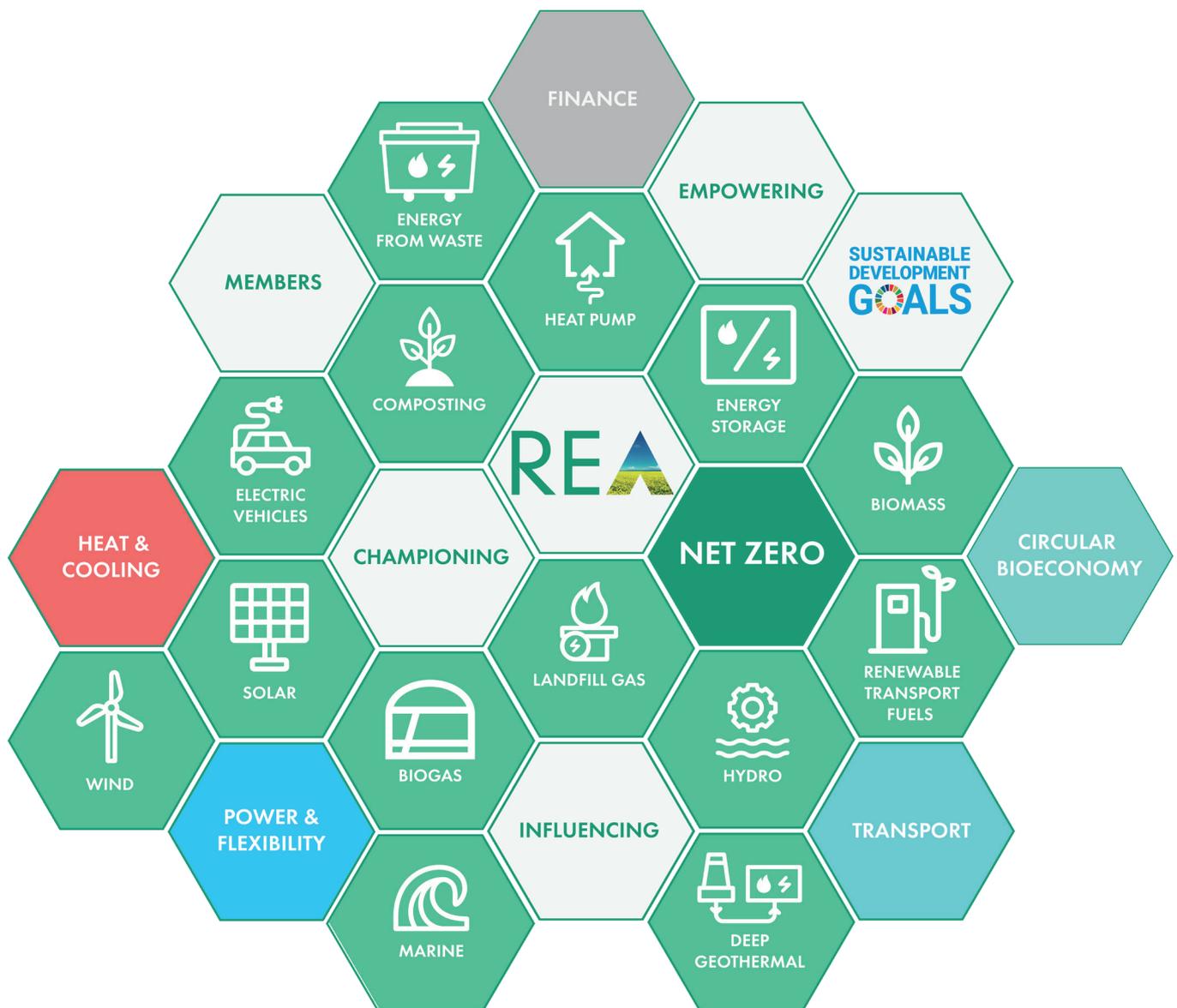


# A FUTURE BUILT ON RENEWABLE ENERGY AND CLEAN TECHNOLOGY

## REA Strategy for Renewable Energy and Clean Technologies



The UK transitions to 100% renewable energy and clean technology by 2050 delivering Net Zero CO<sub>2</sub> emissions, improving and valuing natural capital

## REA's Renewables & Clean Tech Strategy - a pathway to enabling Net Zero



The UK's energy system is in the midst of the largest transformation for generations, moving towards the legally-binding 2050 Net Zero target for greenhouse gas emissions reductions. The change required over the next three decades is on a par to that experienced during the industrial revolution; affecting people's homes, businesses and the very fabric of the nation.

Working with experts in the industry and our research and knowledge of the sectors, the REA has developed a strategic 'pathway' to overcome the barriers to delivering Net Zero using renewable energy and clean technology alongside ambitious targets to achieve. This year is also the 20<sup>th</sup> anniversary of the REA, and is the first time we have crystallised our view of how renewables and clean tech can deliver Net Zero in a single report.

The key conclusions include that the majority of energy demand for the heat and transport sectors could be met from renewables and clean technologies by 2035, while renewables could provide over half of our power by the end of next year (2022), and that by the end of 2023 all bio-waste could be either separated and recycled at source or collected separately, moving towards a more circular economy.

Key barriers to reaching these, identified by workshops and research include: the need for a complete mix of technologies to be deployed in order to reach Net Zero; for an effective Route to Market for renewables; standardisation of best practice, a shift to holistic circular resource management & the management of soil health, and for sustainability to remain at the heart of everything the industry does.



## LONG TERM AMBITION FOR IMPACT

The UK transitions to 100% renewable energy and clean technology by 2050 delivering Net Zero CO<sub>2</sub> emissions, improving and valuing natural capital.

### CIRCULAR BIORESOURCES

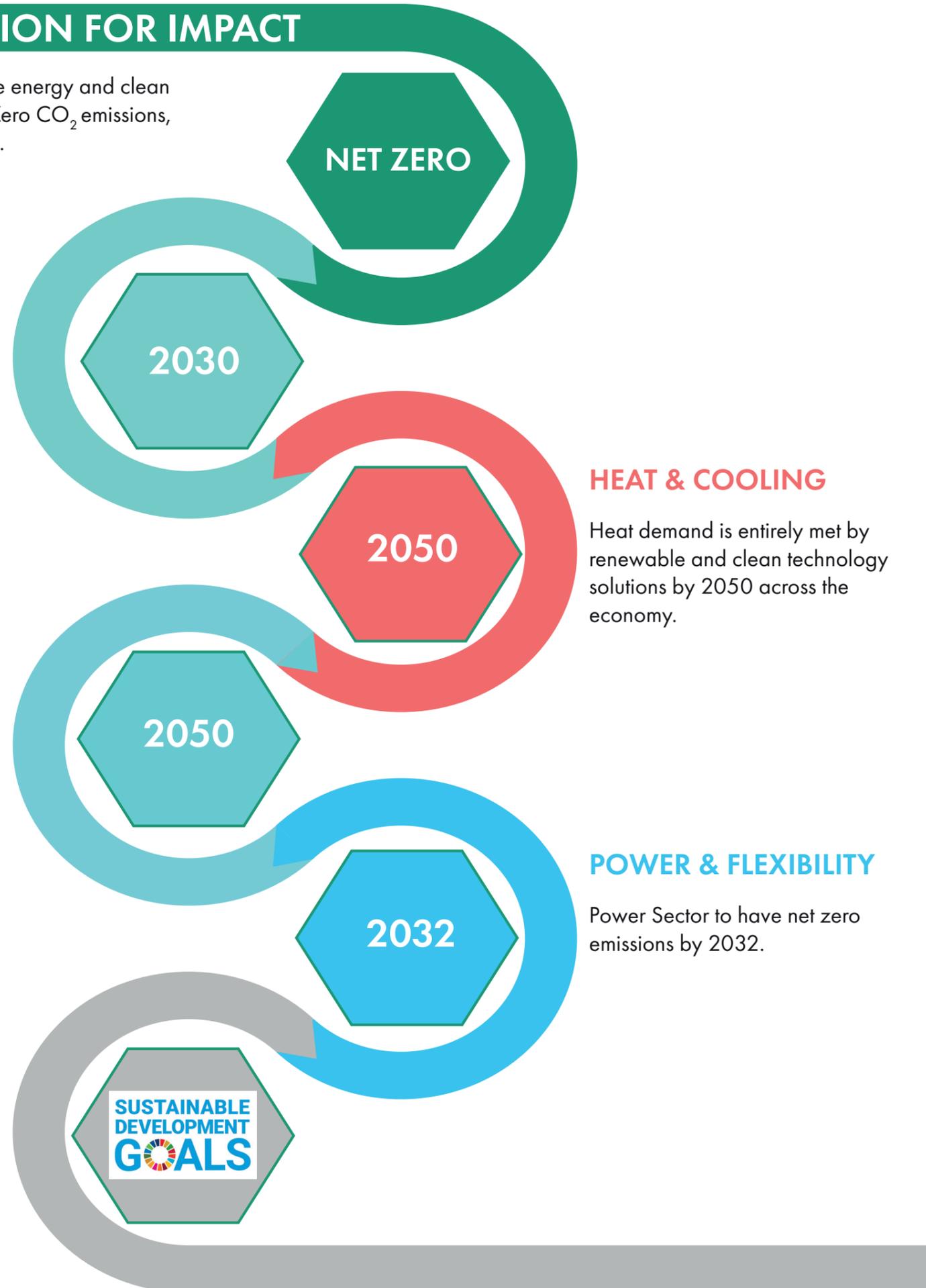
By 2030 biodegradable wastes are separately collected and biodegraded, recycled and recovered, separately managed biodegradable wastes and non-waste materials are put to the highest achievable value uses. Food and garden waste is eliminated from landfill.

### TRANSPORT

Transport is completely decarbonised with renewables and clean technologies the dominant source of transport by 2050.

### FINANCE

Identifying the evidence-based opportunities and removing barriers to sustained investment in renewable energy and clean technologies.



### HEAT & COOLING

Heat demand is entirely met by renewable and clean technology solutions by 2050 across the economy.

### POWER & FLEXIBILITY

Power Sector to have net zero emissions by 2032.

## PATHWAY

In order to deliver this, we have taken a resource and sector approach, under four 'pillars' - Heat & Cooling, Transport, Power & Flexibility and Circular Bioresources - each with their own ambition, which support the overall impact ambition, as shown.

Based on research, we find that **the early 2020s is a critical period** for renewables and that much of the possible transition from fossil-based fuels and materials to renewable or circular solutions, needs to be achieved early on this decade, and the challenge requires **a truly multi-technology approach**.

### Key Cross-Cutting Barriers and Solutions

Several key themes emerge that cut across the entire transition that must be addressed:

- **The need for a Route to Market:** across heat, power, flexibility technologies and transport fuels it is clear that there is a lack of a clear route to market for most technologies, for example the closure of the RHI for heat projects, inadequate CfD scheme for many power technologies, no holistic flexibility markets, and lack of ambition in the RTFO for transport fuels. This is closely tied to a fundamental need for stable, consistent, clear frameworks over time.
- **Sustainability:** The sector has and must continue to have, sustainability at its heart.
- **Standards:** There needs to be development and application of best practice guidance and standardisations across technologies.
- **Importance of feedstocks:** for organics to play their part in a circular economy there needs to be a clear focus on quality of inputs and ensuring plastics and other unwanted materials do not enter the feedstock in the first place.



## INTERIM GOALS ALONG THE PATHWAY

The UK transitions to 100% renewable energy and clean technology by 2050 delivering Net Zero CO<sub>2</sub> emissions, improving and valuing natural capital.

### CIRCULAR BIORESOURCES

By the end of 2023 all bio-waste is either separated and recycled at source or is collected separately and is not mixed with other types of waste<sup>1</sup>.

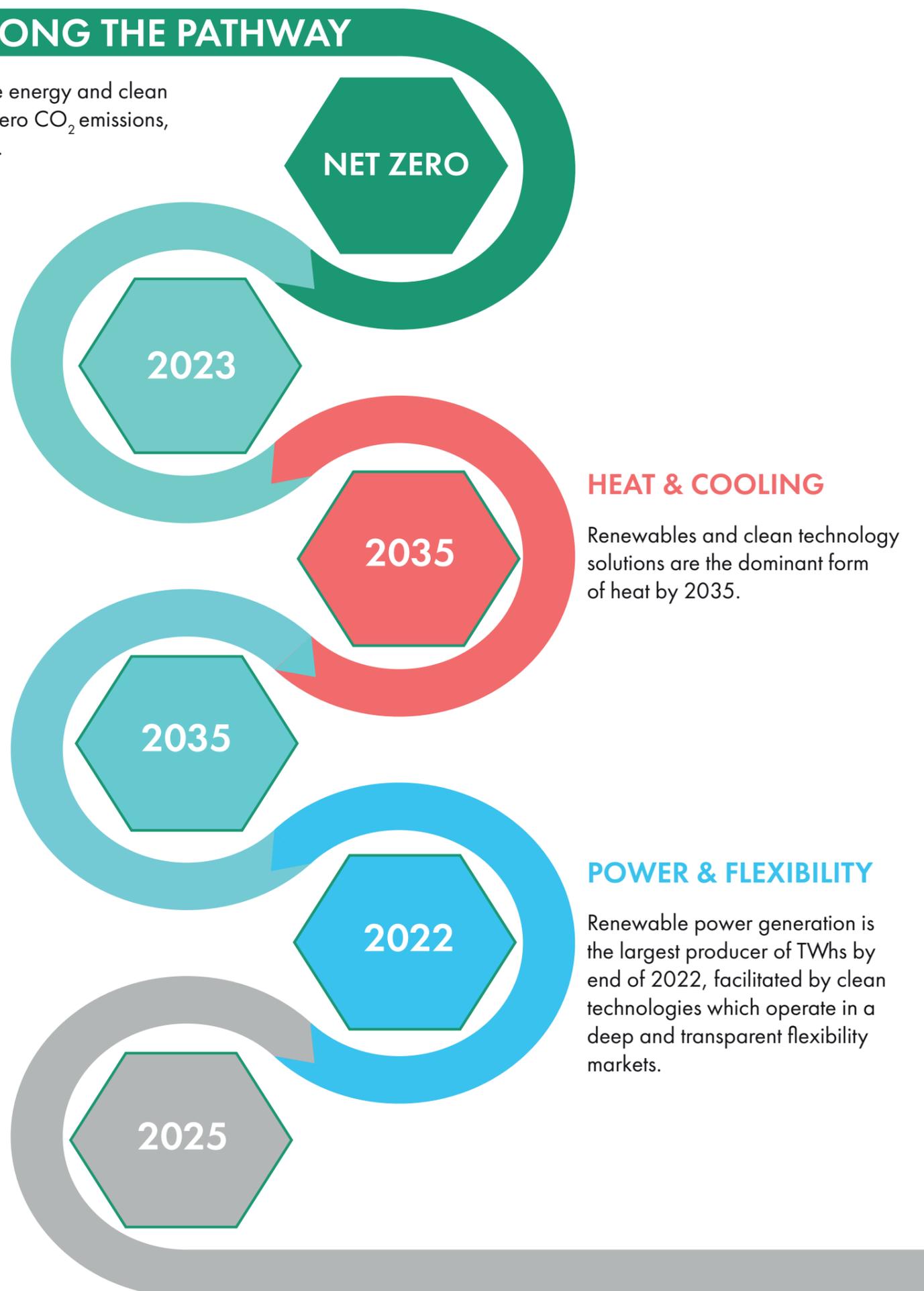
Organics recycling is recognised in the reformed Packaging Producer Responsibility System.

### TRANSPORT

By 2035, renewable fuels and electricity are the majority source of energy used in the transport sector.

### FINANCE

Finance and Investment groups invest more in net zero agenda and drive corporate Environmental, Sustainability Governance (ESG). Tipping the balance away from a fossil fuel-based economy by 2025.



## PATHWAY

- **Holistic circular resource management & Soil health:** are crucial to mitigating climate change and applications of organic materials along with good soil management practices are key to protecting and restoring soil health. This needs to be widely recognised, the benefits acknowledged and joined up policy that prioritises the circular economy and soil health.
- **Grid networks:** the electricity grid has undergone considerable transformation in the past ten years, and this will only accelerate with the electrification of heat and transport. The gas network could face a similar transformation with the move to hydrogen and hybrid heat pumps. Both need to be fit for purpose and connection and use of appropriate system rules.
- **A mix of technologies is essential:** as the scale of the decarbonisation challenge emerges, it is clear that only a combination of technologies can deliver it, including bioenergy (such as biomass heat and power), energy from waste, gasification, landfill gas, geothermal, solar PV, wind, EVs, biofuels, marine, hydro. Dry and wet AD, composting and energy storage in all forms, will be just as important as the emerging heat pumps, Demand Side Response (DSR) and hydrogen sectors- all have a role.

### Economic benefits if we reach our targets

REA's previous economic analysis indicates that if these levels of renewable deployment can be reached, then with the right support there could be around 120,000 jobs by 2032 in the bioenergy sector (from c.50,000 in 2017)<sup>2</sup> and around 200,000 by 2035 in 'connected, non-fuelled' technologies, up from c.75,000 in 2017<sup>3</sup>. Together, this would represent an increase of around 200,000 jobs across the country in the renewable and clean tech sector by 2035.



<sup>1</sup> Target from the revised [EU waste framework directive](#). It includes definitions of biodegradable waste and biowaste.

<sup>2</sup> REA, 2019, '[REA Bioenergy Strategy](#)' <sup>3</sup> REA & BNEF, 2018, '[Flexibility Solutions for High Renewable energy systems](#)'

## Next steps

The findings and ambitions will now become the basis for the REA's advocacy and policy engagement with Government and industry, and provide a route map for delivering Net Zero in the energy sector and a more circular economy.

We will be communicating the in-depth findings to Government and Regulators to start to unlock the way forwards, contact us to find out more.

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### About REA

The REA is the UK's largest trade association for renewable energy and clean technologies with around 550 members operating across heat, power, transport, and the circular bioeconomy. The REA is a not-for-profit organisation that represents renewable energy and clean technology companies operating in over fourteen sectors, ranging from biogas and renewable fuels to solar and electric vehicle charging and composting to biomass. Member organisations range from major multinationals to sole traders.

February 2021