

# BIEE Future of Energy Lecture

Juliet Davenport, OBE

**THE  
GREEN  
START-UP**

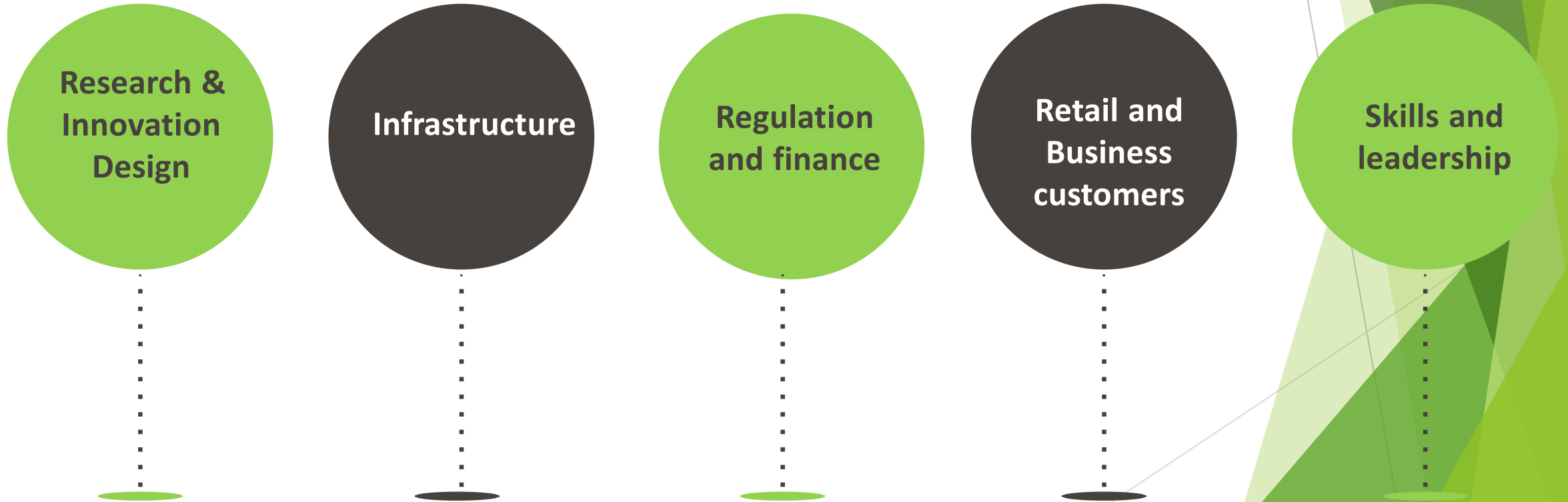


**MAKE YOUR  
BUSINESS  
BETTER FOR  
THE PLANET**

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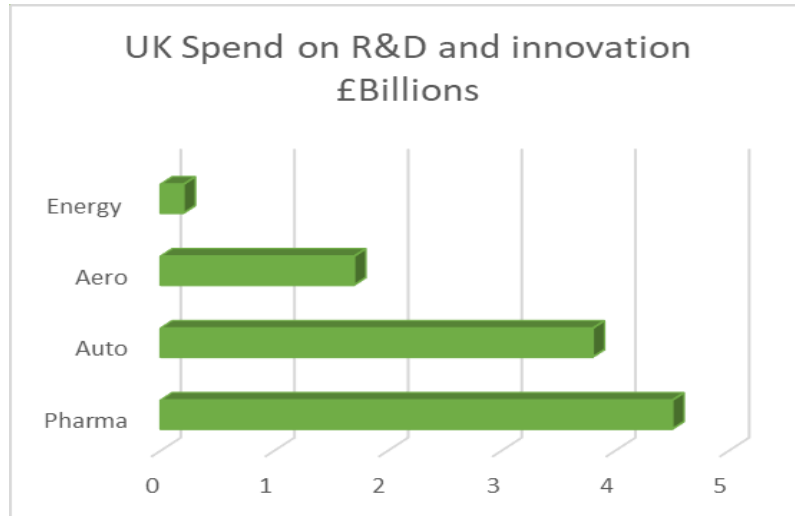
# The urgency of net zero

To tackle climate change and support the transition to net zero we need to consider a overall systems approach.



# Innovation and R&D

## Historical Systemic failure of investment



- Historically government have invested in areas where industry is already investing
- There has been no investment in risk areas or areas of natural resource
- “Not picking winners” as a strategy has left UK non competitive in these new technologies
- No investment wave and tidal technologies today, and offshore industry “offshore”!
- BEIS review has made some improvement with at least a Net Zero strategy, and the work of the Catapults is beginning to show benefits ORE and ESC
- Innovation and R&D is an area we need to be more bold, and prepared to make mistakes, focusing on the goal of doing the work that established industries are already doing.

# Power networks

Biggest challenge for renewables, and running behind

- **Power Networks** – market and regulation failure on delivering the new requirements for the grid over the past 20 years.
- More consents in the last 2 years than in the last 10, means we are behind and there will be significant challenges in where the future renewable resource is versus where we need power.
- Need to consider way to increase the pace of deployment, and delivering cost effective solutions that are more strategic for the UK as a whole.
- Auctions could be an effective way of bringing a level of competition to this market, rather than having to use a purely regulated approach.
- Significant gap between government targets on renewables and the projected pipeline, driven by significant constraints on the networks.

# Heat Networks

Increasing support and regulatory framework development

- The Green Heat Networks Fund (GHNF) is a 3-year £288 million capital grant fund running to 2025 that supports the commercialisation and construction of new low and zero carbon heat networks and the retrofitting and expansion of existing heat networks.
- In addition to capital support, government is introducing zoning. This involves central and local government to identify and designate areas within which heat networks are the lowest cost solution for decarbonising heat. Certain buildings within zones would be required to connect to the heat network.
- In addition to zoning, Heat network regulation will provide consumer protection for those connected to a heat network from 2024 to ensure that the zoning regulation doesn't undermine consumer protection.

# EV networks

Networks will need to change as we approach the 2030 target on EV

In a recent survey by EV users on Zapmap, 98% have access to off-street parking and 84% have home chargers

24.6% of households don't have access to off street parking, around 7 million households that will need to need rely on our public charging network.

At the end of April 2023, there were around 40,000 electric vehicle charging points across the UK. This represents a 37% increase in the total number of charging devices since April 2022. This is in the context of around 700,000 electric vehicles in the UK, with an average growth of 40%.

There are two funds that government is focused on supporting this roll out a) £950 m Rapid Charging fund and b) Obligation on Local Authorities and funded by the £500m local infrastructure fund. Regional targets and regional roll outs are important to ensure equity in EV ownership for the future.

Opportunities for the future is to use EV charging infrastructure to provide flexibility requirements into the energy network.

# Power markets

REMA needs to be careful on what it creates

Power markets have been good to manage the majority of trading in benign markets.

“Gas has set a much higher market price than the cost of renewable power production and potentially will continue to do so”.(Aurora)

It is ill equipped for volatile and transitional market as the short term market does not provide sufficient investment signals and has a tendency to maximise the value of existing infrastructure

Investment for flexibility is still in evolution, but on the current trajectory we will need a significant step up in flexibility capacity for the UK.

Most renewables will be built either on CFD contracts or long term contracts with corporates.

Understanding how these interplay with the rest of the markets and the increased costs these instruments could produce - balancing costs have significantly increased in recent years.

# Domestic and business customers customers

Regulatory focus still on bills.

Consumers potentially are routes to market for new technologies.

The development of sleeved PPAs, free roof top solar and agile charging are just some examples of where markets start to interact with consumers directly to provide routes to market for new technologies

However, this doesn't come without risk.

Ensuring that customers are protected in this future world and that “greenwashing” doesn't undermine any nascent market is important. (The Green Start Up - whole section on how greenwashing affects a market.)

Regulation on Heat networks showing government is thinking about consumers in this area, but more needs to be done in all areas.



# Skills – recent reporting

## Massive skills campaign required

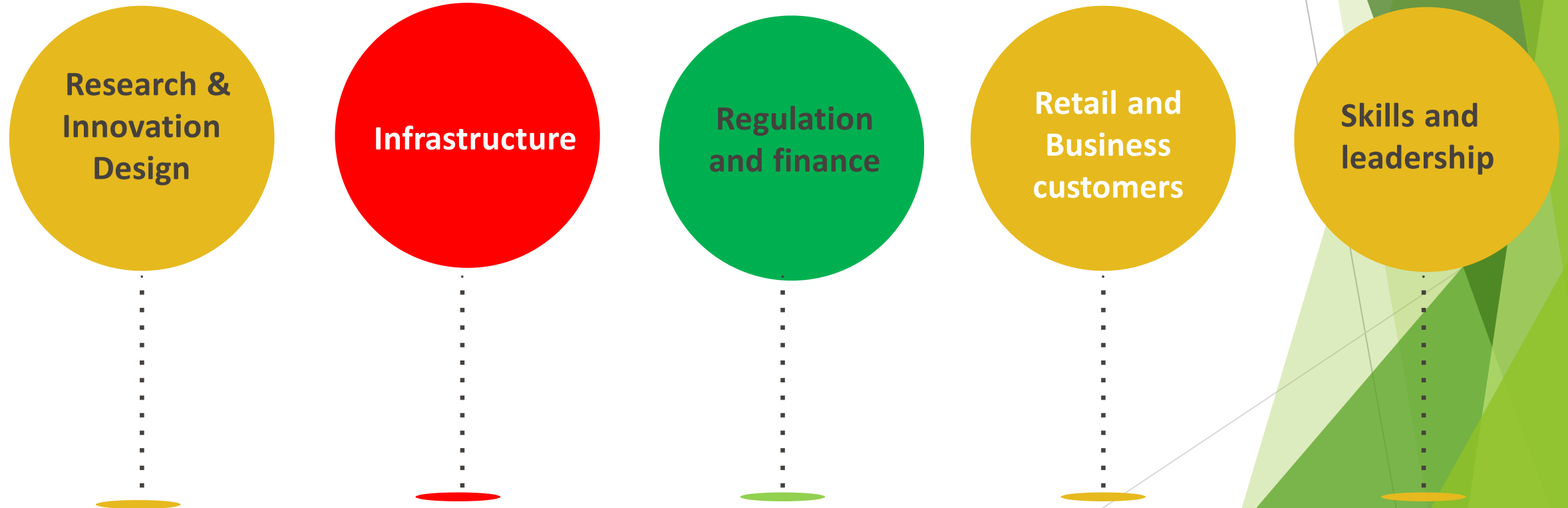
Ongoing energy transitions and decarbonisation efforts are poised to bring profound shifts in the sector's employment, including massive new opportunities for job creation in clean energy.

At the same time, traditional energy sectors will experience declining job opportunities. In most cases, this will require the development of both new programmes of education, certification and vocational training along with targeted upskilling or reskilling programmes for the existing workforce. (IEA report on Energy Transition employment)

Green Skills workforce was set up in 2021 to respond to this challenge, produced a report about the challenges. But there seems to be little momentum since then.

Opportunity to provide knowledge on renewables and technical skills through the curriculum and beyond, seems to have lost some momentum and needs to be reinvigorated if we are going to achieve some of the key aspirations set out in the report.

# The urgency of net zero - RAG



## About Juliet

Juliet was the founder and CEO of Good Energy, and has recently written the book *The Green Start-Up*, which takes a journey on how Good Energy became greener than just its products. The book interviews around 25 contributors as to how you can green a company from the inside out. Each chapter has a list actions that companies can take from how they buy their power through to greening up their HR strategy.

Available at all good book shops (including amazon! : <https://amzn.to/3M7FiLe>