



ReCOSTING ENERGY

POWERING FOR THE FUTURE

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EPISODE
ONE
of the
ReCOSTING
ENERGY
Box Set

INTRODUCTION

CAPTURING THE DECARBONISATION DIVIDEND

The nature of Net Zero

Net Zero is a very different concept from the old fashioned “generate, despatch and deliver” model that has guided our energy system to date. At the heart of Net Zero is productivity, doing more with less and reengineering business incentives away from “more” to “better”. Our optimism for the future lies with our vision that Net Zero is not only a climate imperative, but also must drive significant modernisation, unlock greater productivity, deliver

full system cost reductions and operational efficiencies for the benefit of consumers, the economy and the planet.

We also recognise that, while the decarbonisation destination is pretty clear, the pathway towards Net Zero will be messy. Policy, regulatory and industry responses will need to be recalibrated and flexible in the face of new opportunities, new challenges, new evidence and experiences of the interaction between carbon, capital, capacity, cost and consumers.

At the heart of Net Zero is productivity, doing more with less and reengineering business incentives away from “more” to “better”

The Crossroads

The energy system has reached a crucial crossroads. The deployment and utilisation of varied renewable assets has shown that renewables can perform, that the system can manage the change in the characteristics and behaviour of these new assets and that there are investors and developers with confidence in the future of the decarbonisation journey.

However, we are at the foothills of the decarbonisation journey with mobility and heat still in front of us and this is the time to design our system around a new exciting and modern energy world – and capture the Decarbonisation Dividend.

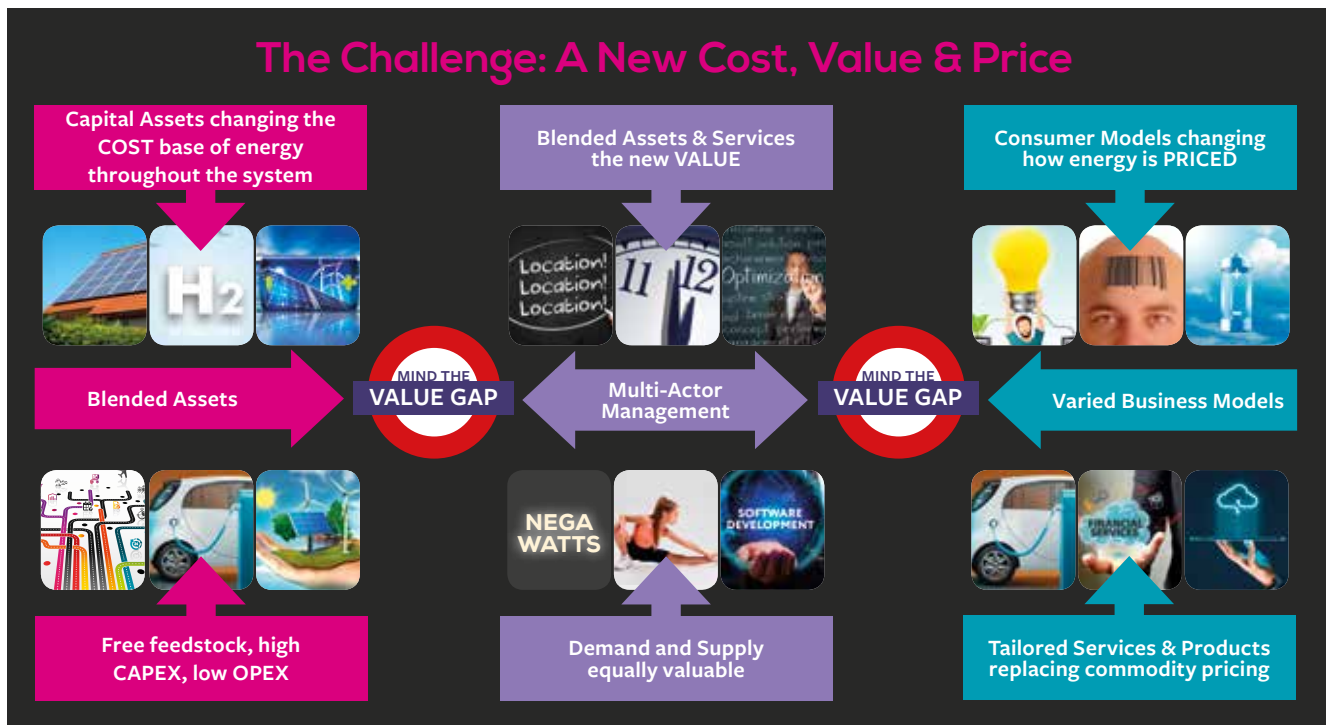
We have a choice – do we continue trying to squeeze a new system, with different characteristics and new potential, into our old fossil fuel market design? Or do



we recognise that decarbonisation offers us significant advantages over the old system and change how we

design, shape and regulate the sector going forward to capture these opportunities?

The New World Assumptions



SUPPORT CAPITAL NOT COMMODITIES:

£20bn per annum in capital required to decarbonise

The operational cost of generating the commodity is reducing while the need for capital is increasing. And capital is needed to unlock investment throughout the system from consumer mini assets, midi sized assets as well as large projects. These are not easily unlocked through a commodity priced system.

DELIVERING NEW VALUE:

From Generate, Dispatch and Deliver to Optimised Utilisation

The value within the system is not the commodity but how you manage, add value and optimise the commodity. The sector is moving from a few players to the potential of 50 million assets and actions and the value will lie with multiple actors, across blended products and services creating a patchwork of actions.

DELIVER A NEW CUSTOMER EXPERIENCE: From commodity to Tailored Services

Services, products with embedded energy consumption, energy management and new business propositions will enable customers to purchase tailored interesting and life enhancing outcomes.

Fair and equitable access to the assets that deliver value for consumers will need to be “translated” into an appropriate pricing mechanism that works for customers and allows them to benefit from the transformation.

These new customer-centric business models might well be delivered through financial services and long term contractual relationships unlocking their access to EVs, PV and system management products and services.

Unlocking the Value Gap

The current value sits between the silos and value is restricted from flowing from one silo to another. This will need to change to optimise the system.

The Journey We Must Take



Released as a Three-Episode Box Set

EPISODE ONE:

- **Introduction:**
Outlining the opportunity of decarbonisation
- **Smouldering Platform**
Highlighting the problematic trajectory of our current system design
- **Executive Summary**
Providing the highlights of the project

EPISODE TWO:

- **From Fossil to Low Carbon:**
Making low carbon the default option, and putting in place increased barriers to fossil fuel options
- **From Silo to Whole System Cost:**
Measuring the full system impacts of actions, policies and regulation
- **From Brawn to Brain:** Greater focus on technology, digitalisation and skills required to manage the growing complexity and dynamism of the system
- **From the Few to the Many:**
Capture the exciting opportunities to deliver citizen benefits by unlocking access and value to for their actions and assets

*** New: New Metrics comparing the value of Demand actions with generation assets ***

EPISODE THREE

- **From Supply to Demand:** Shaping the system around customers' needs and unlocking the assets they need to decarbonise
- **From Commodities to Services:**
Moving from commodities traded to services procured and delivered through a wide range of capital assets and customer actions
- **From Risk Socialised to Risk Owned:** System risk being owned by business not passed on to the consumer to pick up the pieces
- **From Supporting the Commodity to Strengthening the Market:**
Build a stronger PPA and merchant market and focus support on immature technologies

Building on ReDesigning Regulation and ReShaping Regulation

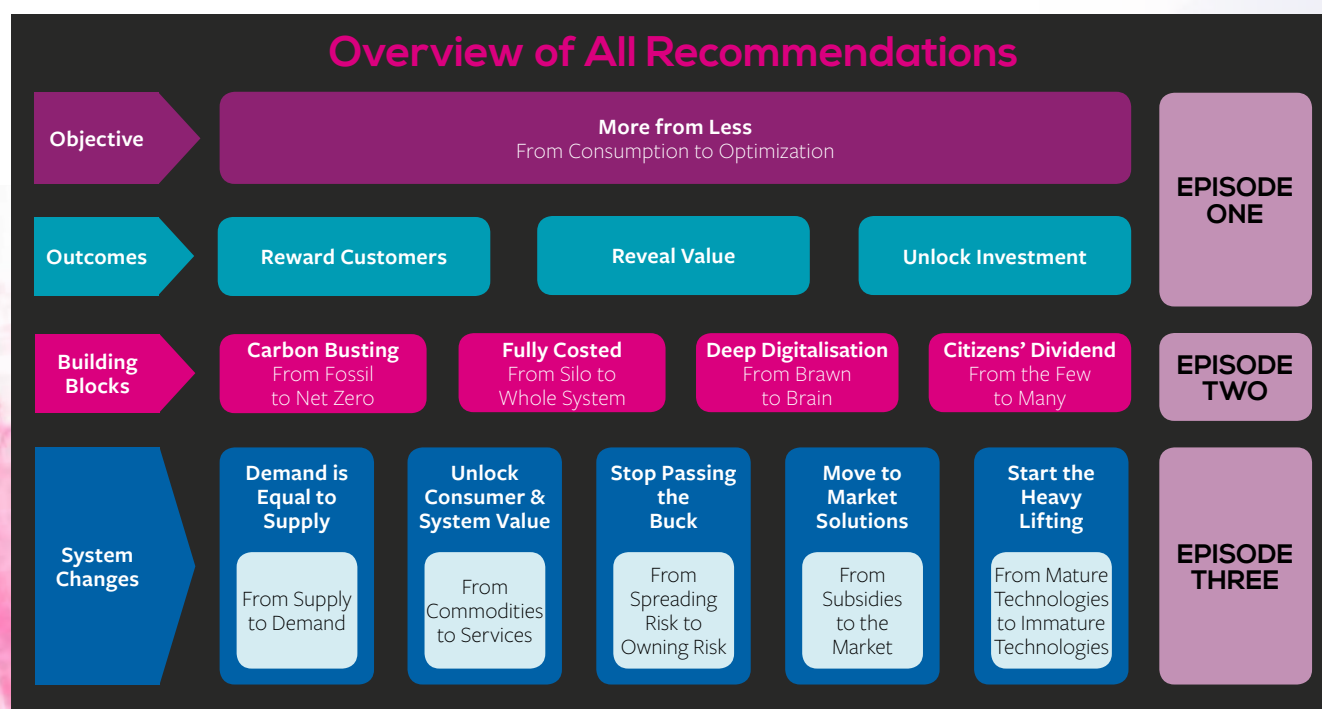
- **Start at the “plug” not the Power Station:** Consumers must be the first driver of value
- **Get More from Less:** Optimising the full system costs unlocking the new value through data, digitalisation and new exciting business models
- **From the Few to the Many:**
Moving from a linear system with few actors to multiple actors, actions and assets interacting offering new opportunities, benefits and posing new risks

EXECUTIVE SUMMARY

SHAPING A NEW FUTURE

The current energy market design, its funding mechanisms, what markets value, and the role of consumers were conceived in a fossil fuel, top down, pre-Net Zero world. We are moving from a system dominated by few more than 200 key players to a system with millions of assets and actions. This extraordinary challenge of moving from a linear system to a messy, diverse and different system requires fundamental changes to unlock the opportunities.

The current market design and governance regime is not wholly wrong, but there needs to be a new set of ambitions and an accelerated change in policy, regulation and market design before we embark on deeper decarbonisation of heat and transport.



The Decarbonisation Dividend

We should be able to decarbonise the whole energy system while ALSO

Delivering Customers Benefits

- **Cost Dividend:** Capturing the benefits of the marginal cost of the commodity
- **Reward Dividend:** Unlocking the value and rewards of customers' actions and assets
- **Equality Dividend:** Democratising access to decarbonisation assets eg: electric vehicles, energy efficiency and zero carbon heat solutions

Modernising the Sector

- **Economy Wide Dividend:** Delivering more with less
- **Innovation Dividend:** Unlocking the value in new technologies
- **Digitalisation Dividend:** Investing in the brain of the system as much as the brawn

Accelerating Decarbonisation Investment

- **Decarbonisation Dividend:** Setting targets and mandates to deliver decarbonisation
- **Investment Dividend:** Strengthening the Market
- **Speed Dividend:** Accelerating support to deploy newer decarbonisation assets

DOING MORE FROM LESS: FROM CONSUMPTION TO OPTIMISATION

To deliver Net Zero requires a philosophical change in how we look at the energy system from a consumption model to an optimisation model, driving value rather than commodity, fully utilising capital rather than wasting it and most importantly recognising, rewarding and incentivising consumer and demand side optimisation.

With the potential of millions of assets, generation, storing, hedging we need to unlock the value and potential of a much wider group of players – a consumption model will stand in its way.

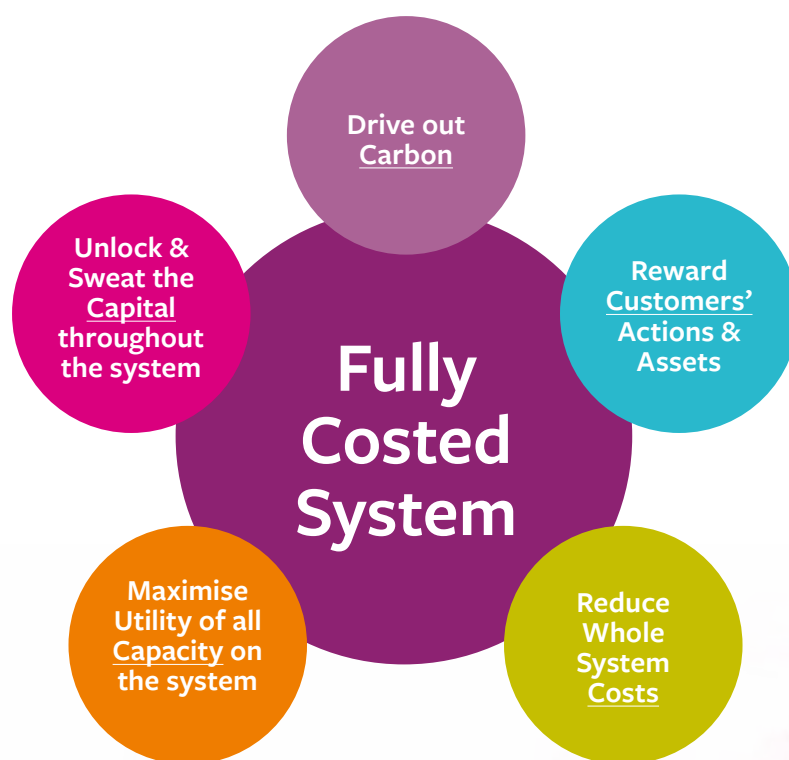
We are still designing our system around a few traditional energy players shaped around a vanilla top-down system with the customer at the end of the “plug”.

Optimising the 5 Cs: Carbon, Customers, Costs, Capacity & Capital

To reach Net Zero we need to replace the trade-offs posed by the trilemma with a set of efficiency ambitions accelerating decarbonisation through optimisation. This requires a changed mind-set from how much can we produce, to how best can we use all the resources efficiently. At the heart of optimisation is a fully costed system that breaks down the current silos and throws a light on how carbon and costs are moved from one player to another with the customer and the planet picking up the pieces.

Fully costing the whole system will be particularly important when decarbonising heat.

Optimisation requires a new set of incentives, market pressures to unlock new assets and actions – delivering More from Less.



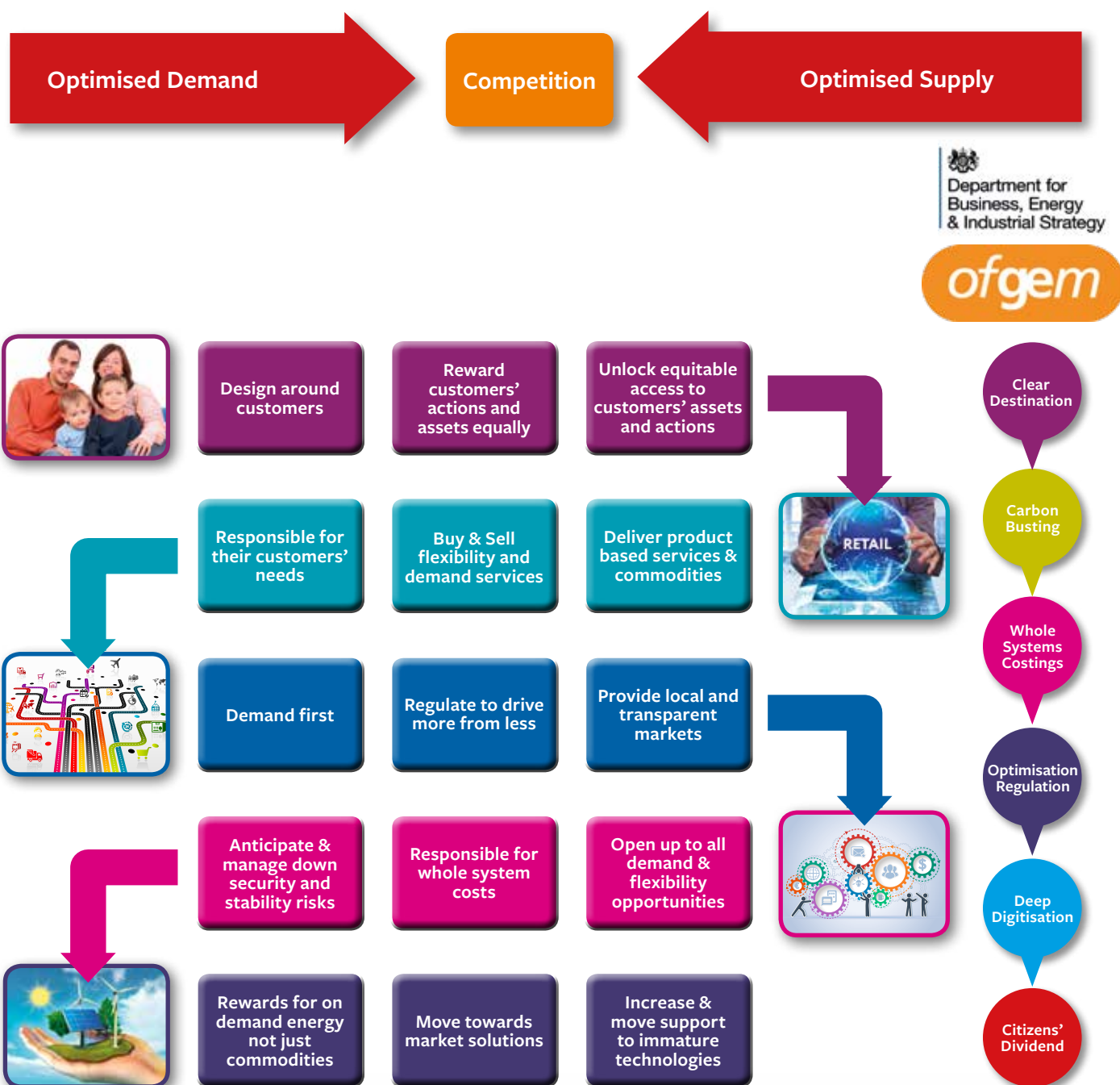
All regulatory and policy actions should be guided by optimising the 5 Cs, measured against the full system costs

THE DECARBONISATION DIVIDEND

There is an exciting prize at the end of the journey to Net Zero – A Decarbonisation Dividend. These recommendations aim to deliver on some of those dividends driven by optimisation not consumption – and spreading the joy to citizens too.

Dividend	Barriers	Challenge	Recommendations
Drive out Carbon			
A Modern Climate Safe Energy System Low carbon solutions quickly squeezing out fossil fuels throughout the system	Fossil Fuel Bias There are still far too many cases of fossil fuels taking priority and discriminating against low carbon options	Restack the Deck What measures are needed to give priority to low carbon and drive out the inbuilt “bias” towards fossil fuels	Carbon Busting Clarity of Direction, changed incentives, and significantly increasing barriers to defaulting to fossil fuels
Reward Customers			
Crucial Value for Customers Customers and their actions will become a growingly and ultimately a critical part of the energy system with so much more value flowing in their direction	Designed around Supply of energy not demand The customer is still the victim and has limited access to the assets and actions that enable value to flow in their direction	Access to Assets and New Services How to release the capital all customers need to access and benefit from decarbonisation assets	Demand is Equal to Supply In a fully costed system customer demand is of equal value to supply and can be unlocked through new market design and new asset based services
Whole System Cost			
Reduce costs All actions and policies to account for and reduce whole system costs and allow for value to flow across the silos of today	Silos capturing value Policy and regulation consider and cost the system in silos and do not “trust” the power of demand actions	Squeezing value from the system Complexity of fully costing the system and assessing the impacts of one actor on another	Accountable for Full System Costs All policy, regulation and markets need to account for full system costs with a value to avoided costs to the system and consumer
Maximise Capacity			
Doing More With Less Optimise the capacity on the system increasing the productivity of assets and focus as much on the processing of energy as its production	More is More & Siloed Actions The system is designed around rewarding the quantity of a commodity not the value of services or functions provided	Changing to More with Less Moving from a consumption to an optimisation model reflecting the new assets and actions required to turn the commodity into a utility	From Commodity to Service Incentivising outcomes not inputs through valuing services not the commodities and driving risk into businesses not sitting with consumers
Unlock & Sweat Capital			
Accelerate investment & maximise its utility Efficiently use all assets on the system, unlocking significant investment and reducing waste	Artificial Silos Silos preclude revenue stacking, while rewarding wasted energy and not unlocking investment in serious system gaps	Capital not Commodities How to unlock capital in a most efficient manner delivering the appropriate assets designed around the system needs	Deepen Support & Build the Market Focus support on immature technologies while underpinning the open market

Optimising the System



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