NET ZERO ENERGY SYSTEMS: UNLOCKING OUR PATH TO NET ZERO





CHALLENGE

Our existing energy system is the engine room of our global economy, powering and heating all areas of society. A Net Zero or clean-energy system will need to do the same, but at a much larger scale to meet the rising demand for power as the wider economy implements their own Net Zero plans.

Whole-system thinking will be essential to effectively plot a pathway to a Net Zero energy system future and, importantly, the transition to a Net Zero energy system will be exactly that, a transition. Clean-energy solutions, new technologies and the fourth industrial revolution will need to converge to drive the integration of a new clean-energy system over time and in a phased manner.

Building capacity while transitioning to a clean-energy system, ensuring security of supply and that the energy system is resilient and adaptive to our changing climate, form the largest priorities the energy systems face. Importantly, the energy systems' success in this transition will be critical to decarbonising the wider economy.

We are ready to support our clients in facing their energy system challenges, whether it be decarbonising key areas of the existing system, integrating clean-energy solutions within the existing system, or developing clean-energy solutions to enable the decarbonisation of the wider built environment.

Our whole-system thinking approach provides an end-to-end capability across the whole lifecycle of energy system assets, ensuring our clients' aspirations and commitments to Net Zero are achieved.

MAKE CARBON VISIBLE

We do not see carbon as clearly as we see cost. It is often invisible in the design and construction process and obscured in production behind more obvious concerns of throughput, quality and reliability.

To effectively tackle carbon we must see it, clearly and in all areas where it occurs, and quantify it such that we can prioritise our interventions and measure our success. Atkins' carbon accounting tools ensure that construction and operational carbon is visible in the

end-to-end process, upstream in material and component supply and downstream in distribution and endof-life recycling.

We extend this visibility across the entire team to enable a proactive, Carbon Value Engineering (C-VE) focus on major contributors. Our detailed carbon budgeting allows success to be measured, inspiring our people and demonstrating commitment to customers, society and our world.

As part of our whole-system approach, we have developed a range of other targeted propositions that complement and interface with this Net Zero Energy Systems offering.

Policy Advisory -----A clean-energy system's performance is ensured through its design, integrating equipment and infrastructure to maximise energy efficiency, minimis construction waste, reduce embodied carbon and creating flexible space for plant longevity. PLANNING **Planning & Consenting** Our Planning and Environmental Consenting team's digitally enabled approach to impact assessment, NSIPs planning and permitting de-risks the consentability of a scheme while **Green Construction** Working with contractors and our supply chain to deliver the lowcarbon design intent enabled through digital solutions, modern proactively supporting our clients in methods of construction and making strategic low-carbon decisions whole-life thinking. Integrated n Solutions Climate Resilience and Adaptation **SUPPLY Energy Masterplanning Green Logistics** Our Energy Masterplanning team support our clients to prepare for upgrading, repurposing or growth, providing an actionable strategy and roadmap to deliver a practical, sustainable and integrated access extended. Supporting construction through green construction logistics modelling through to Green Ports, our teams enable the effective delivery of lowand Ir carbon and Net Zero energy integrated energy system. schemes at any scale Sm **DEMAND** T&D **Clean Energy Solutions** Green Fuels Our Energy business provides industry-leading expertise on appraising, designing, delivering and operating clean-energy systems from integrated campuses, estates and From waste to fuels, hydrogen to sustainable aviation fuels, we provide a holistic capability in provide a notistic capability in developing low-carbon fuel solutions and its enabling infrastructure through whole-system thinking to ensure effective integration of green fuels into existing systems. OPERATION city-scale systems up to national arid scale **Decarbonising Existing Energy Systems** Across the demand, T&D and supply side, our energy teams provide industry-leading expertise in decarbonising existing energy in both offshore and onshore settings through integrating new clean-energy solutions such as hydrogen, wind and CCUS into existing energy systems. Sustainable Finance Advisory



Strategic Carbon Advisory

Delivering industry-leading routemaps and pathways to credible Net Zero futures.



Net Zero Buildings and Cities

Decarbonising new or existing buildings, campuses, estates or cities and the associated enabling infrastructure systems.



Net Zero Transportation

Decarbonising new or existing transport systems across road, rail and aviation and developing new and novel Net Zero transportation for any scale of project.



Net Zero Industry and Infrastructure

Decarbonising new and existing industrial processes and process emissions from a wide range of sectors, including manufacturing water processes, steel and cement production.



Greenhouse Gas Removals

Deploying a range of nature-based solutions on varying scales to help clients optimise land use and integrate nature-based offsetting solutions into the built environment We also provide GGR technologies

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