CLIMATE CHANGE and the road to NET-ZERO: The Book

We are pleased to offer a unique, tailored series of workshops on the science, technology, economics, and politics of climate change and the net-zero transition delivered by Dr Mathew Hampshire-Waugh, author of bestselling book 'CLIMATE CHANGE and the road to NET-ZERO'.

The course is designed to provide a top-down "ten-thousand-foot-view" of the climate problem and the economics of change, whilst also building a detailed bottom-up assessment of technology and policy options based around Mathew's integrated assessment modelling and book.

Learning Outcomes

The course provides simple intuitive explanations of climate science, energy technology, systems thinking, and regulatory and cultural change to build a better understanding of the climate problem, a clear vision of what a net-zero future means, and the ability to navigate potential physical, technological, and political change.

The course provides valuable insight for corporates, private equity, and financial institutions to better mitigate physical and transition risks whilst also identifying portfolio opportunities.

Tailored Content

The standard presentation session is 3 hours (180 minutes) delivered in one or multiple workshops and including Q&A. However, to ensure we deliver the highest value possible we offer tailored content so please select whether you wish to receive an abridged taster version or more detailed version of the content in each section (delivery time ranges from 60 mins to 240 minutes, split as required).

We also offer the option to build out in tandem an excel workbook which runs through simplified modelling of future emissions pathways, warming outcomes, damage estimates, carbon accounting, discounting, levelized cost calculations, technology pathways, value-at-risk analysis, and GDP impact calculations.

Expert Biography

Dr Mathew Hampshire-Waugh has spent the last ten years working as an equity analyst at global investment bank, Credit Suisse. He resigned his role as director in 2019 to commit to writing on climate change and new energy technology full time.

During a decade as an investment banker, Mathew worked with the top executives of many multi-billion-dollar companies and built relationships with many of the world's largest investment managers. Mathew's work centred on forecasting technology trends, financial performance, and the intrinsic value of companies involved in markets including renewable energy, electric cars, battery technology, and biofuels - publishing and pitching share price recommendations to the world's largest institutional investors, hedge funds, and private wealth managers.

Prior to his career in the banking industry, Hampshire-Waugh gained his doctorate in materials chemistry from University College London, where he worked on novel coatings and nano-materials for use in energy saving glazing and solar panel design. During his doctorate Mathew registered a patent for an efficiency enhancing coating for solar modules, published numerous scientific papers, and engaged in public speaking, consultancy, and media outreach.

Section	Abridged	Standard	Detailed
Human Progress & Planetary Pressures • Human Innovation and the Industrial revolution. • Evaluating global inequality, peak population, peak consumption.		x	
Carbon Dioxide - Earth's Thermostat • The greenhouse effect and the physics of warming. • The carbon cycle and Earth systems. • CO_2 and temperature for 500 million years. • How humans have disrupted the Earth's systems and temperature.		x	
Forecasting Change – How Scientists Predict Future Climate • A basic model to forecast temperature rise. • Uncertainties in forecasts and future warming scenarios		x	
Physical, Social, and Economic Costs of Climate Change • Chronic risks from temperature/sea rise, and agricultural decline. • Acute risks from extreme weather. • Economic damages and discounting. • Unmanageable change and tipping points.		x	
Taking Care of the Planet – Building a Strategy to Deal with Climate Change • CO_2 and other green-house gases – quantifying their impact. • Energy use and emissions across the world. • Adaptation and climate engineering options. • Ways to mitigate emissions and the Kaya identity.		x	
Sustainable Energy – Powering the World without Heating the Planet • Assessing all energy sources - fossil fuels, nuclear, and renewables. • Lifecycle emissions, land use, safety, resource intensity, water use. • Levelized cost of Energy and learning Curves		x	
Energy Storage and Distribution - A Safe, Reliable, Affordable Network • Intermittency of wind and solar and storage options. • Levelized cost of short term and seasonal storage solutions. • Fully Loaded cost of net-zero energy.		x	
Electrifying Everything – Transport, Industry, and Amenities • Energy, emissions, and decarbonisation technology pathway and economics of decarbonizing transport, industry, and amenities. • Levelized cost analysis, aggregated systems costs, tech options.		x	
Net-Zero Agriculture – Feeding the World Without Heating the Planet • Agriculture energy, emissions, and land use. • Agricultural Yield and inefficiencies in the agricultural system. • Future land use scenarios and decarbonising Agriculture		x	
The social and economic benefits of a net-zero carbon economy • Energy use, energy prices, and system costs through the transition • Impact on GDP and optimising the speed of the transition. • Sensitivities to climate uncertainties, discounting, and technology. • Job Creation, sustainability of resources, resilience, and land use. • Solving Climate Change versus Development – comparing outcomes		x	
Reaching Net-Zero - Culture and Politics • Hurdles to Change – attribution, market failures, free-riding, and sabotage. • Required Investment and Sourcing the Money • Overcoming hurdles - Policy options, corporate culture, case studies. • Carbon taxation		x	
Total Workshop Length	**60 mins**	**180 mins**	**240 mins**

	Select One Option
Excel Modelling Bolt-on (+120 mins)	Yes/No