An Introduction to Vivid Economics

Vivid Economics is a strategic and economic consultancy with 13 years of experience providing long-term advice under uncertain futures. We have a long track record analysing complex climate and environmental issues and how these impact the economy. Our expertise spans key economic sectors including energy, energy intensive industry, transport, cities & infrastructure, finance, and natural resources. Our consultant team are all economically trained. Furthermore, our team include specialists with multidisciplinary backgrounds to complement their economics training across policy, science, engineering, and data analytics. Across our work, we emphasize thorough and technically robust analysis, as well as clear communication which allows decision makers to focus on key drivers and trade-offs.

Our team has worked extensively with BEIS, HM Government, and international governments. We regularly advise BEIS on questions concerning innovation, carbon policy, technology/sector specific policy, as well as other areas which require methodical assessments of potential futures. They key team members on our Futures Work have all worked with BEIS previously and understand how to deliver effectively and efficiently to BEIS’ needs. More broadly, we work in over 50 countries, across a broad range of topics and clients and are recognised providers of long-term strategic advice across uncertain futures.

Figure 1. Vivid Economics serves a wide range of clients, across 8 practise groups

Figure 2. Vivid has deep experience modelling possible futures and designing policy and strategic advice appropriate to uncertain environments
Vivid Economics’ recent futures work

Vivid Economics regularly conducts futures work for both private and public clients.

- **Public work**: Vivid is an established consultant for HM Government, and has a long track record advising BEIS, Defra, Innovate UK, DFID, and other UK public institutions. The below provides a selection of case studies of our public work, which includes both long term strategic advice on priorities, as well as advice on short term policy changes required to meet long term goals.

- **Private work**: Vivid is a trusted strategic advisor for large corporates on long term futures, particularly associated with climate change. We provide advice at the executive level on strategic opportunities and risks created by climate change to O&G majors, large mineral companies, as well as portfolio advice to banks and investors. This work is not publicly available but often includes scenario and tipping point analysis, as well as a strong focus on concise communication and identification of key decision points.

### Energy Innovation Needs Assessments (EINAs), BEIS

*Vivid lead a consortium including the Carbon Trust, E4tech and several academic experts for the EINA work programme, which prioritises innovation needs out to 2050 for the UK energy system*

- This project formed a key evidence base for BEIS to prioritise its substantial innovation spending. Vivid designed the methodology and implemented the assessments, which combine energy system modelling, identification of individual innovation opportunities, stakeholder (across industry, government and academia) workshops, analysis of export opportunities, and analysis of market barriers.

- Vivid’s analytical contribution focused on assessing the green business opportunities, identifying market/policy barriers, synthesizing insights from the analysis of the latest engineering/scientific literature and system modelling outputs produced by consortium partners. The work programme produced a series of reports: a report per technology, and a final ‘synthesis’ report highlighting the priorities for innovation across the UK’s energy system.

### Greenhouse Gas Removal Policy options, BEIS

*Vivid Economics was commissioned by BEIS to assess potential policy options to support large scale GGR deployment in the UK*

- The analysis consolidated the latest evidence on mature and immature GGR technologies/options and sets out the key barriers to their deployment across economic, technical and environmental dimensions.

- The report considers policies such as regulation, taxes, and obligations. The scope of feasible policy options was determined through several expert workshops. Within the feasible policy option space, the report sets out typical economic considerations such as the efficiency, effectiveness and distributional trade-offs. Balancing these trade-offs, Vivid recommends an obligation-based approach.

- Beyond the direct GGR incentive mechanism, the report also considers enabling GGR policy includes environmental risks, MRV considerations, the need for innovation support, etc.
<table>
<thead>
<tr>
<th>The Future of Carbon Pricing in the UK, Committee on Climate Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vivid Economics</strong> was commissioned by the Committee on Climate Change (CCC) to support its response to a government request for advice on the future of carbon pricing in the UK.</td>
</tr>
<tr>
<td>● Vivid provided expert advice on the design of carbon pricing in the UK following Brexit. We build on our in-house expertise from advising on international ETS design, as well as conducting workshops for stakeholders including academics, industry representatives and CCC Board members.</td>
</tr>
<tr>
<td>● Vivid’s analysis set out the costs and benefit of different carbon pricing options, and recommends a UK ETS linked to the EU. The analysis was published, and formed the basis of CCC advice to BEIS on the future of carbon pricing in the UK.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modelling the transition to a lower net emissions New Zealand, Globe NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vivid Economics</strong> supported the New Zealand Productivity Commission’s low emissions economy inquiry, by developing a model to guide its assessments of transition options, opportunities and risks.</td>
</tr>
<tr>
<td>● We modelled the impact of policy and investment strategies, under a range of uncertain future circumstances to evaluate the feasibility of targets, quantify potential mitigation costs and identify robust economic strategies.</td>
</tr>
<tr>
<td>● Modelling the transition to a lower net emissions New Zealand examined the impacts of decision making under uncertainty by considering how different decisions impact outcomes of interest, such as economic activity and greenhouse gas emissions, under uncertain future states of the world.</td>
</tr>
<tr>
<td>● Vivid Economics was responsible for developing the modelled scenarios, interpreting model outputs and drafting the reports.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accelerated electrification and the GB electricity system, Committee on Climate Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vivid Economics and Imperial College</strong> were commissioned to assess the impacts of accelerated electrification of heat and transport on the electricity system, to support the CCC’s recommendations to UK Government on adopting a net zero emissions target</td>
</tr>
<tr>
<td>● We conducted an electricity system modelling study to identify the impacts of the additional electricity demand profiles on system operability, electricity network reinforcement, and new generation capacity. This included establishing sensible scenarios for key modelling inputs, such as EV and heat pump deployment, and understanding sensitivities around these uncertain inputs. Based on this, we assessed the feasibility of delivering wind and solar generating capacity to meet the additional demand.</td>
</tr>
<tr>
<td>● Vivid led the assessment of remaining GB renewable resource potential using GIS analysis to inform the feasibility of delivering additional wind and solar generating capacity.</td>
</tr>
</tbody>
</table>
**Net Zero UK and Scotland, WWF UK and WWF Scotland**

*Vivid Economics has conducted a programme of work for WWF UK and WWF Scotland to establish feasible net zero dates, pathways towards net zero, and short term policy action to get onto a net zero pathway.*

- **UK:** Vivid Economics was commissioned by WWF UK to assess the feasibility of a net zero emissions target in the UK. Vivid Economics conducted a sector-by-sector analysis of how fast the UK can meet net-zero emissions through domestic action. Our analysis updated outdated CCC pathways with the latest evidence, and tested feasibility based on expert interviews. Our recommendations directly fed into the CCC’s recommendation for a net zero target.

- **Scotland:** Following on from our UK work, Vivid identified a pathway for Scotland to reach net zero emissions by 2045 by leveraging its large potential for greenhouse gas removal (GGR) options. Vivid presented the analysis to MSPs of the Environment, Climate Change and Land use committee, and were invited back to present to the Cabinet Secretary for Environment, Climate Change and Land use. Vivid followed up on this work with specific policy recommendations for the Scottish budget, many of which were implemented.

### Key staff

Key Vivid staff members supporting our Futures work are highlighted below. Depending on the requirements of the brief, Vivid will assemble a team from the staff members below, supported by:

- **Selected content experts** from the wider Vivid team (such as practise group leads from the 8 practise groups set out in Figure 1), and academic experts from Imperial College, Cambridge University and LSE associated with Vivid. This, amongst others, includes Professor Sam Fankhauser, Professor Simon Dietz, Professor Cameron Hepburn, Dr. Robert Ritz, Dr Adam Hawkes, and Dr Swenja Surminski, who are economic and policy experts across climate mitigation and adaptation, environmental issues, energy issues, and innovation.

- **Experienced economists and analysts** who have worked on futures projects in the past. We are able to draw upon a pool of junior staff who have experience working on a variety of Futures projects across both are public and private clients.

### Dr. Jason Eis, Executive Director

Jason has served as Vivid Economics’s Executive Director since 2014. He oversees project work in finance, energy and industry, cities and infrastructure, and natural resources, and leads Vivid’s business development across the firm.

Jason is an expert in the fields of innovation, sustainable and responsible investment, and energy/climate transitions. His work includes the development of transition scenarios, and the assessment of risks to financial assets and the broader economy from the low-carbon transition. Jason has worked with BEIS extensively in the past, including on the EINAs and their predecessors the TINAs (in his role as Associate Director at the Carbon Trust overseeing work on the UK’s low-carbon innovation strategy).

### Professor Cameron Hepburn, Director

Dr Cameron Hepburn is an expert in energy, market economics, commercial strategy, and climate policy. He has almost two decade’s experience working on environmental and climate change issues, with particular interests in the implementation of emissions trading, the economics of cost-benefit analysis of energy system transitions, and the economics of apparently irrational individual behaviour (for example, in relation to energy demand). He has extensive experience in developing energy transition frameworks for several countries including China and South Africa.
Alex Kazaglis, Principal

Alex is a Principal and head of the energy practice and an expert in climate policy, transition scenarios, and climate strategy at Vivid Economics. He is a trusted advisor on the economics and regulatory aspects of energy, climate and urban infrastructure. He has worked on energy-climate issues for over 10 years and has a strong track record in the delivery of high-quality independent advice and effective stakeholder work with both public and private sector organisations. Recently, Alex managed and completed the Energy Innovation Needs Assessments work programme for BEIS.

Stuart Evans, Engagement Manager

Stuart is an Engagement Manager specialising in carbon pricing, and projects in policy design, scenario analysis and modelling. Stuart works in scenario analysis, modelling, and policy design, with a specialisation in carbon markets. He has led analyses regarding carbon pricing and energy policy for governments, international organisations and multinational corporations.

Therese Karger-Lerchl, Senior Economist

Therese advises private and public sector clients in the UK and in developing countries on urban economic development strategies with a focus on the role of built, digital and green infrastructures. Projects focus on applying natural capital accounts to strategic planning and sustainable development, and spatial analysis for the promotion of local economic development.

Maarten Hage, Senior Economist

Maarten is an energy and innovation expert, and leads Vivid’s analysis on sizing future economic and business opportunities. His work focuses on energy system innovation, energy system analysis, green competitiveness and business opportunities associated with low carbon technologies. He is particularly interested in understanding how the low carbon transition provides opportunities for economic growth in the UK. Maarten has recently worked with BEIS on the EINAs, and managed Vivid’s analysis on GGR policy design.

Financial offer

Vivid’s rates have been provided separately. Rates provided are standard for positions within Vivid Economics. Vivid recognises the need to deliver high quality analysis to budget and will tailor the team design to best suit the brief.

Contact us

Vivid Economics Limited
163 Eversholt Street
London NW1 1BU
United Kingdom

T: +44 (0)844 8000 254
procurement@vivideconomics.com