



Brainstorming 2023

Topics for discussion

The format of the 2023 brainstorming has been designed to enable in-depth discussions of short-term energy issues in the context of longer-term economic and public policy goals that will strongly affect the entire energy sector, notably those related to climate change and decarbonization. This longer-term policy objective requires extensive electrification of most energy end-markets as well as deep penetration of renewables. The implication is the need for a transformation both on the demand-side and the supply side of the energy system. However, there is also a growing awareness of the difficulties of transforming the energy system and the need to maintain investment in fossil fuels while accelerating investment in electrification and renewables. There are six topics/themes which will be discussed in order, but the timing will be flexible; some might only take 45 minutes, while others might stretch over two sessions (see timetable attached).

Theme 1: The Energy Trilemma in Focus

- How has the war in Ukraine affected policy priorities and has the war provided a new justification for the energy transition or, on the contrary, undermined that transition?
- How are energy security and affordability concerns impacting decision making and policies in different parts of the world?
- How are differing views—and the disparity in financing—impacting the energy transition and the geopolitical dynamics around it?
- Will the shift towards more government intervention in energy markets persist? What are the short and long-term implications of government intervention in markets on consumers and investors' behaviours?
- What is the right balance of the role of government versus market in achieving decarbonisation targets and how can that balance be achieved?
- How far off track is the net-zero ambition in Europe and globally and what further policy measures are required?
- How are energy security concerns and deteriorating geopolitical environment impacting climate change negotiations and the speed of transition?
- What are the climate issues to watch in COP28? Will COP28 see more alignment between developed and developing economies?



Theme 2: Energy Markets in the Short Term: Coping with a Series of Shocks

The Prospects for the Global Economy

- Should the world prepare for a deep and long recession?
- Have inflation and monetary policy tightening peaked? Is the era of cheap credit over?
- Will bottlenecks in supply chains continue to act as a constraint on growth or will the opening of China relieve these constraints?
- What are the prospects for globalisation and how do they affect economic growth forecasts for different regions of the world?

The Oil Market in Flux

- How is the post-pandemic recovery of global oil demand evolving and how are the current macro pressures impacting the return to its pre-COVID levels?
- What are the heterogeneities across products in the recovery cycle and are we seeing evidence of structural changes?
- Will Chinese demand return to its robust levels of growth seen over recent decades or is it facing a structural slowdown?
- What have been the impacts on Russian oil supplies from the EU embargo in full effect and are we starting to witness any scarring effects on Russian oil fields from the Western sanctions?
- Has the oil price cap mechanism been effective in achieving its objectives and does this level of government intervention pose any risks for other oil exporters and future oil supplies?
- What is next for OPEC+ and will Russia be able to maintain its influence within the group?
- The use of SPR: A new tool for market management?
- How are the differing business objectives amongst shale producers impacting US growth and global supplies?
- How has the relationship between the world's largest three producers (US, Russia, and the Gulf) changed and what are the short-term and long-term implications? How is China thinking about and dealing with sanctions on Russia?
- Are the recent shifts in crude and products oil trade flows temporary or structural and what are the implications for global oil markets?
- How have refineries been adjusting to the change in trade flows?
- How can Europe navigate through a potential diesel crisis?

The Gas Market and the Loss of a Key Supplier

- What is the short-term outlook for the gas market in Europe given current storage levels (at the end of winter 2022/23)?
- Are high gas prices leading to the de-industrialisation of Europe in key sectors?
- When will the global gas market re-balance at 'normal' prices (normal meaning the average of 2014-2019 prices)?
- Is there any scenario under which Russian pipeline gas could return to Europe at significantly higher volumes than winter 2022/23?



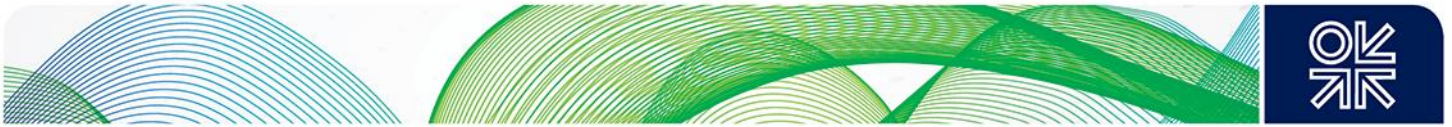
- Can government interventions on price ever work and if so, how? What are the lessons from the EU energy crisis?
- What has been the impact of high prices on gas consumption in developing countries, and has it changed the perceptions of the long-term future of gas demand?
- Gas demand in China: was 2022 a blip or a structural shift in gas demand?

The Electricity Market Design in Question

- What explains the rising price of electricity in most countries in 2022, especially in Europe? Will this continue?
- How has the Ukraine war affected the supply mix for electricity and, in particular, the role of coal?
- How has the war affected the demand for electricity, both for industry and residential consumers and to what extent have markets been effective in reducing demand?
- Is the current energy crisis a market failure? To what extent will the short-term interventions in the electricity market solve the current European energy crisis?
- How is the current crisis shaping wholesale and retail markets in Europe and elsewhere? What is the alternative, if any, to short-run marginal cost pricing?
- What reforms are required in the retail electricity market to protect consumers from high energy prices, provide incentive for efficiency and flexibility while ensuring they benefit when prices are low?

Theme 3: The Shift in the Energy Mix away from the Fossil Fuels and the Role of Electrification

- How are the silos within the energy system breaking down and what are the implications of a changing energy system? How is electrification contributing to the breaking down the silos?
- What are the long-term prospects of reducing demand for fossil fuels in line with the requirements to meet net zero emissions?
- What have been the recent trends in electrification in transport and what are the implications for oil demand?
- What are the decarbonizing options for heavy transport, marine and aviation and their implication on demand? Is there a role for synthetic fuels?
- How are demand prospects influencing current investment decisions upstream, midstream and downstream, in different regions?
- How will the ESG impact the investment cycle and future supply dynamics? Has the investment cycle in oil become longer?
- How is refining responding to potential structural changes in demand patterns and pressure to reduce emissions? Is the world seeing the end of refining expansion?
- Is this the end of the Golden Age of Gas, as a result of the implications of the Russia-Ukraine war?
- Can gas be a bridge fuel for energy transition in emerging markets if prices remain high?
- Is there a case for concentrating first on reducing demand for coal used to generate electricity and turning later to reduce demand for natural gas?



- How does the need for long-term contracts for new gas projects fit with the Energy Transition in Europe and elsewhere?
- Will gas suppliers' license to operate depend on addressing the methane leakage issue?
- What will be the implications for companies and government policies if oil and gas supplies decline while demand for oil and gas remains robust?
- Can a decarbonized electrified energy system ensure security of supply and affordability in the face of some extreme events?
- How should we think about electricity market re-design to balance short term objectives related to the energy crisis and consumer protection with the long-term objective of achieving net zero carbon?
- Are current power markets motivating the needed investments in security and reliability of electricity supply? Can a future market design create strong enough investment signals for all types of flexibility needed by the power system, or is additional investment support still required? How can one enable demand side flexibility?
- Electrification of end-markets requires collaboration of end users, who are also voters in most countries. What market design and regulations will motivate consumers to collaborate and enable them to do so?

Theme 4: The Challenge of Scaling Up Technologies and the Search for Business Models?

- What are the limits to the rate of growth of low carbon technologies and what are the key constraints: critical minerals, manufacturing capacity, skilled labour, finance, willingness to pay, all of the above?
- How does current inflation affect the global supply of components for renewable and low carbon technologies?
- Where are we on the scale of hydrogen being hope or hype? How has the Russia-Ukraine war impacted plans for clean hydrogen?
- What will it take to even get close to the EU's REPowerEU hydrogen ambition – what policy measures are needed / emerging?
- To what extent is hydrogen likely to become a globally traded commodity and how do geopolitics impact the roll out of hydrogen?
- Are the stars finally aligning for CCS? Can CCS finally achieve its full potential? What needs to happen to scale up investment in CCS? What are the regional perspectives?
- What are the other key technologies being developed with the potential to accelerate decarbonization, including nuclear, electricity storage and solar synfuels?
- How is the US Inflation Reduction Act (IRA) impacting plans for clean technologies globally?



Theme 5: Financing the Energy Transition

- What are the main frictions, barriers and risks associated with scaling financing towards climate mitigation and adaptation assets and technologies?
- What are the challenges arising from the current global economic picture and rising political and currency risks?
- To what extent is the cost of finance a barrier to mitigation in developing countries and how can the cost of financing projects be reduced?
- What is the role of public and multilateral institutions in mitigating investment risks and reducing market failures in investments towards climate mitigation?
- What are some of the instruments widely used to encourage private investment in green technologies and how do these instruments differ among countries?
- How can project finance and blended structures supported by MDBs achieve risk mitigation?
- How will the EU and other taxonomies affect investment decisions?
- What has been the experience of the EU ETS in decarbonizing the economy and what prospects do CBAM have of promoting decarbonization in other countries?
- Are carbon markets playing their role in channelling investments to developing countries?

Theme 6: Companies' Strategies in a Net Zero World

- What are the greatest opportunities and challenges facing energy companies in the transition?
- Will today's power companies be the new Super Majors, or will oil/gas companies maintain their dominance in the energy sector?
- What do these prospects mean for current and future business models of energy companies?
- Are energy companies too big and entrenched to pivot?
- Are international energy companies operating in more constrained world compared to national oil companies?
- Why are companies not devoting a larger proportion of their cash flows to renewables and low carbon technologies? How can energy companies' de-risk these investments?
- Is there a case for splitting the companies into traditional and new businesses?
- How can one manage ESG/different net zero regulatory frameworks across regions and jurisdictions and how does this impact corporate strategies?
- What are the challenges and opportunities for corporate carbon offsetting? What internal emissions should a company be allowed to offset? How can this be harmonized across companies in different industries and operating in different regions? To what extent should a company invest in carbon removal credits?