CRA Insights
Energy

CRA Charles River Associates

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Trends in European Energy (Summer 2023) – Reflections on the E-world Conference

In May 2023, a team from CRA's Energy Practice attended Europe's largest energy and utility conference – E-world 2023 in Essen, Germany. Each year, this event draws a wide range of companies and organisations that showcase their latest products, services and ideas. In this *CRA Insights*, we will highlight six key takeaways from the event that reflect upon the breadth and depth of E-world.

#1 Perception of improved industry outlook compared to this time last year

From conversations with industry colleagues, presentations and the overall exhibition space, our CRA Energy team noted the mood of participants felt improved compared to a year ago. Europe navigated the energy demands of the 2022/2023 winter without Russian gas better than expected, underpinned by demand reductions, increases in LNG imports, subsidies for consumers and profit curbing in many countries (e.g., through windfall taxes), as well as increasing progress and commitments towards a net-zero energy system. Price volatility has declined in recent months – however many challenges remain to improve resilience going forward.

#2 Discussions on EU electricity market reforms

A key topic of multiple discussions was the design and structure of European energy markets. Several presentations and discussion points this year **focused on the longer-term markets and hedging opportunities**, seemingly in response to a need identified through the past year's challenges. These topics are also reflected in the draft reforms to the EU's electricity market design proposed by the European Commission[1] and referred to by many event attendees. The importance of hedging and the ability to hedge – with limitations linked both to liquidity and cost (credit) – came to the forefront in the time since 2022 and continue to be top of mind.

[1] European Commission. 2023. Commission proposes reform of the EU electricity market design to boost renewables, better protect consumers and enhance industrial competitiveness. 14 March. Accessed June 05, 2023. https://ec.europa.eu/commission/presscorner/detail/en/IP_23_1591.

Last year's discussions around decoupling electricity and gas prices through fundamental changes to the structure of European energy market design[2] did not materialise. The proposed EU reform, which is now open for comments and inputs from both European Council (EC) and European Parliament (EP) does not fundamentally change the merit order principle for dispatching generation. However, parties brought up the risks associated with potential wider spread of **mandatory Contracts for Difference (CfDs)** for renewable assets – which are currently being considered for addition to the EU reform as part of the EC review. Participants highlighted that this could result in a de facto two-tiered market leading to reduced liquidity of the longer-term hedging market.

#3 Trading and optimising the value of assets

Multiple companies presented their **solutions to extract value from flexible asset optimisation**, including the increasing use of battery storage. This translates into the rising value-add of smart optimisation and algorithmic, automated trading solutions. Given the volatility of 2022, many players – including smaller utilities or renewable generation asset owners and operators – discussed the changing **needs and practices in hedging, asset optimisation and risk management**. Some may seek to implement solutions in-house, while others are still **searching for the right model**, considering hybrid solutions, cross-provider benchmarking or pilots to validate business cases. E-world was well attended by companies providing such services to other parties, covering direct marketing, power purchase agreement (PPA) risk management or more advanced asset optimisation.

#4 Smart grids and digitalisation

The topic of developing **smarter electricity and gas grids** (management, metering) was prominently covered by exhibitors. Related to this, many companies (both large and small) presented their solutions on the connectivity of assets (sensors and industrial Internet of Things (IoT)) and building services, as well as virtual power plants (VPPs).

The discourse around smart grids was shaped by the increasing policy push for **smart metering and transparency on load in grids** in Germany[3] and other European markets. Exhibitors – from grid companies and utilities through to large and smaller metering and grid companies – shared products, showcased improvements in connectivity (innovative communication protocols, reliability and performance) as well as progress in data protection and cyber security. Still, the German smart metering roll out was subject to critical views regarding its speed, regulatory approach to some technical aspects as well as communication with the public. This came up, for example, in a panel discussion titled "The smart meter roll-out in Europe – a success story?". Providing examples of good practice from Nordics, some suggestions were offered regarding potential approaches to communication and problem solving.

Smart grid and grid digitalisation are expected to continue growing in importance, as they have over the past years. Not only does this include substation automation and monitoring – which could be instrumental in keeping the grid cost lower (especially in congested areas) by utilising better operational limits and intervening where it is most required – but also **predictive maintenance**, including AI-driven analytics to identify most-likely points of leakage and high stress (linked to a variety of data sources such as satellite imagery, social media and sentiment analysis, weather data etc.). **Mobilisation and digitalisation of workforce** has been a recurring theme in the energy sector for years now and products

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[2] Reuters. 2022. EU sets sights on energy market reform as prices soar. 30 August. Accessed June 05, 2023. https://www.reuters.com/business/energy/eu-sets-sights-energy-market-reform-prices-soar-2022-08-30/.

[3] German Federal Government. 2023. Intelligente Strommessgeräte: Neustart für die digitale Energiewende. 12 May. Accessed June 05, 2023. https://www.bundesregierung.de/breg-de/themen/klimaschutz/digitale-energiewende-2157184.

and services are being modified for information collection, digital mapping linked to maintenance plans and operations management or Health, Safety and Environment (HSE) solutions to reduce leakages and accidents.

Products and technologies that enable **digital twinning and submetering/load disaggregation** are also increasingly **used in industrial and B2B setup**, given the potential for higher upside of energy savings and the increasing push for emissions reduction and data transparency on energy intensity.

#5 Diversity of digital solutions for end-use customers

In the **customer-facing** sectors of the energy value chain, many companies presented offerings and solutions pertaining to energy management of the home, decarbonised heating and decentralised generation. To support these different solutions, companies showcased **digital retail solutions**. It will be interesting to follow the competitiveness of this space as new entrants are trying to challenge incumbents. Among these new entrants are, increasingly, established platform offerings from companies that have gained significant market share in German and UK retail markets over the last few years.

#6 Consistent theme of decarbonisation throughout the conference

Reflections of E-world would not be complete without mentioning the focus on decarbonisation and sustainability throughout the conference. This is driven by regulatory frameworks including the European Green Deal and EU Taxonomy (including Net Zero Industry Act and Just Transition Mechanism) as well as the REPowerEU plan for energy savings, diversification of energy suppliers and accelerating the roll-out of renewables.

As a key element of decarbonisation, particularly for selected industry processes that cannot be electrified, hydrogen had a prominent place at the conference with a dedicated segment and stage. Talks and presentations covered the required infrastructure changes, the economics of different use cases and the state of regulation. Discussions on a hydrogen network in Germany coincided with the passing of a draft law creating a framework for a hydrogen core network by the German government[4].

E-world hosted presentations on some interesting pilot projects in carbon capture and storage (CCS). Speakers highlighted that CCS could, in their view, only work politically if it's a last resort following emission reductions. It will be interesting to follow the full definition of the process chain and the start of operational pilots over the next years.

Conclusion

Our key takeaways highlighted above are just a small sample of the diverse scope of E-world 2023. There was a broad range of topics covered by a mix of exhibitors and visitors representing companies from start-ups to some of the world's largest companies. We were grateful for the opportunity to meet in person with so many experts, clients, stakeholders and colleagues and already look forward to E-world 2024!

[4] Reuters. 2023. German cabinet approves legal framework for hydrogen core network. 24 May. Accessed June 05, 2023. https://www.reuters.com/business/energy/german-cabinet-approves-legal-framework-hydrogen-core-network-2023-05-24/.

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