



FLEXtrack

The platform to track and understand **accessible value** in European flexibility markets

ANDY.BRADLEY@LCP.COM

About LCP Delta

Our mission is to enable a better, faster energy transition for all

Founded in 2004 and based across the UK, France, Norway, the Netherlands and beyond, LCP Delta provide data-driven research, consultancy, technology products and training services to companies investing in and navigating the energy transition.

We are a diverse team from a variety of backgrounds including engineers, data analysts, environmentalists and more.

LCP Delta is a mission driven organisation - all of us want to make a difference to the energy transition and accelerate the path to a low carbon future.

The energy market is becoming increasingly complex. As consumers become more empowered and as energy systems around the world decarbonise, there is a need to understand both the generation and demand side to effectively navigate the rapid changes occurring.

We know it's a complicated topic, and we're here to help.

Andy Bradly, Partner, LCP Delta

LCP Delta was formed through the merger of Delta-EE and LCP Energy to bring together deep generation and consumer-side expertise, to provide our clients with a single partner to help them on their journey and provide them with a 360° view across the energy spectrum.



Andy Bradley
Partner
andy.bradley@lcp.com



Jon Slowe
Partner
jon.slowe@lcp.com



200+
Global clients



6
offices



110+
Colleagues

LCP Delta provides the best advice, support and tools to enable the energy sector to drive the energy transition



Subscription research services

Our portfolio of subscription research services offer in-depth insights across the energy transition landscape. We have been undertaking primary research with organisations active in the energy transition since 2004 – we have an unparalleled international network of contacts we can draw on. Each service focuses on a particular aspect of the energy transition.

Market and strategic advisory consulting

We provide support across the full energy value chain with bespoke research, insight, forecasts and advice tailored to them. Our consultancy offerings draws on expertise and data from across LCP Delta, from strategic market entry analysis through to detailed half-hourly revenue forecasting.



We support our clients in four ways



Technology & data

Data integration and analysis is at the heart of the energy transition. However, sourcing and navigating complex, wide-ranging datasets is challenging. At LCP Delta, we combine and curate proprietary and public datasets to provide you with a single source of truth across the energy spectrum and make this data interactive using our cutting-edge technology.

Training

Our training helps professionals quickly develop their new energy knowledge, accelerating their impact for organisations who want to capture opportunities. We provide meaningful, concise and easy to understand short courses.



The flexibility market in Europe is growing rapidly and will continue to do so through the coming decade

**>€30
billion**

>€30 billion market / year

From sales of technologies like heat pumps, battery storage, smart controls, etc.; to energy services and platforms for energy mgmt., demand-side flexibility, etc. ; to EV charging infrastructure.

**>10%
CAGR**

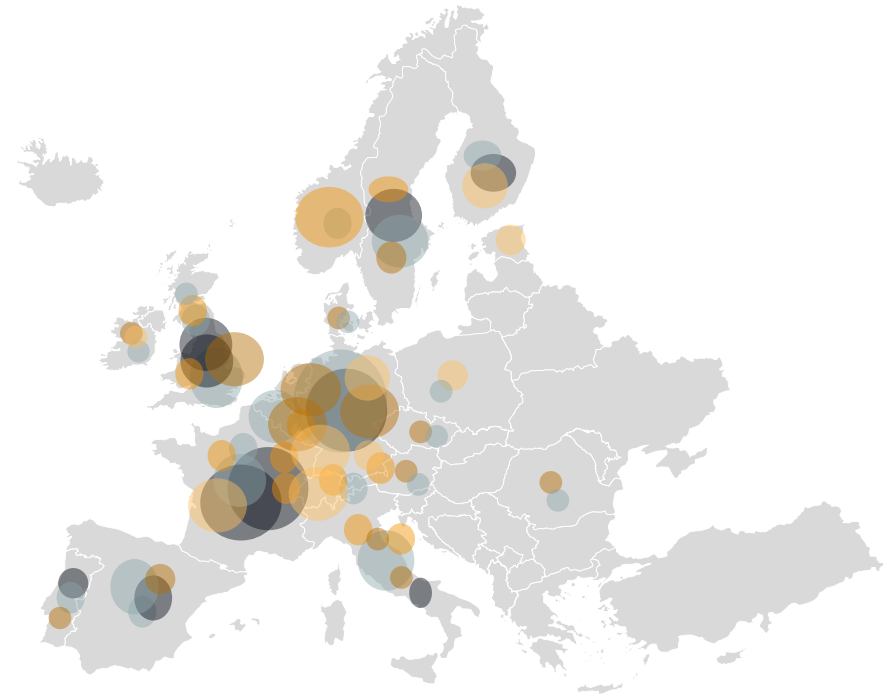
Double digit growth

Especially for EV charging infrastructure, batteries, heat pumps, demand-side flexibility services, etc.

**>200
GW
potential**

Opportunities for demand side flexibility are opening up

The existing installed base of residential HVAC appliances for space heating / cooling and hot water across Europe is >200 GW. In addition, there are low GWs for EV chargepoints and home batteries, and these are now growing. However, only a very small percentage (1-2%) of these resources are currently being utilised.



Key:

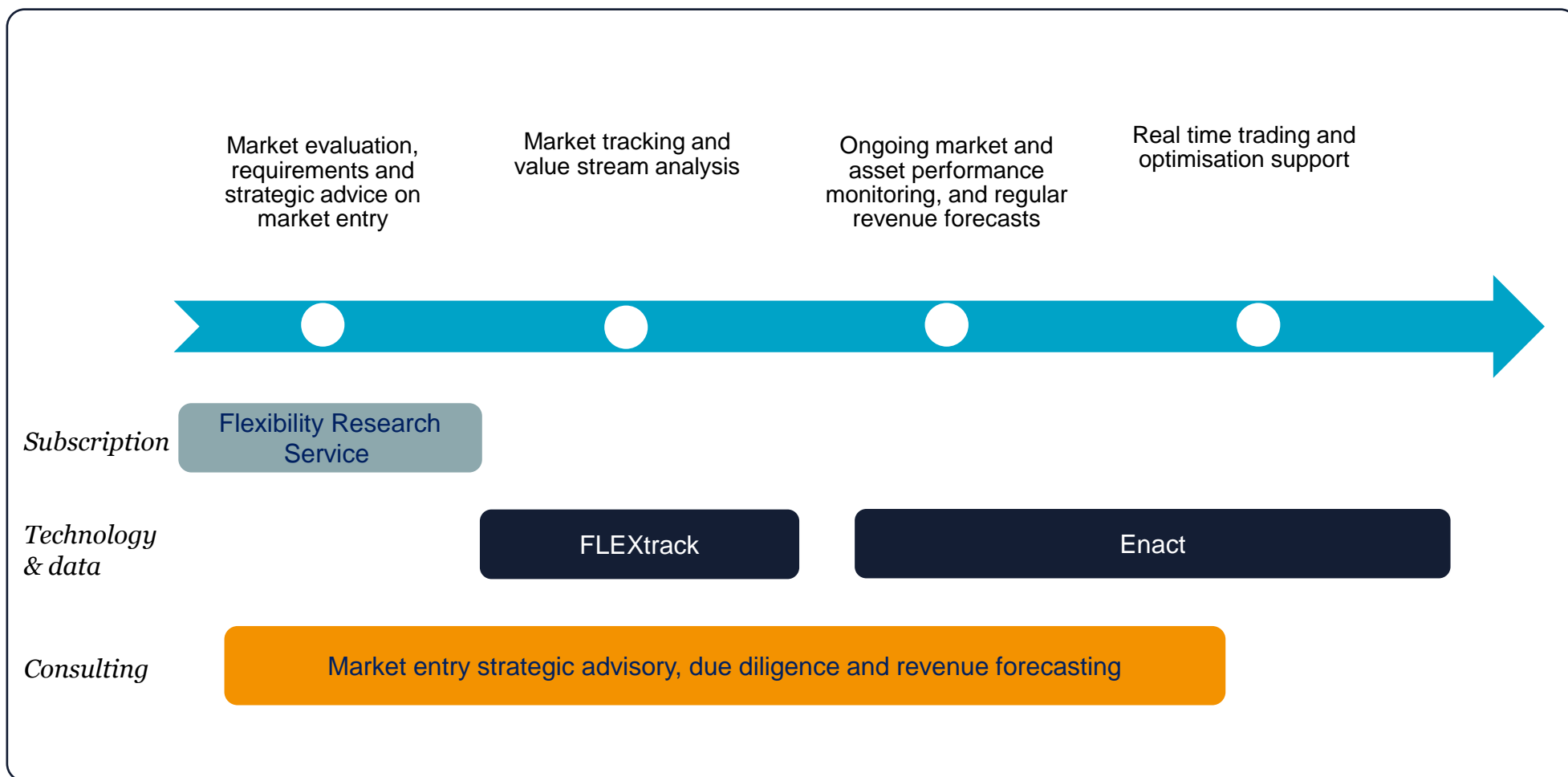
- EV and Charging Infrastructure
- Technologies
- Energy Services
- Smart devices
- Platforms

Overview

We support clients to develop successful strategies, business models and propositions in European flexibility markets

We work with

- ✓ Product developers
- ✓ OEMs
- ✓ Aggregators
- ✓ Utility companies
- ✓ Energy service providers
- ✓ Traders
- ✓ Asset owners
- ✓ Investors



FLEXtrack – valuing flexibility across Europe

Real time integration of ancillary services data across European markets

The demand for flexibility is growing, but gathering and analysing data to identify opportunities is difficult.

- €10bn is spent each year in ancillary services markets across Europe.
- These markets represent a key revenue stream for flexible assets.
- However, data in these markets is notoriously messy, inconsistent, jargon-filled and distributed across multiple sources.
- Making decisions using this data is laborious, with most effort spent on data gathering and cleaning, and key opportunities can easily be missed.

FLEXtrack brings together wholesale and ancillary market prices and volumes from 25 European countries into one platform. Using FLEXtrack, you can:

- Track the volume requirements and prices for various ancillary services, split by country and value stream.
- Explore historical data and identify trends in procurement, seasonality and intraday volatility.
- Deep dive into specific countries or value streams to understand the value of flexibility and identify opportunities.
- Compare the value of flexibility markets against wholesale opportunities.
- Access, analyse and export flexibility data across Europe through one web platform or a single API.

“Bringing together the value of flexibility across Europe is a game changer. This data is hugely disparate and notoriously hard to gather and compare, but understanding this data is fundamental to the business case of so many assets across Europe. FLEXtrack achieves in seconds what it might days to achieve.”

Jon Ferris – Head of Flexibility, LCP Delta

What is FLEXtrack?

The platform to track and understand accessible value in European flexibility markets

FLEXtrack does the hard work of sourcing the data, cleansing it and bringing into an integrated data set, which can then be visualised and downloaded through the web-based interface



11/05/2022 00:00	3.01	643.61	21.5	55.16	28.06	10.06
11/06/2022 00:00	1.83	635.25	22.79	49.47	27.09	11.04
11/07/2022 00:00	1.44	646.84	18.03	58.9	26.86	11.2
11/08/2022 00:00	2.95	645.19	19.07	76.35	27.44	16.04
11/09/2022 00:00	2.87	616.17	10.08	58.18	29.98	19.33
11/10/2022 00:00	2.13	668.44	14.4	49.78	30.37	16.77
11/11/2022 00:00	3	675.5	21.98	74.65	28.29	11.46
11/12/2022 00:00	3	678.82	21.02	86.3	32.27	18.66
11/01/2023 00:00	3	678.8	21.83	97.47	31.75	15.2
11/02/2023 00:00	2.53	679.69	23.22	90.5	29.92	14.87
11/03/2023 00:00	2	680.89	36.56	93.84	32.19	12.93
11/04/2023 00:00	2	677.97	36.18	82.82	30.37	7.34

- Collect the data and set up APIs
- Cleanse the data and make it usable
- Interface to query and visualise the data
- Data exporter to download data at granularity required (from quarter hourly through to annual)

What is FLEXtrack cont.?

The platform to track and understand accessible value in European flexibility markets

FLEXtrack does the hard work of sourcing the data, cleansing it and bringing into an integrated data set, which can then be visualised and downloaded through the web-based interface.



11/05/2022 00:00	3.01	643.61	21.5	55.16	28.06	10.06
11/06/2022 00:00	1.83	635.25	22.79	49.47	27.09	11.04
11/07/2022 00:00	1.44	646.84	18.03	58.9	26.86	11.2
11/08/2022 00:00	2.95	645.19	19.07	76.35	27.44	16.04
11/09/2022 00:00	2.87	616.17	10.08	58.18	29.98	19.33
11/10/2022 00:00	2.13	668.44	14.4	49.78	30.37	16.77
11/11/2022 00:00	3	675.5	21.98	74.65	28.29	11.46
11/12/2022 00:00	3	678.82	21.02	86.3	32.27	18.66
11/01/2023 00:00	3	678.8	21.83	97.47	31.75	15.2
11/02/2023 00:00	2.53	679.69	23.22	90.5	29.92	14.87
11/03/2023 00:00	2	680.89	36.56	93.84	32.19	12.93
11/04/2023 00:00	2	677.97	36.18	82.82	30.37	7.34

- Primary data feeds - collect data directly from country TSO's
- Set up APIs to update data at frequency required (eg daily)
- By-pass ENTSO-E and the issues associated with this data – both quality and timeliness
- Cleanse the data – it comes from multiple sources in multiple formats
- Ensure consistent definitions, resolve data gaps or irregularities
- The devil's in the detail! This is a key part of the FLEXtrack workflow and LCP Delta has invested heavily in this process
- Load into integrated dataset
- Visualise through a web interface
- Intuitive query engine to filter and evaluate market and value streams
- Download the data before every chart
- Use the universal data explorer to download data at the granularity required
- In aggregate or raw data
- Quarter hourly, half hourly, hourly
- Four hourly, daily
- Weekly, monthly, annually
- Data available from 2019

FLEXtrack

Real time and historical tracking of the value of ancillary markets across Europe, to quantify the value of flexibility in each market

FLEXtrack integrates real-time ancillary services data across European markets, highlighting key trends and opportunities for flexibility providers

FLEXtrack allows users to:

- **Track the volume requirements** and clearing prices for various ancillary service markets across Europe
- **Compare countries** and value streams with ease
- **Explore historical data and identify trends** over time, such as within day volatility and seasonality
- **Deep dive into specific countries** or value streams to **understand the value of flexibility** and identify opportunities going forwards

FLEXtrack cont.

Real time and historical tracking of the value of ancillary markets across Europe, to quantify the value of flexibility in each market

FLEXtrack brings the time taken to analyse flexible markets down from days to minutes

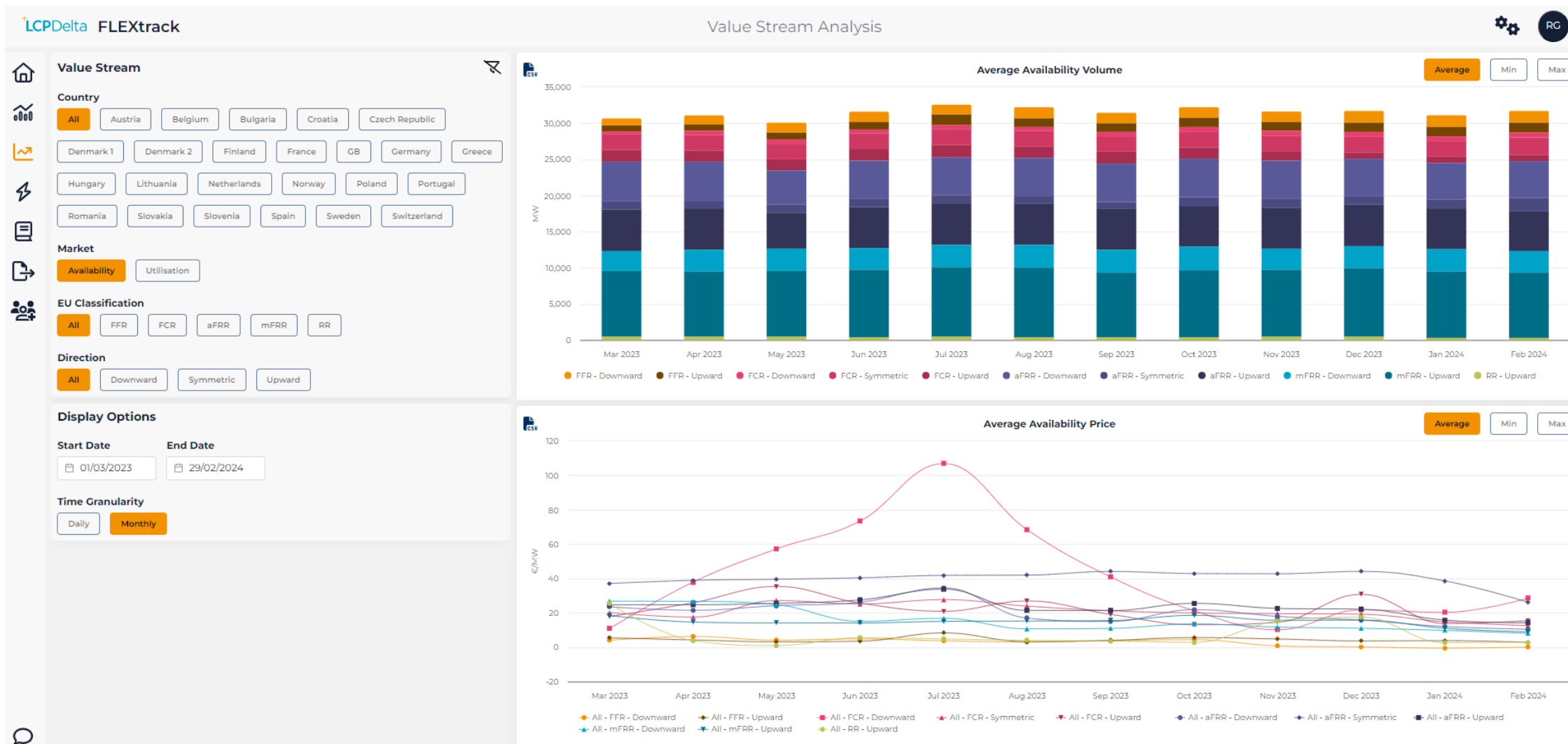
Using FLEXtrack, users are able to:

- Compare flexibility value streams across countries and value streams. Identify trends in prices, volume and total spend by TSO and system service.
- Understand what capabilities your assets need to have to be able to access the most attractive value streams.
- Understand the accessible ancillary services revenue stack available to assets
- Identify where you can get the highest value for flexibility from your assets
- Inform your strategy – what are the right types of assets and where should they be?

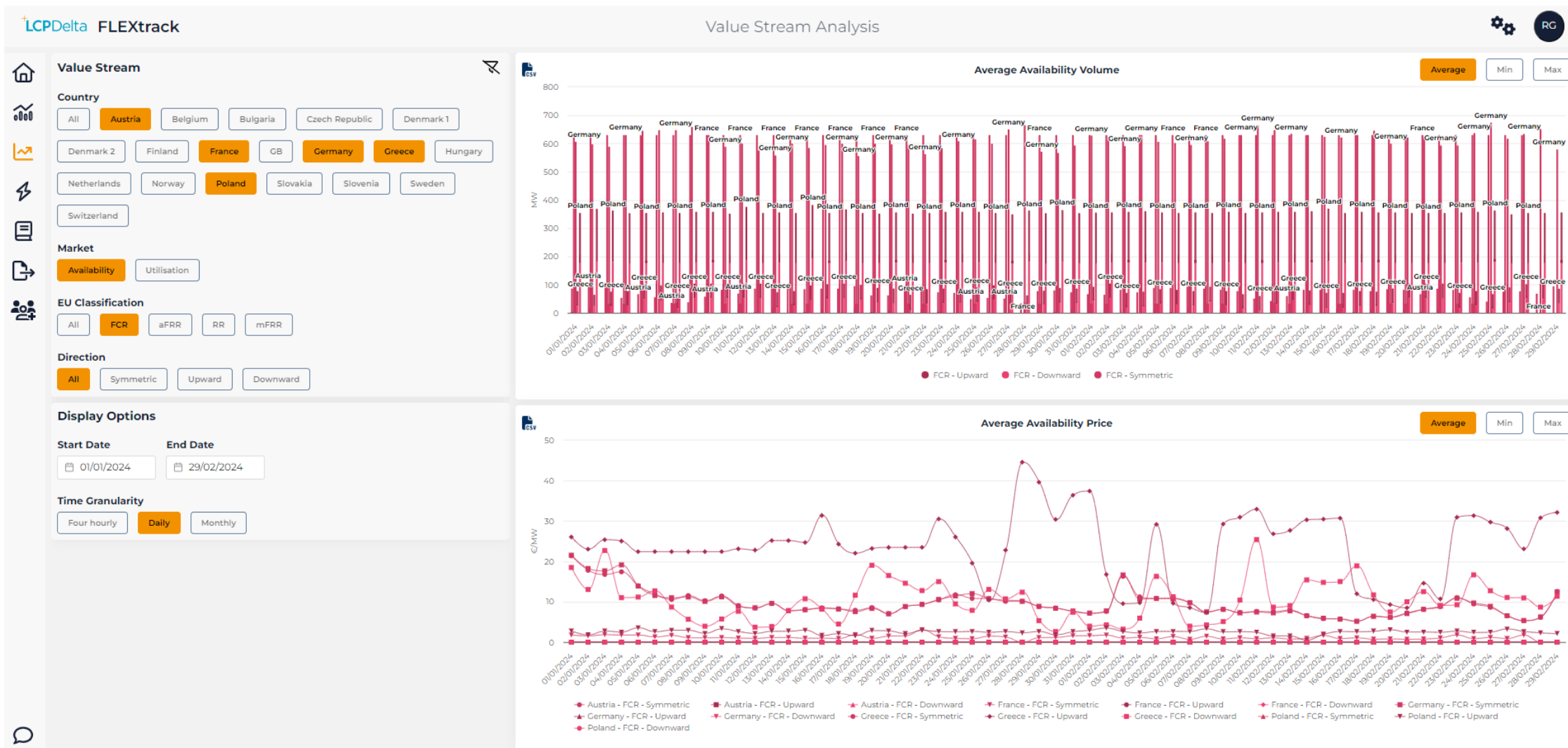
Compare flexibility value streams across countries



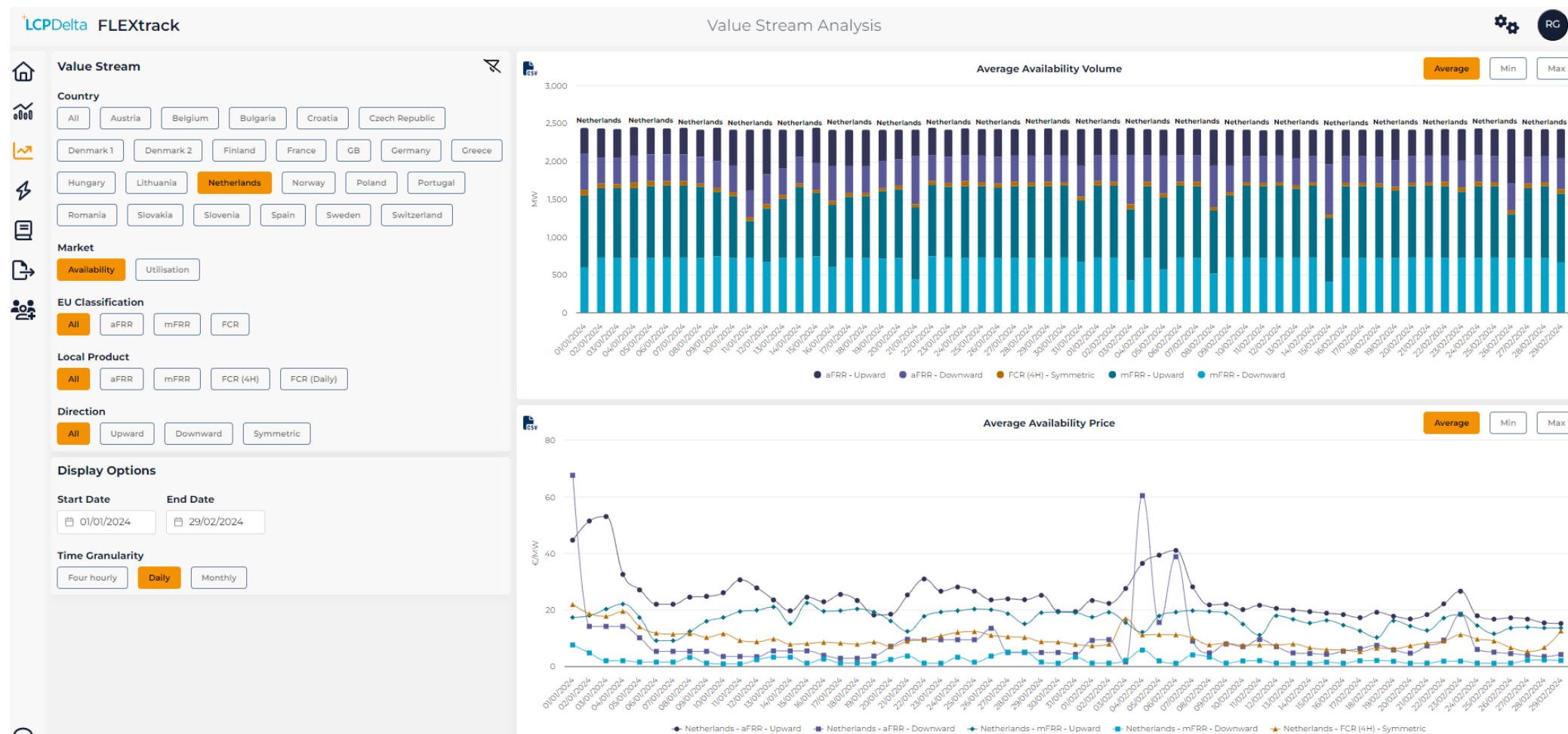
Compare flexibility value across value streams



Where is the value from flexibility highest?



What is the ancillary service value stack available to assets?



Contact us



Leon Gielen

Head of Business Development Asia

+31 (0) 617935006

leon.gielen@lcp.com

About LCP Delta

LCP Delta is a trading name of Delta Energy & Environment Limited and Lane Clark & Peacock LLP. References in this document to LCP Delta may mean Delta Energy & Environment Limited, or Lane Clark & Peacock LLP, or both, as the context shall require.

Delta Energy & Environment Limited is a company registered in Scotland with registered number SC259964 and with its registered office at Argyle House, Lady Lawson Street, Edinburgh, EH3 9DR, UK.

Lane Clark & Peacock LLP is a limited liability partnership registered in England and Wales with registered number OC301436. All partners are members of Lane Clark & Peacock LLP. A list of members' names is available for inspection at 95 Wigmore Street, London, W1U 1DQ, the firm's principal place of business and registered office. Lane Clark & Peacock LLP is authorised and regulated by the Financial Conduct Authority and is licensed by the Institute and Faculty of Actuaries for a range of investment business activities.

LCP and LCP Delta are registered trademarks in the UK and in the EU. Locations in Cambridge, Edinburgh, London, Paris, Winchester and Ireland.

Copyright © 2024 LCP Delta.

<https://www.lcp.uk.com/emails-important-information> contains important information about this communication from LCP Delta, including limitations as to its use.

Disclaimer and use of our work

Where this report contains projections, these are based on assumptions that are subject to uncertainties and contingencies. Because of the subjective judgements and inherent uncertainties of projections, and because events frequently do not occur as expected, there can be no assurance that the projections contained in this report will be realised and actual events may be difference from projected results. The projections supplied are not to be regarded as firm predictions of the future, but rather as illustrations of what might happen. Parties are advised to base their actions on an awareness of the range of such projections, and to note that the range necessarily broadens in the latter years of the projections.