

Aurora Spring Forum 2019

Highlights

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2019 Partners



Dear Friends and Colleagues

It was my very great pleasure to welcome you to Oxford this year for our fifth Spring Forum. With almost 400 people in attendance, I am delighted that our Forum is regarded so widely as the place where Europe's major energy topics are discussed and debated. Your contributions to this year's Forum topic – The Future of Energy – were enormously appreciated.

This year we added a non-European dimension to the discussions, and were delighted to welcome senior decision makers from the United States and Australia as speakers. I'm grateful to Cath Tanna, Steve Berberich, Audrey Zibelman, John Cole and Kerry Schott for taking the time out of their busy schedules to join us.

Iain Conn and João Manso Neto opened the event, providing global context on the energy transition underway. Iain powerfully conveyed the size of the challenge, before calling for a "moonshot" from humanity in response, which, I think, lifted the level of ambition in all our discussions throughout the day a little.

Richard Howard's Aurora keynote focussed on the knowns and unknowns of the future evolution of the energy system, before quantifying the 400 billion Euro investment in renewables required to deliver Europe's low energy transition to 2040. Aurora's Benjamin Merle shared our latest analysis on the management of merchant risk for renewables developers, which suggests that 60GW of wind could be financed through corporate PPAs in Europe.

Full copies of Richard's and Benjamin's presentations are included in our Forum highlights.

“ *The programme this year focussed on some of the most challenging problems in deep decarbonisation, including Hydrogen, CCS, energy efficiency and the operation of very-low-carbon electricity systems.* ”

In addition to leading one of the panels, I was also privileged to listen to many of the engaging and interesting debates. Consistent with past editions of the event, the level of debate was second to none!

I would like to thank again the many people who contributed to the success of Aurora's Spring Forum this year. Our speakers are central to the day we are hugely grateful for their friendship and support. Thank you for your generosity of time, spirit and expertise! Our generous sponsors are due special appreciation, having supported us in our greater ambition for the Forum this year.

Thanks to Barclays, Greencoat Capital and MUFG whose support builds on years of fruitful collaboration on events and beyond. Finally, thank you to my own team at Aurora Energy Research for their diligence, commitment and adaptability in staging the 2019 Forum.

We look forward to welcoming you again next year, when we will have new challenging topics to discuss as part of the ongoing global transition.



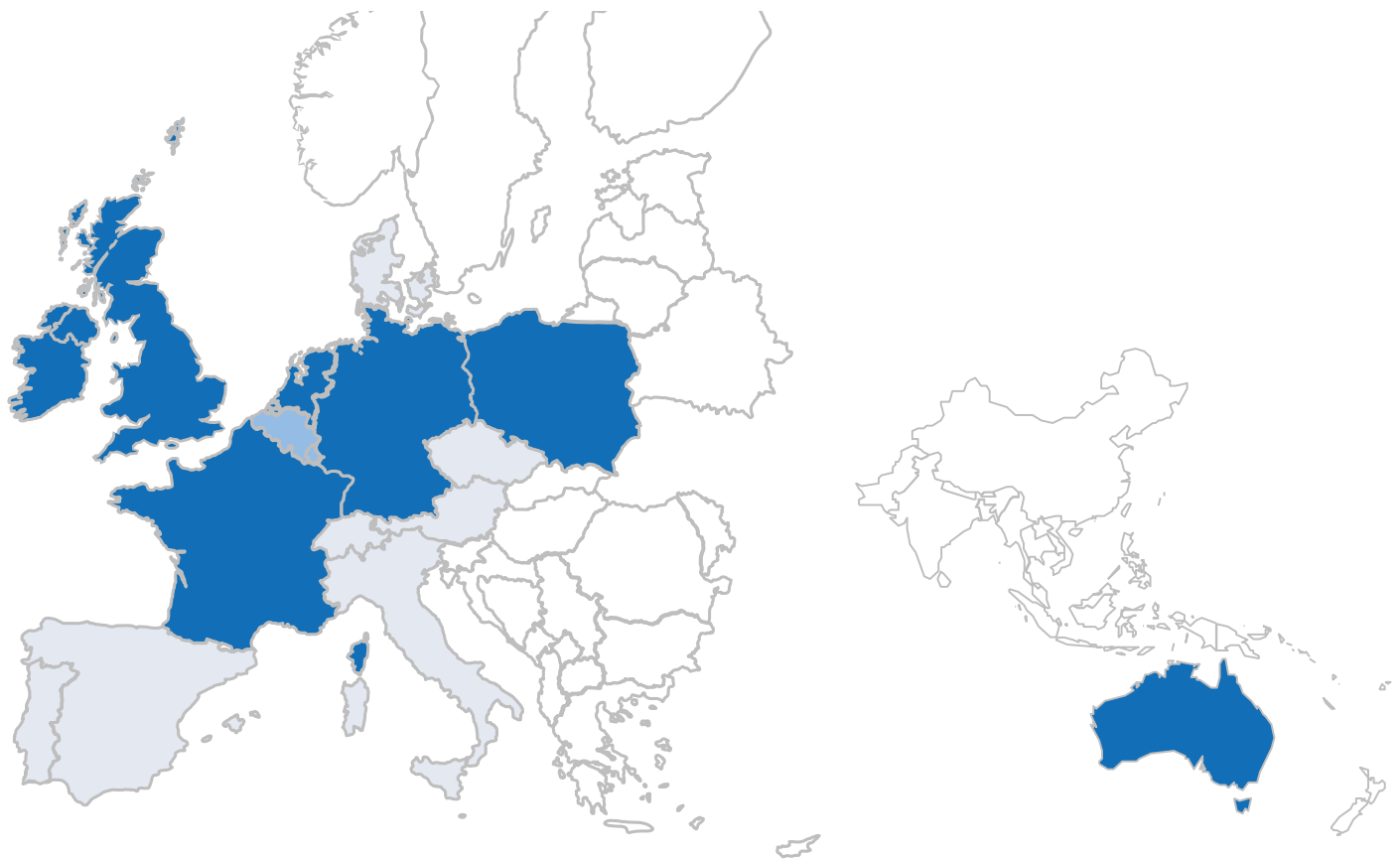
A handwritten signature in black ink, reading 'John Feddersen'.

John Feddersen
Co-Founder and CEO
Aurora Energy Research

Aurora's Power Market Intelligence Services

Market analysis and forecast for all power market participants

Aurora offers power market forecasts and market intelligence spanning Europe's key markets and Australia



Comprehensive Power Market Services

- Power market forecast reports
- Forecast data in Excel
- Strategic insight reports
- Roundtable meetings
- Bilateral workshops
- Analyst support

Power Market Forecast Reports

- Power market forecast reports
- Forecast data in Excel
- Analyst support

Bespoke forecasts

- Aurora can provide power market forecasts upon request

Energy Market Intelligence Services

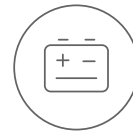
Market analysis and forecasts for all power and gas market participants



Power market



Renewable power



Flexible and distributed power



Gas market



GB Power Market Service

GB Renewables Service

GB Distributed and Flexible Energy Service



Ireland Power Market Service

Renewables add-on

Flexibility add-on



German Power Market Service

German Power Market Service



Dutch Power Market Service

Renewables add-on



French Power Market Service

Renewables add-on



Belgium Power Market Forecast



Polish Power Market Service



Australian Power Market Service



Spanish Power Market Forecast (starting H2 2019)



Italian Power Market Forecast (starting 2020)



Nordic Power Market Forecast (starting 2020)

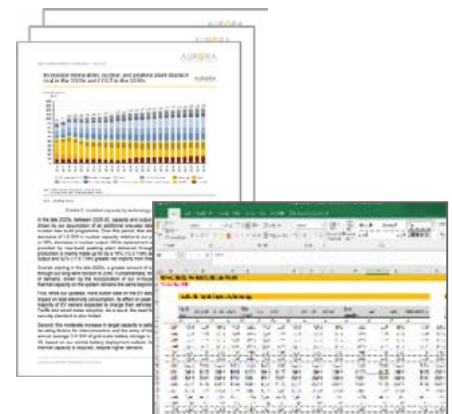
European Gas Market Service

Power Market Intelligence Services

Market analysis and forecast for all power market participants

Market Outlook Reports and Forecast Data

- Power market development until 2040 including prices, price shape, spreads, capacity and generation mix development, capacity market results, capture prices for all technologies
- Detailed review of policy and regulatory framework, including discussion of key policy uncertainties
- Forecasts are provided under three various scenarios (central, low, high) plus sensitivities of key power price drivers and selected scenarios on key policy uncertainties
- Additionally, provision of all underlying data in Excel
- Specific analysis for renewable and flexibility projects

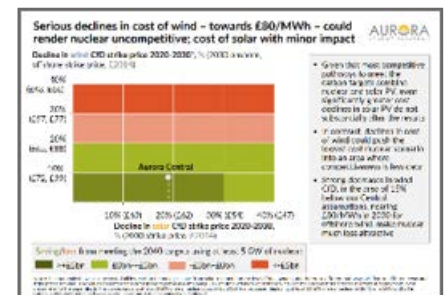


Strategic Insight Reports and Roundtable Meetings

- Regular in-depth analysis to provide unrivalled insight on critical topics for the power industry

Planned Strategic Insight topics for 2019 comprise:

- Subsidy-free renewables as an asset class – risk profiles, betas, required returns
- Economics of pairing wind and solar assets with battery storage
- Carbon pricing and implications for European power markets
- Targeted charging review and resulting impacts on business models
- Global 2-degrees scenario
- Optimised generation portfolios – resilient against market development paths and temporary shocks
- Renewable and flexible heat: power market impact and new investments opportunities
- We present and discuss these topics in our regular subscriber group meetings and publish our insights in Strategic Insight Reports

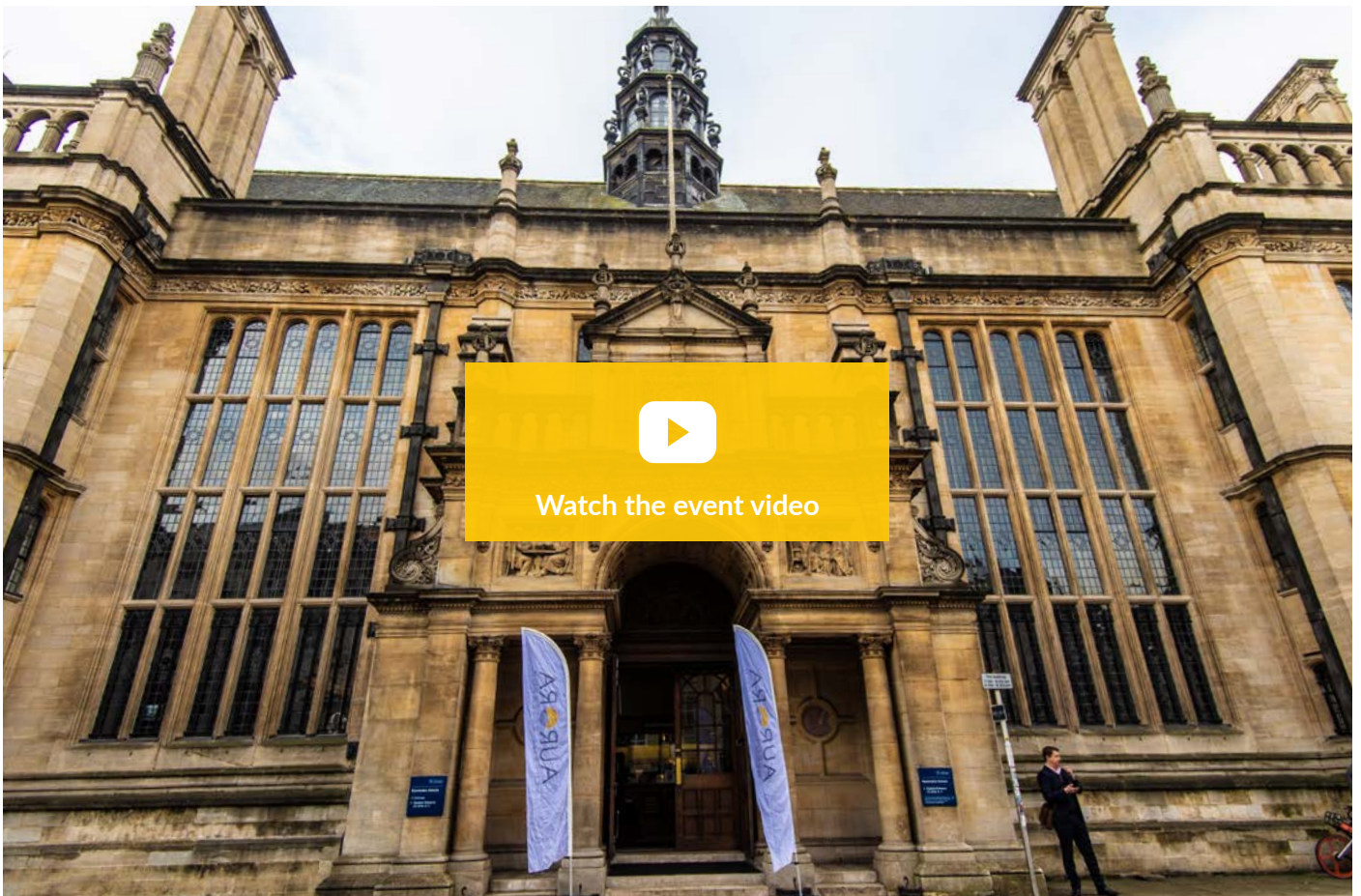


Extensive interaction with the Aurora team

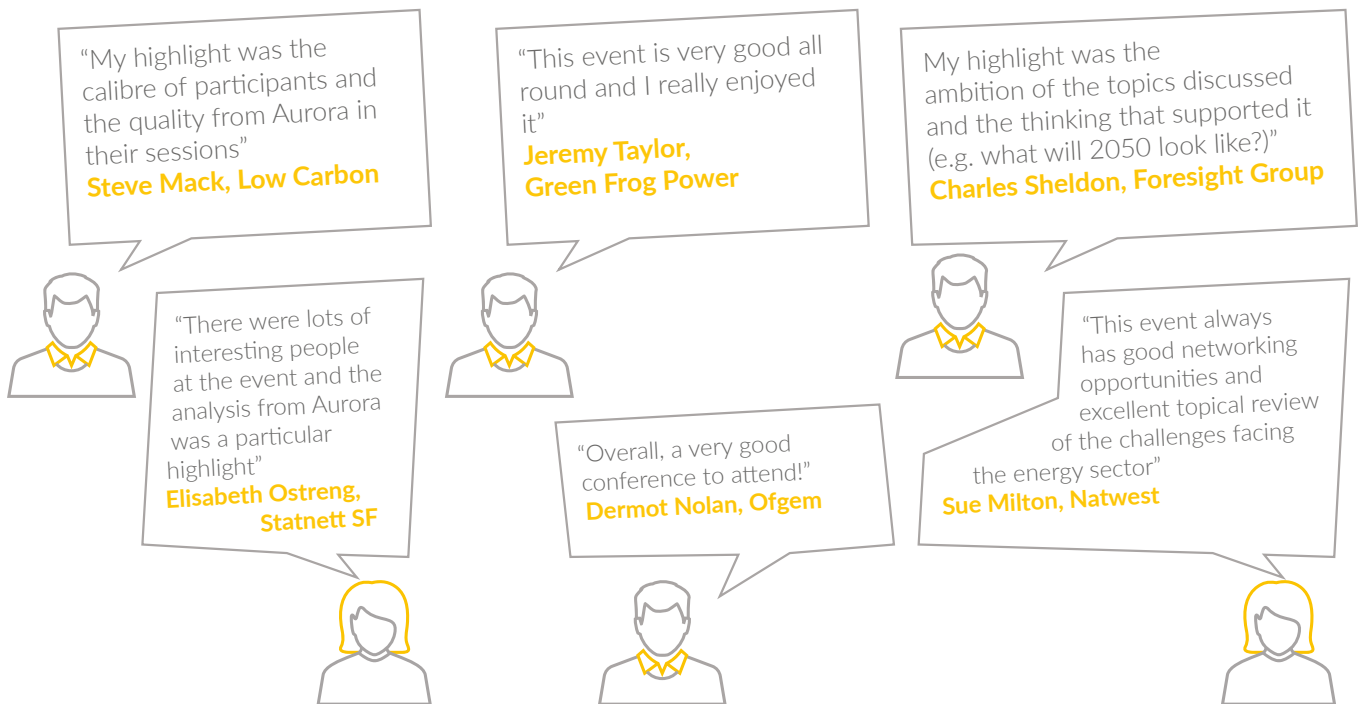
- Bilateral workshops with senior members and subject experts of Aurora's team to discuss Aurora's analysis and views on the market
- Our analysts will provide support at short-notice on questions arising from our research and commentary on policy developments







Speaker and delegate feedback



Twitter



Media Coverage

Push to replace polluting gas boilers 'risks backlash', says energy regulator Ofgem



Nuclear option for taking control of our borders



E.ON's Johannes Teyssen: The grid, not generation, will crack decarbonisation



Decarbonization across Europe 'needs Eur400 bil RES spend' to 2040

"Decarbonization of energy across Europe will require an investment of Eur400 billion (\$453 billion) in renewables to 2040, Aurora Energy Research said Tuesday"



Zero-carbon Europe 'needs €400bn spent on renewables by 2040

"Aurora report forecasts 400GW in new clean-power plant added but decarbonisation hinges on 'as-yet-unavailable' technologies"



Ofgem chief: Decarbonising heat the biggest energy challenge



Climate change making storms like Idai more severe, say experts

"Speaking at the Aurora Spring Forum in Oxford, Dermot Nolan said alternatives using hydrogen-based technology "doesn't potentially really exist at the moment"



Ofgem boss 'nervous' about decarbonisation of heat

"Speaking at the annual spring forum of Aurora Energy Research, chief executive of the energy regulator Dermot Nolan said he is relatively "sanguine" about the decarbonisation of power and transport but admitted he is "far more nervous about the issue of heat".



Electrification and renewables boom across Europe will require huge grid resilience

"The findings by energy market analysis firm Aurora Energy Research highlight a rapid shift towards electric vehicles and renewable generation in a highly-interconnected European grid"



Presentations from the day

The future of energy: what will the energy sector look like in 2030 and beyond?

Chair: Dieter Helm, Aurora

Keynote Speakers: Iain Conn, Centrica and João Manso Neto, EDP Renewables

[View the presentation](#)



2050 perspective – Future European power system and strategic implications

Chair: Richard Howard, Aurora

[View the presentation](#)



Future utility business models: will we see more specialisation or integration?

Chair: Manuel Kohler, Aurora

Keynote Speakers: Keith Anderson, ScottishPower, Iain Smedley, Barclays and Cath Tanna, Energy Australia

[View the presentation](#)



The future of merchant renewables in the European power market

Chair: Benjamin Merle, Aurora

[View the presentation](#)



Presentations from the day

Future of renewables: how to get to true subsidy-free?

Chair: Mateusz Wronski, Aurora
Keynote Speakers: Carol Gould, MUFG, Danielle Lane, Vattenfall, James Samworth, Greencoat Capital and Matthew Wright, Orsted

[View the presentation](#)



Future of carbon pricing: what is the trajectory for the ETS towards 2030?

Chair: Hanns Koenig, Aurora
Keynote Speakers: Will Gardiner, Drax Group and Markus Krebber, RWE

[View the presentation](#)



Future energy technologies: what is the next frontier?

Chair: Sebastian Just, Aurora
Keynote Speakers: Katie Collett, University of Oxford, Neil Morris, Faraday Institution and Chris Llewellyn Smith, University of Oxford

[Katie Collett's presentation](#)

[Neil Morris' presentation](#)

[Chris Llewellyn Smith's presentation](#)



Future of energy retail: evolution or revolution?

Chair: Ana Barillas, Aurora
Keynote Speakers: Tony Cocker, former E.ON, Juliet Davenport, Good Energy, Steffen Syvertsen, Agder Energi and John Cole, Edify Energy

[View the presentation](#)



AURORA CONFERENCES

Summer Renewables Summit – London – 5 June 2019

Previous Delegate Highlights:

“Lord Deben was a highlight, plus informative presentations and good podium discussions”

“Gaining better understanding where the renewable energy market in the UK is going and how off take agreements are developing to facilitate funding”

“Excellent presentations by Aurora and Augusta, with an engaged audience during and discussions afterwards”



Berlin Renewables Summit – Berlin – 12 June 2019

The merchant exposure of renewables projects in Germany is significantly increasing. Join us as we bring the industry leaders together to look at the issues and opportunities for investors in the renewables sector.

We will address the following questions:

- How will the EEG 2020 look like?
- How to reach the 65% renewables target?
- How to manage merchant risk and price PPAs?



Battery Storage and Flexibility Conference – 2019

Previous Delegate Highlights:

“Excellent, thought provoking presentation from Aurora’s Felix”

“Calibre and variety of attendees and quality of the original analysis presented”

“Informative, interesting and will be good for business for all those who are involved in the disruptive/changing energy sector”



Aurora Spring Forum 2020 – Oxford – 24 March 2020

Previous Delegate Highlights:

“Networking with many people and learning new insights, especially from Aurora”

“The great diversity of interesting people and in-depth insight from industry CEOs”

“The calibre and content of the presenters and of course the excellent reception and dinner”





For more information about our services and insights, please visit our website www.auroraer.com and follow us on Twitter @AuroraER_Oxford

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