

CONFERENCE
JUNE 14–15, 2007

SANA LISBOA HOTEL, LISBON



energy
forum



MODELLING & MEASURING ENERGY RISK 2007

Latest Energy Research
from leading companies and
academics

KEYNOTE SPEAKER

Professor Hélyette Geman:
Commodities Outlook: Panics,
Spikes and Rallies

The highlights of the conference

- PRICING AND HEDGING
- GAS STORAGE AND LNG
- RISK MANAGEMENT
- DERIVATIVES AND OPTION PRICING
- FORWARD CURVE MODELLING

SPEAKERS:

- Rafal Weron, **Wroclaw University of Technology**
- Alain Galli and Margaret Armstrong, **Cerna, Ecole des Mines de Paris**
- Hélyette Geman, **Birkbeck, University of London and ESSEC Business School**
- Lionel Greene, **EDF Trading**
- Juan Toro, **Instituto de Empresa Business School**
- Olivier Bardou, **Gaz de France**
- Allan Bødskov Andersen, **DONG Energy**
- Michael Coulon, **Oxford University**
- Reinhard Hirsch, **d-fine**
- Dale Miller, **Electrabel**
- Karl Petter Wærn, **Statoil ASA**
- Dominique Dupont, **University of Twente**, a joint work with Alexander Boogert, **Essent Energy Trading**



Hélyette Geman,



Lionel Greene



Olivier Bardou



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DERIVATIVES, OPTION PRICING AND FORWARD CURVE MODELLING

12.45-13.30 Pricing power derivatives in a supply and demand framework

- Electricity spot price modelling using a bid stack approach
- Choosing underlying drivers and incorporating gas prices
- Pricing forwards and calibrating to forward curves
- Empirical results (in US markets)
- Option pricing techniques (calls, puts, spread options)

Michael Coulon, Oxford University



Michael Coulon is currently doing a DPhil (PhD) at Oxford University as part of the Mathematical and Computational Finance Group. Before this, he completed a BSc in Mathematics from Imperial College, London, and a 2-year Master in Finance from Princeton University. He has also worked from short periods in the financial industry at JPMorgan, London, and Goldman Sachs, New York.

13.30-14.00 Coffee and tea

14.00-14.45 Case Study: Risk measurement for energy derivatives

- Risk measures and methodology
- Modelling the spot price process and the forward curves
- Cross commodity correlations
- Forecasting the price and the forward curve shape
- Seasonality of forward curves and volatility term structures, and volatility risk

Dr. Reinhard Hirsch, d-fine



Reinhard Hirsch is Head of the Energy and Commodity Risk Consulting Business at d-fine GmbH. Prior to this, he was responsible for commodity price risk management, real option based portfolio management and credit risk methodology at Bayer AG and Deutsche Bank AG for more than ten years. Reinhard holds a PhD in theoretical physics.

14.45-15.30 Case Study: Commodity Spreads

- Market view on geographic and cross-commodity spreads
- Correlation and spread options

Dale Miller, Electrabel



Dale Miller is an analyst in the Structuring team at Electrabel Trading & Portfolio Management. His responsibilities include market/portfolio analysis and structured product trading.

15.30-15.40 Questions and Closing of the Conference

RISK MANAGEMENT

9.00-9.45 Managing the risk of trading emissions on electricity prices

- Electricity price spikes in relation to price emissions
- How fuel prices affect the merit order and the marginal unit
- How do the spark and dark spreads behave?
- What is the appropriate VaR?

Dr. Juan Toro, Instituto de Empresa Business School



Juan Toro holds a PhD from European University Institute and is currently the Managing Director of Transmarket Iberia S.L. and the Research Director for TMG, focusing on the global government bond and equity markets. He is also an academic at Instituto de Empresa (Madrid). Prior to this he held various positions at London School of Business, the Brazilian Ministry of Finance, Fundacion CENTRA and Oxford University.

09.45-10.30 Case Study: Managing supply contracts

- Optimal swing option design
- Numerical valuation: issues and solutions
- Structuring the price area for an efficient risk management

Dr. Olivier Bardou, Gaz de France



Olivier Bardou is a Project Manager in Gaz de France's Research and Development Division and in charge of developing valuation software and investment methodologies for the operational divisions of the group. He holds a PhD in numerical probability from Nice-Sophia Antipolis University and lectures on energy markets at masters level at Paris VI University.

10.30-11.00 Coffee and tea

11.00-11.45 Case Study: A model for long horizon spot fuel price simulation

- Spot price simulation over a 5-year horizon
- Oil, gas, coal and CO2 prices
- Co-integration techniques
- Long horizon risk assessment using Cash-Flow-at-Risk

Dr. Allan Bødskov Andersen, DONG Energy



Allan Bødskov Andersen is currently Senior Quantitative Analyst at DONG Energy. He has extensive experience with price modelling and risk management from the Danish central bank (Danmarks Nationalbank) and DONG Energy and holds a PhD in financial econometrics.

11.45-12.45 Lunch

HEC School of Management. His current research centres on modelling derivatives on energy, in particular on electricity. He also coordinates the Financial Engineering program within the School of Management and Governance of the University of Twente. This is a joint work with Alexander Boogert, Essent Energy Trading.

12.15-13.15 Lunch

GAS STORAGE, LNG AND FUEL PRICE MODELLING

13.15-14.15 Keynote speaker: Commodities Outlook: Panics, spikes and rallies

- The crucial role of volumes in explaining volatility in commodity markets
- Inventory and shape of the forward curve
- The particular case of crude oil in the recent period
- Correlations between oil and gas spot and forward prices
- Seasonal and Stochastic effects in natural gas markets
- Investing in commodity indexes: choosing the basket, the weights and the optimal roll yield

Professor Hélyette Geman, Birkbeck, University of London and ESSEC Business School.



Hélyette Geman is a graduate from Ecole Normale Supérieure, holds a master's degree in theoretical physics and a Ph.D. in mathematics and a Ph.D. in Finance. Previously a Director at Caisse des Dépôts in charge of Research and Development, she is currently a scientific adviser for major energy companies. Her research includes pioneering work on exotic options, catastrophic risk and energy derivatives. She was named in 2004 in the Hall of Fame of Energy Risk and is a Member of the Board of the UBS-Bloomberg Commodity Index and author of the reference book "Commodities and Commodity Derivatives."

14.15-14.45 Coffee and tea

14.45-15.30 Case Study: An introduction to the valuation and trading of gas-storage in the UK natural gas market

- Purpose of storage and sources of value
- Modelling requirements and available methods
- EDFT valuation method
- Typical storage usage
- Trading: re-hedging after exercise
- Market vs. model risk

Dr. Lionel Greene, EDF Trading



Lionel Greene is Head of Structured Derivatives & Options trading at EDF Energy Merchants. He received a PhD in civil engineering from Leeds University before moving into finance. He later became a structured derivatives trader at various other financial institutions. His interests include quantitative finance/econophysics and quantitative statistical arbitrage.

15.30-16.15 Case Study: Atlantic basin LNG price arbitrage

Karl Petter Wærn, Statoil ASA

Karl Petter Wærn is a project manager at Statoil, focusing on international LNG business development in the Atlantic basin. Before joining Statoil, he was an acting director of the Energy Charter, Brussels. Prior positions include managing gas pipeline and gas storage joint ventures. He holds a graduate degree in financial economics, specialization financial derivatives and has held an assistant professorship at the Royal Norwegian Naval Academy.

16.15-16.30 Questions

19.00 Conference dinner

9.00-9.30 Registration and coffee

9.30-9.40 Chairman Dr. Steve Lawford opens the conference

Chairman Dr. Steve Lawford



Steve Lawford is Visiting Professor at the Center for Operations Research and Econometrics (CORE) and the European Centre for Advanced Research in Economics and Statistics (ECARES). He has degrees from Exeter, Cambridge and York, specializing in econometric theory. He has held academic positions in Brussels and London, and was until recently with the Strategy, Research and Development group at Electrabel.

SPOT AND FORWARD PRICE MODELLING

9.40-10.25 Forecasting spot and forward electricity prices: Semi-parametric time series models

- Overview of modeling approaches
- Autoregression (AR) models and their extensions: exogenous variables, non-linear time series, non-Gaussian innovations, semi-parametric models
- Error measures and model calibration
- Principal components analysis (PCA) vs. dynamic semi-parametric factor modeling (DSFM) of electricity forward curves

Dr. Rafal Weron, Wroclaw University of Technology



Rafal Weron currently holds a position of Assistant Professor at Wroclaw University of Technology (WUT). He received his PhD in applied mathematics from WUT in 1999. His research focuses on risk management and forecasting in the power markets and computational statistics as applied to finance and insurance.

10.25-10.45 Coffee and tea

10.45-11.30 Case Study: A stochastic model for simulating electricity prices 5-10 years into the future based on supply-demand considerations

- Volatile electricity prices
- Need for estimates of prices over at least the first 10 years of operations
- Electricity market data (day-ahead prices, and futures & forwards) only for first few years
- Models for predicting and simulating prices out over the next 5-10 years

Professors Alain Galli and Margaret Armstrong, CERNA Ecole des Mines de Paris



Alain Galli and Margaret Armstrong founded the quantitative finance group at the Ecole des Mines de Paris in 2001 and are now in charge of the quantitative finance major there. Prior to this both worked for many years on stochastic modelling of natural resources.

11.30-12.15 Forward curve decomposition: the interplay between seasonality, common time factor, and term premium

- One-step estimation of the three different components of the forward curve
- Impact of assumptions on seasonality on term premium and vice versa
- Empirical results on two different electricity markets

Dr. Dominique Dupont, University of Twente



Before joining the University of Twente in 2002, Dominique Dupont worked at the Federal Reserve Board in Washington D.C. He holds a Ph.D. in economics from the University of Chicago and an M.B.A. from the

ENERGYFORUM WELCOMES YOU TO THE ANNUAL CONFERENCE

MODELLING & MEASURING ENERGY RISK

14-15 June 2007, Lisbon

WE TAKE GREAT PLEASURE IN INVITING YOU to our first modelling conference of the year, which will combine insights from top energy-market practitioners with some of the latest research from leading academics currently working in the field.

Energy markets continue to expand at an unprecedented rate, and there is an ever-present need to accurately model energy commodities, and to price complex derivative products. The aim of this conference is to provide access to the latest modelling and risk management research, and to give cutting-edge analysis of energy trading and investment opportunities.

The speakers will address a range of important topics drawn from energy risk management, gas markets, option pricing and hedging, and forward curve modelling.

This is a great opportunity to learn from some of the leading figures in the energy market world, and to build lasting contacts with both the other delegates and the speakers!

We are looking forward to seeing you in Lisbon.

Best regards,

Johanna Öberg & Steve Lawford
Project Manager & Conference Chairman
Energyforum & CORE and ECARES



REGISTRATION

Internet: www.energyforum.com/adl/C706
E-mail: info@energyforum.com
Phone: +46 (0)8-736 55 80
Fax: +46 (0)8-736 55 81
In writing: Energyforum International AB
SE-113 90 Stockholm, Sweden

DATE AND VENUE

Conference: 14–15 June, 2007
Venue: SANA Lisboa Hotel
Av. Fontes Pereira de Melo, 8
1069-310 Lisbon
Portugal

Phone: +35 1 210 064 300

For detailed information on how to get there, look at the roadmap on:

www.energyforum.com/conferences/C706/roadmap

ACCOMMODATION

We recommend you to stay at the hotel where the conference will take place

Hotel: SANA Lisboa Hotel
E-mail: sanalisboa@sanahotels.com
Phone: +35 1 210 064 300

Reference for reservation: Energyforum
(before 17 May)

FEES AND ALTERNATIVES

Conference: 2300 €
Academics: Please contact us for prices
Dinner: 75 €

Early Bird! Register before April 5 and we will offer you a 200 € discount on the conference.

DISCOUNT

Group discount: Register 4 delegates from the same company and pay for 3

This discount can not be combined with other discounts.

Academics: Please contact us for price

CANCELLATION

If you have registered but are unable to attend, you may transfer your registration to a colleague. We will give you a full refund if you cancel your registration three weeks prior to the event. If you cancel your registration less than three weeks prior to the event we will send you a free delegate certificate valid for another Energyforum conference within one year. You are liable to pay for your registration if you cancel within the three-week period.

FURTHER INFORMATION

If you have questions about the conference, please contact Johanna Öberg

Switchboard: +46 (0)8-736 55 80
Fax: +46 (0)8-736 55 81
Direct: +46 (0)8-736 55 82
E-mail: johanna@energyforum.com



Hotel information

SANA LISBOA HOTEL

The conference will take place at the four star hotel SANA Lisboa Hotel. The hotel is located conveniently in the center of Lisbon. It is close to one of Lisbon's most beautiful squares, the Marques de Pombal. A few steps from the Hotel, the Edward VII Park offers you a magnificent view of the River and the Old Quarters. It is very close to all modes of city transportation, but it is also a pleasant stroll down the Avenida da Liberdade to Rossio Square. The hotel is just five minutes from downtown. From the hotel, you also have wonderful views of the castle and sea.

The hotel has 281 rooms and 6 suites and offers you wireless Internet and the most modern technologies, supported by a wide range of services. Light is a constant presence. From the discreet elegance of the décor to the design details, everything was conceived to create a comfortable and peaceful atmosphere.

How to get there

How to go from the Airport to the Hotel when arriving at the Airport:

OPTION 1 – BUS

(Total Time 30 min. / Price 1.20 €)

Walk to stop Airport (Carris) (527 m), catch line 44 – direction Cais Sodré (Carris) and get out at stop Saldanha and walk to destination (132 m).

OPTION 2 – HOTEL SHUTTLE

(Total Time 20 min.)

Go to the Carris Stop and catch the bus 91 (Hotel Shuttle).
Get out at Marquês de Pombal stop and walk to destination (45 m).

HOW TO GO FROM THE HOTEL TO DOWNTOWN – BUS

(Total Time 12 min. / Price 1.2 €)

Go to Marquês de Pombal stop and catch bus 36 direction Cais do Sodré and get out at Rossio.

Coming Events:

SYSTEMINTEGRATION INOM ENERGIBOLAG

29–30 May, 2007, Stockholm

NORDIC TRADING DAYS

7–8 June, 2007, Stockholm

CROSS BORDER TRADING

11–12 June, 2007, Nice

PRICE DRIVERS ON THE EUROPEAN POWER MARKET

June 2007 (date and location to be announced later)