



**2012** UNDERSTANDING  
ELECTRICITY MARKETS

# Understanding electricity markets

## TRAINING COURSE

29th February & 1st March 2012  
30th & 31st July 2012  
28th & 29th November 2012

23rd & 24th April 2012  
25th & 26th September 2012

**This intensive two-day course prepares industry participants, stakeholders, major users, service providers and government officials for the challenges and opportunities in a competitive electricity market. The training is delivered through small masterclass style presentations and practical case studies. You'll also undertake hands-on market simulation exercises using NZX Energy's Market Simulation and Pricing (MSAP) model.**

NZX Energy is a proven training provider in this specialised area and draws on its operational experience in energy markets around the globe to deliver a course for the New Zealand market.

### What attendees say about NZX Energy's courses

*"We were very impressed with the design of the programme, the level of preparation, the way each topic was delivered, and the knowledge and experience demonstrated by the topic lecturers."*

Dr. Michael John Ellman, General Manager, Market Operation & Monitoring, National Electricity Regulator, South Africa.

*"The course provides a great overview of the Electricity Sector and helped me to understand and apply some of the fundamentals."*

Mr. Ben Peacey, Regulatory Analyst, Meridian Energy

*"The course exceeded my expectations. I would recommend attendance to a similar NZX Energy course."*

Trainee, Heilongjiang Electric Power Company, China.

### Scheduled presenters

#### Erich Livengood

Erich leads the Energy Business team that has operational responsibility for pricing, clearing and reconciliation in the electricity market. Erich has worked on utility mergers in the United States and has also managed energy projects in South America and Europe.

#### Daniel Pringle

Daniel has a PhD in physics and has previously managed the pricing manager function for NZX Energy.

#### Jason Roche

Jason is an energy analyst at NZX. Jason manages the pricing manager function and is also responsible for coordinating and calculating wholesale electricity volumes for the settlement of the New Zealand electricity market.

### Course materials

#### Understanding Electricity Markets – the fundamentals

- Provided in addition to course handouts and notes
- The manual provides additional content in support of the 2-Day course

# Understanding electricity markets

## THE COURSE PROGRAMME

### Day 1

#### Session 1 – Understanding Electricity

Provides an introduction to the nature of electricity industries and electric power systems. While highlighting the key technical characteristics of power systems, the intention is to provide a broad overview rather than a detailed technical guide.

##### Topics covered:

- The physical aspects of generation and transmission
- The key features of electric power systems that affect real-time management
- The key economic features of electricity

#### Session 2 – Managing an Electricity Market in Real Time

Key design features of wholesale electricity markets are introduced.

##### Topics covered:

- Objectives and key features of the wholesale electricity market
- Stepping back – a comparative view
- Electricity market mechanics: offers and bids, scheduling and dispatch, market pricing, reconciliation, clearing and settlement
- Demand-side participation in wholesale electricity markets
- Real time management of the power system to manage imbalances and maintain system security

#### Session 3 – Electricity Market Reform and Regulation

Highlights issues relating to wholesale electricity market reform and regulation.

##### Topics covered:

- A brief history of the New Zealand market
- Regulatory regime
- New Zealand electricity market reforms
- Current issues and pathways

**Course content is updated regularly. Please enquire at [training@nzx.com](mailto:training@nzx.com) for further information.**

### Day 2

#### Session 4 – Pricing Energy

Focuses on how pricing arrangements in electricity markets reflect supply and demand conditions and the availability of transmission.

##### Topics covered:

- The nodal pricing model (SPD model)
- Nodal pricing worked examples
- Co-optimisation of energy and reserve markets
- Key drivers of prices and price sensitivity

#### Session 5 – Managing Risk in Electricity Markets

Energy trading is an integral part of competitive power markets. This session explores the types of risks in electricity markets and the nature and role of hedge contracts.

##### Topics covered:

- Why is risk management so critical in electricity?
- The main sources of risk in an electricity market
- Alternative types of risk instrument
- The role of hedge markets

#### Session 6 – Market Simulation and Pricing Model (MSAP)

MSAP is used to provide practical examples of energy pricing topics discussed in session 4. Participants also engage in an interactive trading simulation game.

##### Topics covered:

- Impact of line constraints on optimal dispatch and nodal prices
- Alternative pricing outcomes from using average versus marginal losses
- Spring washer effects arising from transmission constraints
- How demand bids affect optimal dispatch and nodal prices
- Infeasible prices

# ENROLMENT FORM

Please scan and email your completed enrolment form to [training@nzx.com](mailto:training@nzx.com), or send it to NZX Ltd, level 2, NZX Centre, 11 Cable St, PO Box 2959, Wellington, if paying by cheque. When booking for more than one person, please complete a form for each attendee.

## YOUR DETAILS:

|  |                   |
|--|-------------------|
| <input type="checkbox"/> Mr <input type="checkbox"/> Mrs <input type="checkbox"/> Ms <input type="checkbox"/> Miss <input type="checkbox"/> Dr | Phone (business): |
| Name:  | Phone (mobile):   |
| Job title:   | Email:            |
| Company/organisation:  | Fax:              |
| Physical address:  | Postal address:   |
|  |                   |

## SELECT YOUR COURSE (please tick)

- 29th February & 1st March 2012   
  30th & 31st July 2012   
  28th & 29th November 2012  
 23rd & 24th April 2012   
  25th & 26th September 2012

*NB: All courses will be run in Wellington*

## PAYMENT

- Early Bird Registration: \$1999 + GST = \$2,298.85 (for registrations received 2 weeks prior to training)  
 Standard Registration: \$2199 + GST = \$2,528.85  
 A group discount fee is available for three or more enrolments from the same incorporated body. To arrange a group discount fee, please email [training@nzx.com](mailto:training@nzx.com).  
 Cheque: please make cheques payable to NZX Limited.     Please invoice me at the above address.  
 Credit Card Payment:     Visa     Mastercard

Name on card: .....

Card number: .....    Expiry date: .....

Total Amount: \$ .....    Signature: .....

### Enrolment conditions:

If you are no longer able to attend this training course a substitute person may take your place. A full refund of course fees, less a \$250 administration fee, will be made available if a written cancellation, by email or letter, is received by two weeks before the commencement of the course. Cancellations within the two-week period before the course commencement receive a refund of 50% of the fee. NZX Ltd regrets that no refund will be available for cancellations five days or less before the commencement of the course. NZX Ltd reserves the right to vary the programme, speakers and venue. This includes cancellation or rescheduling of the course. Fees will be refunded in full or an alternative arranged as appropriate in the event that the course is cancelled for any reason.

### Privacy Policy:

The information you provide on this form is being collected by NZX Ltd for the purposes of processing your registration for the training course and keeping you informed of upcoming training courses and other services offered by NZX Ltd. The information is disclosed from time to time to our related corporate bodies for these purposes. The provision of this information by you is voluntary but if you do not provide some or all of the requested information we may be unable to properly process your registration. You have both a right of access to the personal information we hold about you and to ask us to correct it if inaccurate or out-of-date. If you wish to discuss any aspect of this policy please contact us at [training@nzx.com](mailto:training@nzx.com) or telephone 04 495 2801.

- Please tick this box if you do not wish to receive NZX Energy training and other services information.