

# **API 2008 Residential School in Electric Power Engineering**

## ***Power Industry Solutions for Customers in the 21<sup>st</sup> Century***

**4 February – 22 February 2008**

### **PRELIMINARY SCHEDULE**

The course has been structured to provide the opportunity for two special days that will be open to participants not enrolled for the residential school who will be able to attend in addition to the course participants. These special training days are:

**Friday, 15 February 2008 Full Day**  
**Micro Generation and Renewable Technologies**

**Monday, 18 February 2008 Full Day**  
**Smart Grids**

**Wednesday, 20 February 2008 Full Day**  
**Climate Change: Challenges and Opportunities for Power Industry**

Lecturers will be drawn from utilities and equipment suppliers and universities.

Lecture material relevant to syndicates will be presented prior to the commencement of the main activities for syndicate work.

## TIMETABLE WEEK 1

	Sunday 3 Feb 2008	Monday 4 Feb 2008	Tuesday 5 Feb 2008	Wednesday 6 Feb 2008	Thursday 7 Feb 2008	Friday 8 Feb 2008
8.00 – 8.30		<b>Welcome from the Chair and the Manager</b>				
		<b>Generation</b>	<b>Transmission</b>	<b>Distribution</b>	<b>Market and Economics</b>	<b>End Users and Customer Solutions</b>
8.30 – 9.30		Generation Fundamentals – Part 1 <b>Chris Bailey (Delta Electricity)</b>	Transmission Forecasting and Planning – Part 1 <b>TBA</b>	Distribution Planning Fundamentals – Part 1 <b>Chris Dalitz (Country Energy)</b>	Fundamentals of the National Electricity Market – Part 1 <b>David Bowker (Hydro Tasmania)</b>	Demand Management and Metering Infrastructure – Part 1 <b>Alex Curran (ENA)</b>
9.30 – 10.30		Generation Fundamentals – Part 2 <b>Chris Bailey (Delta Electricity)</b>	Transmission Forecasting and Planning – Part 2 <b>TBA</b>	Distribution Planning Fundamentals – Part 2 <b>Chris Dalitz (Country Energy)</b>	Fundamentals of the National Electricity Market – Part 2 <b>David Bowker (Hydro Tasmania)</b>	Demand Management and Metering Infrastructure – Part 2 <b>Alex Curran (ENA)</b>
10.30 – 10.45	<b>Morning Tea/Coffee</b>					
10.45 – 11.45		<b>TBA</b>	Transmission Design and Construction – Part 1 <b>Tony Gillespie (Powerlink)</b>	Distribution Design and Construction – Part 1 <b>Colin Lee (Energex)</b>	Energy Regulation – Part 1 <b>Alex Curran or, Garth Crawford (ENA)</b>	Reliability and Power Quality – Part 1 <b>Ian Gibb (Aurora)</b>
11.45 – 12.45		<b>TBA</b>	Transmission Design and Construction – Part 2 <b>Tony Gillespie (Powerlink)</b>	Distribution Design and Construction – Part 2 <b>Colin Lee (Energex)</b>	Energy Regulation – Part 1 <b>Alex Curran or, Garth Crawford (ENA)</b>	Reliability and Power Quality – Part 2 <b>Ian Gibb (Aurora)</b>
12.45 – 1.30	<b>Lunch</b>					
1.30 – 2.00		<b>Delegate Presentations</b>	<b>Delegate Presentations</b>	<b>Delegate Presentations</b>	<b>Delegate Presentations</b>	<b>Site Visit: Risdon Substation and Creek road Control Room</b>
2.00 – 3.00		<b>TBA</b>	Transmission Asset and Maintenance Management – Part 1 <b>TBA</b>	Distribution Asset Management – Part 1 <b>Dr.Paul Blackmore (Energex)</b>	Technical Regulation – Part 1 <b>Michael Kilgariff (Energy Networks Association)</b>	
3.00 – 4.00		<b>TBA</b>	Transmission Asset and Maintenance Management – Part 2 <b>TBA</b>	Distribution Asset Management – Part 2 <b>Dr.Paul Blackmore (Energex)</b>	Technical Regulation – Part 2 <b>Michael Kilgariff (Energy Networks Association)</b>	
4.00 – 4.15	<b>Afternoon tea/coffee</b>					
4.15 – 5.15		<b>TBA</b>	System Control <b>Prof Gerard Ledwich (QUT)</b>	Control and Operation <b>TBA</b>	Customers, Commerciality & Confidentiality <b>Michael Green (Transend)</b>	
5.15 – 6.45	<b>Welcome Reception</b>	<b>Free Time</b>	<b>Free Time</b>	<b>Free Time</b>	<b>Free Time</b>	<b>Free Time</b>
6.45 – 7.45	<b>Evening Meal</b>					
8.00 – 9.00	<b>Tasmanian Cheese &amp; Wine: Evening with the Host</b>					

## TIMETABLE WEEK 2

	Sunday 10 Feb 2008	Monday 11 Feb 2008	Tuesday 12 Feb 2008	Wednesday 13 Feb 2008	Thursday 14 Feb 2008	Friday 15 Feb 2008	Saturday 16 Feb 2008
8.00 – 8.30		Welcome from the Chair and the Manager					
		New Approaches to Asset Management	Power Quality Issues and Industrial Customer Supply	Designing, Planning and Operating Large Networks	Advances in Condition Monitoring	Micro Generation and Renewable Technologies	<b>Free Time: Salamanca Market</b>
8.30 – 9.30		TBA Alan Cotton (SP-Ausnet)	PQ fundamentals and interpretation of current Australian Standards Prof. Vic Gosbell (Uni of Wollongong)	Overview of Large Networks Prof. Peter Wallace (Monash University)	High Voltage Testing Dr Tadeusz Czaszejko (Monash University)	Micro Generation and Renewable Technologies Rebecca Tilbrook (Hydro Tasmania)	
9.30 – 10.30		TBA Alan Cotton (SP-Ausnet)	Power Quality Issues for Customers Dinesh Perera (Transend)	Power System Planning & Analysis in the National Electrical Market. Dinesh Perera (Transend)	Case Studies on Moisture Assessment of Operating Transformers – Part 1 Prof. Valery Davydov (Monash University)	TBA Alex Baitch (BES Aust Pty Ltd)	
10.30 – 10.45	<b>Morning Tea/Coffee</b>						
10.45 – 11.45		Strategic Asset Maintenance and Asset Management Information Systems. Mike Hunnibell (Transend)	Power Factor Correction for Customers Bob Coulter (ADAPT Aустaria)	Fault Calculations Prof. Akhtar Kalam (VUT)	Case Studies on Moisture Assessment of Operating Transformers – Part 2 Prof. Valery Davydov (Monash University)	Stability of Embedded Generation Prof. Peter Wallace (Monash University)	
11.45 – 12.45		Asset Management of Underground Cables Gary Winsor (Energy Australia)	Aspects of Industrial Distribution Bob Coulter (ADAPT Australia)	An Introduction to Dynamic Transmission Line Ratings Bruce Longmore (Transend)	TBA	TBA Mark Kelleher (Roaring 40's)	
12.45 – 1.30	<b>Lunch</b>						
1.30 – 2.00		Delegate Presentations	Delegate Presentations	Delegate Presentations	Delegate Presentations	Delegate Presentations	
2.00 – 3.00		Electricity Supply Industry Agreements Roger Rilley (Hill-Michael)	Fundamentals of Substation Design Peter Berry (Areva)	TBA Garth Gum Gee (NEMMCO)	Power Pole Condition Monitoring Robert Crump (Aurora)	Wind Connections – Part 1 Prof Syed Islam (Curtin University)	
3.00 – 4.00		Management of Assets in Distribution Businesses Tim Wicks (Aurora)	Current Ratings of Underground Cables – an Overview in Theory and Practice Mike Loring (Aurora)	Integration of Basslink into the Tasmanian Power System Michael Green (Transend)	SF <sub>6</sub> Applications In Substations and Transend Networks. Management of Sulphur Hexafluoride Rod Jones (Transend)	Wind Connections – Part 2 Prof Syed Islam (Curtin University)	
4.00 – 4.15	<b>Afternoon tea/coffee</b>						
4.15 – 5.15		Environmental Planning Robert Moore (Integral Energy)	<b>CEO's Forum</b>	Technology Roadmap Mike Gregg (Energex)	TBA	TBA	
5.15 – 6.45	BBQ and welcome reception with Richard Bevan (CEO, Transend Networks)			SYNDICATES Briefing on Syndicate Scopes and Objectives	SYNDICATES	SYNDICATES	
6.45 – 7.45	<b>Evening Meal</b>		<b>School Dinner</b>	<b>Evening Meal</b>			
8.00 – 9.00							

## TIMETABLE WEEK 3

	Sunday 17 Feb 2008	Monday 18 Feb 2008	Tuesday 19 Feb 2008	Wednesday 20 Feb 2008	Thursday 21 Feb 2007	Friday 22 Feb 2007	
	Site Visit	Smart Grids	Protection, Control Metering and Automation	Climate Change: Challenges and Opportunities for Power Industry	Markets and Regulation	Official Presentation Day	
8.30 – 9.30	<b>Site Visit: Woolnorth Wind Farm</b>	Trends Towards Intelligent Networks <b>Alistair Wells</b> (Automation Regional Director – Pacific, Areva)	Developments In Substation Automation Systems <b>Robert Kirkman (Siemens)</b>	Climate Change: Challenges and Opportunities for Power Industry <b>Brad Page (CEO esaa)</b>	A Regulatory Overview <b>Chris Pattas, Director of Networks Regulation South (AER)</b>	<b>Syndicate Presentations</b>	
9.30 – 10.30		Remote Condition Monitoring <b>Andrew Kingsmill</b> (Transgrid)	Live Demonstration of the Latest SAS <b>Robert Kirkman (Siemens)</b>	<b>TBA</b> <b>John Boucher (CEO</b> <b>National Generators Forum)</b>	Otter’s Perspective <b>Andrew Reeves (Tasmanian Energy Regulator)</b>	<b>Syndicate Presentations</b>	
10.30 – 10.45		<b>Morning Tea/Coffee</b>					
10.45 – 11.45		<b>TBA</b>	Analysis of significant network incidents: Part 1 <b>John Theunissen and David Rendell (SP AusNet)</b>	Nuclear Energy: A 360 Degree View <b>Barrie Hill (Head, Construction Services Jacobs Australia)</b>	An economic appraisal of the Market <b>Margaret Beardow</b> (Principal, Benchmark Economics)	<b>Syndicate Presentations</b>	
11.45 – 12.45		Intelligent Networks <b>Jeff Lee (IBM)</b>	Analysis of significant network incidents: Part 2 <b>John Theunissen and David Rendell (SP AusNet)</b>	Sustainable Energy - Australia in a Global Context <b>Phil Harrington (Aurora)</b>	What the Future Holds <b>Peter Tyree (Tyree Industries)</b>	<b>Syndicate Presentations</b>	
12.45 – 1.30		<b>Lunch</b>					
2.00 – 3.00		<b>TBA</b>	Incident Control Systems <b>Warren Brooks (Aurora)</b>	<b>TBA</b>	<b>SYNDICATES</b>	<b>Feedback and Close</b>	
3.00 – 4.00		<b>TBA</b>	Fundamentals of Earthing <b>Andrew Hill (Hydro Tasmania)</b>	<b>SYNDICATES</b>	<b>SYNDICATES</b>		
4.00 – 4.15		<b>Afternoon Tea/Coffee</b>					
4.15 – 5.15		<b>TBA</b>	<b>SYNDICATES</b>	<b>SYNDICATES</b>	<b>Free Time</b>		
5:30 – 6:30	<b>Free Time</b>	<b>Free Time</b>	<b>Free Time</b>				
6.45 – 7.45	<b>Evening Meal</b>				<b>Transend &amp; Aurora Dinner</b>		
7.45 – 9.00							

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## Syndicates (are subject to change)

**SYNDICATE 1:** Connection Agreement Negotiation: Key Issues, **Michael Green (Transend Networks)**

**SYNDICATE 2:** Cost Benefit Analysis Network Augmentation and Regulatory Test, **Stephen Clark (Transend Networks)**

**SYNDICATE 3:**

**SYNDICATE 4:** Old Substation Redevelopment Balancing Cost, Reliability Requirements and Customer Expectations – George Town 220/110/22 kV Substation Example, **Sead Pasalic (Transend Networks)**

**SYNDICATE 5:** Incident Control Systems, **Warren Brooks (Aurora Energy)**

**SYNDICATE 6:** Fundamentals of Protection, **Akhtar Kalam (Victoria University of Technology)**