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cigré AUSTRALIA

Chair's Report
2017 AGM

Industry continues to present challenges..

- Board and Secretariat have focused on following through on commitment from previous years and further developing the profile of CIGRE
  - Continuing the refresh of brand and image and get our message out to a wider audience
  - Improve our governance and processes
  - Work toward delivering maximum value for members and stakeholders
  - Remaining relevant and viable

Top Focus Issues

1. Optimising Asset Performance
2. Impacts of the structural evolution of the industry
3. Informing stakeholders on best international practice
4. Supporting innovation and new ideas
5. Operational and system issues associated with new emerging technologies
6. Broadening CIGRE membership
7. Ensuring CIGRE seen and remains a non – partisan source of global expert information

Value Proposition of CIGRE Australia

'The provision of a technical forum for the development and open exchange of electricity industry expertise, knowledge and information, at a national and international level which is both technically excellent and practically applicable. Creating a unique opportunity for the development of technical competencies and the provision of authoritative, unbiased technical information.' For the benefit of all stakeholders.

MISSION

To be the world's foremost collaborative technical reference organisation for all aspects of electric power systems

VISION

To be universally recognised as the leading global organisation for all aspects of electric power systems.

CORE VALUES

- ***Community Minded:***
  Actively build a community of Australian regional experts promoting engineering excellence
- ***Share Knowledge:***
  Facilitate effective knowledge sharing;
- ***Develop Talent:***
  Foster and mentor the next generation of engineers
- ***Practical Value:***
  Deliver value for our member organisations by supporting the creation of practical solutions optimised for local conditions
- ***Support Industry Development:***
  Contribute to the industry by helping to facilitate engagement during the development of the electricity supply system and through promoting safety.

Strategic Themes

Vibrant & Inclusive

- CIGRE is committed to being a vibrant, inclusive, transparent and sustainable organisation which has an enviable reputation for building bridges between technocrats and decision makers on industry issues and challenges - internally and externally, locally and globally.

The Evolving Electricity Supply System of the Future

- Drive transformational thinking within the electricity industry to support being more organic, responsive, forward looking, innovative and value focussed.

Preferred Technical Reference Group

- CIGRE is acknowledged as an independent, politically agnostic source of expert global technical information on the electricity system and its operations.

Sustainable Contribution:

- Influence and contribute to CIGRE Internationally through regional panels, Working Groups, Study Committees and Secretariat practices.

People & Skills of the Future

- Ensure appropriate diversity across the whole of CIGRE and be one of the major champions for developing the next generation of engineers, technicians and managers of the electricity industry (Networking for the Future).

Value Proposition

- Forum for the development and free exchange of industry expertise;
- National, regional and international level;
- Technically excellent and practically applicable;
- Creates a unique opportunity for development of technical competencies; and
- Provision of authoritative, unbiased technical advice……

Conclusion

- Need to stick to our plan & acknowledge the changing landscape and global strategic priorities of CIGRE.

- Constantly consider how we can continue to grow, establish relationships with other associations and remain a relevant and sustainable organisation.

- Continue to develop & encourage diversity in our membership and in particular encourage our younger engineers to be involved.

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Executive Manager Report

Terry Killen

2017 CIGRE AGM

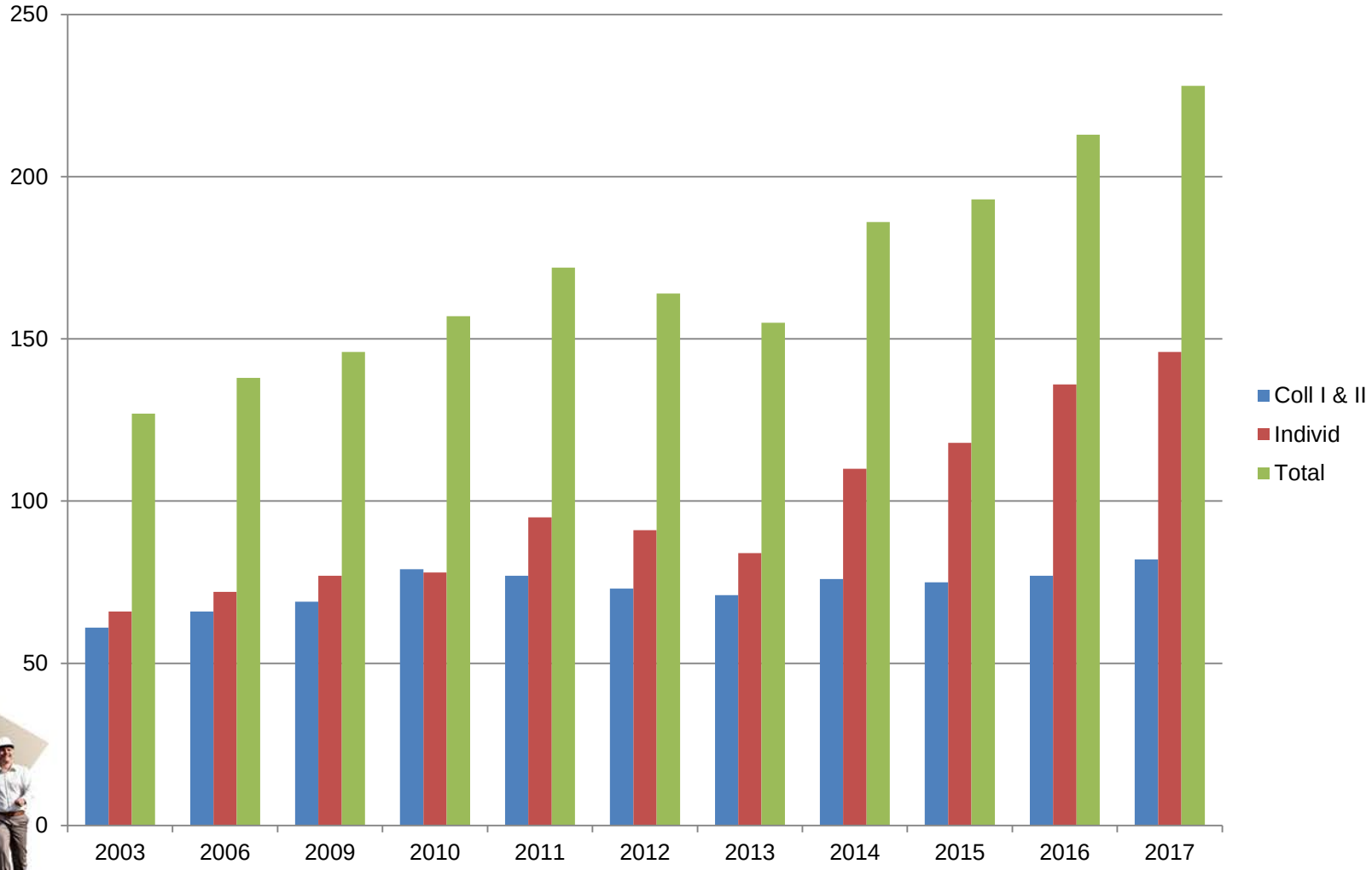
Value Proposition

- Is technically excellent
- Is practically applicable
- Creates unique opportunities for the development of technical competencies
- Supports the provision of authoritative, unbiased technical information for the benefit of all stakeholders'.

Membership

Membership			
	Aug	Sep	Oct
Indiv	152	155	159
C1	72	72	73
C2	10	10	10
YE	18	19	21
Panel	339	339	339
NGN	162	165	167
Student	145	148	150
Total Membership	252	256	263
Equivalent Members	632	636	648

Membership Growth



Conferences

- SEAPAC
- A2 Transformer Workshop
- B2, B4/C4
- International speakers
- IEEE in The USA re what we can do together
- 2023 Super CIDER – Cairns Symposium

Impact globally / industry

Australia - long history of supporting CIGRE internationally

- David Croft president
- Peter Tyree treasurer
- Richard Bevan treasurer

- SC membership
  - Each of our panel convenors is on the SC
  - SC Chairman – SCC1 Phil Southwell
  - SC Chairman – SCB3 Terry Krieg
  - SC Chairman – SCC5 Alex Cruikshank

Impact globally / industry(2)

- KMS – Knowledge Management System (Confluence)
- Marketing/Branding – Aspire NZ firm.
- Pacific Power Association
- Establishment of Philippines NC ?

Technical contribution

- Paris papers – record this yr 24
- ITL (In the Loop) – 12 editions
  - 677 subscribers
  - 44 technical articles
- 81 technical presentations delivered at our events/seminars this year

NGN/Scholarhip/students

Last but not least look to future and younger generation

- 2 co chairs – board invited positions
- NGN growing
- Panels
- Transformer Innovation Centre (UQ)
  - TIC scholarship (Judith Marks)
- STELR
  - Angela Rozali – Engineering Leadership Seminar (London)

The Future

- Paris 2018 – papers and Scholarship
- Work on raising CIGRE profile with the state and federal jurisdictions and let them know the sort of information and expertise that is available through CIGRE
- Continue to spread the word.
  You can help by following on linkedIn, twitter, subscribing to ITL and passing it and other information to colleagues
- Member Get member campaign – get someone to join and get some cash to impress your partner

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Finance summary

CIGRE Australia financial position 2016/17

Trevor Armstrong - Treasurer

Financial Report – Summary 2017

Year	**2015**	**2016**	**2017**
Total Revenue	716,356	$511,062	$850,867
Total Expenses	940,750	$595,328	$1,032,350
Surplus	(224,394)	($84,266)	($ 181,482)

FINANCIAL REPORT 2017
Sources of Income

	2015	2016	2017
Fees	$414 559	$ 497 779	$522,520
Seminars, Workshops, conf	$347,850	$ 58,253	$274,151
Interest	$60,612	$ 47,975	$ 53,641
Other Income			$ 555
Total Income	**$823 021**	**$604 007**	**$850,312**

FINANCIAL REPORT 2017
Expense Areas

	2015	2016	2017	
Admin/Office/Occupancy/legal insurance	$371,956	$ 311,285	$306,936	
Board/Marketing and Branding/Paris Support	$71,230	$ 42,569	$81 658	
NGN/STELR/Scholarships	$12,748	$ 17,955	$25,627	
Seminars and Workshops	$95 042	$ 39,160	$132 841	
Finance and Regulatory	$51 960	$ 47,669	$37 049	
WG/SC Panels /accom etc	$212,116	$ 136,688	$218,825	
TOTAL Expenses	$940 750	$ 595,328	$1,032,350	
Net Surplus/Deficit	(224 394)	(84 226)	($181 487)	
Paris Expenses	($125 696)	0	($111 937)	

FINANCIAL REPORT 2017
Balance Sheet

	2015	2016	2017
Equity as at 30 June	**$2,004,645**	**$1,920,551**	**1,739,068**

Indicative Financial Projection

Income	2017 Act	FY 2018	FY 2019	FY 2020
Fees	$284 635	$257 636	$270 518	$275 929
Panel Fees	$238 440	$270 324	$283 840	$289 517
Interest	$53 641	$48 700	$47 500	$48 450
Seminars and Workshops	$274 151	$104 000	$327 507	$109 200
Total Income	**$ 850 867**	**$680 463**	**$929 365**	**$722 890**

Indicative Financial Projection

Expense	FY 2017 ACTUAL	FY 2018	FY 2019	FY 2020
Admin/Office/Occupancy	$291 389	$304 500	$309 630	$318 977
Board/Marketing and Branding/Paris Support	$81 658	$38 000	$34 000	$33 000
NGN/STELR/Scholarships	$25 173	$20 000	$31 000	$21 000
Seminars and Workshops	$244 778	$64 500	$227 500	$66 375
Finance, Regulatory Paris Payments	$129 353	$103 289	$102 395	$103 856
WG/SC Panels/Accom.tvl	$259 997	$135 600	$220 000	$158 421
Total Expenses	$ 1 032 348	$670 889	$925 155	$701 629
POTENTIAL SURPLUS		$9 574	$4210	$21 261

Financial Considerations

- Currently over 60% of members fees collected goes to CIGRE in Paris.
- We seeing member growth but as we only keep approx. half of any new member fee, it alone is unlikely to create a lot of income.
- Our Bottom line is very dependent on the success of our conferences – Currently SEAPAC, CIDER & CIGRE A2 workshop.
  We would like to look at least one other conference
- Falling interest rates have continued to reduce our income and currency movements also effect our bottom line as we pay the Paris fee in fixed Euro.
- We need to keep a certain amount of invested funds to ensure we can wrap up the association if needed. Conservatively estimated at $ 500K.

Conclusion

- Board believe need to be financially responsible – aim for positive bottom line in FY18
  Keep in mind that the discount to Convenors for Panel fees and Retirees cost about $ 14000 pa.
- Administrative Operational costs continue to be monitored, but realistically are now at a sustainable level.
- Australian component of Fees have been increased for 2018 by 2% CPI of the Australian component.
- Invoices for membership will be issued by the end of November 2017, with payment for the 2018 member calendar year due by 31 Dec 2017.

Members Fees 2018

	2017	2018
Collective 1 T&D	$ 7180	$ 7369
Collective I	$ 1806	$ 1842
Collective II	$ 903	$ 921
Individual I	$ 316	$ 323
Individual II	$ 158	$ 161
Panel	$ 869	$ 886

ACPE-CIGRE Outstanding Academic Award-2017

Prof. Tapan Saha

School of Information Technology and Electrical Engineering (ITEE)

The University of Queensland (UQ), Brisbane, Australia

About myself

- **Born and brought up in Bangladesh**
- **Studied Electrical Engineering in:**
  - **Bangladesh**
  - **India**
  - **Canada**
  - **Australia (PhD from the University of Queensland)**
- **Emigrated in Australia (1989)**
- **Worked in Bangladesh, JCU-Townsville, KTH-Stockholm & University of Newcastle/Aurecon.**
- **Has been with UQ as an academic staff since 1996 & Professor since 2005.**

University of Queensland(UQ)-Power Engineering legacy

- UQ has a legacy of 50+ years
- Renowned Professors include: Prof Sydney Prentice, Prof Tom Parnell, Prof Mat Darveniza, Prof Dave Mackerras
- Produced many industry leaders & power engineering professors around the globe
- Had the best High Voltage Laboratory in the Southern Hemisphere (opened in 1960)
- Pioneered world class research in lightning protection, analysis and other relevant fields

University of Queensland: my early journey- gloomy picture of Power Engineering

- **Started as a lecturer at UQ in 1996**
- **Last senior academic Prof Mat Darveniza retired in 1997**
- **Electrical Engineering merged with Computer Science in 1997**
- **Industry support in funding declined drastically**
- **ESI deregulation gets momentum**
- **By the end of 1999: I remained as the ONLY lecturer at UQ in power engineering**

UQ has been a collective member of CIGRE for several decades

- **Introduced to CIGRE and IEEE by Mat Darveniza**
- **Joined CIGRE AP A2: Transformer**
- **Has been with AP A2 for 20 years, member of the AP A2 Panel with Bryce Corderoy, Peter Austin, Arne Peterson, Peter Cole and Ross Willoughby**
- **Later joined AP D1 and has been a member for some time.**
- **Attended CIGRE Paris (six times) and published nine papers in CIGRE Paris Sessions.**
- **Recently published through C6 for the last three times**
- **Has been with the three Working Groups/Task Force committees and an author of three Technical Brochures.**

Involvement with IEEE & Engineers Australia (EA)

- **Joined IEEE Queensland section in 1997**
- **Served as Secretary, Vice Chair, UQ students Counsellor, Chair (twice)**
- **Served as the Chair of IEEE Australia Council**
- **Awarded many local and international awards for outstanding volunteering**
- **Joined EA Electrical Branch (EB) in mid 2000**
- **Served Queensland EB as a Chair and in other positions**
- **Elected Member of EA-Electrical College Board 2015-2018**

Game Changer: Queensland Power Engineering Alliance (PEA) and Australian Power Institute (API)-mid 2000's

- Teaching support started through PEA and later API
- UQ also started supporting Power Engineering research/teaching
- Enjoyed the highest growth in power engineering teaching, student number, research activities at UQ
- Introduced a number of key programs: Master of Power Generation, Master of Electricity Market, Master of Electrical Engineering specialising in power systems
- Established API-Powerlink Chair in Electricity Transmission
- ***API/ENA Survey in 2017: The University of Queensland (UQ) has arguably one of the strongest all round research capability of all universities surveyed.***

My collaborations

- First research grant was through CIGRE contact-with a TNSP R&D project
- Numerous ARC Linkage projects with major TNSPs and DNSPs
- IIT's-Kharagpur & Bombay in India, Xian and South West Jiao Tong Universities & Hunan University in China, University of Texas & University of Michigan in the US and several others.
- Government funds through QLD and Commonwealth schemes
- **Won many awards including *Australian Learning and Teaching Council Citation in 2009 "For enhancing undergraduate and postgraduate power engineering education through leadership in industry engagement, in work-integrated learning and the collaborative development of innovative postgraduate programs".***

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Today's UQ- Power Engineering
"Enabling the Power System of the Future"

Prof Tapan Saha
Leader, Power & Energy Systems Research Group, & UQ Solar;
Director of Australasian Transformer Innovation Centre.

About UQ – A Leading University

Ranked in the world's top 50, The University of Queensland (UQ) is one of Australia's leading research & teaching institutions

Over 100 years old – established in 1909

Leading Australian research intensive university

Strong track record in research commercialisation

Member of the prestigious Group of Eight Universities (Go8)

Universities Australia member

EDX partner

Member of Universitas 21

Power & Energy Systems (PES) Research Group

- A research Group within the School of IT and Electrical Engineering dedicated to servicing the needs of the Australian power industry
- One of Australia's largest university Power Engineering groups with 40+ Engineers (academics & researchers)
- 3 Professors, & Associate Professors and 6 adjunct/honorary research Professors/Fellows, 4 other Teaching and Research (T&R) academics in power
- 8 Post Doctoral Research fellows, 25+ Research Higher Degrees students & 3 technical & support staff
- A number of academic and research positions are in the process of appointing. We will be 50+ by the first quarter of 2018.

http://www.itee.uq.edu.au/pes

Our research focus

- Analysis and prediction of the dynamic behaviour of power systems for reliable and secure operation.
- Renewable and distributed generation integration to the main national grid
- Deliver next generation condition assessment techniques for electrical plant assets.

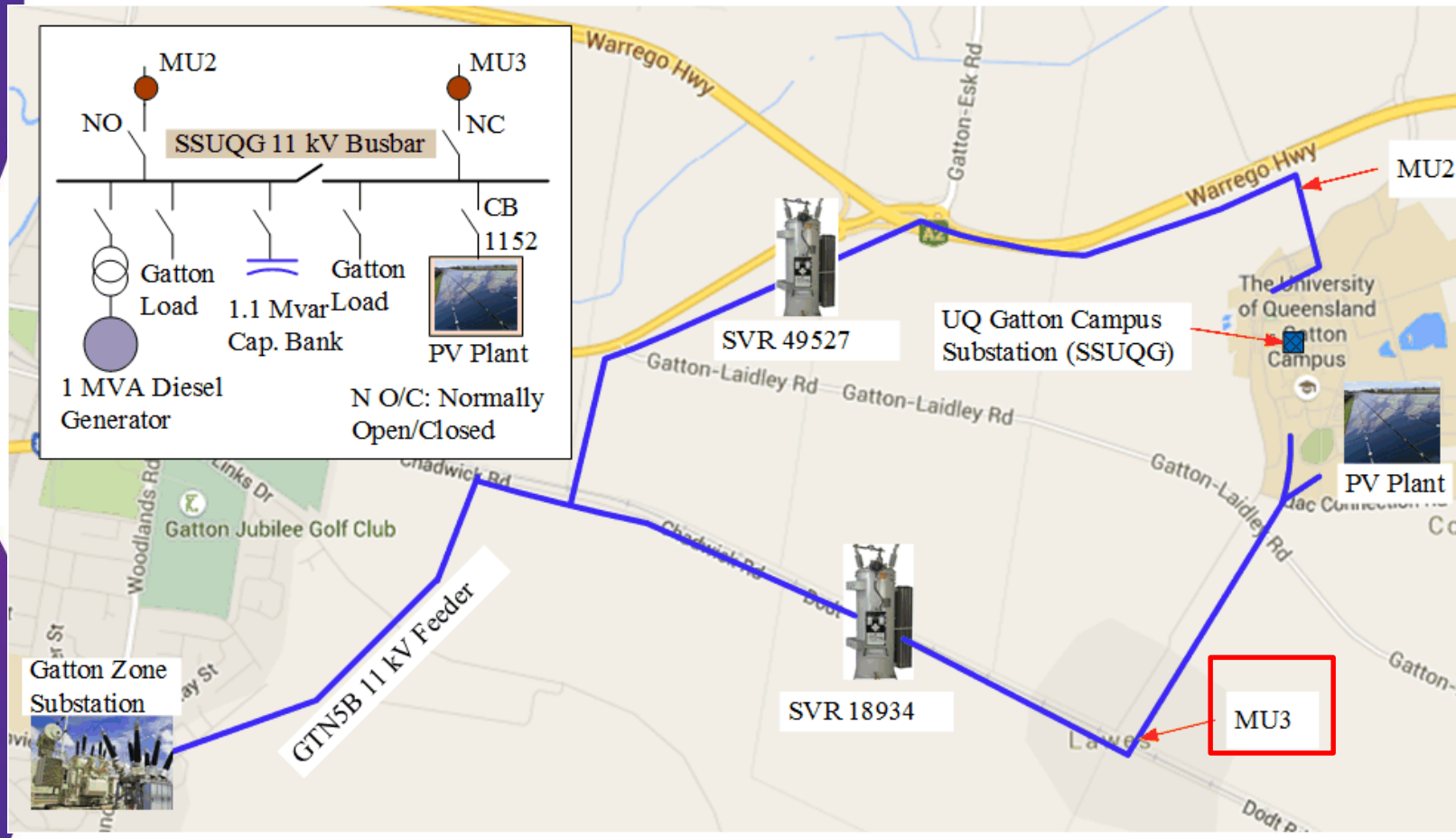
PES – strong, successful and focussed

- Strongest growth record of ITEE's educational portfolio
- Successful research history – grants, publications, focus
- Strong collaboration and engagement with industry nationally
- Growing links to leading international PES universities

UQ-Solar Research Hub in Australia
1.5 MWp PV System UQ St. Lucia Campus

3.275MW system comprises of 5 arrays, 37,000 thin-film photovoltaic panels, mounted on 10ha land:- a dual tracking array, a single axis tracking array and 3 fixed tilt panel; Federal Govt EIF $20M

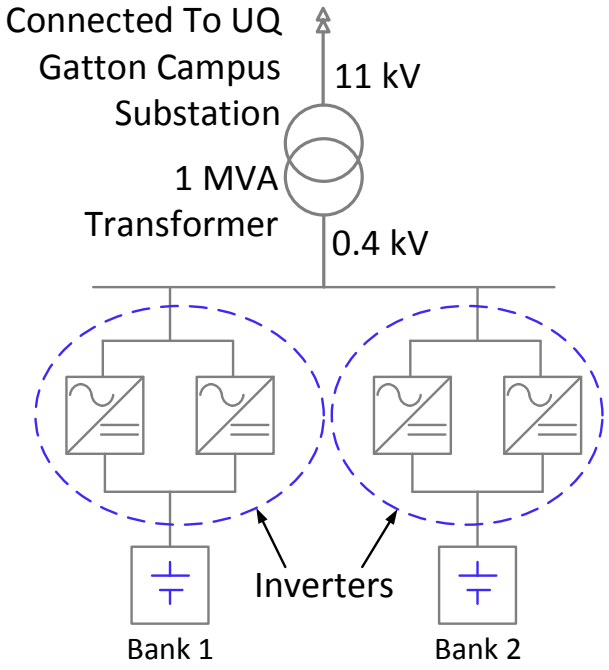
11 kV Energex Network Connection- A real test bed for developing new technology



MU3 is the Contractual 11k V Connection Point

Battery Energy Storage System (BESS)

- 600 kW, 760 kWh Lithium Polymer BESS
- 576~748 V DC
- Interfaced by 4×300 kVA VACON Inverters with 415 V, 3 phase AC output
- Capable to source/sink reactive power up to 0.9 PF



Smart Grid Technology Deployment

- Local Communication and Control across Plant/Substation
- Metering and Data Management
- Remote Communication and Control from UQ St Lucia / Others

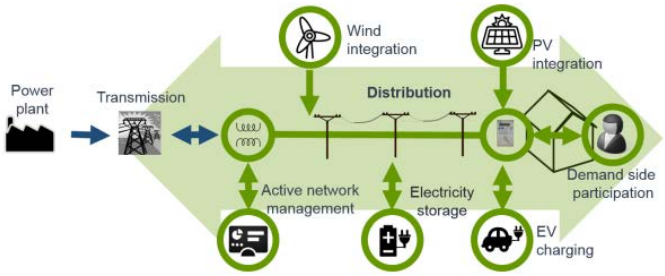
Smart grid technology binds it all together

Successful & Focused Research Projects

Sustainable operation of transformers with better understanding of technical and economic constraints (ARC Linkage Project 2014–2017)

Development of Smart Power Transformers with Intelligent Monitoring, Diagnostic and Life Management Systems, ARC Linkage Project

An Investigation of the Impacts of Increased Power Supply to the National Grid by Wind Generators on the Australian Electricity Industry, ARC Linkage Project



Monitoring and management system for smart distribution networks (ARC Linkage Project 2015-2018)

Investigation of Stability and Power Quality Issues from the Wide Spread Photovoltaic Integration into Electricity Distribution Networks, ARC Linkage Project

Strong Collaboration with Industry, Government bodies & Universities

Industry Collaborations

Australian Energy Market Operator (AEMO)
Powerlink Queensland
TransGrid, AusGrid
CS Energy
Stanwell Corporation
Ergon Energy
Energex
Wilson Transformer Company
Aurecon
Hydro Tasmania
AGL Energy Ltd
Clean Energy Council Limited,
Suzlon Energy Australia Pty Ltd
TRUenergy Pty Ltd
Vestas International Wind Technology A/S
Hydro Tasmania

University Collaborations

University of New South Wales, Sydney Australia
QUT, Brisbane, Australia
Jadavpur University, India
IIT Kharagpur, India
IIT Bombay, India
Xi'an Jiaotong University, Xi'an, China
South West Jiao Tong University, China
Hunan University, China
Chalmers University, Sweden
TU Dortmund University, Germany
University of Texas at Austin, USA
AIT, Bangkok

REDBACK TECHNOLOGIES

ARENA

Australian Research Council

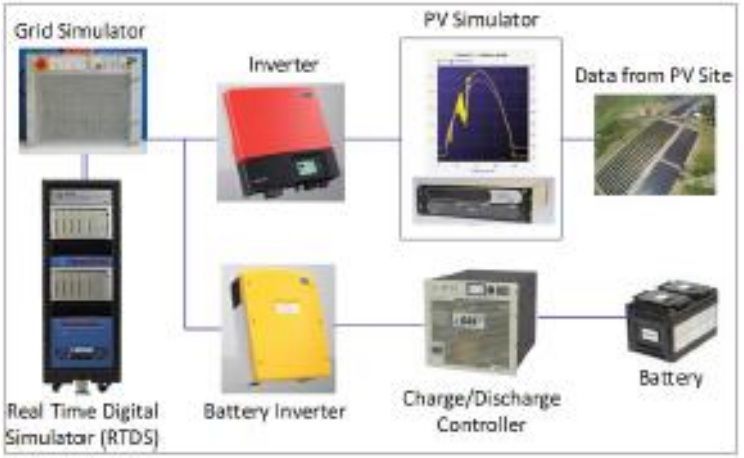
ADVANCE QUEENSLAND

State-of-the Art laboratories

Machines Laboratory

Gatton Campus Solar PV and Battery Storage Facility

Power Systems & Power Quality Laboratory



Renewable Energy Laboratory

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Australasian Transformer Innovation Centre- A new initiative

Prof. Tapan Saha

Director of the Centre

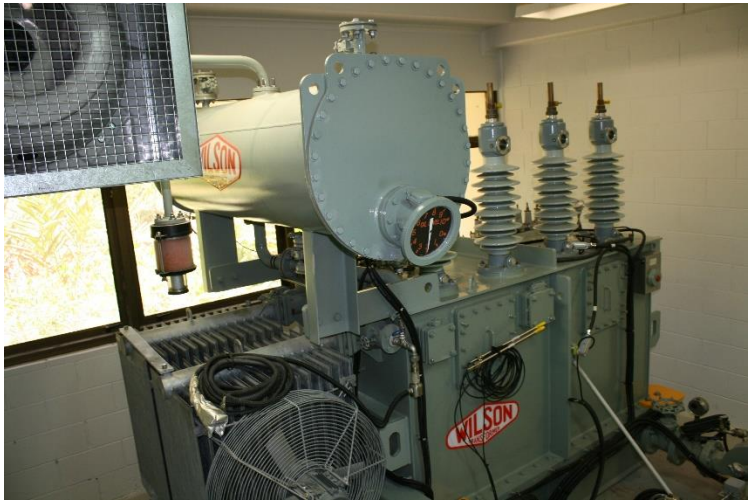
School of IT & Electrical Engineering

The University of Queensland

http://www.itee.uq.edu.au/tic

Transformer Innovation Centre (TIC)

- **TIC Aim**: undertake industry initiated research and provide CPD courses to industry engineers
- **TIC Partners**: UQ, QUT, UNSW, Griffi University and industry
- TIC has started its operation from July 2017



Transformer Innovation Centre (TIC) UQ's Long Pocket Precinct

- Research-grade power transformer with biodegradable oil - donated by Wilson Transformer Company
- Tap Changers (GRIDCON® ITAP®, & OILTAP® MS) donated by REINHAUSEN
- Sensory technology - donated by Dynamic Ratings
- Various equipment for R&D - Omicron DIRANA (FDS and PDC combined); FDS; Polarisation/depolarisation currents and return voltage measurement; FRA; PD measurement systems; acoustic/vibration measurement system.
- Vaisala water activity measurement probes & Fibre optic equipment to measure temperature and water content of insulation
- Thermal infrared camera for studying heating and temperature rise

Driven by Industry Advisory Steering Committee

Name	Organisation
Simon Bartlett (Chair)	The University of Queensland
Tapan Saha	The University of Queensland
Peter Price	Energy Queensland
Nicole Eastoe	TasNetworks
Neil Ridings	South Australian Power Networks
Julian Guild	ABB
Mike Griffin	Australian Power Institute
Terry Killen	CIGRE
Kerry Williams	
Craig Savage	United Energy
David Jellett	Dynamic Ratings
Amra Alibegovic-Memisevic	Powerlink Queensland
Thomas Smolka	MR
John Ford	
Lindsay McPherson	Essential Energy

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Managing the Life Cycle of Power Transformers-2 day intensive course overview on how to make the best use of their transformer assets. September 2017

- **Specifications- Gary Russel**
- **Transformer Design and Considerations- Michael O'Brien**
- **Factory and Site Testing-Craig Adams**
- **Maintenance and Condition Monitoring- Gary Russel and Hui Ma**
- **Real-time condition monitoring- Hui Ma and Dan Martin**
- **Whole of Life Costing-Amra Alibegovic-Mesmisevic & Dan Martin**
- **Course Review and Case study-Ray Holzheimer**
- **THREE NEW CPD COURSES COMING IN FEBRUARY 2018: TAP CHANGER, BUSHING & TRANSFORMER OIL ANALYSIS**

TIC Current Members

TIC platinum members

TIC gold members

Research partners

Transformer Book-From UQ Research

https://www.bookdepository.com/Transformer-Ageing/9781119239963

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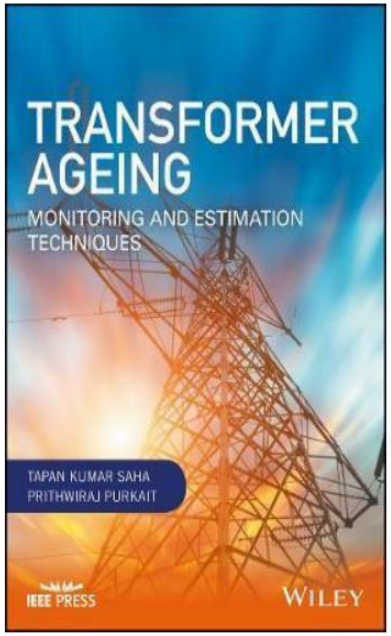
Categories: Electrical Engineering



Transformer Ageing : Monitoring and Estimation Techniques

Hardback | Wiley - IEEE | English
Edited by Tapan Kumar Saha , Edited by Prithwiraj Purkait

Share

A one-stop guide to transformer ageing, presenting industrially relevant state-of-the-art diagnostic techniques backed by extensive research data Offers a comprehensive coverage of transformer ageing topics including insulation materials, condition monitoring and diagnostic techniques Features chapters on smart transformer monitoring frameworks, transformer life estimation and biodegradable oil Highlights industrially relevant techniques adopted in electricity utilities, backed by extensive research

A$244.38

Free delivery worldwide

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When will my order arrive?

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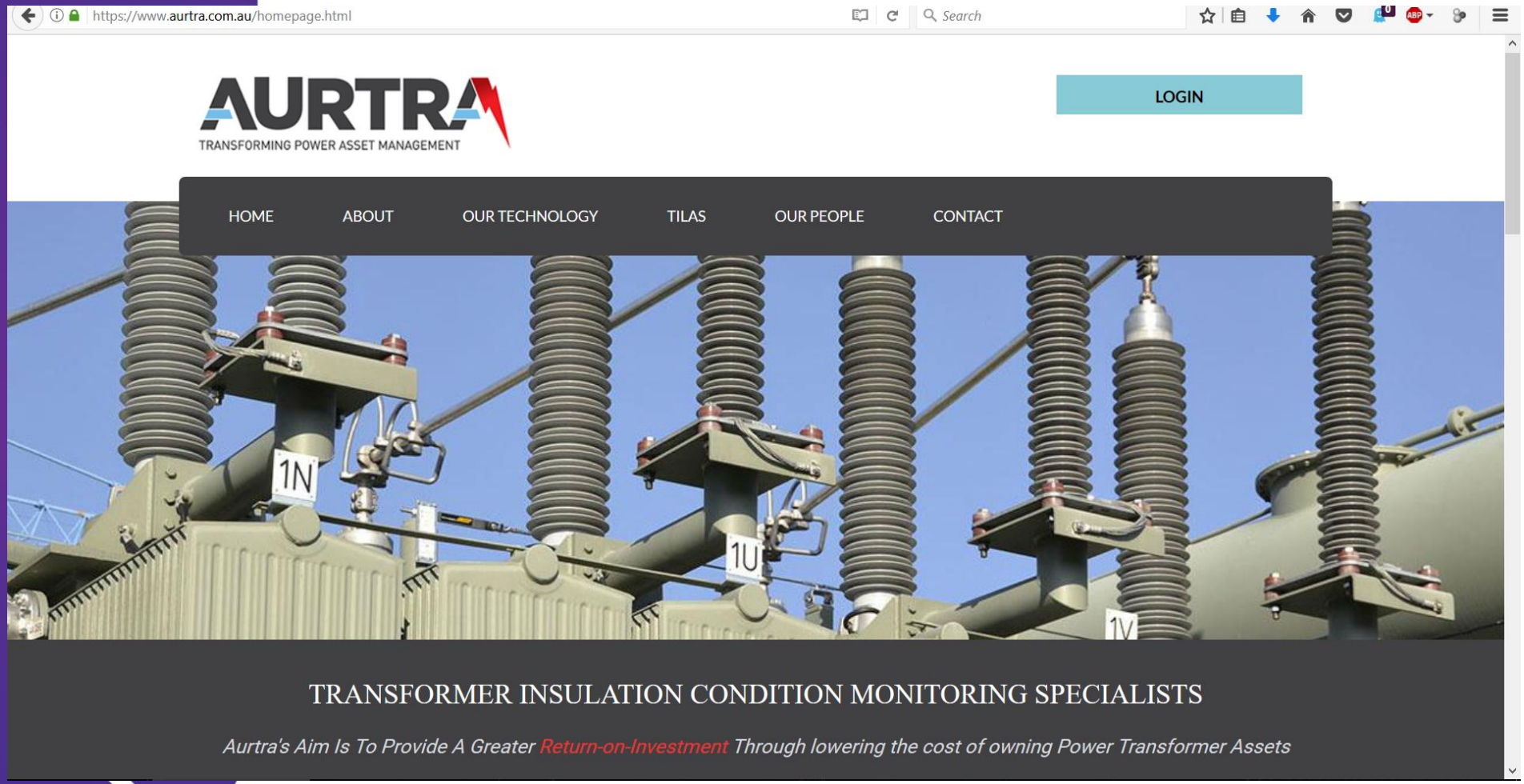
SME-From UQ Research



https://www.aurtra.com.au/

PES's Vision for New ITEE Initiative

UQ to be recognised internationally as Australia's Education and Research Centre for enabling "The Power System of the Future".

The PES group to be renowned for collaborating with industry to research, develop and trial technologies and innovations that deliver affordable and secure electricity to power the economy and underpin modern society whist helping to

- **Integrate increasing amounts of renewable energy**
- **Enable customer choice and household participation in electricity supply and usage**

Conclusions

- From a very humble beginning we are in a very strong position
- University and power industry provided strong commitments
- Industry-University collaboration is the key factor of our success
- *Acknowledgements are due to my all UQ colleagues, 38 graduated PhD students, 15+ PDF's, tens of Masters and hundreds of BE thesis students*
- Without industry collaboration and university support nothing would have been possible to achieve.
- *I am truly honoured to accept this industry academia award.*
- Thank you all for listening!

Contact

Professor Tapan Saha, FIEAust, CPEng, RPEQ, NER, SMIEEE

IEEE PES Distinguished Lecturer

School of Information Technology & Electrical Engineering

The University of Queensland, St. Lucia, Qld-4072, Australia

Tel: +61 7 33653962, Mobile: 0422001378

Email: saha@itee.uq.edu.au, Web: http://staff.itee.uq.edu.au/saha

NGN
Next Generation Network

"Australia's next generation of power engineers"

cigré AUSTRALIA

CIGRE Australia NGN 2017 in Review

CIGRE Australia AGM, Nov 2017

Alexandra Price & Angela Rozali, NGN Co-Chairs

The Objective of the NGN

1. Aid in the **sharing of information** and knowledge between engineering peers within Australia and internationally.
2. **Develop** its members' power systems engineering **knowledge** generally, as well as in specific areas of interest.
3. Work with CIGRE to **assist in working groups** and the development of technical papers.
4. Provide **a pathway for young engineers to become actively involved in CIGRE.**

NGN Events - 2017

- **Webinars**
  - *B4: Introduction to VSC HVDC Transmission*
  - *D2: South Australia Power Outage Black Start Event*
  - *D2: ADMS Network Modelling Capabilities, Constraints and Data Requirements*
- **Australian Panel Meetings and Seminars**
- **Wilson Transformer Workshop Tour**
- **Networking Events**
- **Other Activities**
  - *Representation in AUPEC Panel Session*
  - *CIDER NGN Forum*

Individual Involvement

- NGN Involvement in CIGRE technical activities continues to grow

	2016	2017
NGN Full AP Members	4	6
NGNs attending AP Meetings	14	18
NGNs involved in WGs	2	7

Engaging the NGN

- **We can assist with Working Groups**
  - *Secretarial services*
  - *Development of working group documents*
  - *Review of brochures*
- **We can assist with Australian Panels**
  - *Organising Australia Panel/Tech Seminars etc*
  - *Administration of web-presence*
- **Help us: educate, mentor, network & succession plan**
  - *Invite NGN to get involved*
  - *Attend networking events*
  - *Offer technical tours*

Email ngn@cigreaustralia.org.au

empowering networking globalknow-how

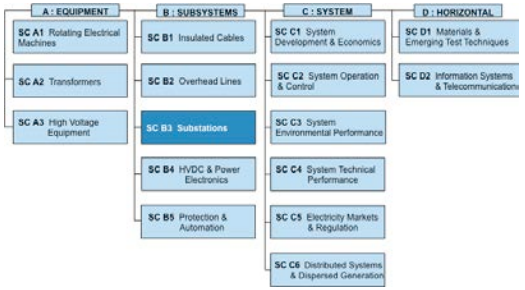
Technical Council Report

Terry Krieg – Chairman of SC B3

ANC Meeting – Adelaide, 24 November 2017

Membership and Attendance

- Mark Waldron - Chairman (Vice-President – Technical) - term ends 2018
- All Study Committee Chairmen (16)
- Yves Maugain - TC Secretary
- Philippe Adam – Secretary General CIGRE
- Admin Council delegates: Liisa Haarla (Finland)
- Rob Stephens attends periodically
- New Vice President Technical - Marcio Szechtman (Brazil)



Meetings

- 2 times per year (3 in Paris year)
  - August 2016 (Saturday after Paris session)
  - November 2016 - Philadelphia, USA
  - March 2017 – Arnhem, Netherlands
  - November 2017 – Somerset West, South Africa

Paris - 2016

- Date: 27 August 2016
- Agenda:
  - Preliminary Paris 2016 review
  - Central Office update from Philippe Adam
  - “Negotiations” for preferential Subjects
  - Clarification of our inclusion of Environment (+ B2, C3)
- The least enjoyable of all TC meetings!

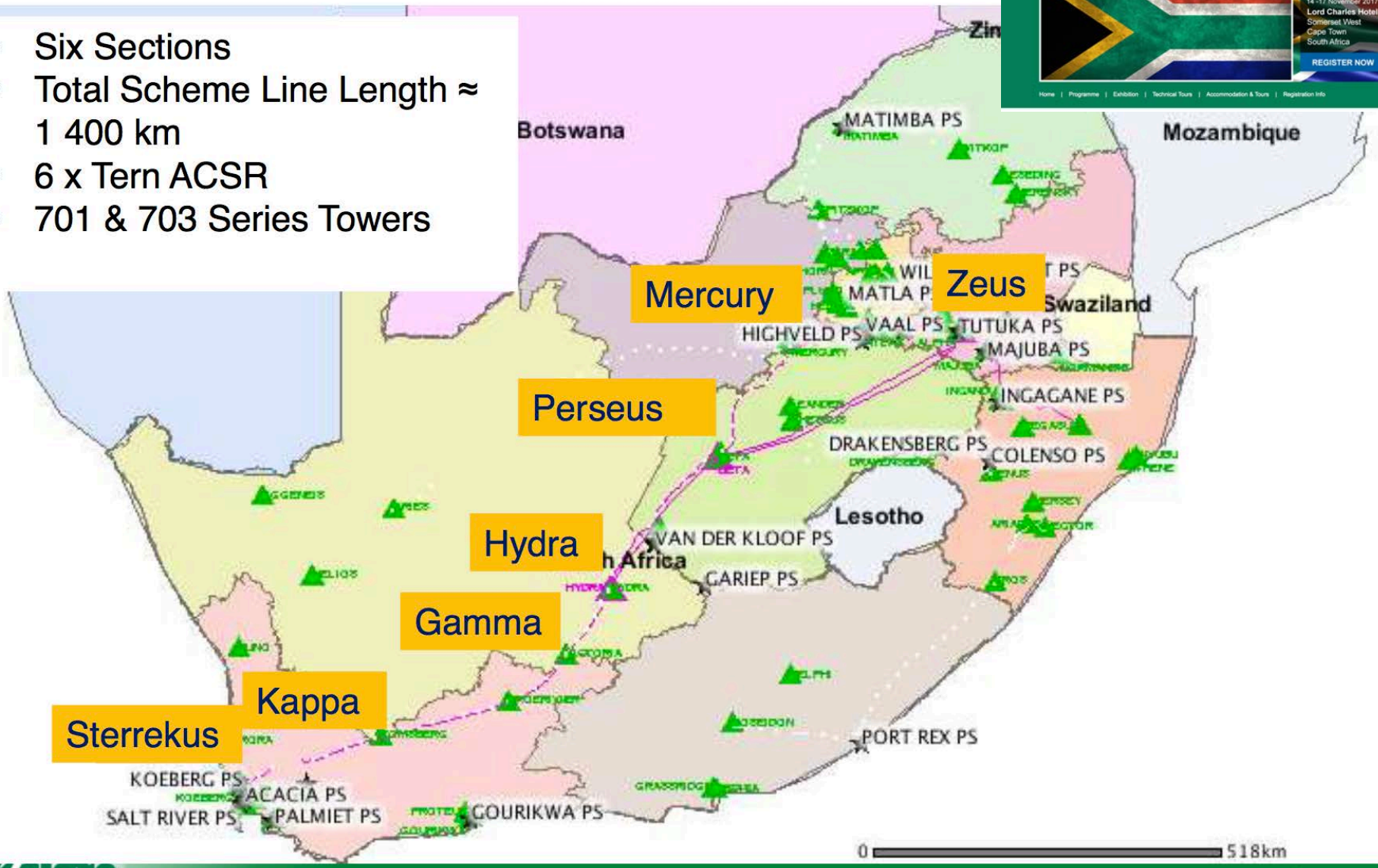
Philadelphia - 2016

- Date: 4 - 5 November 2016
- Hosted: PJM (Andy Ott is CEO, TX utility and Chair C5 – Electricity Markets and Regulation)
- Agenda for the “Fall Meeting”:
  - Preferential subjects final agreement
  - Paris 2016 review
  - Strategic planning
  - Preparation for coming symposia (2017):
    - Location confirmation for future (after 2017)
  - Central Office update from Philippe Adam
  - Green Books and other progress
  - TC projects: “Network of the Future” paper and presentation

Arnhem - 2017

- Date: 28 - 30 March 2017
- Hosted by: Tennet
- Agenda for the “Spring Meeting”:
  - Strategic Plan updating – new Chairs
  - Future symposia planning
  - Paris 2018 Planning
    - Tutorials
    - Young engineer slots in discussion meetings
    - Women in engineering
    - Forum for CEO’s
  - Central Office update from Philippe Adam
  - Green Books and other progress

- Six Sections
- Total Scheme Line Length ≈ 1 400 km
- 6 x Tern ACSR
- 701 & 703 Series Towers



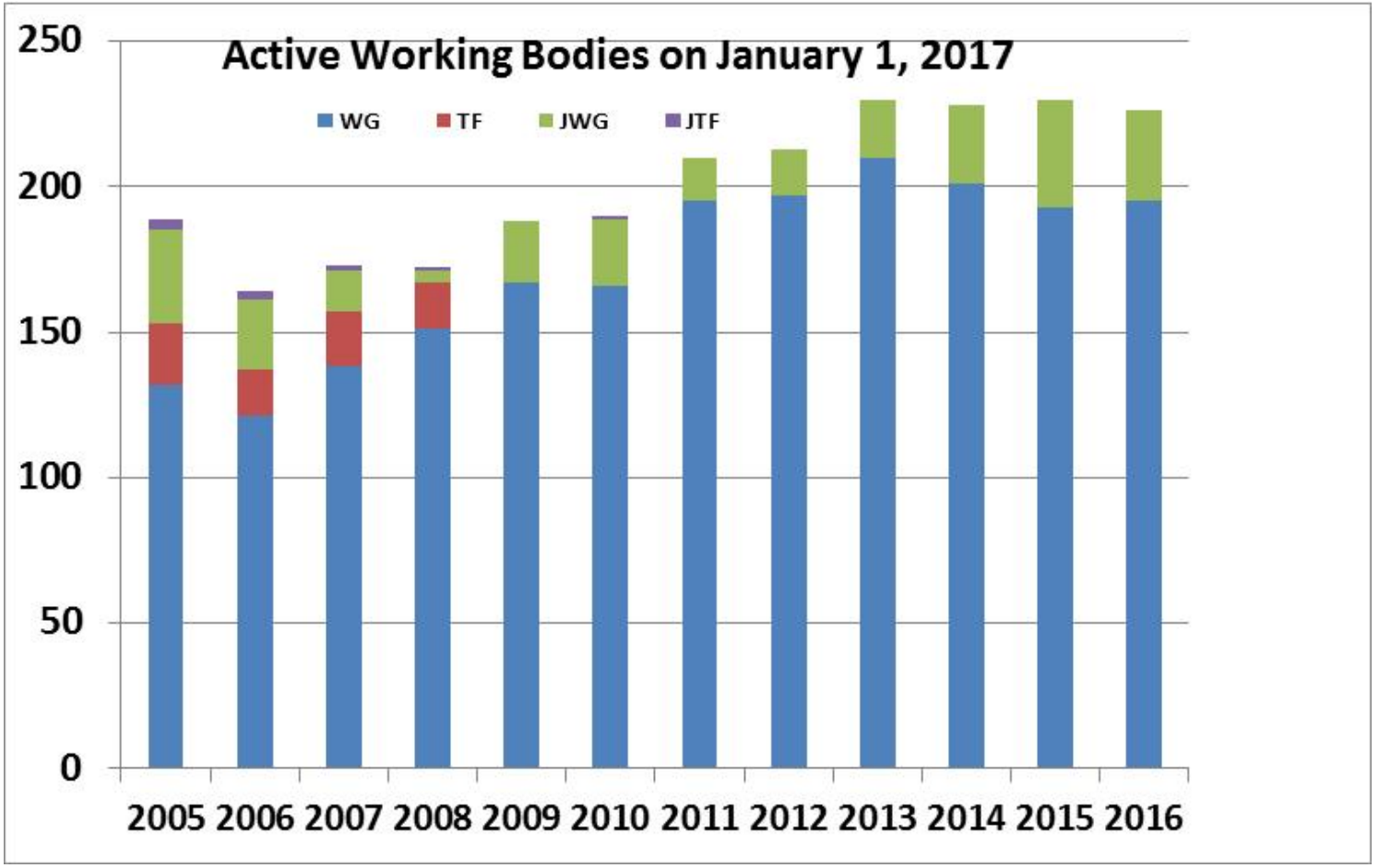
Technical Council Activities

- Network of the Future: living document and presentation
- Cooperation and MOU's with other organisations
- Broadening scope to traction systems?
- KMS implementation progress
- Green book progress
- Central Office IT projects:
  - Improved searching in CIGRE Science and Engineering
  - e-CIGRE, New WG management tool, website refurbishment
- Sustainability and CIGRE: internal status or guidance
- Tutorials, Reference papers
- Next Meeting in March 2018 in Vienna includes new SC Chairs

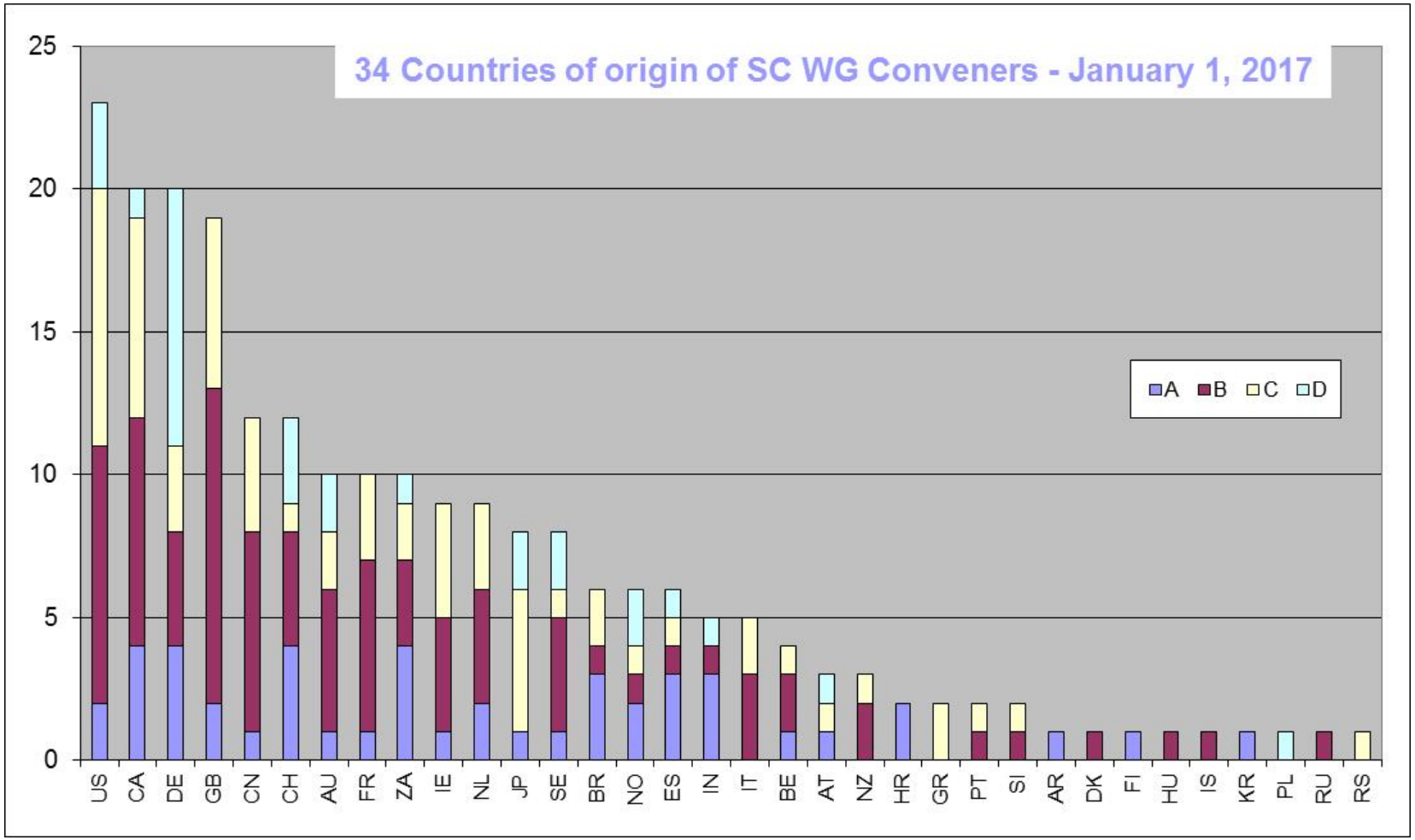
Paris 2018 Program

2018	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Group Discussion Meetings					A1		A3		A2		B1	
					B4		B5		B3		B2	
					C4		C5		C2		C1	
					C6		D1		D2		C3	
Study Committee meetings	C1				A2		C1		A3		A1	
					B2		B2		B5		B4	
					B3		C3		C4			
						B1	B1		C5			
					C2		D1		C6			
					D2							
Contributor meetings			A1		A3		A2		B1			
			B4		B5		B3		B2			
			C4		C5		C2		C1			
			C6		D1		D2		C3			
Poster Sessions			C4	A1	A3	C5	A2	C2	B1	B2		
			C6	B4	B5	D1	B3	D2	C1	C3		
Tutorials	08:30	10:20	B5		C1		C4		D1		B3 workshop	
	10:40	12:30	B4		B2		C2		A1			
	14:00	15:50		A2		A3		C6		B1		
	16:10	18:00		D2		C5		B3		C3		

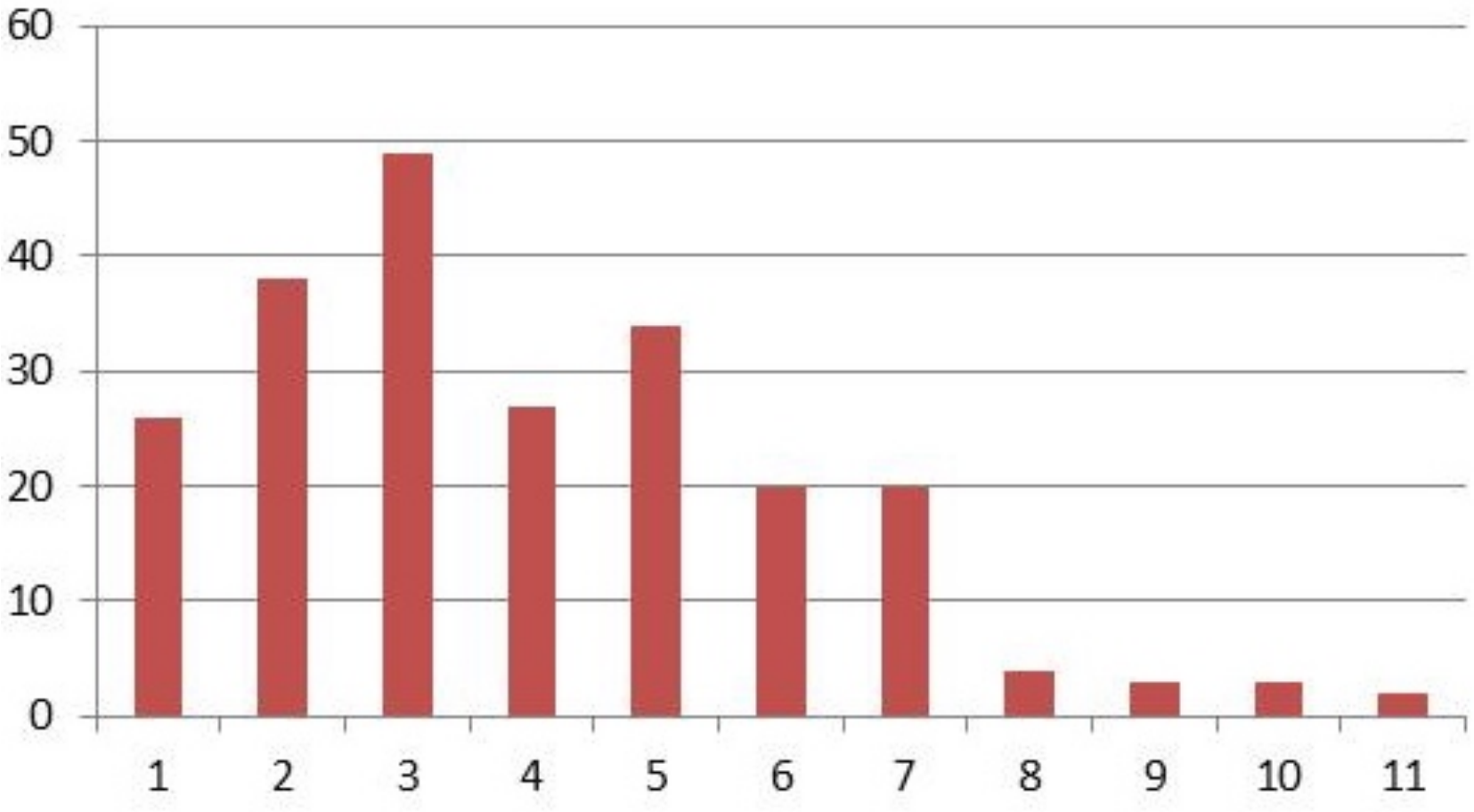
Active Working Groups



Working Group Convenors

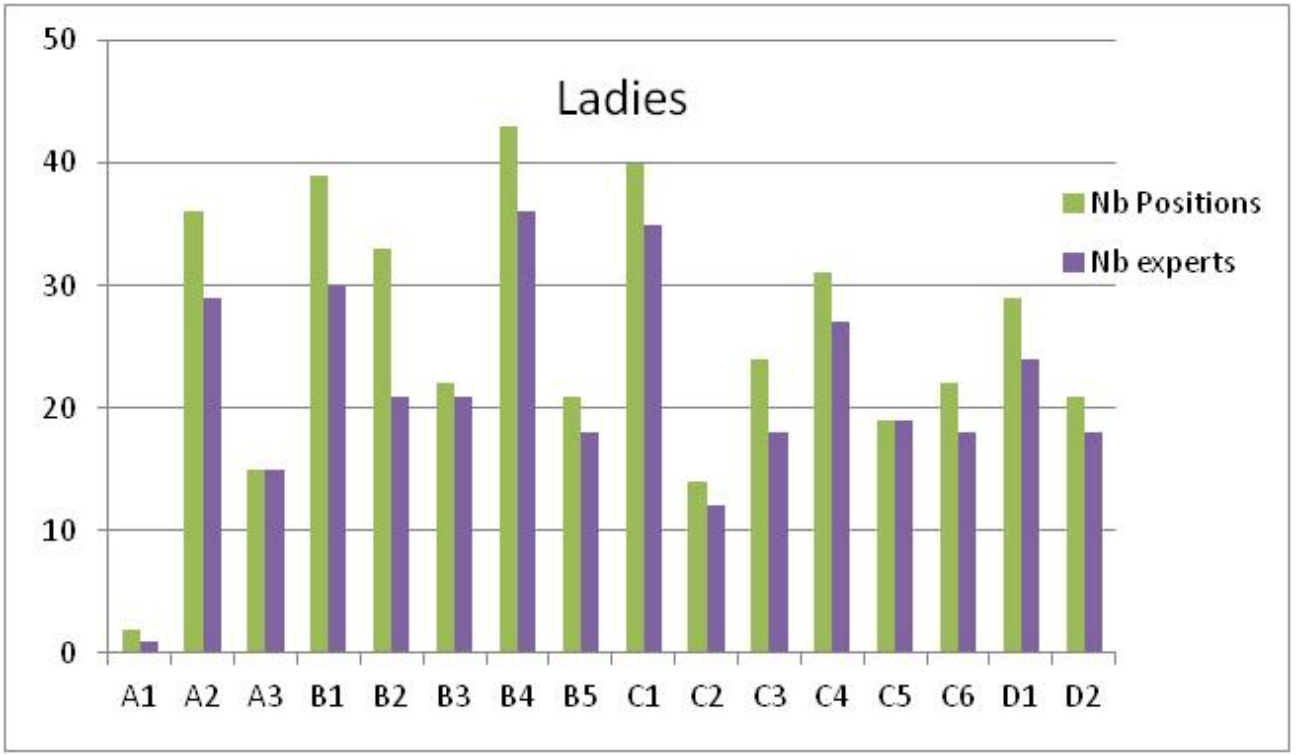


Working Group Age (Years)



Women in CIGRE

- Chairs: 2 of 16
- Experts on WG: 299 of 3766 (8%)
- Aim to increase to 20% by 2020



Study Committee B3 Activities

- 40 members, 350 experts, generally good participation
- Annual Meetings of Study Committee, well attended
- Annual Meeting of SAG, TAG, CAG
- Key trends in work:
  - Alternatives to SF_6
  - Electrification and developing countries
  - Safety
  - Robotics in Substations
  - Sustainability focus

- Knowledge Management in Confluence very successful for B3
- 2 + 1 Green books underway: Substations, SF_6 Guidebook, Power Series (chapter)

Conclusions

- Australia is making a positive contribution to CIGRE work
  - There are 140 Australian WG members (187 positions)
- Africa is a key focus for CIGRE presently, 600m without electricity
- Some fantastic work by some of our NGN members in Working Groups (e.g. WG B3.43):
  - Addison Gabriel, Matthew Ridgely (Ergon Energy) and Nipun Arora (Dynamic ratings)
- Possible improvements in WG nomination processes – need timely nominations, real contributors to work, not observers.
- KMS using Confluence has been a major success for CIGRE, credit to Rod Hughes
- Enjoyable role as Chairman but 7 years is enough!

Thank you for your support

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cigré AUSTRALIA

ATC Report

David Bones ATC Chair

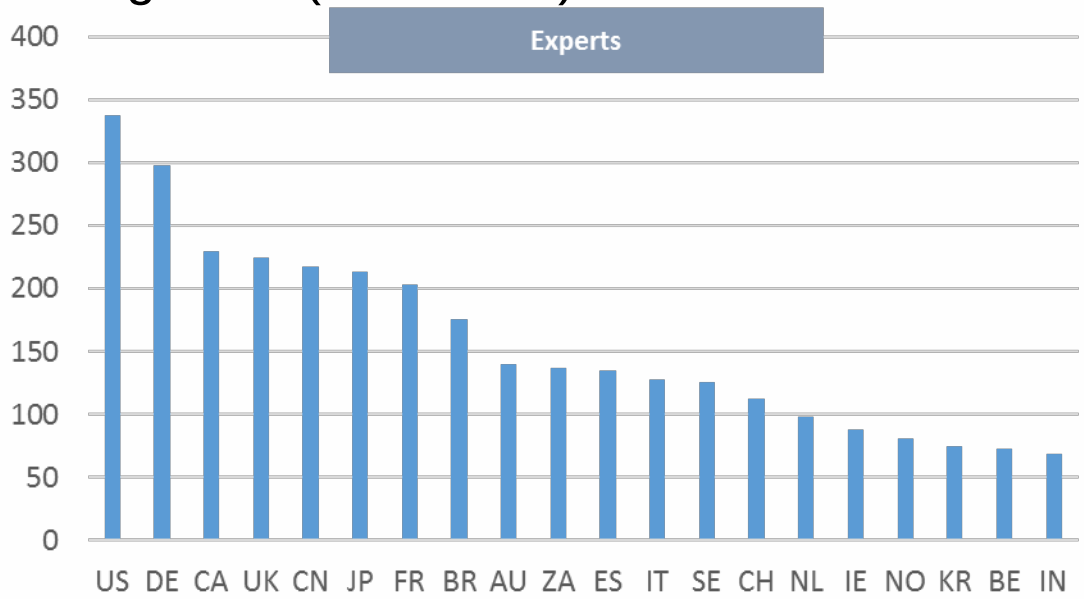
2017 AGM - Adelaide

2017 – Another Highly Productive Year

- From a Technical Perspective 2017 was a productive year
- Key ANZ highlights included
  - Technical seminars SEAPAC, Transformer Workshop and CIDER
  - 16 Australian Panel meetings
    - some incorporating technical seminar/colloquium:
      - recent C4/B4 meeting in Brisbane and
      - B2 meeting in Melbourne
    - Continued involvement of NGN on Panels and WG

2017 – Contributing Internationally

- International Activities
  - Supporting SC meetings and associated seminars
  - Participating and leading WGs (ranked 9th)
  - ANC supported
    - 12* WG
    - 10 convenors
    - A à D covered
    - KPI = 10
    - SCB3 Chair
    - SCA1 Secretary



* Within budget as some WG aligned with SC meeting

2017 – ATC Technical Seminar

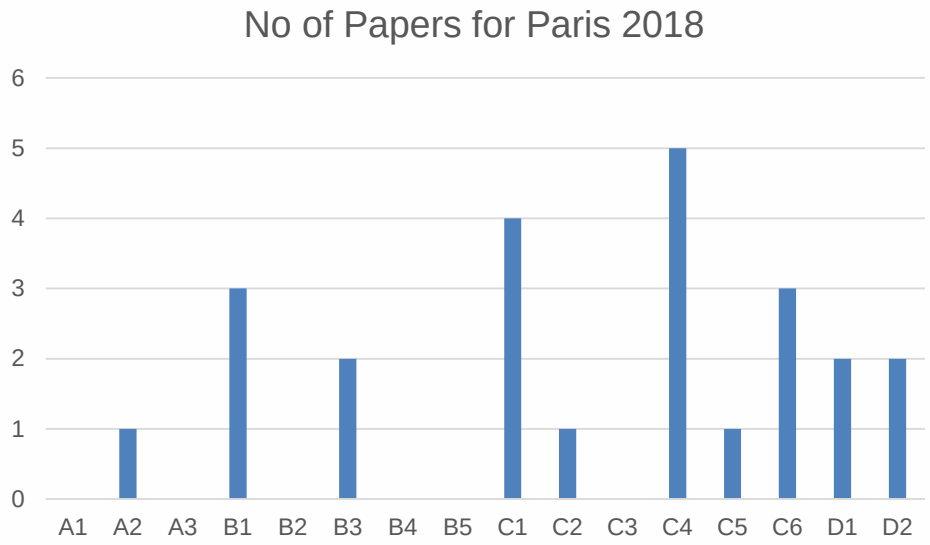
- Theme
  - Global collaboration solving Australian power system challenges
- Purpose
  - Promote the work of CIGRE and inform members of technical highlights achieved across 2017
  - Each panel convenor presented key technical activities undertaken across 2017, focussing on those activities with highest relevance to CIGRE Australia members
  - Panel presentations will form part of the annual report provided to members
- Over 60 attendees

2017 – Annual Reports

- Circulated electronically following AGM
- Will include:
  - ATC report summarising key technical activities and achievements across 2017
  - Slides presented at the 2017 ATC Technical Seminar
  - Reports from all 16 Australian Panels
  - Reports form each WG member/convenor who received financial support during 2017

2018 – Paris Papers

- CIGRE Australia submitted 29 Synopses' and had 24 accepted - **A new record**
- Authors notified of the result in October 2017
  - Draft papers by 8th December 2017
  - Final paper to ANC by Monday 29th January Submissions@cigreaustralia.org.au



Questions

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Outgoing Convenors

CIGRE Australia

2017

Peter Wiehe: A1 – Rotating Electrical Machines

- AP A1 Convenor from 2009 to 2017.
- Poster convener for Paris 2012 and 2014
- SC A1 Secretary 2015 - 2020
- Secretary of WG A1.02 “Generator Stator Winding Stress Grading Coating Problem”
- Active member of 6 working groups
  - WG A1.14 Guide for minimizing the damage from stator winding ground faults in Hydro Generators
  - WG A1.31 State of the Art of Stator Winding Supports in Slot Area and Winding Overhang of Hydro Generators
  - WG A1.36 Vibration and Stability Problems Met In New, Old and Refurbished Hydro Generators, Root Causes and Consequences
  - WG A1.39 DDF Measurements of Stator Coils and Bars
  - WG A1.40 Survey on Hydro generator Instrumentation and monitoring
  - WG A1.44 Testing of Turbo- and Hydro-generators
- *Tri Tran will be continuing in the role to build on Peter’s good work*

Richard Joyce: B1 – Insulated Cables

- AP B1 Convener Role from 2012 to 2017
- Active member of three working groups:
  - WG B1.37 – Guide for the Operation of Self-Contained Fluid Filled Cable Systems
  - WG B1.51 – Fire Issues for Insulated Cables Installed in Air
  - WG B1.54 – Behaviour of Cable Systems under Large Disturbances
- Participated in three AORC meetings.
- Special Reporter for the 2013 Auckland Symposium
- *Russell Wheatland will be continuing in the role to build on Richard's good work*

Angela Klepac: B3 – Substations

- AP B3 Convenor from 2012 to 2017.
- Active member of the organising committee and assisted to run the International Study Committee Meeting and B3 and D1 Colloquium in 2013 titled “Managing Substations in the Power Systems of the Future”.
- 2014 Paris paper accepted and presented to Study Committee B3 – Managing Risk in Design and Installation of Substations
- *Crina Costan will be continuing in the role to build on Angela’s good work*

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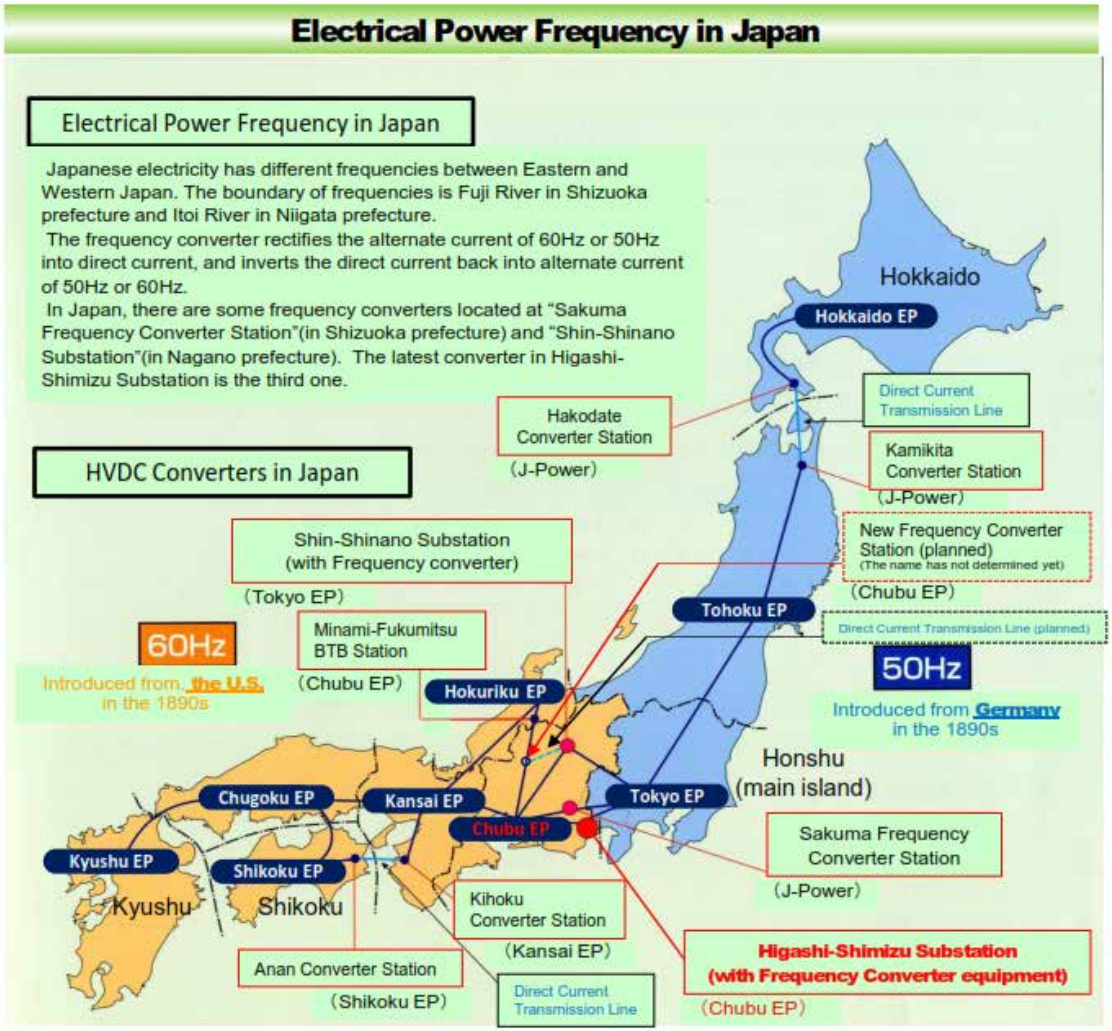
APB3
SUBSTATIONS
Convener: Angela Klepac



Highlight

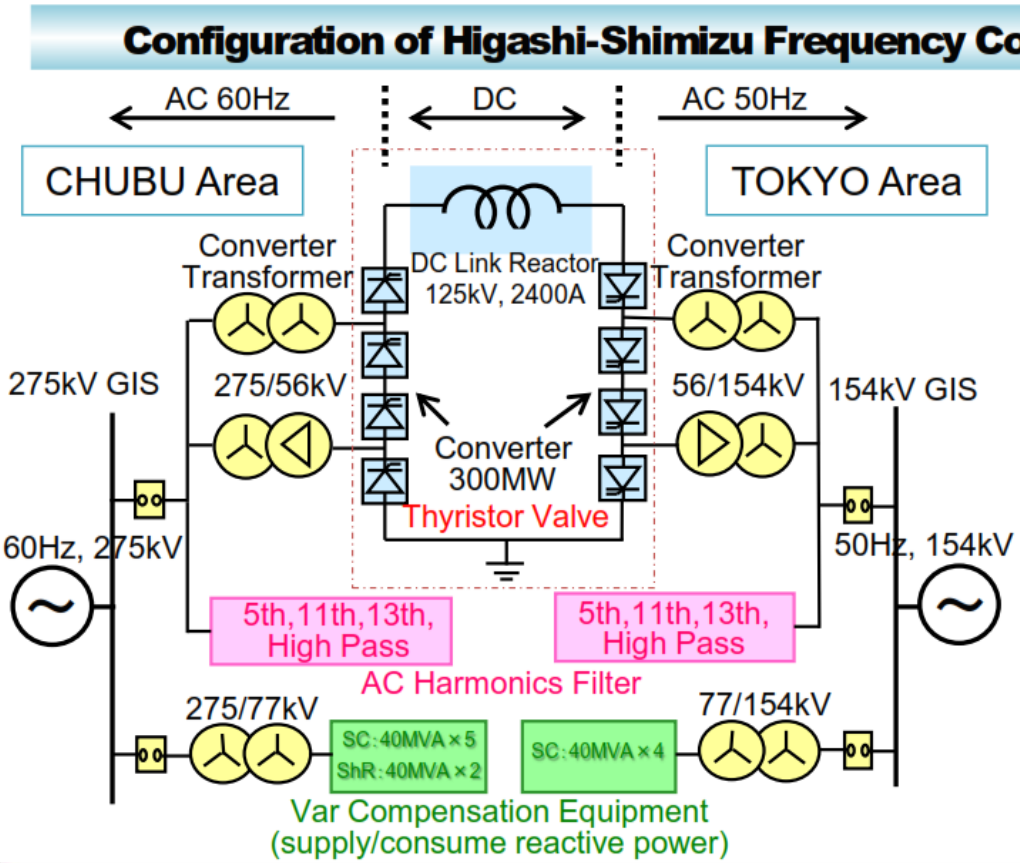
APB3 and SCB3 Substations – Highlight of 275/77kV Higashi-Shimizu Converter SS



APB3 and SCB3 Substations – Highlight of 275/77kV Higashi-Shimizu Converter SS

Panoramic Photograph of Higashi-Shimizu Substation

APB3 and SCB3 Substations – Highlight of 275/77kV Higashi-Shimizu Converter SS



◆ Thyristor Valve

Ian Young: B5 – Protection and Automation

- AP B5 Convenor from 2011 to 2017.
- Active member of WGB5.50
- Leader of the green book task force on 61850
- Paper author for the 2013 colloquium in Belo Horizonte
- Ian has also been instrumental is ensuring the continued success of the SEAPAC conference
- *Peter Bishop will be continuing in the role to build on Ian's good work*

Mark Miller: C2 – System Operation and Control

- AP C2 Convenor from 2011 to 2017.
- Active member of working groups on system restoration and system restart which provided valuable insights regarding state of the art international practices
- Presented on two occasions at the Large Disturbances Workshop at the Paris Sessions
- Special Reporter for the C2 Technical Session at Paris in 2016
- *Greg Hesse will be continuing in the role to build on Mark's good work*

Ken Ash: C6 – Distribution Systems and Dispersed Generation

- AP C6 Convenor from 2010 to 2017.
- Active member of 4 working groups
  - C6.13 Rural Electrification
  - C6.22 Microgrids Roadmap
  - C6.24 Hosting Capacity of Distribution Feeders
  - C6.28 Hybrid Systems for Off-Grid Power Supply (On-going)
- With the support of C6 members, and industry, introduced the inaugural Conference on Distributed Energy Resources (CIDER) in Brisbane in 2015, and followed up with a very successful CIDER in Sydney in 2017, with over 100 delegates attending.
- *Ray Brown will be continuing in the role to build on Ken's good work*