Paris Session 2022

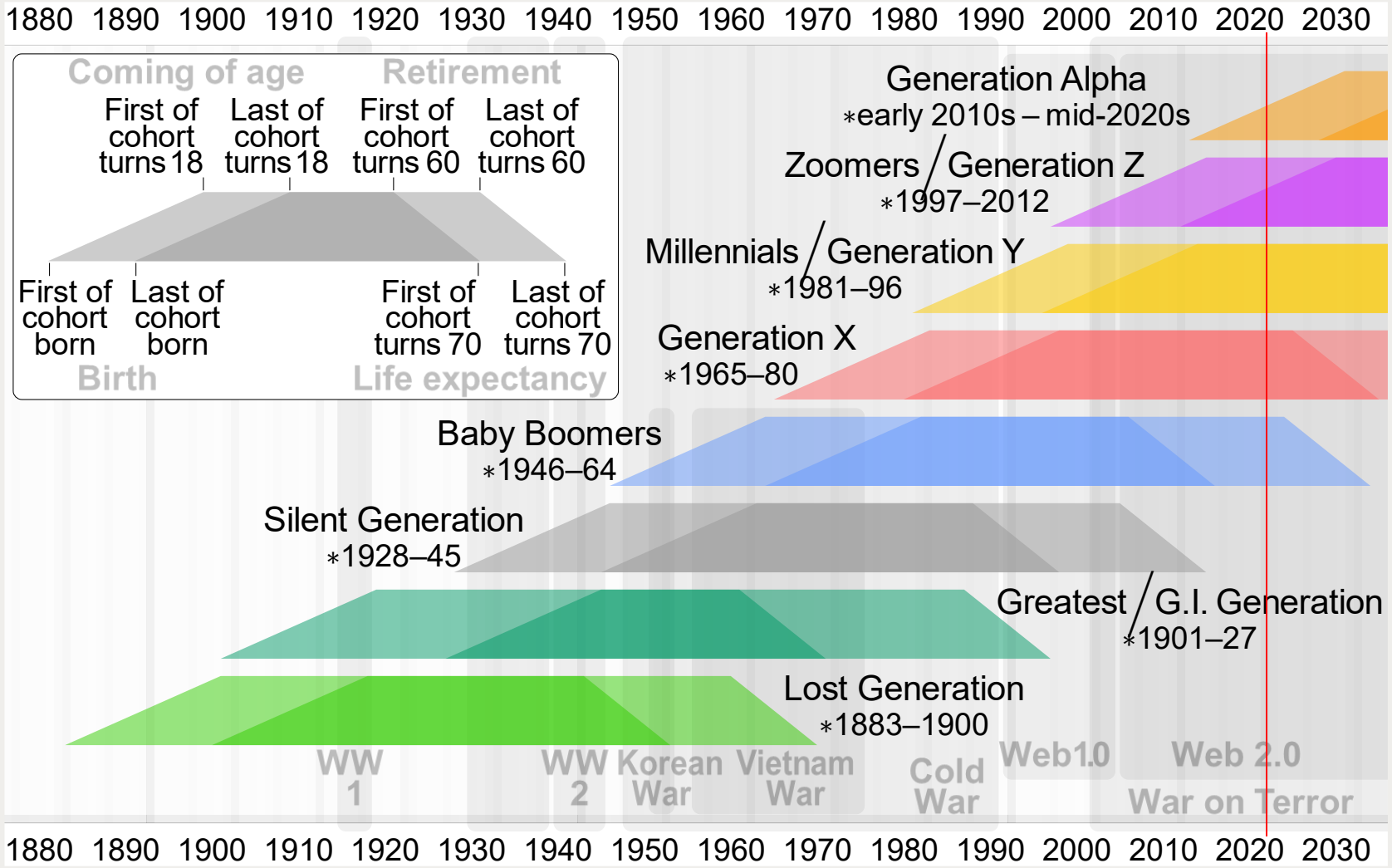
CIGRE Mentoring Scheme

Study Committee B3

PS2.3 With the retirement of experienced utility engineers around the world, there is a significant knowledge drain on utilities and the industry. What processes or development programs can help companies transfer knowledge to the new work force.

Terry Krieg, Australia

Our Engineering Workforce



Generations in the Workplace

Characteristics	Baby Boomers 1946 - 1964	Generation X 1965 - 1980	Generation Y 1981 - 1996	Generation Z 1997+
Key features	Optimistic, Competitive, Workaholic, Team players	Flexible, Informal, skeptical, independent	Competitive, Civic-minded, achievement-orientated	Global, Entrepreneurial, progressive, less-focused
Percentage in workforce	33%	24%	35%	5%
Attitude to technology	Early adopters	Digital immigrants	Digital natives	"Technoholics"
Attitude to career	Career defined by employer	Loyal to profession but not necessarily employer	Work "with" organisations not "for"	Career multi-taskers, pop-up businesses
Communication preference	Face-face, phone or email	SMS or e-mail	Online messaging, mobile	Facetime
Employers should	Give them mentoring roles	Provide feedback, flexible work, personal development	Allow flexible work assignments, manage by results	Offer multiple projects, allow them to be self-managing

- We need to consider <u>new ways</u> of sharing information across generations

Some CIGRE Initiatives

Purpose:

"*to foster engagement and knowledge sharing among power system professionals globally to enable the sustainable provision of electricity for all*".

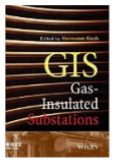
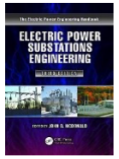
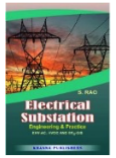
Mission:

To contribute to the betterment of the power system by enhancing the expertise of the people within it

Some Actions – in the last 5 years:

- **KMS**: introduced in 2016 (2010 in Australia), now 7000 registered members, 750 spaces
- **Greenbooks**: 2018 - Substations - Reference books to assist in sharing information on our work
- A **Substation Training Course**: 2019 - 11 modules, see Hugh Cunningham for details
- **Working Group B3.58** – 2020 - Knowledge Transfer of Substation Engineering

Using KMS – reference listing

	Year	Title	Author	ISBN/Reference	Web Link	Description
	2014	GIS - Gas Insulated Substations	H. Koch	ISBN:9781118570722	https://books.google.com.au/books?id=KrfFAwAAQBAJ	Comprehensive reference covering all aspects of gas insulated substations testing and ownership issues
	2012 (2017)	Electrical Power Substations Engineering 2nd Ed (3rd Ed)	J. D. McDonald(Ed.)	ISBN:0849373832 (ISBN:9781138569430)		This course is designed in the form of a book , this represents hard work c about Electrical Substations in the lowest time and effort.
	2007	Electrical Substation - Engineering and Practice EHV-AC, HVDC and SF6-GIS (Principles, Practice, Design and Reference Data)	S. Rao	ISBN:8174091394		
	2001	Design Guide for Rural Substations	United States Department of Agriculture	RUS Bulletin 1724E-300	https://www.rd.usda.gov/files/UEP_Bulletin_1724E-300.pdf	
	1977	The Design and Application of EHV Substations, IEE International Conference	IEE UK, IEAust, SAIoEE	Conference Publication Number 157, - 160pgs ISBN:0852961839	https://searchworks.stanford.edu/view/1000941	
	1970	Layout of E.H.V Substations	R L Giles, IEE	ISBN:521080134	https://www.scribd.com/document/151929974/Layout-of-E-H-V-Substation-by-R-L-Giles-pdf	

Some Australian Initiatives

The Australian Power Institute since 2004

Developing the workforce for our future

- Develop the **workforce pipeline** for the engineering team
- Enhance our engineering team's **diversity + inclusiveness**
- **Strengthen tertiary sector education** for the power sector
- Build capacity for **Transformation** & **Innovation** in current and future workforce
- **Strategic Workforce** Development

Developing the diverse leaders and skilled workforce for our future

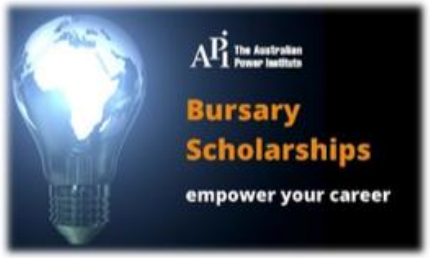
Primary School
Lifting the profile of technical role models

High School
Promoting study pathways & careers in the power sector

University
Develop diverse graduates that are energy industry job ready

Workplace/Workforce
Support innovation, share knowledge, build skills, strategic workforce planning

Our goal:
Tomorrow's technical leaders equipped to deliver Australia's energy future



A CIGRE Mentoring Scheme

- 71% of Fortune 500 companies have formalised mentoring schemes
- 87% of Millennials report that mentoring is an important part of their careers
- Employees who participate are more likely to get a pay rise.
- Staff report improved job satisfaction, more likely to stay
- Low cost compared to other types of development

CIGRE Australia NGN Mentoring

- Launched in 2022, 9 mentors matched with NGN mentees
- Mentors and mentees are matched
- Forms and guidelines for discussions are provided

Xiang Yung Choo, Substation Engineer in an Australian utility

“I’m very fortunate to be matched with my mentor as part of the CIGRE Mentoring Program in 2022. I’m in the late stage of Gen Y and I value feedback and advice, whether technically or professionally, and how my work fits into the bigger picture. Throughout this program, Terry and I share a lot of our lives professionally and personally. What I enjoy the most is the ability to tap into the wealth of knowledge Terry has over his career, but also share with him my work experience. Terry has given me different perspectives to think and has provided guidance to help me in navigating my career in modern work life.”

Conclusion

1. There are ongoing skill shortages in engineering
2. There are differences in generational characteristics to be considered
3. We need other methods in knowledge transfer, including the use of mentoring
4. KMS is very useful for sharing information and for collaboration.
5. Need to enhance traditional STEM education throughout the education system
6. Mentoring of younger engineers can be useful in encouraging development