23rd annual

Machines & HV Assets 2025

18-19 June 2025

Melbourne Convention and Exhibition Centre | Australia

Part of:

AUSTRALIAN ENERGY WEEK

PRACTICAL SOLUTIONS FOR HV ENGINEERING AND ASSET MANAGEMENT

Speakers include:

David Pointing
Chief Executive Officer
The Australian Power Institute

David Tarrant
Generator Specialist
Sebenzana APP
South Africa

Martin Boettcher
Lead Asset Engineer
Ventia

Ian Stegmann
Manager - Energy & Systems Readiness
Fortescue

Praema Ranga
Product Services Manager
Boeing

Christopher Breslin
Technical Advisor
Environment One Corporation (E/One)
USA

Kellie Kininmont
Principal Project Engineer
PSD Energy

Jeremy Culberg
Substations Asset Strategist
Transgrid

Rose Shirali
Electrical Asset Manager
Melbourne Water

Iain Mackenzie
Chief Electrical Engineer
Woodside Energy

Dr Ana Kuusk
Senior Advisor - Data & Solution Architecture
Secora

Shantanu Kumar
Principal Electrical Engineer
BHP

Györgyi de Lange
Senior Asset Manager
Cubico Sustainable Investments

Shantanu Bendre
Mechanical & Electrical Reliability Engineer
Yarra Valley Water

Dr Elizabeth Ratnam
Associate Professor - Department of Electrical and Computer Systems Engineering
Monash University

REGISTER TODAY!

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23rd Machines & HV Assets 2025

The **23rd annual Machines & HV Assets 2025** conference delivers practical insights and technical expertise for electrical engineers, reliability and asset managers, and anyone with responsibility for rotating machines or HV assets. This year's program dives into predictive maintenance, power system modelling, HV safety innovations, and the integration of new technologies such as synchronous condensers, superconductor cables, and AI-driven diagnostics. Attendees will gain actionable strategies for reducing downtime, mitigating failures, and optimising asset performance.

Join us and engage in expert-led discussions, explore real-world case studies, and collaborate with industry peers. Be part of the conversation shaping the next generation of HV asset management and electrical engineering innovation.

> The conference was highly insightful and exceptionally well-organised.
>
> Iain Mackenzie, **Woodside**

TOP 5 REASONS TO ATTEND MACHINES & HV ASSETS 2025

1. Gain expert insights into the future of HV asset management - Stay ahead with the latest advances in electrification and emerging technologies like superconductor cables and AI-driven diagnostics with addresses from **Transport for NSW**, **Fortescue** and **BHP**
2. Enhance your technical knowledge and problem - solving skills - Deep dive into real-world case studies on predictive maintenance, and power system modelling to tackle engineering challenges more effectively from **Alcoa** and **EA Technology Australia**
3. Improve asset reliability and operational efficiency - Learn best practices for reducing downtime, managing insulation degradation, and implementing smarter maintenance strategies for long-term equipment performance with insights from **Ventia**, **Melbourne Water** and **machinemonitor**
4. Strengthen safety and risk prevention strategies - Access in-depth sessions on arc flash mitigation, and regulatory compliance to enhance workplace safety and reduce hazards from **Cubico Sustainable Investments**, **Alinta Energy**, and **Woodside Energy**
5. Experience cutting-edge innovations in HV technology - Explore how AI, digital simulations, and automation are revolutionising electrical engineering and transforming the way HV assets are managed from **Secora**, **Tesseract ESS**, and **Energy Networks Australia**.
6. The legendary Machines Dinner is included in the ticket price - and this year we're going to Bollywood!!!

WHO SHOULD ATTEND

- High Voltage (HV) Electrical Engineers
- Power Systems Engineers
- Substation Engineers
- Asset Management Engineers
- Electrical Protection Engineers
- Maintenance & Reliability Engineers
- Control & Automation Engineers
- Electrical Safety Engineers
- Transmission & Distribution Engineers
- Rotating Equipment Engineers
- Power Quality Engineers
- Grid Integration Engineers

> Both informative and enjoyable.
>
> Dane Thomas, **Energy Queensland**

SPEAKERS

David Pointing
Chief Executive Officer
The Australian Power Institute

David Tarrant
Generator Specialist
Sebenzana APP
South Africa

Martin Boettcher
Lead Asset Engineer
Ventia

Ian Stegmann
Manager - Energy & Systems Readiness
Fortescue

Praema Ranga
Product Services Manager
Boeing

Shantanu Kumar
Principal Electrical Engineer
BHP

Kellie Kininmont
Principal Project Engineer
PSD Energy

Jeremy Culberg
Substations Asset Strategist
Transgrid

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Electrical Asset Manager
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Chief Electrical Engineer
Woodside Energy

Dr Anna Kuusk
Senior Advisor - Data & Solution Architecture
Secora

Dr Jon Pemberton
Chairman
machinemonitor®

György de Lange
Senior Asset Manager
Cubico Sustainable Investments

Shantanu Bendre
Mechanical & Electrical Reliability Engineer
Yarra Valley Water

Dr Elizabeth Ratnam
Associate Professor - Department of Electrical and Computer Systems Engineering
Monash University

Martin Boettcher
Lead Asset Engineer
Ventia

Dr Steve Mitchell
Manager - AMPcontrol Marine
AMPcontrol

Giacomo Ciotti
Product Manager
machinemonitor®

Monaaf Al Falahi
Technical Program Coordinator
Energy Networks Australia

Andrew Mears
Chief Executive Officer & Founder
Tesseract ESS

Christopher Breslin
Technical Advisor
Environment One Corporation (E/One)
USA

Ian Burgwin
GM Regulatory Operations
Energy Safe Victoria

Kalpesh Patel
Senior Electrical Engineer
Alinta Energy

Victor Edo
Senior Electrical Engineer - Major Capital Projects
Alcoa

Bradley Monaghan
Head of Services - Senior Technician
EA Technology Australia

> A wonderful opportunity to collaborate with industry professionals from across the country.
>
> Ingrid Fuentes, **Energy Queensland**

AGENDA DAY 1 I Wednesday, 18 June

07:45 Registration and welcome coffee

08:50 Opening remarks from Chair

Dr Jon Pemberton
Chairman
machinemonitor®

MAINTENANCE AND DOWNTIME STRATEGIES

09:00 INTERNATIONAL ADDRESS: **Everything you ever wanted to know about synchronous condensers but were afraid to ask**

- Evaluating machine type, sizing, and operational factors to select the most suitable synchronous condenser for long-term reliability
- Developing predictive maintenance strategies to extend component lifespan and minimise failures in critical rotating machinery
- Implementing remote online monitoring to track key parameters, detect faults early, and reduce operational risks

David Tarrant
Generator Specialist
Sebenzana APP (South Africa)

09:25 **Driving high-voltage innovations through tailored electrification solutions**

- Identifying needs and designing custom solutions to ensure alignment with operational goals
- Examining essential components and practical applications to provide clarity for informed decision-making
- Implementing and using solutions effectively to enhance operational performance and efficiency

Lidija Dumbaloska
Director Energy Networks and Systems
Transport for NSW

09:50 **Advancing clean electrification for a resilient grid**

- Evaluating superconductor cables and stand-alone systems to enhance efficiency and minimise operational risks
- Integrating battery storage and small-scale hydro to improve energy reliability and alleviate grid congestion
- Streamlining operations with virtual transmission and decentralised energy solutions to optimise power flow and reduce downtime

Ian Stegmann
Manager - Energy & Systems Readiness
Fortescue

10:15 Morning tea in Expo Hall

ELECTRIFICATION STRATEGIES AND ASSET MANAGEMENT SOLUTIONS

11:00 **Optimising electrification in remote and off-grid settings**

- Assessing enabling technologies to optimise performance, reliability, and long-term efficiency in isolated systems
- Integrating generators and hybrid systems to ensure resilience during outages and emergency conditions
- Implementing system checks, inverter management, and backup strategies to minimise risk and maintain operational stability

11:25 Partner presentation

11:50 **Making the right call: Repair, replace, or extend asset life?**

- Assessing the condition, and risks, of aging equipment to ensure informed repair or replace decisions
- Balancing costs, reliability, and sustainability in end-of-life maintenance to optimise value without compromising operational integrity
- Implementing strategic refurbishment and upgrades to extend the assets life while aligning with modern requirements

Shantanu Bendre
Mechanical and Electrical Reliability Engineer
Yarra Valley Water

ENHANCING RELIABILITY THROUGH PARTIAL DISCHARGE TESTING AND ADVANCED MONITORING TECHNIQUES

12:05 **Mastering PD testing: Ensuring compliance and preventing failures**

- Using standardised PD measurement techniques to assess insulation health, ensure compliance, and mitigate operational risks
- Employing online and offline PD testing methods to identify high-risk areas, extend asset lifespan, and prevent catastrophic failures
- Aligning PD testing practices with Australian industry regulations to enhance safety and reliability in HV networks

Rose Shirali
Electrical Asset Manager
Melbourne Water

12:30 Lunch in Expo Hall

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13:45 **Advancing PD monitoring: Smart detection and predictive analytics**

- Implementing advanced PD sensors and automated algorithms to enhance real-time monitoring accuracy and fault detection
- Leveraging AI-driven diagnostics and predictive analytics to detect early signs of insulation degradation and prevent unexpected failures
- Optimising PD monitoring systems in HV cables, GIS, and switchgear to improve reliability and streamline maintenance strategies

Giacomo Ciotti
Product Manager
machinemonitor®

BUILDING THE NEXT GENERATION

14:10 **Building a resilient engineering workforce: Mentorship and growth**

- Mentoring engineers to build confidence, overcome unconscious bias, and foster professional growth
- Supporting mental health and self-concept development to prevent burnout and retain emerging talent
- Encouraging open dialogue in the workplace to create a more supportive industry

Praema Ranga
Product Services Manager
Boeing

MAINTENANCE AND DOWNTIME STRATEGIES

14:35 **Asset resilience for large rotating machinery and fixed assets: comparisons and contrasts**

- How routine inspections and maintenance have changed with technology advances
- Exploring the asset management lifecycle, and how to confront ageing infrastructure and repair/replacement considerations
- Using resilience modelling and analysis to harness the data

Jeremy Culberg
Substations Asset Strategist
Transgrid

15:00 Afternoon tea in Expo Hall

WORKING ROUNDTABLES

15:30 Roundtables are informal 30 mins discussions

15:35 ROUNDTABLE 1 | 16:05 ROUNDTABLE 2 | 16:35 ROUNDTABLE 3

Roundtable 1 **Managing HV Assets in hazardous environments - Overcoming challenges in the Australian oil & gas industry**

Iain Mackenzie
Chief Electrical Engineer
Woodside Energy

Roundtable 2 **Managing arc flash risk in an electrified grid**

Györgyi de Lange
Senior Asset Manager
Cubico Sustainable Investments

Roundtable 3 **Insulation degradation & failure - The hidden threat of partial discharge**

Giacomo Ciotti
Product Manager
machinemonitor®

Roundtable 4 **Sychrophasor data vs smart meter vs SCADA data: modernising grid control for net-zero**

Dr Elizabeth Ratnam
Associate Professor - Department of Electrical and Computer Systems Engineering
Monash University

Roundtable 5 **Modernising Protection & Control Systems for HV Networks**

Greg Hannan
General Manager Engineering
PowerPlant

17:05 Closing remarks from Chair

17:15 Day 1 concludes, drinks reception in Expo Hall

18:30 **Bollywood Nights: The Official Machines & HV Assets Dinner**
Soak up the atmosphere, make new connections, and let the energy of Bollywood light up your evening in Melbourne!

AGENDA DAY 2 I Thursday, 19 June

08:30 Welcome Coffee

09:00 Opening remarks from the Chair

David Pointing
Chief Executive Officer
The Australian Power Institute

MAINTENANCE AND DOWNTIME STRATEGIES

09:10 **Minimising downtime of medium criticality equipment**
- Analysing intermittent high-criticality equipment to improve backup plant reliability and reduce operational risks
- Conducting detailed equipment criticality analysis to prioritise maintenance needs and optimise resource allocation
- Predicting failures and developing targeted maintenance task lists to improve efficiency and minimise downtime

Martin Boettcher
Lead Asset Engineer
Ventia

09:35 **Leveraging smart design for predictive maintenance**
- Integrating IoT for real-time predictive maintenance to enhance asset longevity and reduce unexpected failures
- Using AI-driven analytics to improve asset reliability, detect faults early, and minimise unplanned downtime
- Optimising predictive testing methods by combining traditional and modern techniques to improve operational efficiency

Shantanu Kumar
Principal Electrical Engineer
BHP

10:00 **Overcoming challenges in Brownfield HV sites - Navigating hidden risks and legacy infrastructure**
- Addressing inaccuracies in as-built drawings with advanced surveying techniques, digital twins, and historical data validation
- Managing underground and hidden assets through enhanced detection methods, risk assessment, and integration with modern HV designs
- Mitigating risks from adjacent infrastructure by coordinating design and construction efforts to minimise disruption, ensure compliance, and maintain operational safety

Kellie Kininmont
Principal Project Engineer
PSD Energy

10:25 Morning tea in Expo Hall

11:10 **Maximising able asset lifespan with predictive modelling**
- Evaluating cable health through advanced condition assessment techniques
- Leveraging condition-based risk modelling and data analytics to estimate the remaining service life of HV cables
- Modelling proactive maintenance frameworks that balance risk, cost, and operational efficiency

Bradley Monaghan
Head of Services - Senior Technician
EA Technology Australia

11:35 **Engineering the future with hybrid power solutions**
- Overcoming the challenges of maritime electrification by addressing recharging limitations and regeneration constraints unique to vessels
- Developing and deploying hybrid power and propulsion systems to significantly reduce emissions, enhance efficiency, and improve operational reliability
- Leveraging industry-academic collaboration to drive engineering innovation, accelerate decarbonisation, and set new standards for the maritime sector

Dr Steve Mitchell
Manager - AMPcontrol Marine
AMPcontrol

DIGITAL INNOVATIONS IN MACHINES AND HV ASSET

12:00 **Integrating data and digital twins into HV asset management**
- Visualising real-time data, to predict failures, and streamline maintenance decisions
- Leveraging data frameworks and predictive analytics to reduce inefficiencies and, enhance risk assessments
- Enabling technical teams to harness digital modelling, automate workflows, and make informed, data-driven decisions

Dr Ana Kuusk
Senior Advisor - Data & Solution Architecture
Secora

12:25 Lunch in Expo Hall

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13:40 **Digital innovations transforming asset maintenance and performance**
- Integrating digital twins, AI, and IoT to enhance decision-making, optimise asset performance, and improve predictive maintenance
- Analysing real-world successes and failures to identify best practices, avoid costly missteps, and accelerate adoption of digital solutions
- Bridging the gap in automation and real-time monitoring to create a more resilient and data-driven asset management approach

Andrew Mears
Chief Executive Officer & Founder
Tesseract ESS

14:05 INTERNATIONAL ADDRESS: **Monitoring generator cooling systems for risk mitigation**
- Prolonging period between outages
- Extending the lifetime and efficiency of aging assets
- Safety standards for hazardous areas

Christopher Breslin
Technical Advisor
Environment One Corporation (E/One) (USA)

14:25 **Integrating AI, EVs, and DER into the future energy grid**
- Navigating the transition from legacy to next-generation technologies by aligning AI, EV infrastructure, and Distributed Energy Resources (DER) with existing grid systems
- Blending technical expertise, commercial strategy, and policy design to develop sustainable, scalable, and future-ready energy solutions
- Empowering the next generation of engineers and innovators by fostering collaboration, mentorship, and interdisciplinary problem-solving to shape the future of the energy sector

Monaaf Al Falahi
Technical Program Coordinator
Energy Networks Australia

MAXIMISING SAFETY AND ENHANCING RISK PREVENTION

14:50 **Minimising equipment failures for enhanced reliability**
- Identifying common wear points to extend asset lifespan and prevent unexpected outages
- Implementing predictive maintenance techniques to detect failures early and reduce downtime
- Enhancing diagnostics, monitoring systems, and staff training to improve maintenance efficiency and equipment performance

Victor Edo
Senior Electrical Engineer - Major Capital Projects
Alcoa

15:10 Afternoon tea in Expo Hall

15:40 **Transformers conditioning monitoring - From time-based maintenance (TBM) to condition-based maintenance (CBM)**
- Improving asset reliability by transitioning to condition-based maintenance (CBM), and monitoring them in real-time for signs of wear or failure
- Using CBM to help avoid unnecessary time-based maintenance activities, reduce unnecessary plant outages, labour, and material costs and prevent over-maintenance
- Continuously monitoring critical parameters (e.g., partial discharge, temperature, insulating oil quality, vibration) to help detect early signs of degradation (due to the failures or early ageing) enabling timely interventions to extend the life of transformers and improve long-term performance and reliability

Kalpesh Patel
Senior Electrical Engineer
Alinta Energy

16:05 PANEL DISCUSSION: **Strengthening safety: Preventing failures, enhancing training, and reducing risk**
- What design and operational strategies are improving safety in HV assets and electrical systems
- What recurring safety failures or near-misses highlight critical gaps in engineering practices
- How effective are current training programs and protocols in preventing electrical hazards
- What emerging risks should electrical engineers and frontline workers anticipate in the evolving energy landscape

Moderator:

David Pointing
Chief Executive Officer
The Australian Power Institute

Panellist:

Iain Mackenzie
Chief Electrical Engineer
Woodside Energy

Ian Burgwin
GM Regulatory Operations
Energy Safe Victoria

16:45 Closing remarks from the Chair

16:55 Day 2 concludes

WHY SPONSOR & EXHIBIT

Sponsorship Opportunities

Machines & HV Assets 2025 (part of **Australian Energy Week**) is where you can directly engage with asset, engineering, maintenance and reliability managers with a focus on rotating machines and high voltage assets.

With a combined exhibition, your booth has expanded reach, while speaking opportunities during the **Machines & HV Assets 2025** conference give you a targeted audience of your ideal customers.

Don't miss this chance to be part of one of the most significant energy events in the country!

For more information on ways to engage with delegates at the **23rd annual Machines & HV Assets 2025**, please contact **Tashi Gazzard** on **tashig@questevents.com.au** or **+61 418 847 713** or **Milad Etemadi** on **milade@questevents.com.au** or call **+61 (0) 478 195 857**.

REGISTRATION

2 DAY STANDARD PACKAGE	WOMEN IN ENERGY BREAKFAST	REGISTER TODAY
18-19 June	19 June	Group Discounts
Full access to the 2-day main conference sessions All networking sessions Regular price $1,895	$50 Breakfast booking fee donated to Women & Children First * Breakfast is available to registered attendees of the conference only	**15%** 3-6 delegate package **20%** 7-10 delegate package **25%** 11+ delegate package

*All prices are inclusive of GST