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**Topic:** Cybersecurity Strategies in Power Generation: Defence or Resilience?

**Date:** Friday, 28 October 2016

**Time:** 9:00 am to 12:00 noon

**Venue:** Marina Bay Sands Expo and Convention Centre

**Speakers:**

- Mr Akhlesh Kaushiva, Program Manager, The U.S. Department of Energy
- Mr Lim Tian Chin, Deputy Director, Cybersecurity Agency of Singapore
- Mr Ngai Chee Ban, CIISP, Operations Leader Asia Pacific, Honeywell Process Solutions
- Dr Madan Oberoi, Director, Interpol Global Complex for Innovation
- Mr Matt Wittenstein, Analyst, International Energy Agency

- Moderator: Dr Philip Andrews-Speed,  
Senior Principal Fellow and Head, Energy Security Division,  
Energy Studies Institute, National University of Singapore

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## **Abstract:**

As cybersecurity threats increase in sophistication and reach, energy companies in the power generation sector have moved towards increasing their resilience against cyber-attacks and enhancing their cyber defense capabilities. Protecting the power grid and ensuring a reliable energy supply remain sector-wide priorities. However, should governments and the energy industry focus their efforts on strengthening defence or resilience? On the one hand, industries and info-comm experts appear to favour a cyber-defence strategy while on the other hand, others opt for resilience measures to recovery quickly when attacked, believing cyber-attacks are inevitable. Given limited resources, the question remains as to which strategy would be more effective in maximising the cyber security defences of companies in the power generation sector. At this roundtable discussion, the notion of defence or resilience will be put forward to the panelists who will discuss the merits and weaknesses of both strategies, and their relevance to the power sector to ensure robust energy delivery systems.

This Roundtable will discuss the following:

- What are the latest cyber threats in the power sector and the initiatives taken to address them?
- Given the varying strengths of cybersecurity strategies of defence and resilience, what are the challenges that power industry stakeholders face in adopting them?
- How can public-private partnerships and innovation play a role in building cyber resilience in the power-generation sector?

## **About the Speakers:**



Mr. Akhlesh Kaushiva  
Program Manager  
US Department of Energy

Akhlesh Kaushiva, P.E. is in the Office of Electricity Delivery and Energy Reliability with the Department of Energy. He has been actively involved in the Smart Grid Investment Grant projects sponsored by DOE as part of the American Recovery and Reinvestment Act. He is also involved in the Smart Grid Cybersecurity aspect of the projects. Prior to joining DOE he had a long career in the electric utility industry and served in various capacities in the area of System Planning, Power Distribution, Outage Management, Mobile Dispatch, and GIS. He has a BSEE with Honors from the University of Maryland and a MS degree in Computer Science from the George Washington University. He is a Senior Member of IEEE and a Registered Professional Engineer in the State of Maryland and the District of Columbia. He is also a member of Tau Beta Pi and Eta Kappa Nu Association.



Mr Lim Thian Chin  
Deputy Director, Head of CII Protection  
Critical Information Infrastructure Division  
Cyber Security Agency of Singapore

Lim Thian Chin joined the Cyber Security Agency (CSA) of Singapore in August 2015. He currently heads the Critical Information Infrastructure (CII) Protection function and is responsible for the cyber-protection of 11 CII sectors which cut across utilities, transport and services. In this role, he leads a team of officers who work closely with CII sector regulators to strengthen the cyber resilience of the CIIs and forge strong public-private partnerships to fight cyber threats.

Thian Chin has over 15 years of experience in the financial sector, focused on IT governance, risk and controls, resilience and audit. Prior to joining CSA, Thian Chin led the regional Technology governance function in United Overseas Bank, as well as the Technology Risk team in GIC.

Thian Chin holds a Bachelor's Degree in Computer Engineering from Nanyang Technological University and is an alumnus of the George C Marshall European Center for Security Studies (Program for Cyber Security Studies). He also holds the CGEIT, CRISC, CISM, CISSP, CISA and SABSA certifications.



Mr Ngai Chee Ban, CISSP  
Operations Leader Asia Pacific  
Honeywell Process Solutions

Chee Ban leads Honeywell Industrial Cyber Security in Asia Pacific. He has been in advisory consulting and business development in industrial and enterprise IT sectors for more than 20 years. His domain has been in cybersecurity and information risk management. A mechanical engineer by training, he was once director of Security Operations Centres in Singapore, Malaysia and Hong Kong and had led in professional security services for Asia Pacific. Chee Ban also headed IT security offices in Maybank and Petronas. He holds a master degree in software & knowledge engineering, and is a Certified Information Systems Security Professional CISSP.



Dr Madan Oberoi  
Director  
Interpol Global Complex for Innovation

Madan M. Oberoi has been an officer in the Indian Police Service since 1992. He is a Fulbright Scholar (Hubert H. Humphrey Fellowship – 2010-2011) in the area of "Cyber Security" at the University of Washington. He holds a PhD in the area of cyber-crime from Indian Institute of Technology (IIT), Delhi and a Masters degree in Management and Systems from IIT Delhi and another Masters degree in Police Management. He is presently deployed as Director, Cybercrime, INTERPOL, located at the INTERPOL Global Complex for Innovation in Singapore with global jurisdiction. In his capacity as Director, he supervises the 'Cyber Fusion Centre', 'Cyber Investigation Support', 'Cyber Strategy' and 'Cyber Training' units of INTERPOL.



Mr Matt Wittenstein  
Energy Analyst (Power)  
International Energy Agency

Matthew Wittenstein joined the International Energy Agency's Gas, Coal and Power Markets Division in 2014. As an electricity sector analyst he focuses on the economics of generation, the challenges of encouraging investment in clean energy technologies, and issues related to electricity market design. His work includes the 2015 Projected Costs of Generating Electricity study, the Development Prospects of the ASEAN Power Sector report, and the 2016 Thailand Electricity Security Assessment. Matthew is currently leading the IEA's work on cross-border electricity security.

## **About the Moderator:**



Dr Philip Andrews-Speed  
Senior Principal Fellow and Head of Energy Security Division,  
Energy Studies Institute at the National University of Singapore

Philip has 35 years of academic and industry experience. He started his career as a mineral and oil exploration geologist before moving into the field of energy and resource governance. He has a PhD in geology and an LLM in energy and resources law and policy. Until 2010 he was Professor of Energy Policy at the University of Dundee and Director of the Centre of Energy, Petroleum and Mineral Law and Policy. There the principal focus of his research was China's energy sector, both the domestic and external dimensions. After that, whilst a Fellow at the Transatlantic Academy of the German Marshall Fund of the US, he co-authored a report entitled The Global Resource Nexus. The Struggles for Land, Food, Water and Minerals. From 2010 to 2012 he led a major European Union, Framework 7 Programme project "Competition and Collaboration in Access to Oil, Gas and Mineral Resources". Recent books include China, Oil and Global Politics with Roland Dannreuther (Routledge, 2011) and The Governance of Energy in China: Transition to a Low-Carbon Economy (Palgrave MacMillan, 2012).

## **Programme:**

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| 09:00 – 09:05 | Welcome Remarks<br>Dr Philip Andrews-Speed, Senior Principal Fellow &<br>Head of Energy Security Division,<br>Energy Studies Institute, National University of Singapore   |
| 09:05 – 09:30 | Information Systems in the Power Generation Sector: Critical issues,<br>Trends and Challenges Relating to Cybersecurity<br>Mr Matt Wittenstein, Energy Analyst (Power), International Energy Agency              |
| 09:30 – 09:55 | Defence and Resilience Strategies to Counter Cybersecurity Threats to the<br>Power Generation Sector<br>Mr Ngai Chee Ban, Operations Leader Asia Pacific,<br>Honeywell Process Solutions                         |
| 09:55 – 10:20 | What are the Public-Private Partnership Innovations that can Enhance<br>Cybersecurity Defenses and Resilience in the Power Generation Sector?<br>Mr Akhlesh Kaushiva, Program Manager, U.S. Department of Energy |

10:20 – 10:35	Q & A
10:35 – 11:00	Coffee Break
11:05 – 11:55	Panel discussion and Q&A Dr Madan Oberoi Director, Cybercrime Interpol Global Complex for Innovation  Mr Lim Thian Chin Deputy Director Cyber Security Agency of Singapore
11:55 – 12:00	Closing Remarks Dr Philip Andrews-Speed, Senior Principal Fellow & Head of Energy Security Division, Energy Studies Institute, National University of Singapore