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Electricity Switching Working Group

## ESWG Background

Established to address concerns with the high-potential incidents and near-misses associated with HV switching activities


Strong support from governance group of senior management

The Senior Governance Group directed the ESWG to holistically address improvement opportunities across HV switching - safety and efficiency

A collaborative, non commercial endeavour between Powerco and key service providers

Working group members as champions for safe and efficient switching to and from the ESWG and their respective organisations


Met and workshopped regularly during 2018 and 2019 both in person and remotely

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### Electricity Switching Working Group

# ESWG Team



**Dave East**  
(Powerco)

**Dean Stevenson**  
(Powerco)

**Stephen Ogier**  
(Powerco)

**Graeme Jackson**  
(Downer)

**Richard Laird - Facilitator**  
(Powerco)

**Peter Carr**  
(Northpower)

**Chris Norman**  
(Powerco)

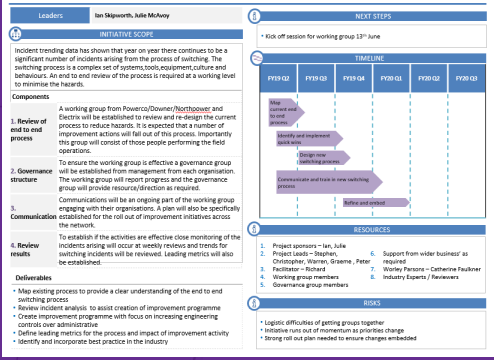
**Warren Madembo**  
(Electrix)

**Michael Reid**  
(Powerco)

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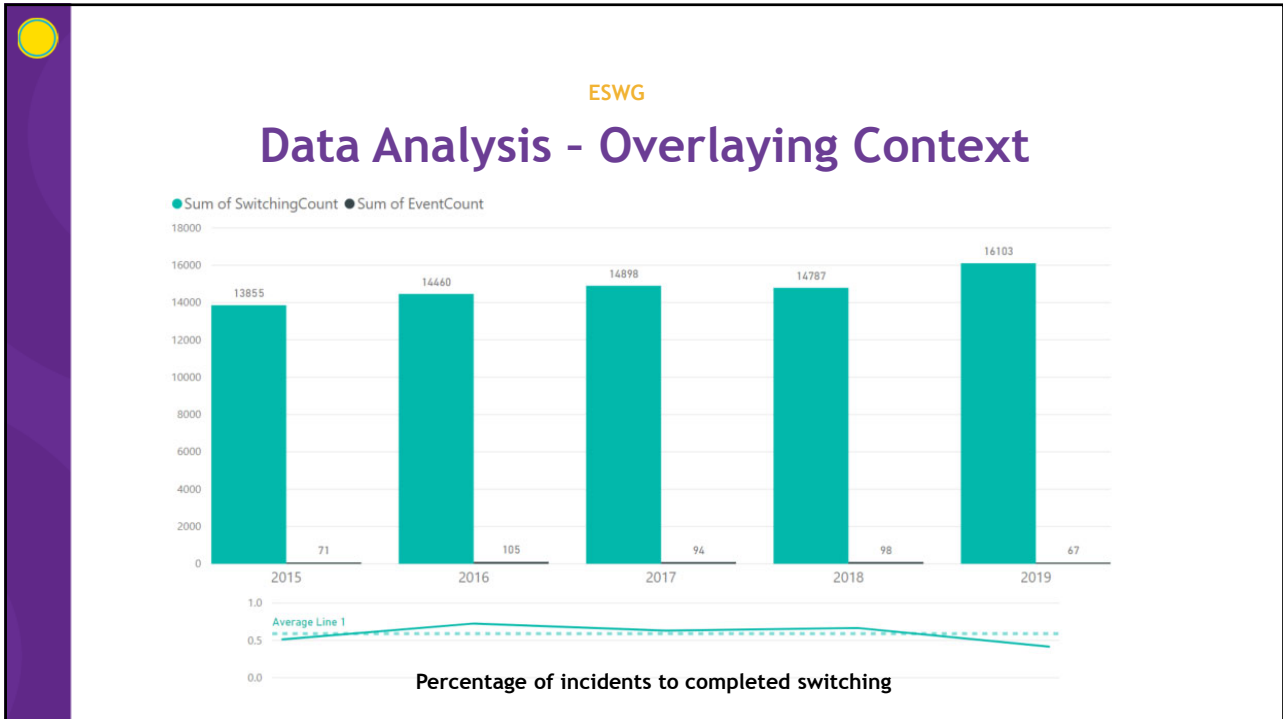
### Electricity Switching Working Group

# ESWG Approach

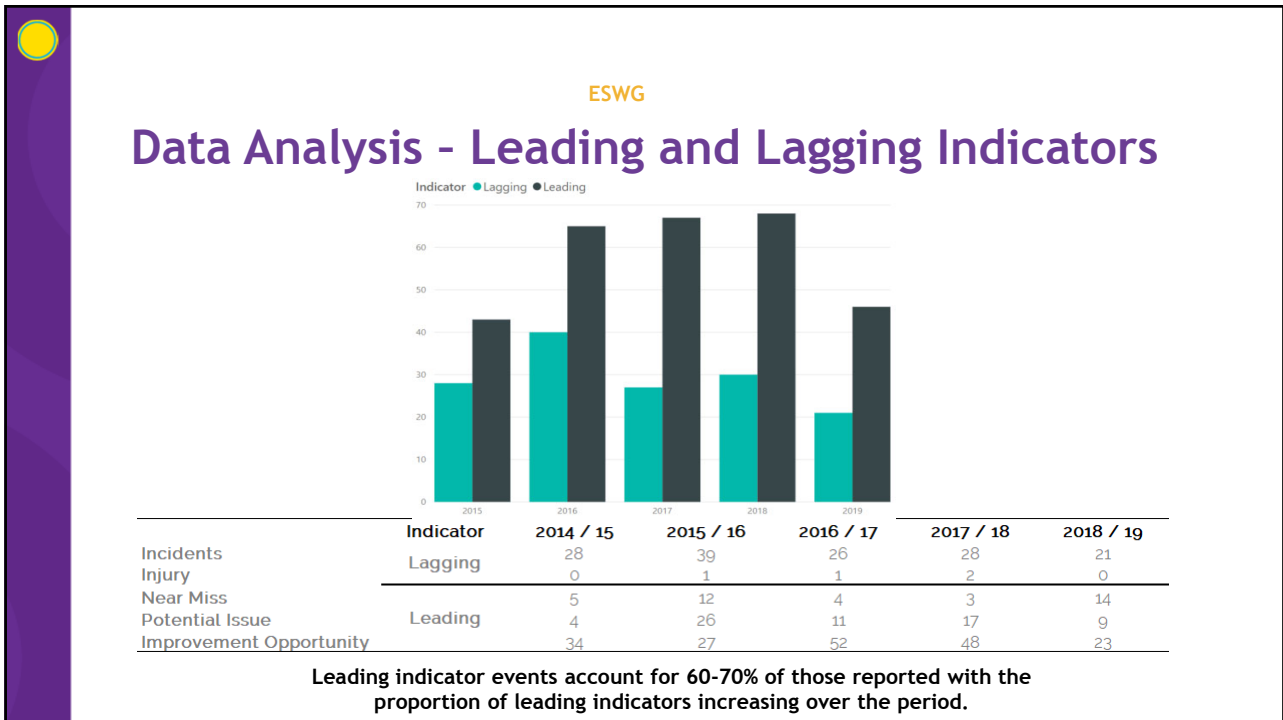


- Mining and granular classification of data
- Data analysis for informed and targeted decision making
- Process mapping and analysis
- Learnings from industry
- Targeted and / or quick wins
- People, process and technology considerations

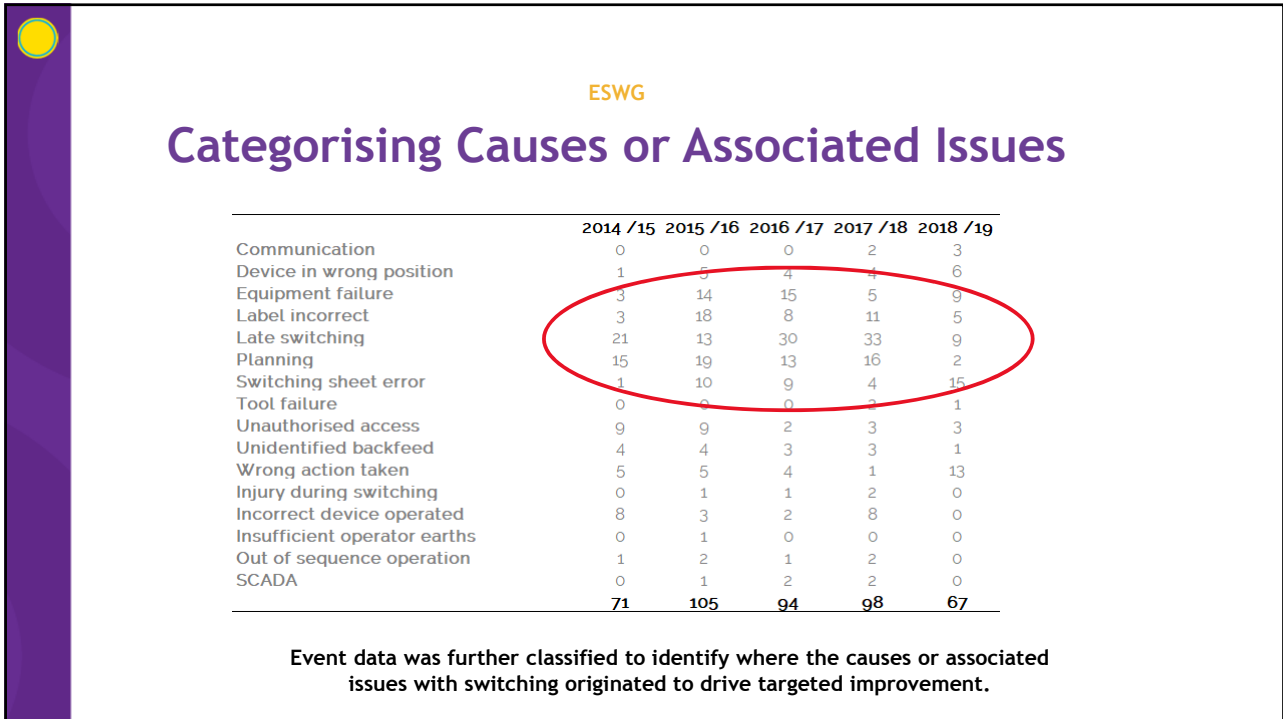
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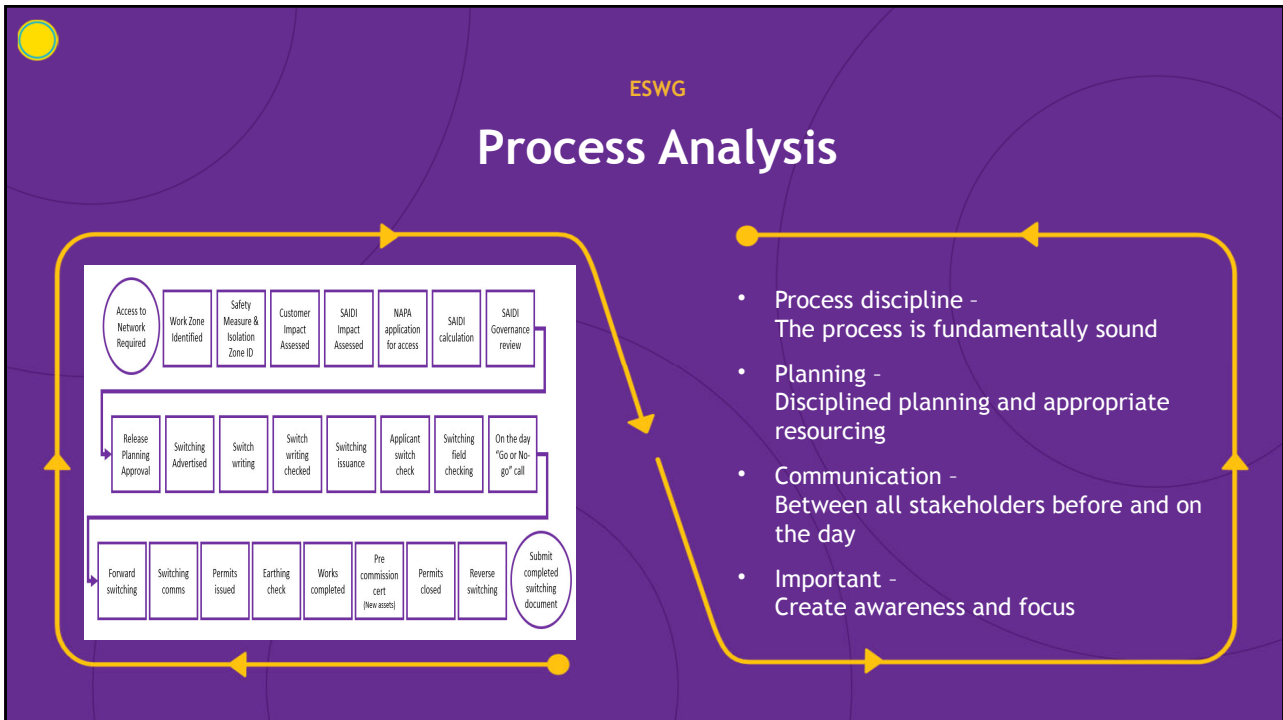
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# Targeted Initiatives

- 1 Asset Labelling**  
Remedial labelling and operational notice
- 2 Pre-Switching**  
Pre switching roles, responsibilities & checks socialised and formalised
- 3 EDI Manual**  
Rolled out to Service Providers
- 4 Competency**  
Competency and refresher training review and proposal

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# Asset Labelling

Remedial labelling and operational safety notice



The image contains two photographs of green electrical cabinets. The top photograph shows a cabinet with a yellow triangular warning label and a red 'DANGER' label. The bottom photograph shows a similar cabinet with a yellow triangular warning label and a red 'DANGER' label. Both cabinets are outdoors and have a concrete base.

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## Pre-switching Checks

- To achieve Safe operation of the Electricity network during planned works it is essential that the parties involved with Switching prepare and plan any activity before the work day.
- All parties are required to work together to ensure Safety and gain efficiencies so best use of the work time is made.
- Ensure the operational activity is Planned for safety and efficiency

- Applicant, Permit Recipient and Field Switcher have a responsibility to carry out checks and discuss before the work day
- Timely planning and Communication between all parties involved before the work day.
- Formalised in Powerco's HVIAP standard

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## EDI Manual

The screenshot displays a software interface for the EDI Manual, specifically for the ABB SDAP 143 - ANDELECT S03 RING MAIN UNIT. It is divided into two main columns of instructions, each with a corresponding diagram and a confirmation box. The steps include:

- Step 1:** Adjust the back end of the operating handle to the black switch operating mechanism as shown. Confirm the correct switch location and labeling prior to and after any operation.
- Step 2:** Rotate the operating handle ACW to the stop position to open the circuit switch. Confirm the correct switch location and labeling prior to and after any operation.
- Step 3:** Remove the operating handle. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 4:** Confirm the mechanical indicator shows. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 5:** Adjust the back end of the operating handle to the black switch operating mechanism as shown. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 6:** Rotate the operating handle CW to the stop position to close the circuit switch. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 7:** Remove the operating handle. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 8:** Confirm the mechanical indicator shows. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 9:** Adjust the back end of the operating handle to the black switch operating mechanism as shown. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 10:** Rotate the operating handle CW to the stop position to close the circuit switch. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 11:** Remove the operating handle. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 12:** Confirm the mechanical indicator shows. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 13:** Adjust the back end of the operating handle to the black switch operating mechanism as shown. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 14:** Rotate the operating handle CW to the stop position to close the circuit switch. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 15:** Remove the operating handle. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 16:** Confirm the mechanical indicator shows. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 17:** Adjust the back end of the operating handle to the black switch operating mechanism as shown. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 18:** Rotate the operating handle CW to the stop position to close the circuit switch. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 19:** Remove the operating handle. Confirm the correct test points are used. Identify prior to and after any operation.
- Step 20:** Confirm the mechanical indicator shows. Confirm the correct test points are used. Identify prior to and after any operation.

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## Competency & Refresher Training

Remedial labelling and operational safety notice

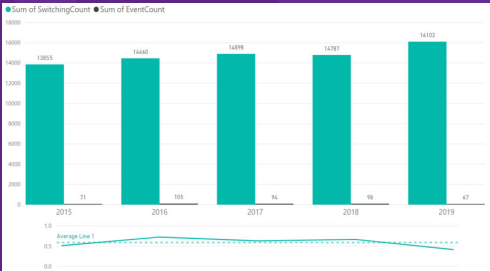
- Further work on the L4 Field Switcher competency
- Alignment to an industry-wide common competency framework
- Focus on implementing the three-tiered approach proposed by the group generally as follows:
  - Level 1 Operate OH equipment only: DDO's, ABS etc.
  - Level 2 Operate combination of OH & UG equipment: DDO's, ABS, RMU's etc.
  - Level 3 Operate all equipment including substation devices
- Proposed refresh of the content of HVIAP refresher training to address issues as well as introduce additional focus areas

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## Outcomes & Lessons Learnt




Year	Sum of SwitchingCount	Sum of EventCount
2015	13853	21
2016	14640	105
2017	14496	54
2018	14787	98
2019	14102	47

- Recent revisit of analysis (period August '18 to July '19) showed events had reduced at the same time as switching activities have increased
- No single silver bullet for complex problems
- Importance of clearly identifying, defining and analysing the problem
- Combination of multiple and complicated factors
- Significant value in just creating focus and awareness
- Target people process and technology
- Highlighted the value of a collaborative multi-party working group enabled to effect change and commercial interests are set aside
- Precedent for tackling other issues with multi-party interest that may arise in the future

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## Questions, comments, feedback...



The slide features three circular icons arranged horizontally. The first icon is a light blue circle containing a white question mark. The second icon is a green circle containing a white icon of three stylized human figures. The third icon is a gold circle containing a white thumbs-up icon.