

Space weather: a risk to NSW critical infrastructure?

Space Weather Users Workshop
17th November 2017

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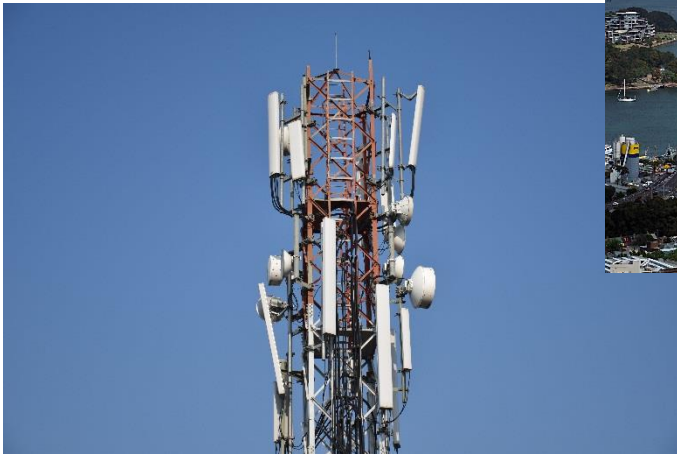
NSW Office of Emergency Management

- ▶ Support and assist the Minister for Emergency Services,
- ▶ Capability development: training, exercises, grants
- ▶ Coordinate recovery functions for those impacted in NSW
- ▶ Provide disaster welfare functional area services
- ▶ Disaster funding policy and banker



Increasing risk

- ▶ Increasing severity of disasters;
- ▶ Exposure of population and assets as urbanisation continues;
- ▶ Energy and telecommunications networks vulnerability
- ▶ Financial risk



Disaster Resilience Reform

- ▼ Increasing resilience at state, regional and local levels:
 - ▼ Focusing on risk rather than event, re-orientate to mitigation
 - ▼ Understanding our exposures and supporting vulnerable communities
 - ▼ Building community resilience and adapting to climate change
- ▼ Elements
 - ▼ Emergency Risk Management (ERM) Framework
 - ▼ **State Level Emergency Risk Assessment (SLERA)**
 - ▼ Critical Infrastructure Resilience Strategy (CIRS)
 - ▼ Capability Development & Lessons Management Framework
 - ▼ State Exercise Program re-engineering

2017 SLERA





OEM

Project Planning
Project Management
Coordination / Facilitation



SMSC

State Mitigation Sub-Committee
Strategic cross-hazard advice,
direction, approval, endorsement,
validation & hazard information-



Method & Process

Method - National Emergency Risk Assessment
Guidelines (NERAG) + Customisation
Process - Consultation & collaboration through
workshops

Significant State-Level Scenario Based Risk Assessment Workshops

12 workshops
176 participants

Hazard Profile & Scenario Building Workshops

12 workshops
70 participants

Initiation, Methodology & Context Workshop

SMSC
17 participants

Workshops



Hazards

Bush Fire
Coastal Erosion
Earthquake
East Coast Low
Biosecurity
Flood
Heatwave
Infrastructure Failure
Human Infectious
Disease Outbreak
Landslide
Storm
Tsunami

Strategic Consolidation

Strategic Cross-Hazard Workshop

1 workshop
16 participants

- 1 Building Codes
- 2 Business Continuity Planning
- 3 Climate Change
- 4 Community Engagement & Education
- 5 Infrastructure Failure
- 6 Insurance
- 7 Land Use Planning
- 8 Modelling
- 9 Warnings

Reporting

Sector Report
Public report



Scenario

Infrastructure failure

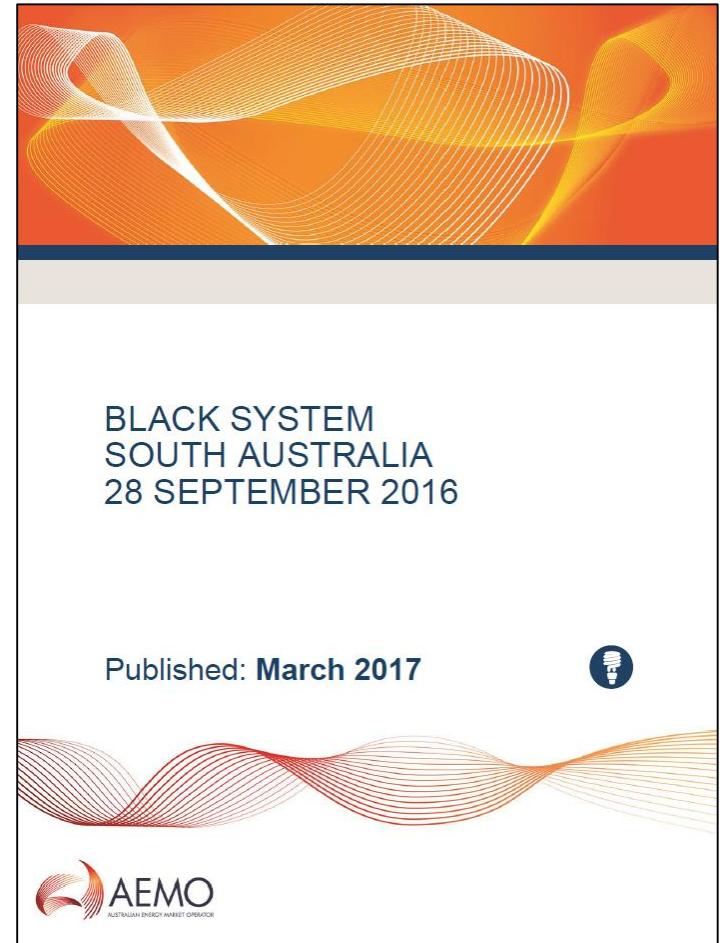
- ▼ Scenario narrowed to electricity failure
 - ▼ Widespread downstream impacts
- ▼ Space weather storm identified based on global experiences and an increasing dialogue amongst EM practitioners

A space weather storm event impacts Southern Australia infringing on power infrastructure, including a major network component failure, resulting in major initial disruption and future load shedding. Disruption to satellite communications and transport signals.

South Australia Event

Black System

- ▼ State-wide power outage
- ▼ Wednesday 28 September 2016
 - ▼ Day after the infrastructure failure workshop
- ▼ Highlighted challenges and lessons relevant to power system security
- ▼ Increased emphasis on infrastructure failure and workshop



Risk Assessment

Infrastructure failure

Maximum Risk Level Maximum Consequence		Extreme Catastrophic
Scenario Likelihood	<i>Unlikely</i>	Risk Level
Consequence – People	Major	High
Consequence – Economy	Catastrophic	Extreme
Consequence – Environment	Catastrophic	Extreme
Consequence – Public Administration	Catastrophic	Extreme
Consequence – Social	Moderate	Medium

2017 SLERA

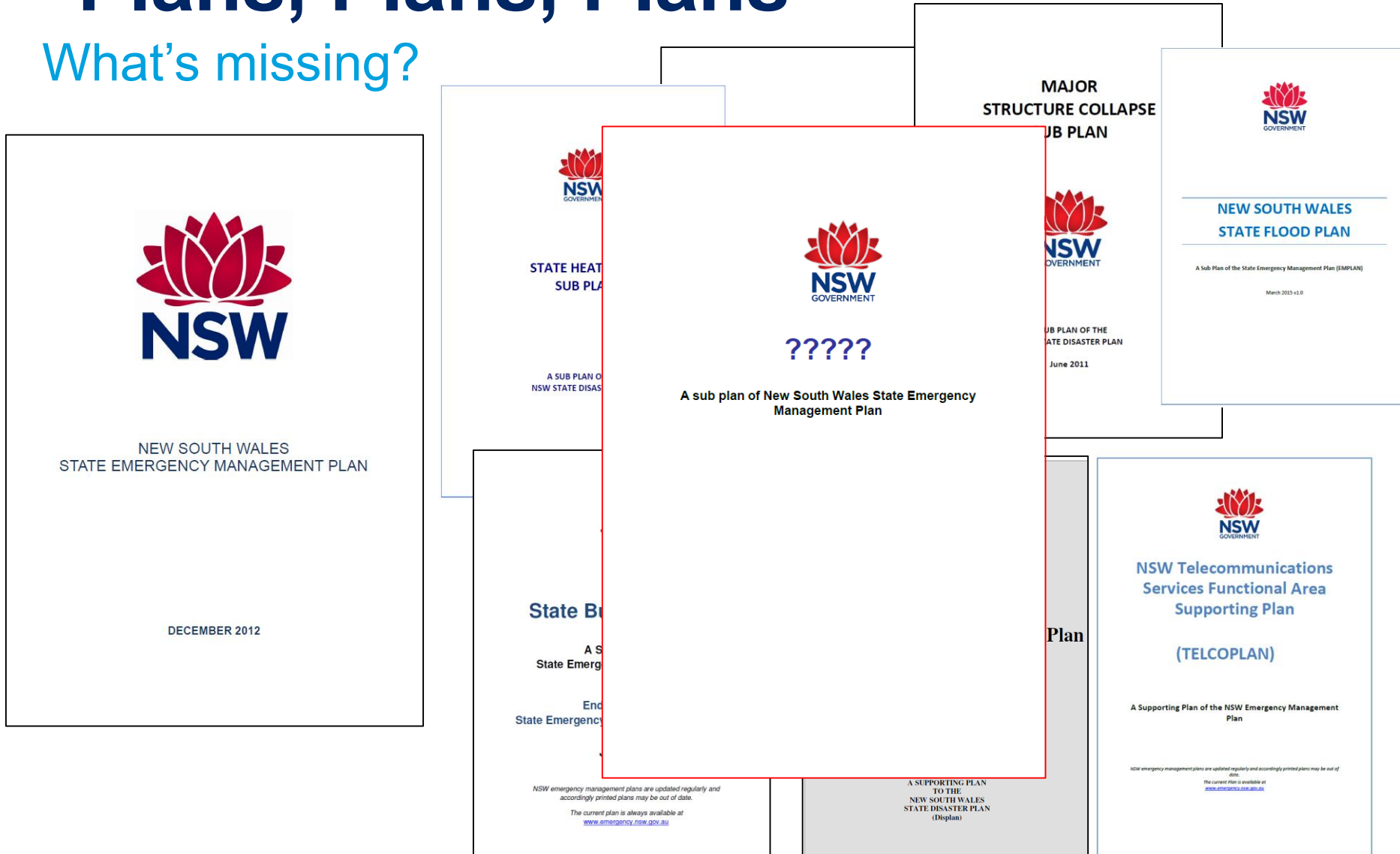
Top priorities

- ▼ Land use planning
- ▼ Data and risk modelling
- ▼ Climate change
- ▼ Local emergency planning
- ▼ **Infrastructure resilience**
- ▼ Business continuity planning
- ▼ Exercises
- ▼ Funding
- ▼ Community engagement
- ▼ Public warnings



Plans, Plans, Plans

What's missing?



NSW Energy Security Taskforce

Recommendation 4:

That Government improve the structural processes underpinning the management of energy emergencies in NSW and ensure a stronger link between energy management and emergency management.



Chief Scientist
& Engineer

Initial Report from the Energy Security Taskforce

NSW Chief Scientist & Engineer

5 May 2017

Future Considerations

- ▼ Need for a Space Weather Strategy or Emergency Plan?
- ▼ State or Commonwealth Level? Catastrophic scale?
- ▼ How do we enhance warning systems to effectively incorporate emergency management organisations and ensure appropriate actions are taken?
- ▼ What is achievable in the lead times provided by space weather events to minimise impacts based on the anticipated magnitude of the event?
- ▼ How do we make key infrastructure more resilient to space weather?

Contact us

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