



PROJECT IGNIS- Quantifying Catastrophic Bushfires

Milestone 1 Close-Off evidence December 2018

Aim: The purpose of this document is to record a formal request from the Bushfire and Natural Hazards CRC to Energy Network Australia (ENA) and the Australian Power Institute (API) to formally close Milestone 1 related to Project IGNIS- *Quantifying Catastrophic Bushfires.*, led by A/Professor Trent Penman.

Milestone: Payment at milestone 1 (stakeholder workshop) - \$50,000

Description: The first phase of the project involved the researchers, Implementation Team, API, ENA and the CRC to meeting for the kick-off meeting for Project IGNIS*. During the meeting, the project scope was refined and consensus was achieved on the fire simulation methodology to be used under Phoenix Rapidfire, a range of assets to be considered to incorporate intangible values into bushfire consequences as well as confirming case study areas in: the Western Blue Mountains (NSW), Mount Macedon (VIC), Hobart (TAS) and the Adelaide Hills (Mt Lofty Ranges, SA).

All discussions and action items were noted in meeting minutes which have been attached to provide evidence for Milestone 1 (see Attachment 1).

Recommendation: Based on the evidence provided in Attachment 1, Milestone 1 has been completed and therefore as per the ENA Quarterly report, the CRC recommends that payment should be made accordingly.

* The ENA requested that the Implementation Team should agree on a project code name, hence the name Project IGNIS was decided.





Attachment 1

Quantifying catastrophic bushfire consequences Minutes- kick-off meeting

Date: Wednesday 1 August 2018

Time: 10:00 – 16:00 (AEST)

Location: AIDR Board Room - Ground Floor, 370 Albert St, East Melbourne

Attendees

Staff	Organisation
Dr Monishka Narayan	Energy Networks Australia
Simon Bartlett	Australian Power Institute
Sarah Mizzi (Chair)	BNHCRC
Dr John Bates	BNHCRC
Kelsey Tarabini	BNHCRC
A/Prof Trent Penman	University of Melbourne
Dr Veronique Florec	University of WA
Kate Parkins	University of Melbourne
Dene Ward	Powercor
David Wilkinson	United Energy
Bill Woods	AusGrid
Ian Fitzpatrick	Essential Energy
Frank Crisci (via videoconference)	South Australia Power Networks

Apologies: Amir Sherkat (Western Power)

Please note: the secretariat for the Project Implementation Committee will be the Bushfire and Natural Hazards Cooperative Research Centre (the CRC).

1.0 INTRODUCTION

- Introductions, roles and responsibilities were clarified amongst all committee members. The researchers provided background on their expertise.
- The CRC provided a brief overview of the centre, its mandate and research programs and highlighted current research that might be of interest to committee members as results become available, including post- event research on recent Tathra bushfire. High level project information can be accessed here: <http://www.bnhcrc.com.au/research/4691>
- Simon Bartlett from API provided a general overview of the Australian Power Institute (API) and their relationship with Energy Networks Australia (ENA) and discussed other research projects that had recently received ENA funding

Action: CRC to send public report on the Tathra bushfires research project to Implementation Committee once available in November.





2.0 GOVERNANCE

- Simon summarised the business case to the steering committee.
- He also explained overall governance for the project from an ENA perspective and clarified differences between two groups.

The Project Implementation Team – is to work alongside the researchers to scope the project, clarify the outputs, monitor progress (via review of progress reporting) and advice insights from the research can best inform practice and policy (research utilisation). A representative from this group will ultimately report up to the Project Advisory Steering Committee.
- The role of the steering committee is to receive project updates from the Implementation Team and provide high level advice on direction of the project if required. It is important to note that this committee has broader representation compared to the implementation team.
- As discussed during the meeting, it will be critical for the Steering Committee to assist the Implementation team with utilisation and communications planning for the project.
- The Project Implementation Team requires a Project Implementation Lead from the power companies represented who will assist the BNHCRC rep Sarah Mizzi and Uni of Melbourne rep A/Prof Trent Penman in communicating with the research team and the rest of the project implementation team. The three leads will also be responsible for communication to the ENA advisory group meetings and will provide approval of milestones for the project as the researchers deliver.
- Ian Fitzpatrick raised the upcoming National Bushfire Industry Day held within the electricity sector which is usually a closed-door opportunity for networks to discuss a variety of topics. Further details will be provided by Ian out of session.
- There was some discussion regarding confidentiality of information and data exchange for this project. It was confirmed that individual organisations as a part of this project do not need to have separate confidentiality agreements with the CRC as the signed agreement between the CRC and ENA already addresses and covers the confidentiality of information and data.
- Monishka Narayan discussed the importance of establishing a collaborative workspace online where project partners can review outputs, progress reporting, etc
- Dene Ward also highlighted a LinkedIn group exists which assists with the sharing of knowledge between networks on topics related to bushfire and risk.
- In addition, the chair offered to establish a document which would capture any ideas raised by the implementation committee that currently fall outside of scope. These ideas can be either revisited at a later date or can be reported up to the Project Steering Committee for consideration.





Decision:

- *The Implementation Team nominated Ian Fitzpatrick (Essential Energy) for the role of Utility Implementation Lead, which was approved by all.*

Action:

- Ian to consider inviting the CRC and the researchers to the electricity network National Bushfire Industry Day.
- Monishka will create a section on the ENA website for implementation committee members. They can log-in to gain access to meeting minutes and other documents relating to this project.
- CRC to obtain further information from Dene Ward on LinkedIn group.
- CRC to establish 'ideas' log, for discussion points that are of interest but clearly out of scope.

3.0 INTRODUCTION TO PHOENIX MODEL (PHASE 1)

- A/Prof Trent Penman presented background knowledge on the Phoenix RapidFire Model that will be used as a tool in the research project to model the case studies. Group discussion occurred to further define a catastrophic bushfire, aiming to reconcile the different perspectives across the six networks and reach consensus.
- To provide some additional context, Dr Veronique Florec provided an outline of the NERAG guidelines with existing terminology definitions
- Trent confirmed that Phoenix will allow the team to simulate thousands of fires which should 'weed out' outliers. Will not just provide information on how a fire was generated, but also intensity, flame height, etc.
- The system will use a density weighted number of ignition points per scenario and up to 54 daily weather streams across the six FDI categories.
- Bayesian Network will cover uncertainties and capture multiple relationships within a system.
- Veronique confirmed key aspects of impacts which the project will address including more than just estimated house loss. This economic modelling will also include estimated value to the relevant community, avoiding disturbance and willingness to pay, intangible vs tangible costs (reputation, legalities, etc.)
- It is envisaged that an outcome of this project is the research will assist the networks in considering decisions about short term asset specific decisions compared to longer term whole of network/ whole of grid decisions.
- An important point was raised during discussions about mitigating for Major events - this will also reduce losses for other event types as well.





Decision:

- *For the purposes of this project, the term ‘catastrophic’ will not be used to avoid confusion with the same term which is defined by the National Fire Danger Rating Index (FDI)*
- *The group decided on “worse case credible event” or ‘major’ as a working term, in place of ‘catastrophic’- this will become more important when the group starts to discuss communication options and opportunities for the project.*

Action:

- Trent to provide a list of data requirements to the implementation team
- Implementation team members to respond with the details of the appropriate contacts within their organisations to assist with data exchange to the research team.
- CRC to send implementation team link to research project coupled with atmosphere fire modelling
- Veronique to send link to the relevant NERAG guidelines

4.0 CASE STUDIES

- An extensive discussion ensued regarding relevant regions to include in the case studies. In the absence of Western Power, the implementation team still needed to proceed in selected relevant regions.
- After the initial brainstorm, the group was asked to prioritise the top three regions for each of four selected states (SA, VIC, TAS, NSW). The group believes this provides for reasonable diversity in the case study samples, whilst keeping the number of sites manageable and within the resource constraints. Research will at the very least examine the first preferences for each of the case study states, and if time and resources permit, will proceed to address second and third order preferences for each of the case study areas.
- It is important that for each of the case studies, that a consistent data set can be provided to the research team- this should be considered when finalising the case studies for selection.

South Australia

1. Adelaide Hills – Population, Vegetation, high loss consequence
2. Port Lincoln – Tourism, Vegetation, Environment, considerable loss consequence
3. Mt. Gambier (South East) or Clare (Mid-North) – similar in loss consequence





Victoria

1. Mount Macedon – Devastating impacts during Ash Wednesday, the group believed another major fire is due for the area. In addition, community demographics have changed.
2. Great Otway National Park – tourism, population, booming real estate market.
3. Terang – late-seasonal fires occurred in March 2018, cropping/farm land, flat in comparison to other case study areas

New South Wales

1. Western Blue Mountains – Water catchment, suburban/rural interface, tourism
2. NSW areas North of Canberra – Yass/Goulburn/Burrinjuck areas
3. Putty NSW area

Tasmania

1. Hobart – major city, environment, vegetation, interface
2. Bicheno – North eastern coast
3. North West (if required, to be discussed in future meetings)

Decision:

- *Focus on first order priority region for each area- four case studies will be conducted (Adelaide Hills, Mount Macedon, Western Blue Mountains and Hobart areas)*

Action:

- TasNetworks are not currently included on the implementation committee - Ian Fitzpatrick to make contact with them on behalf of the committee to ascertain contact person for the relevant case study region.





6.0 ECONOMIC ANALYSIS (PHASE 2)

- Veronique presented the second phase of the project – impact / economic modelling.
- The fire/s that are produced within the case study areas will also contain spatial and temporal information about selected assets that will be affected in the fire region. These assets will need to be defined by the Steering Committee. The assets in the affected in the area will be analysed on a worst-case scenario basis.
- The objective is to quantify risk damage caused by the ‘worst-case’ / ‘major’ fires.
- Veronique spent some time discussing the ‘onion layers’ diagram of tangible vs intangible and direct versus indirect costs of natural events, specifically bushfires (see last dot point).
- Other points of clarification from Veronique included: differences between calculating the costs of reconstruction value compared to content value.
- She is also seeking clarity on whether or not to include response costs for the economic modelling.
- Quantified impact/cost by classification into:

Direct / Tangible	Direct / Intangible
Indirect / Tangible	Indirect / Intangible

At this stage, examples of varying assets loss functions (including but not limited to):

- ❖ *Housing + Industry + Commercial*
- ❖ *Life*
- ❖ *Water Catchments*
- ❖ *Hospitals*
- ❖ *Schools*
- ❖ *Communication Capacity – Tower,*
- ❖ *Connection Lines – Specifically state connection lines*
- ❖ *Agriculture + Stock + Crops*
- ❖ *Plantations*





Action:

- Implementation group to decide if the response costs are to be included in the economic modelling.

7.0 COMBINING FIRE AND ECONOMICS

- The models will incorporate no fire history – this will result in the maximum worst case scenario for the case studies.
- confirmed that implementation committee will receive a methodology and a tool from the project, which will allow for them to input their own data and analyse results for future work.

Action:

- Trent will provide a polygon file for case study areas to networks.
- Network representatives will then be required to include information inside the polygon areas for any power lines/towers that can result in an ignition, and other assets. Ignition points will be placed on network assets.

8.0 COMMUNICATION AND UTILISATION

- There was some discussion about the best communication channels for this work and more importantly, how the learnings and insights from the research can best inform critical business activities, such as the 5 year reset submissions and beyond.
- Some of the industry representatives recommended that the researchers and the CRC review previous AER submissions to gain a better understanding of the type of information which has previously been included.
- The group thought it would be useful to have a high-level document which captured key points about the project, so that when others within their respective businesses are kept informed of progress and provided with consistent messaging.
- To assist with communication between team members, there was a preference to create a project codename which will be used in all formal and informal communication, including emails, to reference the project.
- Will dedicate more time at next meeting to discussion about communication and utilisation planning for the project.





Decision:

- *Implementation team decided to call the project IGNIS*

Action:

- CRC to create a briefing powerpoint outlining key aspects of the project and send to implementation committee members for use in project awareness communications
- Researchers to read previous AER submissions on AER website

9.0 GENERAL BUSINESS

N/A

10.0 SUMMARY AND NEXT STEPS

- Next meeting should be organised around mid -October
- The group were conscious that a number of decisions were made during the meeting in which Western Power were not privy to.

Action:

- CRC to send out doodle poll to ascertain availability for next meeting
- Veronique to meet with Western Power to (Amir Sherkat) to inform him of meeting outcomes and clarify any points required.





TABLE 1.1 SUMMARY ACTIONS

ACTION	WHO IS RESPONSIBLE
a) Send public report on the Tathra bushfires research project to steering committee once available in November.	CRC
b) Consider inviting the CRC and the researchers to the electricity network National Bushfire Industry Day.	Ian
c) Create a section on the ENA website for implementation committee members can log-in to gain access to meeting minutes and other documents relating to this project.	Monishka
d) Find out more information on LinkedIn group.	CRC
e) Establish 'ideas' log, for discussion points that are of interest but clearly out of scope.	CRC
f) Provide a list of data requirements to the implementation team	Trent
g) Implementation team members to respond with the details of the appropriate contacts within their organisations to assist with data exchange to the research team.	All industry reps
h) Send implementation team link to research project coupled atmosphere fire modelling	CRC
i) Send link to the relevant NERAG guidelines	Veronique
j) TasNetworks are not currently included on the implementation committee- make contact with them on behalf of the committee to ascertain data for the relevant case study region.	Ian
k) Implementation group to decide if the response costs are to be included in the economic modelling.	All industry reps





l) Provide a polygon file for case study areas to networks.	Trent
m) Create a brief powerpoint outlining key aspects of the project and send to implementation committee members	CRC
n) Researchers to read previous AER submissions on AER website	Trent, Veronique, Kate
o) Distribute doodle poll to ascertain availability for next meeting	CRC
p) Meet with Western Power to (Amir Sherkat) to inform him of meeting outcomes and clarify any points required.	Veronique

