

TEMPLATE EXPLANATION

This template must be used by the TNSP to report on the implementation of their priority projects for the previous calendar year. This report template is to be submitted by the TNSP to the AER as part of the annual STPIS compliance review.

After the initial report template is filled out and provided by TNSPs in the first STPIS compliance review for the regulatory control period for which the NCIPAP applies, the TNSP will update the report template at the end of each calendar year and provide a updated copy to the AER as part of the annual STPIS compliance review.

The summary worksheet provides an overview of the priority projects and whether, at the time of submitting this NCIPAP reporting template, the TNSP has taken steps to implement any of its priority projects and/or completed any of its priority projects.

One priority project worksheet should be filled out for each priority project in the TNSP's NCIPAP. These worksheets will be used by the TNSP to provide updates on the status of the implementation of the priority projects. If the TNSP successfully implements a priority project, takes steps towards the delivery on a priority project or encounters delays in a priority project in the previous calendar year, the priority project worksheet should be updated to reflect this and the summary should also be updated.

This template also provides worksheet templates for TNSPs which want to, as part of the STPIS compliance review, remove priority projects from their NCIPAP and propose a replacement priority project to be added to the NCIPAP.

Priority project name and ranking	Summary of project	Have steps been taken in the previous calendar year to implement the priority project?	Priority project completion summary		
			Has the priority project been delivered?	Has the priority project improvement target been achieved?	If the priority project has been delivered, has AEMO been notified of any change in the limit?
	Explanatory statement: include a short description of the priority project	Explanatory statement: indicate 'yes' or 'no' as to whether any steps have been taken by the TNSP to implement the priority project in the previous calendar year. If steps have been taken by the TNSP to implement the priority project in the previous calendar year, please update the worksheet for the priority project.	Explanatory statement: indicate 'yes' or 'no' as to whether the priority project has been delivered.	Explanatory statement: indicate 'yes' or 'no' as to whether the improvement target has been achieved following the completion of the priority project. If the improvement target has not been achieved despite the completion of the priority project, please provide further information in row 15 of the relevant priority project worksheet.	Explanatory statement: indicate if AEMO has been made aware, for operational purposes, of the change in the limit.
1. Fifteen Minutes Transient Rating for Transmission Lines	All transmission lines that are currently controlled through AEMO's generation dispatch	Yes	No	No	Not applicable as project is not completed
2. Knights Road Substation	Dynamic rating of Knights Road Substation supply transformers	No	No	No	Not applicable as project is not completed
3. I.I.I.I.I.I.I.I.I.I Substation	Dynamic rating of substation supply transformers	No	No	No	Not applicable as project is not completed
4. Installation of new line fault indicators	Farrell-Que-Savage River-Hampshire, Farrell-Rosebery-Queenstown, Norwood-Scottsdale-Derby and Lindsfame-Sorell-Triabunna 110 kV transmission circuits	No	No	No	Not applicable as project is not completed
5. Review and optimisation of Operational Margins for TasNetworks limit equations	All transmission circuits whose flow is controlled by AEMO constraint equations	No	No	No	Not applicable as project is not completed
6. Line fault indicator (LFI) remote communications	Palmerston-Avoca and Knights Road-Huon River-Kermadie 110kV transmission circuits	No	No	No	Not applicable as project is not completed
7. Basslink Tasmania-Victoria interconnector	George Town automatic voltage control scheme (GTAVCS) 2.0	Yes	Yes	Yes	Yes - Design has been submitted to AEMO
8. All 220/110kV Network Transformers	Dynamic rating of all 220/110 kV network transformers	No	No	No	Not applicable as project is not completed
9. Sheffield – Devonport transmission circuit	Substandard spans verification and rectification	No	No	No	Not applicable as project is not completed
10. Sheffield-George Town 220 kV transmission line	Replace disconnectors, CT and bay conductor to achieve line rating increase and reduce market constraints	No	No	No	Not applicable as project is not completed
11. Weather stations at Creek Road, Chapel Street, Devonport, Trevallyn, Hadspen, Sheffield, and Farrell substations	Weather station telemetry renewal	No	No	No	Not applicable as project is not completed
12. Liapootah-Waddamana-Palmerston No 1, Liapootah-Cluny-Repulse-Chapel Street No 1, Liapootah-Chapel Street No 2 and George Town-Comalco No 4 & 5 220 kV transmission circuits, Hadspen-Norwood No 1 & 2 110 kV transmission circuits	Upgrade of dead end fittings on selected transmission lines	Yes	No	No	Not applicable as project is not completed
13. Substandard spans verification and rectification	Palmerston-Avoca transmission circuit	No	No	No	Not applicable as project is not completed
14. Castle Forbes Bay Tee Switching Station	Castle Forbes Bay Tee Switching Station disconnector upgrade	No	No	No	Not applicable as project is not completed
15. Transmission line surge diverter installation and tower footing earthing improvements	Sheffield-Farrell 1 & 2, Farrell-Reece 1 & 2, Farrell-John Butters 220kV and Farrell-Rosebery-Queenstown 110 kV transmission circuits	No	No	No	Not applicable as project is not completed
16. Savage River Sour transmission circuit	Substandard spans verification and rectification	No	No	No	Not applicable as project is not completed

NOTE: summary page to be automated to link to priority projects sheets

Priority project name and ranking	1. Fifteen Minutes Transient Rating for Transmission Lines
Priority project description	<p>TasNetworks computes the continuous rating of the EHV transmission lines using the real time measurement of ambient conditions such as ambient temperature and wind velocity. This rating is used by AEMO and TasNetworks to limit the line loadings and the post continuous flows below the continuous rating.</p> <p>Additional transmission line capacity can be realised by using real time transient ratings (fifteen minute dynamic rating) and using the transient rating to dispatch the generators. Fifteen minute rating gives the maximum current that can be permitted in the conductor for duration of up to fifteen minutes without violating the maximum conductor temperature. Under most conditions, dynamic short time ratings are above the continuous line rating. During contingency events the line will be permitted to carry a firm rating current corresponding to the fifteen minute rating. During the period following the contingency, AEMO's generation dispatch mechanism can be used to regulate the current in the overloaded line below the continuous rating.</p> <p>The additional line capacity that can be achieved by using the short time line rating varies between 5 to 20 % depending upon the conductor properties, transmission line construction (stringing) and the ambient conditions. Additional short time capacity is available during low wind conditions.</p> <p>The scheme can be implemented for non-NCSPS protected lines that are currently monitored by AEMO using thermal limit equations. If required the scheme can also be extended to NCSPS lines during periods when the NCSPS is not in operation.</p> <p>TasNetworks computes the continuous rating of the EHV transmission lines using the real time measurement of ambient conditions such as ambient temperature and wind velocity. This rating is used by AEMO and TasNetworks to limit the line loadings and the post continuous flows below the continuous rating.</p>
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	Yes
Date of priority project completion	June-16
Limit(s) addressed by priority project	Thermal limit of all non- NCSPS circuits. In order to release additional capacity while ensuring appropriate ground clearances are maintained.
Initial limit value(s)	The continuous dynamic thermal rating.
Target limit value(s)	Availability of 15-min rating of transmission lines dynamically for real-time operation.
Completion limit values	<p>Based on the initial analysis carried out, following benefits can be achieved:</p> <p>a) An additional line capacity of 5 to 20 % can be achieved depending upon the conductor properties, transmission line construction (stringing) and the ambient conditions.</p> <p>b) The scheme is found to provide an additional capacity of 10 to 20 % levels during low wind conditions. This will provide boost to transmission capacity during adverse high temperature and low wind conditions.</p> <p>c) The scheme requires no additional control mechanisms to regulate the line flow and can use AEMO's existing generation dispatch engine to reduce the overload.</p> <p>d) The same computation methodology can be extended to provide two minute dynamic ratings that are required for future NCSPS schemes.</p>
Estimated capital cost of priority project	\$40,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$4,000
Operating expenditure to date	\$0
Priority project key milestones and dates	<p>The key milestones for this project are :</p> <ul style="list-style-type: none"> ● Internal approval was completed in April 2014 ● Project commenced and transmission line decoding is progressing ● Testing on selected transmission line is planned in May-June 2015 (Phase 1) ● Final testing is planned in May-June 2016 ● Project completion in June 2016
Priority project update/comments	This project is commenced and schedule completion planned by June 2016.

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Priority project name and ranking	2. Knights Road Substation The load at Knights Road Substation exceeds the firm rating of transformers T1 and T2 which is 20MVA. Implementation of dynamic rating for these transformers will result in these transformers being able to supply in excess of their name plate rating in the event of loss of any one of their associated parallel unit. Taking into account the dynamic rating and ability to monitor temperature increase and life degradation of the transformers will enable the load at Knights Road to be supplied in excess of transformer name plate rating.
Priority project description	The load at Knights Road Substation exceeds the firm rating of transformers T1 and T2 which is 20MVA. Implementation of dynamic rating for these transformers will result in these transformers being able to supply in excess of their name plate rating in the event of loss of any one of their associated parallel unit. Taking into account the dynamic rating and ability to monitor temperature increase and life degradation of the transformers will enable the load at Knights Road to be supplied in excess of transformer name plate rating.
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	No
Date of priority project completion	June-16
Limit(s) addressed by priority project	Availability of dynamic ratings from the transformers T1 and T2 at Knights Road Substation.
Initial limit value(s)	The transformers T1 and T2 have a current firm name plate limit of 20MVA. Ratings of transformers are made using weighted ambient of 20degC. Possibility of using DRMCC at sites such as Knights Road, where load is over firm name plate rating, and utilise actual winter peak ambient (about 10DegC) which would increase load rating of transformers.
Target limit value(s)	Additional 2 MVA capacity subjected to ambient temperature
Completion limit values	
Estimated capital cost of priority project	\$150,000
Estimated operating cost of priority project	\$16,000
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	Key milestone for this project are: <ul style="list-style-type: none"> • Completion of internal approval process is to be completed by February 2015 • Procurement of equipment to be completed by June 2015 • Project Implementation January-February 2016 • Project completion June 2016
Priority project update/comments	The AER draft decision was made in late November 2014 for all NCC . As a result, this project is in process of internal approval process with schedule completion planned by June 2016.

EXPLANATORY NOTE

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Priority project name and ranking	3.!!!!!!! Substation
Priority project description	!!!!!!! Substation has the heaviest loaded transformers in the transmission network. T1 and T2 operate in parallel, as do !! and !!. The loss of any one transformer will result in the remaining being overloaded and result in the connected customer (!!!!!!!) needing to reduce load to keep equipment within rating. Any reduction in load for !!!!!!! has a detrimental and costly impact on their production since it is a process based plant
Co-ordinated project	This is not a coordinated project
Has the priority project been commenced ?	No
Date of priority project completion	June-16
Limit(s) addressed by priority project	Increased transformation capacity of transformer
Initial limit value(s)	The transformers T1 and T2 have a current firm limit of 22.5MVA. !! and !! have firm rating of !!MVA. Availability of dynamic ratings from the transformers T1, T2, TX and TY at !!!!!!! Substation.
Target limit value(s)	
Completion limit values	Application of dynamic ratings of the transformers referred above in real time operation.
Estimated capital cost of priority project	\$180,000
Estimated operating cost of priority project	\$20,000
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	Key milestone dates are: <ul style="list-style-type: none">● Commence internal approval process by June 2015● Procurement of equipment completed by December 2015● Installation, commissioning and testing completed by February 2016● Project completion date March 2016
Priority project update/comments	Project to commence in June 2015

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Priority project name and ranking	4. Installation of new line fault indicators
Priority project description	<p>Sustained fault outages on radial transmission circuits will result in outages to all connected customers. The circuits listed above are all radial in nature and have experienced 38 sustained fault outages in the last 10 years, causing the loss of approximately 1100 MWhrs of energy and of which 20 fault outages caused a loss of supply greater than 0.1 system minutes.</p> <p>The installation of line fault indicators with remote communication capabilities will facilitate the transmission of fault data to the control room, significantly reducing fault patrol times and the commencement of fault restoration activities. The selected line for this project are: Farrell-Que-Savage River-Hampshire, Farrell-Rosebery-Queenstown, Norwood-Scottsdale-Derby and Lindsifarne-Sorell-Triabunna 110 kV transmission circuits</p>
Co-ordinated project	This is not a co-ordinated project
Has the priority project been commenced ?	No
Date of priority project completion	31/11/2016
Limit(s) addressed by priority project	Reduced fault outage restoration times
Initial limit value(s)	Fault restoration time is several hours. Currently tee-off transmission lines are physically patrolled (post- contingency) to identify downstream fault
Target limit value(s)	Reduced fault outage restoration times (5-30 minutes)
Completion limit values	Reduced fault outage restoration times (5-30 minutes)
Estimated capital cost of priority project	\$230,000
Estimated operating cost of priority project	\$19,000
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	<p>Key milestone for this project are:</p> <ul style="list-style-type: none"> ● Final internal approval completion by June 2015 ● Procurement of equipment completed by October 2015 ● Project implementation and commissioning March-April 2016 ● Project completion by June 2016
Priority project update/comments	

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Priority project name and ranking	5. Review and optimisation of operational margins for TasNetworks limit equations
Priority project description	<p>The project will involve tasking a system analyst with gathering all instances of where thermal constraints have been binding or violating and then comparing the actual flows with the raw limit and determining if it is possible to relax the operating margin without unreasonably increasing the probability of exceeding the rating of the circuit. It is essentially an exercise in capturing and analysing historical data.</p> <p>The deliverable from this project will be the submission of an updated TasNetworks operational margins paper to AEMO for implementation.</p>
Co-ordinated project	This is not a co-ordinated project
Has the priority project been commenced ?	No
Date of priority project completion	December-15
Limit(s) addressed by priority project	<p>The thermal limit equations are intended to ensure that circuits are not operated beyond their thermal rating post-contingency.</p> <p>The default limit in all thermal constraints is 11 %</p>
Initial limit value(s)	The default operational margin for all transmission lines is 11%
Target limit value(s)	Identify one or more circuits where operating margins can be reduced below 11 per cent.
Completion limit values	This is the outcome of the project.
Estimated capital cost of priority project	\$0
Estimated operating cost of priority project	\$35,000
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	<p>Key milestones for this project are:</p> <ul style="list-style-type: none">● Completion of internal approval process by February 2015● Limit equation and operational margin analysis March 2015● Project outcome (a report) with proposed operational margin to AEMO● Project completion by December 2015
Priority project update/comments	None

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Priority project name and ranking	6. Line fault indicator (LFI) remote communications
Priority project description	<p>Avoca, St Marys, Kermandie and Huon River substations are radially supplied by single 110kV circuits. To assist in fault finding activities, LFIs have been installed on the Palmerston–Avoca and Knights Rd–Huon River–Kermandie 110kV circuits.</p> <p>These LFIs:</p> <ul style="list-style-type: none"> • geographically divide the 64km PM–AV line into two sections, reducing the time taken to locate a transmission line fault by up to 50 per cent; and • indicate if a fault is present on the Huon Valley Spur, allowing operators to immediately restore supply to Kermandie Substation. <p>Presently these devices have local indication only and therefore fault location information is only available once an operator has attended site, which could take up to 1 hour from the nearest service depot.</p> <p>The provision of remote communications would provide System Controllers with the ability to direct field crews straight to the faulted circuit section, rather than needing to first visit the location of the line fault indicators to check their status.</p> <p>The installation of remote switching at Castle Forbes Bay Tee would further reduce fault outage restoration times, for those instances where the fault is located on the Huon River Spur.</p>
Co-ordinated project	This not a co-ordinated project
Has the priority project been commenced ?	No
Date of priority project completion	June-15
Limit(s) addressed by priority project	Reduced fault outage durations
Initial limit value(s)	Fault restoration time is several hours. Currently tee-off transmission lines are physically patrolled (post- contingency) to identify downstream fault
Target limit value(s)	5-30 minutes
Completion limit values	Fault restoration time could be reduced to 5-30 minutes
Estimated capital cost of priority project	\$60,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	<p>Key milestone for this project are:</p> <ul style="list-style-type: none"> • Internal approval process is completed by mid-February 2015 • Procurement of equipment will be completed by mid-April 2015 • Installation, testing and commissioning is completed by May 2015 • Project completion by June 2015
Priority project update/comments	Project is to commence by June 2015

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Priority project name and ranking	7. Basslink Tasmania-Victoria Interconnector
Priority project description	The reduction in 220 kV fault level at George Town has resulted in issues associated with the switching of !!!!!!!! filter. This project achieves reengineering of the GTAVCS for improved voltage control during low fault levels at George Town to allow for increased transfer from TAS to VIC. The project is renamed as NAVS (Network Automatic Voltage Scheme).
Co-ordinated project	This is not a co-ordinated project
Has the priority project been commenced ?	Yes
Date of priority project completion	December-15
Limit(s) addressed by priority project	Removal of the requirement for manual intervention in the control of 220 kV voltage levels at George Town Substation. After the commissioning of !!!!!!!! the GTAVCS was implemented to reduce the amount of manual intervention required to manage the steady state George Town 220 kV voltage. This scheme was tuned on the basis that the combined cycle gas turbine connected to George Town would be a base load generator.
Initial limit value(s)	With the change in operating patterns of this generator and the connection of more non synchronous generation the GTAVCS needs to be reengineered to take better account of the changed operating conditions.
Target limit value(s)	Improved, automated voltage control at George Town 220 kV bus at times of low fault level and !!!!!!!! export levels 300 MW or higher
Completion limit values	This project has been delivered and operating successfully.
Estimated capital cost of priority project	\$480,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$65,000
Operating expenditure to date	\$0
Priority project key milestones and dates	Project has been delivered and has been confirmed to be operating successfully.
Priority project update/comments	TasNetworks identified an opportunity in 2013 to commence work on this project and deliver market benefits earlier than originally anticipated. Project completion occurred in late 2014 with expenditure between July 2014 and December 2014 of \$30,000.

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Priority project name and ranking	8. All 220/110kV Network Transformers.
Priority project description	Purchase and install dynamic rating, monitoring, control and communication units on 220/110kV network transformers at Farrell (T1 & T2), Sheffield (T1 & T2), Hadspen (T1 & T2) and Palmerston (T1) substations and implement dynamic rating functionality. Implement dynamic rating functionality on all other existing network transformers in system, i.e., Burnie (T2), George Town (T1, T2 & T3), Chapel St (T1, T2, T3 & T4) and Lindsfarne (T4 & T5) as these transformers already have DRMCC's installed.
Co-ordinated project	This is not a co-ordinated project
Has the priority project been commenced ?	No
Date of priority project completion	June-18
Limit(s) addressed by priority project	The network transformers are presently rated based on the condition level degrading over time due to various factors including loading, fault current, and age based asset condition factors. Typically time based test and maintenance will provide an overview of the asset condition. Engineering knowledge and analysis tools are utilised in ascertaining remaining life of these transformers.
Initial limit value(s)	Existing continuous and emergency static ratings.
Target limit value(s)	The transformers listed above will have dynamic rating capability continuously monitored, reported and applied in real time operation.
Completion limit values	The transformers listed above will have dynamic rating capability continuously monitored, reported and applied in real time operation.
Estimated capital cost of priority project	\$900,000
Estimated operating cost of priority project	\$58,000
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	Key milestone for this project are: <ul style="list-style-type: none">● Internal approval to be completed by November 2015● Procurement of equipment to be completed by February 2016● Project implementation and commissioning dates differ for various network transformers as this project is spread over three fiscal years 2015-16, 2016-17 and 2017-18.
Priority project update/comments	

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Priority project name and ranking	9. Sheffield-Devonport transmission circuit
Priority project description	A number of transmission circuit spans may have substandard ground clearances. Through minimal investment, rectification of these spans will achieve compliance, and is also likely to result in an increase in line rating and capability.
Co-ordinated project	This not a co-ordinated project.
Has the priority project been commenced ?	No
Date of priority project completion	June-17
Limit(s) addressed by priority project	Identification of substandard clearances enable to achieve compliance requirement with an incremental transmission transfer capacity.
Initial limit value(s)	Existing transmission line design temperature.
Target limit value(s)	Increased transmission line design temperature. Quantification of the increase is not possible to predict until LIDAR surveys are complete.
Completion limit values	Increased transmission line design temperature. Quantification of the increase is not possible to predict until LIDAR surveys are complete.
Estimated capital cost of priority project	\$279,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
	Key milestone for this project are:
Priority project key milestones and dates	<ul style="list-style-type: none">• Internal approval process to be completed by December 2015• Procurement of equipment to be completed by February 2016• Project completion by June 2016
Priority project update/comments	

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If this worksheet is updated, please update the summary worksheet to indicate

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Priority project name and ranking	10. Sheffield-George Town 220 kV transmission line
Priority project description	Replace present limiting terminal equipment at Sheffield Substation on the SH-GT 1 and 2 220 kV transmission circuits to increase their circuit terminal ratings to 2000A to reduce market constraints.
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	Yes
Date of priority project completion	July-16
Limit(s) addressed by priority project	Elimination of thermal constraints in Sheffield-George Town 220 kV transmission corridor.
Initial limit value(s)	SH-GT 1 220 kV: 1200A terminal rating at Sheffield Substation SH-GT 2 220 kV: 1250A terminal rating at Sheffield Substation
Target limit value(s)	SH-GT 1 220 kV: 2000A terminal rating at Sheffield Substation SH-GT 2 220 kV: 2000A terminal rating at Sheffield Substation
Completion limit values	SH-GT 1 220 kV: 2000A terminal rating at Sheffield Substation SH-GT 2 220 kV: 2000A terminal rating at Sheffield Substation
Estimated capital cost of priority project	\$1.12 million
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	This project is undertaken in 2 stages. Key milestone for this project are: First stage: <ul style="list-style-type: none">● Internal approval process completed by February 2015● Installation of primary equipment (2000A CT) on L bay and replacement of bay conductor completed by June 2015● Interim replacement of disconnectors fingers on K bay with 1600A rating and replacement of bay conductor completed by June 2015 Second stage: <ul style="list-style-type: none">● Replacement of K bay disconnectors to full rating of 2000A by June 2016 Internal approval process is progressing.
Priority project update/comments	

EXPLANATORY NOTE

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Priority project name and ranking	11. Weather stations at Creek Road, Chapel Street, Devonport, Trevallyn, Hadspen, Sheffield, and Farrell substations
Priority project description	Relocation and/or upgrade of weather station assets at seven sites.
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	No
Date of priority project completion	June-19 The upgrade of weather station telemetry at sites where assets are approaching end of life, replacing these assets with new low-power assets with a lower lifecycle cost. The relocation of weather station assets from inside TasNetworks' substations to a secure location outside the switchyard. This relocation will facilitate more effective site access, removing the requirement for an EHV Substation Operator to attend, at lower ongoing cost to TasNetworks, while also providing data with greater accuracy than is currently supplied.
Limit(s) addressed by priority project	Renewal of weather stations, ensuring that these sites continue to provide accurate and reliable atmospheric data in the long term, at the lowest whole of life cost to consumers.
Initial limit value(s)	Relocation and/or upgrade of weather station assets at seven sites.
Target limit value(s)	Relocation and/or upgrade of weather station assets at seven sites.
Completion limit values	\$1.05 million
Estimated capital cost of priority project	\$0
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	This project is undertaken in several stages. Replacement and upgrade of weather station are completed by <ul style="list-style-type: none">• Creek Road - December 2015• Chapel St and Devonport Substation-June 2016• Trevallyn Substation-June 2017• Hadspen Substation- June 2018• Sheffield and Farrell Substation-December 2019
Priority project key milestones and dates	
Priority project update/comments	

EXPLANATORY NOTE

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Priority project name and ranking	12. Liapootah-Waddamana-Palmerston No 1, Liapootah-Cluny-Repulse-Chapel Street No 1, Liapootah-Chapel Street No 2 and George Town-Comalco No 4 & 5 220 kV transmission circuits. Hadspen-Norwood No 1 & 2 110 kV transmission circuits.
Priority project description	Upgrade of dead end fittings on selected transmission lines
Co-ordinated project	This is not a co-ordinated project
Has the priority project been commenced ?	Yes
Date of priority project completion	June-17 Compression dead end fittings installed on five 220 kV and two 110 kV transmission circuits have a lower rating than that of the conductors to which the fittings are attached. The lower rating is due to the insufficient surface area at the point of connection between the fitting and the conductor palm, hence limiting current flow.
Limit(s) addressed by priority project	This issue can impact on the 220 kV transmission corridor south of Palmerston during Basslink import, particularly under N-1 contingency situations. Under such circumstances, the power flow could be restricted to the firm capacity of the under rated dead end fittings. This will severely impact north-south power flow during winter months to supply southern loads. The present Winter limits are: LI-WA-PM 1 220 kV – 840 A LI-CL-RE-CS 1 220 kV – 851 A LI-CS 2 220 kV – 851 A GT-CO 4&5 220 kV – 938 A HA-NW 1&2 110 kV – 840 A
Initial limit value(s)	
Target limit value(s)	The target Winter limits are: LI-WA-PM 1 220 kV – 987 A LI-CL-RE-CS 1 220 kV – 873 A LI-CS 2 220 kV – 873 A GT-CO 4&5 220 kV – 1032 A HA-NW 1&2 110 kV – 949 A
Completion limit values	The target Winter limits are: LI-WA-PM 1 220 kV – 987 A LI-CL-RE-CS 1 220 kV – 873 A LI-CS 2 220 kV – 873 A GT-CO 4&5 220 kV – 1032 A HA-NW 1&2 110 kV – 949 A
Estimated capital cost of priority project	\$840,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$94,000
Operating expenditure to date	\$0
Priority project key milestones and dates	These projects are undertaken in several stages. Details of each project component are: <ul style="list-style-type: none"> ● Upgrade of dead end fittings on Liapootah-Waddamana-Palmerston No.1 220 kV transmission circuits was completed in September 2014. ● Upgrade of dead end fittings on George Town-Comalco No 4 & 5 220 kV transmission circuits will be completed by December 2015 ● Upgrade of dead end fittings on Liapootah-Chapel Street No 2 and Liapootah-Cluny-Repulse-Chapel St No.1 220 kV transmission circuits and will be completed by December 2016 ● Upgrade of dead end fittings on and Hadspen-Norwood No 1 & 2 110 kV transmission circuits will be completed by December 2017.
Priority project update/comments	A project component to upgrade dead end fittings on Liapootah-Waddamana-Palmerston No 1 220 kV transmission circuit is already completed and the target limit for this circuit has been achieved.

EXPLANATORY NOTE

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Priority project name and ranking	13. Palmerston-Avoca transmission circuit
Priority project description	Substandard spans verification and rectification
Co-ordinated project	This is not a co-ordinated project
Has the priority project been commenced ?	No
Date of priority project completion	December-16
Limit(s) addressed by priority project	LIDAR survey of transmission lines at risk of substandard clearances and remedial works to rectify identified substandard clearances.
Initial limit value(s)	Existing transmission line design temperature.
Target limit value(s)	Increased transmission line design temperature depending on completion of LIDAR surveys
Completion limit values	Increased transmission line design temperature.
Estimated capital cost of priority project	\$926,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	Key milestone for this project are: <ul style="list-style-type: none">● Completion of internal approval process by June 2015.● Completion of LIDAR survey by June 2016.● Ground profiling, re-tensioning to meet increased transmission line design temperature by November 2016.● Project Completion by December 2016.
Priority project update/comments	TasNetworks is reviewing historical survey records, as this may negate the need for LIDAR expenditure for this transmission line.

EXPLANATORY NOTE

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Priority project name and ranking	14. Castle Forbes Bay Tee Switching Station
Priority project description	Replace manual 110kV disconnecter at Castle Forbes Bay Tee with a remotely operable 110kV disconnecter to reduce the duration of unplanned outages affecting customers connected from Kermandie and Huon River Substation.
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	No
Date of priority project completion	December-16
Limit(s) addressed by priority project	Reduce the duration of unplanned outages for customers supplied from Kermandie and Huon River substations, where the cause of the outage is on the Huon River Spur.
Initial limit value(s)	Current restoration time ranges from an hour to several hours depending on time of the fault
Target limit value(s)	After completion of this project the circuit restoration time could potentially reduce to 5-30 minutes
Completion limit values	After completion of this project the circuit restoration time could potentially reduce to 5-30 minutes
Estimated capital cost of priority project	\$250,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
	Key milestone for this project are :
Priority project key milestones and dates	<ul style="list-style-type: none">● Completion of internal approval process-February 2015● Procurement of primary equipment (motor operated load make/break disconnecter) June 2016● Installation and commissioning by November 2016● Project completion by December 2016
Priority project update/comments	Project delivery time is dependent of lead delivery time of primary equipment

EXPLANATORY NOTE

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Priority project name and ranking	15. Transmission line surge diverter installation and tower footing earthing improvements
Priority project description	<p>In the last 10 years transmission circuits Sheffield-Farrell No. 1&2 220kV, Farrell-Reece No. 1&2 220kV, Farrell-John Butters 220kV, (radial single circuit to generator) and Farrell-Rosebery-Queenstown 110kV (radial single circuit to load) have experienced 28 sustained fault outages due to lightning. This performance is suboptimal with a significant proportion of these outages suspected to be due to 'back-flashover'. This has resulted in a number of double circuit outages and subsequent placement of these circuits on the vulnerable status list, resulting in network constraints during lightning storm activity.</p> <p>The installation of surge diverters in strategic locations and the improvement of tower footing earthing will reduce the voltage surge to which a transmission circuit is subjected as a result of a lightning strike, minimising the likelihood of flashover and subsequent unplanned circuit outage.</p>
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	No
Date of priority project completion	June-17
Limit(s) addressed by priority project	Reduced unplanned outage frequency due to lightning.
Initial limit value(s)	Unacceptable transmission line lightning performance at an average of 2.8 sustained fault outages due to lightning per annum on the circuits identified above.
Target limit value(s)	Reduced unplanned outage frequency due to lightning.
Completion limit values	Reduced unplanned outage frequency due to lightning.
Estimated capital cost of priority project	\$550,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	This project will be completed by December 2017.
Priority project update/comments	None

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Priority project name and ranking	16. Savage River Spur transmission circuit
Priority project description	Substandard spans verification and rectification.
Co-ordinated project	This is not a co-ordinated project.
Has the priority project been commenced ?	No
Date of priority project completion	December-18
Limit(s) addressed by priority project	LIDAR survey of transmission lines at risk of substandard clearances and remedial works to rectify identified substandard clearances.
Initial limit value(s)	Existing transmission line design temperature.
Target limit value(s)	Increased transmission line design temperature depending on completion of LIDAR surveys.
Completion limit values	Increased transmission line design temperature.
Estimated capital cost of priority project	\$1,389,000
Estimated operating cost of priority project	\$0
Capital expenditure to date	\$0
Operating expenditure to date	\$0
Priority project key milestones and dates	Key milestone for this project are <ul style="list-style-type: none">● Completion of internal approval process by June 2017.● Completion of LIDAR survey by June 2018.● Ground profiling, re-tensioning to meet increased transmission line design temperature by November 2016.● Project Completion December 2018.
Priority project update/comments	TasNetworks is reviewing historical survey records, as this may negate the need for LIDAR expenditure for this transmission line.

EXPLANATORY NOTE

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Name and ranking of priority project to be removed

10.Waddamana-Palmerston No 2 110 kV transmission circuit

Priority project description

Restrung P1 bay conductor at Palmerston Substation

Limit addressed by priority project

Increased transmission line rating from existing summer/winter rating of 736/800A to summer/winter 800A rating

Initial limit value

Increased summer rating of 800A

Target limit value

Increased summer rating of 800A

Reasons to undertake the project

Removal of the bay conductor limit at Palmerston Substation to allow increased transmission circuit capability.

Reason for priority project removal

TasNetworks decided to take out this project from NCIPAP because a broader project scope to replace circuit breaker, bay conductor, CT, VT associated with 110 kV P1 bay at Palmerston Substation is planned in 2015-16. An internal approval process to replace bay P1 is already initiated which includes replacement of P1 bay conductor.

As part of annual review process to NCIPAP priority projects, TasNetworks has completed consultation with AEMO prior to removing this project from the priority list.

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Name and ranking of priority project to be removed	13. Farrell Substation
Priority project description	Installation of second 220 kV bus coupler circuit breaker at Farrell Substation
Limit addressed by priority project	Improve security of supply to all 220 kV connections at Farrell Substation
Initial limit value	Failure of the 220 kV bus-coupler circuit breaker to open under a fault event could trip all 220 kV circuits, causing interruption of supply to west coast load (71 MW) as well as separation of significant West Coast generation (617 MW) from the rest of the network.
Target limit value	No interruption to supply (up to 71 MW) or generation (up to 617 MW) caused by failure of a single 220 kV bus coupler circuit breaker
Reasons to undertake the project	The annualised market benefit with increased system reliability in West Coast of Tasmanian
Reason for priority project removal	Since TasNetworks made its revenue submission, circumstances have changed due to closure of 3 major industrial customers (mainly mining load) in the West Coast area. The market benefit and payback period has changed significantly . As part of annual review process to NCIPAP priority projects, TasNetworks has completed consultation with AEMO prior to removing this project from the priority list.

EXPLANATORY NOTE

Name of replacement priority project 1	Knights Road-Kermandie transmission circuit
Replacement priority project ranking	17
Transmission circuit/injection point(s)	Knights Road-Kermandie 110 kV transmission circuit
Limit and reason for the limit	It is suspected that a number of transmission circuit spans may have substandard ground clearances. Through minimal investment, rectification of these spans will achieve compliance, and is also likely to result in an increase in line rating and capability
Project description	Increase transmission line design temperature by removing substandard clearance on selected spans
Initial limit	Existing transmission line design temperature.
Improvement target	Collection of substandard line clearance data to facilitate rerating of surveyed transmission lines
Estimated capital cost	\$291,000
Estimated operating cost	\$0
Consultation with AEMO	TasNetworks has consulted with AEMO in accordance with clause 5.4(e), (g) prior to inclusion as a replacement project. This project was initially endorsed by AEMO when TasNetworks made initial submission to the AER in February 2014. This project was removed by the AER on the background that TasNetworks total NCIPAP program was equivalent to 1.5 percent of the MAR and lower payback period.
Reason to include the replacement priority project	Because TasNetworks has proposed removing two priority projects from the AER's approved project priority list (draft decision), this project is proposed to replace one of these projects.

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Name of replacement priority project 1	Palmerston-Hadspen No 1 & 2, Palmerston-Sheffield and Sheffield-Burnie No 1 220 kV transmission circuits
Replacement priority project ranking	18
Transmission circuit/injection point(s)	Palmerston-Hadspen No 1 & 2, Palmerston-Sheffield and Sheffield-Burnie No 1 220 kV transmission circuits
Limit and reason for the limit	No fault location relay capability on the identified transmission circuits as the protection schemes on the identified transmission circuits have relays that do not support the distance to fault functionality
Project description	Installation of modern fault location functionality for more accurate fault location on the identified transmission circuits
Initial limit	No fault location relay capability on the identified transmission circuits
Improvement target	Fault location relay capability on the identified transmission circuits
Estimated capital cost	\$120,000
Estimated operating cost	\$14
Consultation with AEMO	TasNetworks has consulted with AEMO in accordance with clause 5.4(e), (g) prior to inclusion of this as a replacement project. This project was initially endorsed by AEMO when TasNetworks made initial submission to the AER in February 2014. This project was removed by the AER on the background that TasNetworks total NCIPAP program was equivalent to 1.5 percent of the MAR.
Reason to include the replacement priority project	This project provides reduced return to service times following a fault outage and increased likelihood of determining the cause of unplanned transmission line outages, reducing the likelihood of future unplanned outages. Because TasNetworks has proposed removing two priority projects from the AER's approved project priority list (draft decision), this project is proposed to replace one of these projects.

EXPLANATORY NOTE

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Name of replacement priority project 1	Chapel St Substation
Replacement priority project ranking	19
Transmission circuit/injection point(s)	Chapel St 110 kV bus coupler
Limit and reason for the limit	Chapel Street Substation has an outdoor AIS 110 kV switchyard which has a double bus arrangement. The two buses are connected via one only bus-coupler circuit breaker. Failure of this circuit breaker to open under a fault event would result in all circuits connected to both 110 kV buses being tripped. This would interrupt connections to seven 110 kV transmission circuits and four 110/11 kV supply transformers.
Project description	Install a second 110 kV bus coupler dead tank circuit breaker in series with the existing bus coupler circuit breaker
Initial limit	Failure of the 110 kV bus-coupler circuit breaker to open under a fault event could trip all 110 kV circuits, causing interruption of supply to significant load
Improvement target	No interruption of supply caused by failure of a single 110 kV bus coupler circuit breaker
Estimated capital cost	\$450,000
Estimated operating cost	\$0
Consultation with AEMO	TasNetworks has consulted with AEMO in accordance with clause 5.4(e), (g) prior to inclusion of this as a replacement project. This project was initially endorsed by AEMO when TasNetworks made initial submission to the AER in February 2014. This project was removed by the AER on the background that TasNetworks total NCIPAP program was equivalent to 1.5 percent of the MAR.
Reason to include the replacement priority project	Because TasNetworks has removed two priority projects from the AER's approved project priority list (draft decision), this project is added as a replacement project

EXPLANATORY NOTE

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