Instructions

This template must be used by **TasNetworks** to report service performance information for **2016** (1 Jul - 31 Dec 2016)

Inputs

- Blue, yellow and green worksheets are for inputs, including performance and exclusion information. The TNSP only needs to enter data on these worksheets.
  - To add more rows in the Inputs-exclusions tabs please insert rows after row 4.
- Cells where TNSP input is required are shaded orange: TNSP input required
- Cells where the input is sourced from the revenue proposal are shaded green: revenue proposal

Calculations

- Purple worksheets are the s-factor results based on the performance inputs entered by the TNSP. These are automatically calculated.
- cells where a calculation occurs are shaded grey with orange text: **calculation cell**

Outcomes

- The red worksheet shows the total performance, s-factor and financial incentive results based on the TNSP's performance inputs.

							Unit	Performance without exclusions	Performance with exclusions	Performance exclusions	Number of events pa - 2016 without exclusions	Number of events pa - 2016 with exclusions	Number of events pa - 2016 exclusions	Number of events pa - 2016 No. of defined circuits	Number of events pa - 2015 without exclusions	Number of events pa - 2015 with exclusions	Number of events pa - 2015 exclusions	Number of events pa - 2015 No. of defined circuits	Average (2015, 2016) without exclusions	Average (2015, 2016) with exclusions	Average (2015, 2016) exclusions	Average (2015, 2016) No. of defined circuits
	Average circuit outage rate (%)	**Collar**	**Target**	**Cap**	**Weighting**																	
s1	line outage - fault	64.59	31.17	13.39	0.2		average circuit outage rate (%)	25.8	23.9		31	30	1	106	24	21	3	107	28	26	2	107
s2	transformer outage - fault	17.28	11.60	7.03	0.2		average circuit outage rate (%)	8.3	8.3		10	10	0	109	8	8	0	109	9	9	0	109
s3	reactive plant - fault	9.99	3.33	0.17	0.1		average circuit outage rate (%)	4.2	4.2		0	0	0	12	1	1	0	12	1	1	0	12
s4	line outage - forced	17.62	9.99	2.67	0.0		average circuit outage rate (%)	14.1	12.2		20	19	1	106	10	7	3	107	15	13	2	107
s5	transformer outage - forced	4.37	2.82	1.28	0.0		average circuit outage rate (%)	11.5	11.5		11	11	0	109	14	14	0	109	13	13	0	109
s6	reactive plant - forced	32.82	14.00	1.07	0.0		average circuit outage rate (%)	12.5	12.5		0	0	0	12	3	3	0	12	2	2	0	12
	Loss of supply event frequency									**exclusions**												
s7	>0.10 system minutes	11	10	8	0.15		number of events per annum	1	1	0												
s8	>1.00 system minutes	5	3	0	0.15		number of events per annum	1	1	0												
	Average outage duration																					
s9	Average outage duration	169.76	111.52	63.99	0.2		number of LOS events	13	12	1	13	11	2		12	12	0		13	12	1	
							Aggregate LOS minutes	530	524	5	176	166	10		883	883	0		530	524	5	
	Proper operation of equipment						**Average outage duration**	44	44	3	14	15	5		74	74	0		44	44	3	
s10	failure of protection system	14.0	9.0	5.0	0.0		number of events per annum	1	1	0												
s11	Material failure of SCADA	25.0	8.0	0.0	0.0		number of events per annum	2	2	0												
s12	Incorrect operational isolation of	8.0	4.0	1.0	0.0		number of events per annum	6	6	0												

TNSP	TasNetworks
STPIS version	December, 2012
Regulatory Determination	2014/15 - 2017/18
Base Year Allowed Revenue	186,931,284
Base Year	2014-15
Commencement of regulatory year	1 Jul 2014
X factor	9.81% 2.31%

	2014–15	**2015–16**	**2016–17**	2017-18	2018-19
Annual revenue ($2014-15)	186,931,284				
Annual revenue adjusted for CPI	186,931,284	171,494,719	170,366,992		

Calendar year revene	2H 2015	2016	2017	2018	1H 2019
Revenue	85,747,359	170,930,855			

	Dec-13	**Dec-14**	**Dec-15**	**Dec-16**	**Dec-17**	**Dec-18**
CPI	104.8	106.6	108.4			

Other inputs

Assessment Period	2016
Financial year to affect revenue:	2017/18
Date prepared:	
Revision date:	

Parameter	Average circuit outage rate	Event proposed for exclusion	Description of the event and its impact on the network and performance	Cause of the event	Count of circuit events	Circuits affected	Reasons for exclusion request	Further references	
S	Name of any average circuit outage rate parameters applying to TasNetworks	Name of the event	Detail of the event. Such as: the action of any third parties, the actions of the TNSP, assets damaged or interrupted.	A description of the cause of the event	Identify the events that are to be excluded from the performance measure	Name of circuits affected	Full details of the reason/s for excluding this event. Should include a reference to the defined exclusions and explain how it meets this exclusion definition (see Exclusion definition tab). Eg. Exclusion 1.2 Third party event.	A TNSP may provide further details of an exclusion event. Please provide reference to any attachments submitted.	AER staff assessment
S1	Average circuit outage rate fault (%) - lines	IR2116 LI-WY 220 kV transmission circuit tripped at 9/02/2016 1:25:00 PM due to inter-trip from generation.	At the same time as GO–CS No 2 trip, a restricted earth fault relay (64R) installed on Hydro's generator transformer T5 at Wayatinah Substation mal operated and sent a permissive intertrip signal to Liapootah differential relay E187A and E187/121B and tripped circuit breaker E152 at Liapootah Substation disconnecting the Liapootah–Wayatinah 220 kV transmission circuit.	Intertrip	1	LI-WY 220 kV Transmission Circuit	outage primarily caused or initiated by a fault or other event on a third party system —e.g. intertrip signal, generator outage, customer installation	See investigation report IIR2115	Details match internal report provided. However link to third party email verifying event doesn't work (Hydro)
S2	Average circuit outage rate fault (%) - transformers				0				
S3	Average circuit outage rate fault (%) - reactive plant				0				
S4	Average circuit outage rate forced (%) - lines	Forced outage of PO-PM 5 220 kV Transmission Circuit at 27/01/2016 8:56:00 AM	Isolation Points:Open onlyWorkPlanned: Opened Off only for Hydro Transformer maintenance.	Generator request	1	PO-PM 5 220 kV Transmission Circuit	outage primarily caused or initiated by a fault or other event on a third party system — intertrip signal		??
S5	Average circuit outage rate forced (%) - transformers				0				
S6	Average circuit outage rate forced (%) - reactive plant				0				

Parameter	LOS event frequency	Event proposed for exclusion	Description of the event and its impact on the network and performance	Cause of the event	Start date	Start time	End date	End time		Quantitative impact	Demand shed and time	Circuits affected	Maximum system demand	Reasons for exclusion request	Further references
S	Name of any LOS event parameters applying to TasNetworks	Name of the event	Detail of the event. Such as: the action of any third parties, the actions of the TNSP, assets damaged or interrupted.	A description of the cause of the event	dd/mm/yy	hh:mm:ss	dd/mm/yy	hh:mm:ss	Hours+Minutes unavailable (min)	Impact of exclusion event on LOS parameter	The (MW) demand shed and the duration it was shed for.	Name of circuits or plant affected	The max system demand that occurred up until the time of the event	Full details of the reason/s for excluding this event. Should include a reference to the defined exclusions and explain how it meets this exclusion definition (see Exclusion definition tab). Eg.	A TNSP may provide further details of an exclusion event. Please provide reference to any attachments submitted.
S7									0:00						
S8									0:00						

Average Outage Duration	Event proposed for exclusion	Description of the event and its impact on the network and performance	Cause of the event	Start date	Start time	End date	End time		Quantitative impact	Capped impact	Circuits affected	Reasons for exclusion request	Further references		
	Name of the event	Detail of the event. Such as: the action of any third parties, the actions of the TNSP, assets damaged or interrupted.	A description of the cause of the event	dd/mm/yy	hh:mm:ss	dd/mm/yy	hh:mm:ss	Hours+Minutes unavailable (min)	Impact of exclusion event on AOD Parameter	Impact of capped exclusion event on AOD	Name of circuits or plant affected	Full details of the reason for excluding this event. Should include a reference to the defined exclusions and explain how it meets this exclusion definition (see Exclusion definition tab). Eg. Exclusion 1.2 Third party event	A TNSP may provide further details of an exclusion event. Please provide reference to any attachments submitted.	AER staff assessment	Follow-up
s9	Newton pumps	The Queenstown–Netwton110 kV transmission circuit tripped and auto reclosed after dead time. The 11 kV feeder NT-D352 that supplies Newton pump at also tripped at the same time of the QT-NT 110 kV transmission circuit trip and was reclosed by Power System Coordinator after 2 minutes. Pumping load was approximately 3 MW at the time.	Adverse weather	13/08/16	19:01:00	13/08/16	19:03:00	0:02	1	0:02	Newton D352 11 kV feeder	interruption of infrequent, occasional load (such as pumping stations) where accurate estimate of load profiles is unreliable	See investigation report IR2149, and Newton schematic diagram	Details ve	How does claim fit with exclusion definitions? Is it a
s9	TEMCO load block trip	See investigation report IR2135. Inappropriate configuration of TEMCO caused a load trip during protection testing.	Customer equipment configuration	17/05/16	10:13:00	17/05/16	10:21:00	0:08	1	0:08	TEMCO load shedding	outage primarily caused by equipment configuration on a third party system — customer installation	See investigation report IR2135 TEMCO UFLS trip	Details verified from internal report	

99 - should not be included?

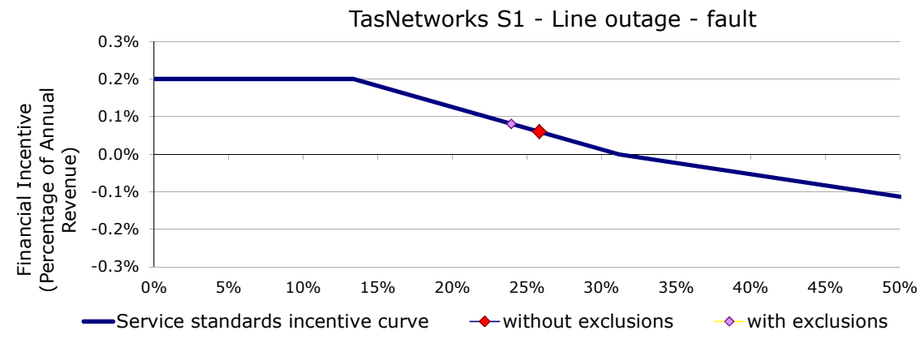
TasNetworks - s1 - line outage - fault

Performance Targets	Graph start	Collar	Target	Cap	Graph end
line outage - fault	84.6%	64.6%	31.2%	13.4%	-1.4%
Weighting	-0.2000%	-0.2000%	0.0000%	0.2000%	0.2000%

Performance Formulae	Formulae					
Performance	=	-0.0020				
	=	-0.0060	x	line outage	+	0.0019
	=	-0.0112	x	line outage	+	0.0035
	=	0.0020				

Performance Outcomes		without exclusions	with exclusions
line outage - fault	=	26%	24%
S-Factor	=	0.06%	0.08%

Conditions			S- Calc 1	S- Calc 2
64.6%	<	line outage	-0.0020	-0.0020
31.2%	≤	line outage	0.0003	0.0004
13.4%	≤	line outage	0.0006	0.0008
		line outage	0.0020	0.0020



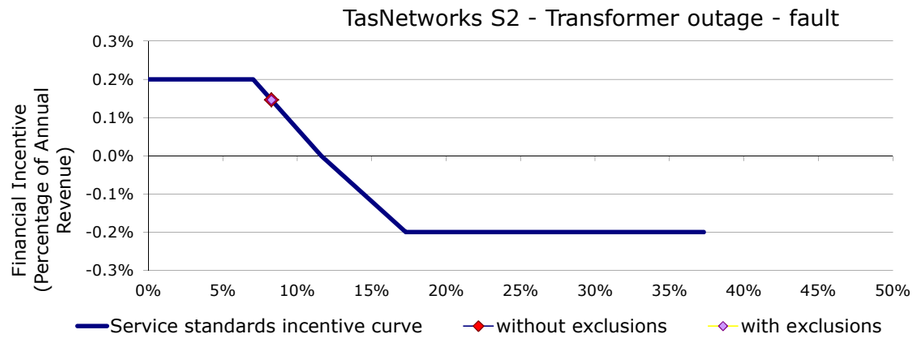
TasNetworks - s2 - transformer outage - fault

Performance Targets	Graph start	Collar	Target	Cap	Graph end
transformer outage - fault	37.30%	17.28%	11.60%	7.03%	-13.00%
Weighting	-0.2000%	-0.2000%	0.0000%	0.2000%	0.2000%

Performance Formulae	Formulae					
Performance	=	-0.0020				
	=	-0.0352	x	transformers ou	+	0.0041
	=	-0.0438	x	transformers ou	+	0.0051
	=	0.0020				

Performance Outcomes		without exclusions	with exclusions
transformer outage - fault	=	8%	8%
S-Factor	=	0.15%	0.15%

Conditions			S- Calc 1	S- Calc 2
17.28%	<	transformers outage	-0.0020	-0.0020
11.6%	≤	transformers outage	0.0012	0.0012
7.0%	≤	transformers outage	0.0015	0.0015
		transformers outage	0.0020	0.0020



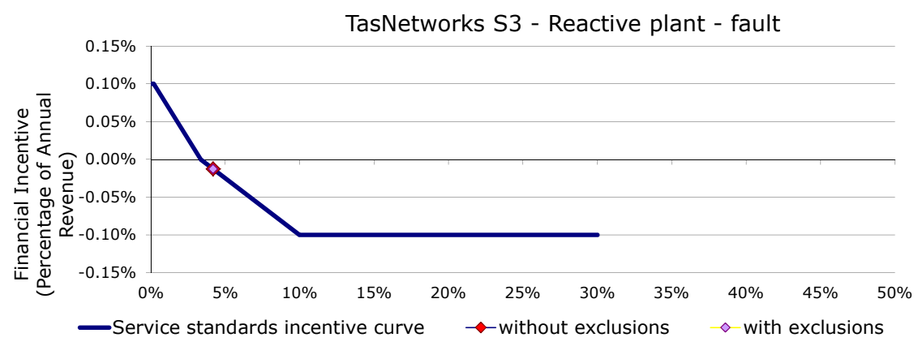
TasNetworks - s3 - reactive plant - fault

Performance Targets	Graph start	Collar	Target	Cap	Graph end
reactive plant - fault	30.00%	9.99%	3.33%	0.17%	0.00%
Weighting	-0.10%	-0.10%	0.00%	0.10%	0.10%

Performance Formulae	Formulae					
Performance	=	-0.0010				
	=	-0.0150	x	reactive plant (	+	0.0005
	=	-0.0316	x	reactive plant (	+	0.0011
	=	0.0010				

Performance Outcomes		without exclusions	with exclusions
reactive plant - fault	=	4%	4%
S-Factor	=	-0.01%	-0.01%

Conditions			S- Calc 1	S- Calc 2
9.99%	≤	reactive plant outage	-0.0010	-0.0010
3.3%	≤	reactive plant outage	-0.0001	-0.0001
0.2%	≤	reactive plant outage	-0.0003	-0.0003
		reactive plant outage	0.0010	0.0010



TasNetworks - s4 - line outage - forced

Performance Targets	Graph start	Collar	Target	Cap	Graph end
line outage - forced	17.40%	17.62%	9.99%	2.67%	2.90%
Weighting	0.00%	0.00%	0.00%	0.00%	0.00%

Performance Formulae	Formulae					
Performance	=	0.0000				
	=	0.0000	x	line outage (fo	+	0.0000
	=	0.0000	x	line outage (fo	+	0.0000
	=	0.0000				

Performance Outcomes		without exclusions	with exclusions
line outage - forced	=	14%	12%
S-Factor	=	0.00%	0.00%

Conditions			S- Calc 1	S- Calc 2
17.62%	≤	line outage (force)	0.0000	0.0000
10.0%	≤	line outage (force)	0.0000	0.0000
2.7%	≤	line outage (force)	0.0000	0.0000
		line outage (force)	0.0000	0.0000

TasNetworks - s5 - transformer outage - forced

Performance Targets	Graph start	Collar	Target	Cap	Graph end
transformer outage - force	4.20%	4.37%	2.82%	1.28%	1.50%
Weighting	0.00%	0.00%	0.00%	0.00%	0.00%

Performance Outcomes		without exclusions	with exclusions
transformer outage - forced	=	11%	11%
S-Factor	=	0.00%	0.00%

Performance Formulae	Formulae						Conditions			S- Calc 1	S- Calc 2
Performance	=	0.0000					4.37% ≤ transformers outage (force)			0.0000	0.0000
	=	0.0000	x	transformers ou	+	0.0000	2.8% ≤ transformers outage (force	≤	4.4%	0.0000	0.0000
	=	0.0000	x	transformers ou	+	0.0000	1.3% ≤ transformers outage (force	≤	2.8%	0.0000	0.0000
	=	0.0000					transformers outage (force	<	1.3%	0.0000	0.0000

TasNetworks - s6 - reactive plant - forced

Performance Targets	Graph start	Collar	Target	Cap	Graph end
reactive plant - forced	32.60%	32.82%	14.00%	1.07%	1.30%
Weighting	0.00%	0.00%	0.00%	0.00%	0.00%

Performance Outcomes		without exclusions	with exclusions
reactive plant - forced	=	13%	13%
S-Factor	=	0.00%	0.00%

Performance Formulae	Formulae						Conditions			S- Calc 1	S- Calc 2
Performance	=	0.0000					32.82% ≤ reactive plant outage (force)			0.0000	0.0000
	=	0.0000	x	reactive plant	+	0.0000	14.0% ≤ reactive plant outage (for	≤	32.8%	0.0000	0.0000
	=	0.0000	x	reactive plant	+	0.0000	1.1% ≤ reactive plant outage (for	≤	14.0%	0.0000	0.0000
	=	0.0000					reactive plant outage (for	<	1.1%	0.0000	0.0000

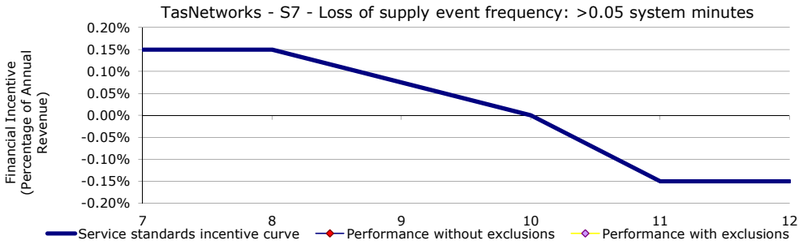
TasNetworks - s7 - Loss of supply event frequency: >0.10 system minutes

Performance Targets	Graph start	Collar	Target	Cap	Graph end
>0.10 system minutes	12	11.0	10.0	8.0	0
Weighting	-0.00150	-0.00150	0.00000	0.00150	0.00150

Performance Formulae	Formulae
Performance	

Performance Outcomes		without exclusions	with exclusions
>0.10 system minutes	=	1	1
S-Factor	=	0.15%	0.15%

Conditions			S- Calc 1	S- Calc 2
When: 11.0	<	No. of events	-0.0015	-0.0015
		No. of events = 10	0.0000	0.0000
		No. of events = 9	0.0008	0.0008
		No. of events = 8	0.0015	0.0015



TasNetworks - s8 - Loss of supply event frequency: >1.00 system minutes

Performance Targets	Graph start	Collar	Target	Cap	Graph end
>1.00 system minutes	5	5.0	3.0	0.0	0
Weighting	-0.0015	-0.0015	0.0000	0.0015	0.0015

Performance Formulae	Formulae
Performance	

Performance Outcomes		without exclusions	with exclusions
>1.00 system minutes	=	1	1
S-Factor	=	0.10%	0.10%

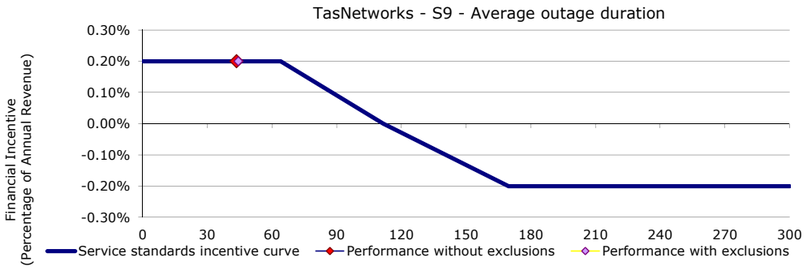
Conditions			S- Calc 1	S- Calc 2
When: 5.0	<	No. of events	-0.0015	-0.0015
		No. of events = 4	-0.0008	-0.0008
		No. of events = 3	0.0000	0.0000
		No. of events = 2	0.0005	0.0005
		No. of events = 1	0.0010	0.0010
		No. of events = 0	0.0015	0.0015

TasNetworks - s9 - Average outage duration

Performance Targets	Graph start	Collar	Target	Cap	Graph end
Average outage duration	300	170	112	64	0
Weighting	-0.00200	-0.00200	0.00000	0.00200	0.00200

Performance Formulae	Formulae						Conditions				S- Calc 1	S- Calc 2
							When:					
Performance	=	-0.0020					170	<	No. of events		-0.0020	-0.0020
	=	0.0000	x	No. of events	+	0.0038	111.52	≤	No. of events	≤ 170	0.0023	0.0023
	=	0.0000	x	No. of events	+	0.0047	63.99	≤	No. of events	≤ 112	0.0029	0.0028
	=	0.0020							No. of events	= 64	0.0020	0.0020

Performance Outcomes		without exclusions	with exclusions
Average outage duration	=	44	44
S-Factor	=	0.20%	0.20%



TasNetworks - Performance outcomes

Aggregate outcome	
S-factor	0.665%
Financial Incentive	$1,136,743
Financial year affected by financial incentive	2015–16

S	Performance parameter	Target	Performance without exclusions			Performance with exclusions			Impact of exclusions
			Performance	S-Factor	Final Incentive	Performance	S-Factor	Final Incentive	
s1	line outage - fault	31.17%	25.82%	0.06%	$102,835	23.94%	0.08%	$138,943	0.02%
s2	transformer outage - fault	11.60%	8.26%	0.15%	$250,084	8.26%	0.15%	$250,084	0.00%
s3	reactive plant - fault	3.33%	4.17%	-0.01%	-$21,473	4.17%	-0.01%	-$21,473	0.00%
s4	line outage - forced	9.99%	14.08%	0.00%	$0	12.21%	0.00%	$0	0.00%
s5	transformer outage - forced	2.82%	11.47%	0.00%	$0	11.47%	0.00%	$0	0.00%
s6	reactive plant - forced	14.00%	12.50%	0.00%	$0	12.50%	0.00%	$0	0.00%
s7	LOS >0.10 system minutes	10	1	0.15%	$256,396	1	0.15%	$256,396	0.00%
s8	LOS >1.00 system minutes	3	1	0.10%	$170,931	1	0.10%	$170,931	0.00%
s9	Average outage duration	111.52	44	0.20%	$341,862	44	0.20%	$341,862	0.00%
	TOTALS			**0.64%**	**$1,100,635**		**0.67%**	**$1,136,743**	**0.02%**

Revenue calendar year:	$170,930,855