

Instructions

This template must be used by **TransGrid** 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:
- Cells where the input is sourced from the revenue proposal are shaded green:

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:

Outcomes

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

	Collar	Target	Cap	Weighting
s1 line outage - fault	22.26	17.86	12.38	0.2
s2 transformer outage - fault	19.01	14.92	10.26	0.2
s3 reactive plant - fault	22.73	15.54	9.54	0.1
s4 line outage - forced	25.49	14.98	1.34	0.0
s5 transformer outage - forced	24.15	20.25	15.56	0.0
s6 reactive plant - forced	28.55	20.39	6.55	0.0

Loss of supply event frequency				
s7 >0.05 system minutes:	4	3	2	0.15
s8 >0.25 system minutes:	2	1	0	0.15

Average outage duration				
s9 Average outage duration	266.53	144.49	67.97	0.2

Proper operation of equipment				
s10 failure of protection system	N/A	N/A	N/A	0.0
s11 Material failure of SCADA	N/A	N/A	N/A	0.0
s12 Incorrect operational isolation of	N/A	N/A	N/A	0.0

TNSP
STPIS version
Regulatory Determination
Base Year Allowed Revenue
Base Year
Commencement of regulatory year
X factor

TransGrid				
December, 2012				
2014/15 - 2017/18				
845,390,768				
2014-15				
1 Jul 2014				
15.03%	3.70%			

	2014-15	2015-16	2016-17	2017-18
Annual revenue (\$2014-15)	845,390,768			
Annual revenue adjusted for CPI	845,390,768	730,649,994	715,495,791	
Calendar year revenue	2H 2015	2016	2017	1H 2018
Revenue	345,324,997	723,072,893		
Revenue(2015)	788,020,381			

Other inputs	
Assessment Period	2016
Financial year to affect revenue:	2017/18
Date prepared:	4-Jan-17
Revision date:	

Unit	Performance	
	without exclusions	with exclusions
average circuit outage rate (%)	14.0	12.4
average circuit outage rate (%)	15.6	15.3
average circuit outage rate (%)	7.7	7.7
average circuit outage rate (%)	19.2	18.3
average circuit outage rate (%)	25.4	25.4
average circuit outage rate (%)	26.0	24.9
	exclusions	
number of events per annum	2	2
number of events per annum	0	0
number of LOS events	10	10
Aggregate LOS minutes	1,026	1,026
Average outage duration	114	116
number of events per annum	20	20
number of events per annum	3	3
number of events per annum	5	5

Number of events pa - 2016			
without exclusions	with exclusions	No. of defined circuits	
32	29	3	211
33	32	1	182.25
8	8	0	135.9167
30	29	1	211
36	36	0	182
34	31	3	136

8	8	0
1,353	1,353	0
169	169	#DIV/0!

Number of events pa - 2015			
without exclusions	with exclusions	No. of defined circuits	
27	24	3	210.33
24	24	0	183.75
13	13	0	137.25
51	48	3	210
57	57	0	184
37	37	0	137

11	11	0
699	699	0
64	64	#DIV/0!

Average (2015, 2016)			
without exclusions	with exclusions	No. of defined circuits	
30	27	3	211
29	28	1	183
11	11	0	137
41	39	2	211
47	47	0	183
36	34	2	137

10	10	0
1,026	1,026	0
116	116	#DIV/0!

	Dec-13	Dec-14	Dec-15	Dec-16
CPI 104.8		106.6	108.4	

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
	Name of any average circuit outage rate parameters applying to TransGrid	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.
S								
S1	Line Outage - Fault	217404	132kV Transmission Line 250 fault outage due to a lightning stike within Ausgrid's network.	Lightning strike within Ausgrid's network		250 Sydney North Berowra 132kV Line	Exclusion 1.2 Third Party Event	Excluded Outage 217404 - 132kV TL 250 - 29_01_2016.zip
S1	Line Outage - Fault	221156	330kV Transmission Line L1 fault outage due to a fault within SHL's network.	Fault within SHL's network		L1 Lower Tumut - Tumut3 330kV Line	Exclusion 1.2 Third Party Event	Excluded Outage 221156 - 330kV TL L1 - 25_02_2016.zip
S4	Line Outage - Forced	220337	330kV Transmission Line L5 forced outage due to a short notice request from SHL.	Request from SHL		L5 Lower Tumut - Tumut3 330kV Line	Exclusion 1.2 Third Party Event	Excluded Outage 220337 - 330kV TL L5 - 16_02_2016.zip
S2	Transformer Outage - Fault	278866	132/66kV No.4 Transformer at Taree tripped due to a lightning strike within Essential Energy's network.	Lightning strike within Essential Energy's network		Taree No.4 Transformer 132/66kV	Exclusion 1.2 Third Party Event	Excluded Outage 278866 - TRE No.4 Tx - 6_12_2016.zip
S1	Line Outage - Fault	264180	330kV Transmission Line U1 fault outage due to a fault within SHL's network.	Fault within SHL's network		U1 Upper Tumut - Tumut1 330kV Line	Exclusion 1.2 Third Party Event	Excluded Outage 264180 - 330kV TL U1 - 07_08_2016.zip
S6	Reactive Plant - Forced	272864	330kV No.3 Reactor at Yass taken out of service at short notice.	Short notice outage		Yass No.3 Reactor 330kV	Exclusion 1.1 Outage on assets that are not providing prescribed transmission services	Refer to the list of non-prescribed assets provided in the zip file containing evidence files for the MIC
S6	Reactive Plant - Forced	267940	330kV No.2 Reactor at Murray taken out of service at short notice.	Short notice outage		Murray No.2 Reactor 330kV	Exclusion 1.1 Outage on assets that are not providing prescribed transmission services	Refer to the list of non-prescribed assets provided in the zip file containing evidence files for the MIC
S6	Reactive Plant - Forced	276040	330kV No.2 Reactor at Yass taken out of service at short notice.	Short notice outage		Yass No.2 Reactor 330kV	Exclusion 1.1 Outage on assets that are not providing prescribed transmission services	Refer to the list of non-prescribed assets provided in the zip file containing evidence files for the MIC

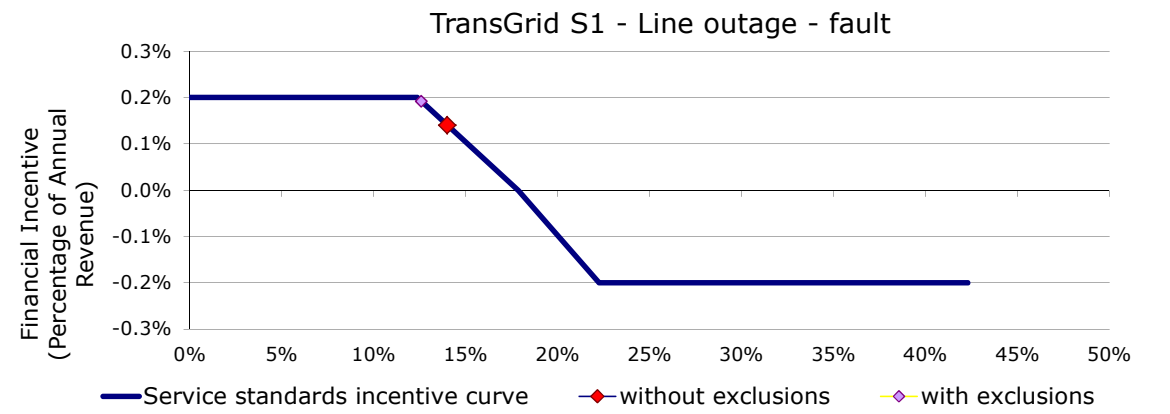
Parameter	LOS event frequency	Event proposed for exclusion	Description of the event and its impact on the network and performance	Cause of the event	Start date	Start time	End date	End time	Quantitative impact	Demand shed and time	Circuits affected	Maximum system demand	Reasons for exclusion request	Further references
S	Name of any LOS event parameters applying to TransGrid	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)	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 reference to any attachments 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.
								0:00		0:00			

TransGrid - s1 - line outage - fault

Performance Targets					Performance Outcomes				
	Graph start	Collar	Target	Cap	Graph end			without exclusions	with exclusions
line outage - fault	42.3%	22.3%	17.9%	12.4%	-2.4%	line outage - fault	=	14%	13%
Weighting	-0.2000%	-0.2000%	0.0000%	0.2000%	0.2000%	S-Factor	=	0.14%	0.19%

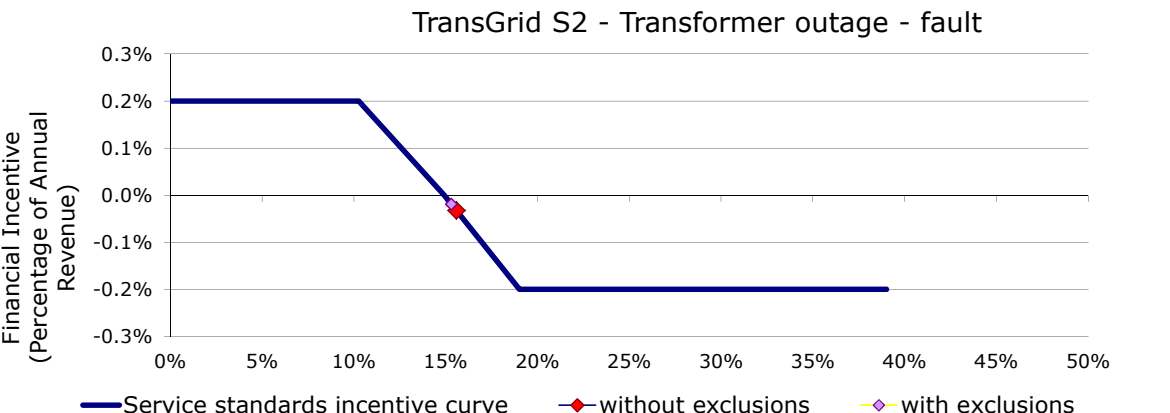
Performance Formulae					Conditions						
	Formulae					Conditions					
Performance	=	-0.0020				22.3% <	line outage		S- Calc 1	S- Calc 2	
	=	-0.0455	x	line outage	+	17.9% ≤	line outage	≤	22.3%	0.0018	0.0024
	=	-0.0365	x	line outage	+	12.4% ≤	line outage	≤	17.9%	0.0014	0.0019
	=	0.0020					line outage	<	12.4%	0.0020	0.0020



TransGrid - s2 - transformer outage - fault

Performance Targets					Performance Outcomes				
	Graph start	Collar	Target	Cap	Graph end			without exclusions	with exclusions
transformer outage - fault	39.00%	19.01%	14.92%	10.26%	-9.70%	transformer outage - fault	=	16%	15%
Weighting	-0.2000%	-0.2000%	0.0000%	0.2000%	0.2000%	S-Factor	=	-0.03%	-0.02%

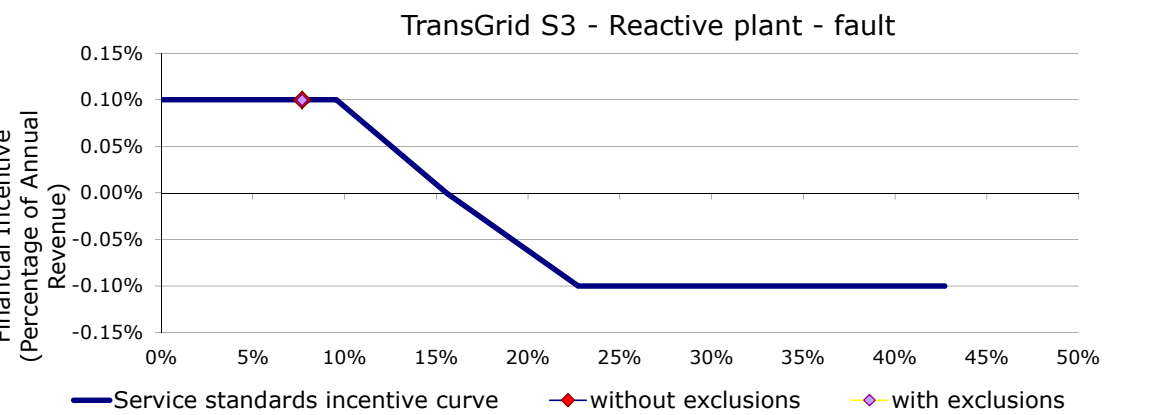
Performance Formulae					Conditions						
	Formulae					Conditions					
Performance	=	-0.0020				19.01% <	transformers outage		S- Calc 1	S- Calc 2	
	=	-0.0489	x	transformers ou	+	14.9% ≤	transformers outage	≤	19.0%	-0.0003	-0.0002
	=	-0.0429	x	transformers ou	+	10.3% ≤	transformers outage	≤	14.9%	-0.0003	-0.0002
	=	0.0020					transformers outage	<	10.3%	0.0020	0.0020



TransGrid - s3 - reactive plant - fault

Performance Targets					Performance Outcomes				
	Graph start	Collar	Target	Cap	Graph end			without exclusions	with exclusions
reactive plant - fault	42.70%	22.73%	15.54%	9.54%	0.00%	reactive plant - fault	=	8%	8%
Weighting	-0.10%	-0.10%	0.00%	0.10%	0.10%	S-Factor	=	0.10%	0.10%

Performance Formulae					Conditions						
	Formulae					Conditions					
Performance	=	-0.0010				22.73% ≤	reactive plant outage		S- Calc 1	S- Calc 2	
	=	-0.0139	x	reactive plant o	+	15.5% ≤	reactive plant outage	≤	22.7%	0.0011	0.0011
	=	-0.0167	x	reactive plant o	+	9.5% ≤	reactive plant outage	≤	15.5%	0.0013	0.0013
	=	0.0010					reactive plant outage	<	9.5%	0.0010	0.0010



TransGrid - s4 - line outage - forced

Performance Targets					Performance Outcomes				
	Graph start	Collar	Target	Cap	Graph end			without exclusions	with exclusions
line outage - forced	25.30%	25.49%	14.98%	1.34%	1.50%	line outage - forced	=	19%	18%
Weighting	0.00%	0.00%	0.00%	0.00%	0.00%	S-Factor	=	0.00%	0.00%

Performance Formulae					Conditions						
	Formulae					Conditions					
Performance	=	0.0000				25.49% ≤	line outage (force)		S- Calc 1	S- Calc 2	
	=	0.0000	x	line outage (fo	+	15.0% ≤	line outage (force)	≤	25.5%	0.0000	0.0000
	=	0.0000	x	line outage (fo	+	1.3% ≤	line outage (force)	≤	15.0%	0.0000	0.0000
	=	0.0000					line outage (force)	<	1.3%	0.0000	0.0000

TransGrid - s5 - transformer outage - forced

Performance Targets						Performance Outcomes		without	with
	Graph start	Collar	Target	Cap	Graph end			exclusions	exclusions
transformer outage - forced	24.00%	24.15%	20.25%	15.56%	15.80%			25%	25%
Weighting	0.00%	0.00%	0.00%	0.00%	0.00%			0.00%	0.00%

Performance Formulae						Conditions		S- Calc 1	S- Calc 2
	Formulae								
Performance	=	0.0000				24.15% ≤ transformers outage (force)		0.0000	0.0000
	=	0.0000	x	transformers ou	+	0.0000	20.3% ≤ transformers outage (force ≤	24.2%	0.0000
	=	0.0000	x	transformers ou	+	0.0000	15.6% ≤ transformers outage (force ≤	20.3%	0.0000
	=	0.0000					transformers outage (force <	15.6%	0.0000

TransGrid - s6 - reactive plant - forced

Performance Targets						Performance Outcomes		without	with
	Graph start	Collar	Target	Cap	Graph end			exclusions	exclusions
reactive plant - forced	28.40%	28.55%	20.39%	6.55%	6.80%			26%	25%
Weighting	0.00%	0.00%	0.00%	0.00%	0.00%			0.00%	0.00%

Performance Formulae						Conditions		S- Calc 1	S- Calc 2
	Formulae								
Performance	=	0.0000				28.55% ≤ reactive plant outage (force)		0.0000	0.0000
	=	0.0000	x	reactive plant o	+	0.0000	20.4% ≤ reactive plant outage (for ≤	28.6%	0.0000
	=	0.0000	x	reactive plant o	+	0.0000	6.6% ≤ reactive plant outage (for ≤	20.4%	0.0000
	=	0.0000					reactive plant outage (for <	6.6%	0.0000

TransGrid - s8 - Loss of supply event frequency: >0.25 system minutes

Performance Targets

>0.25 system minutes
Weighting

Graph start	Collar	Target	Cap	Graph end
4	2.0	1.0	0.0	0
-0.0015	-0.0015	0.0000	0.0015	0.0015

Performance Outcomes

>0.25 system minutes
S-Factor

	without exclusions	with exclusions
=	0	0
=	0.15%	0.15%
S- Calc 1	-0.0015	-0.0015
S- Calc 2	0.0000	0.0000
	0.0015	0.0015

Performance Formulae

Performance

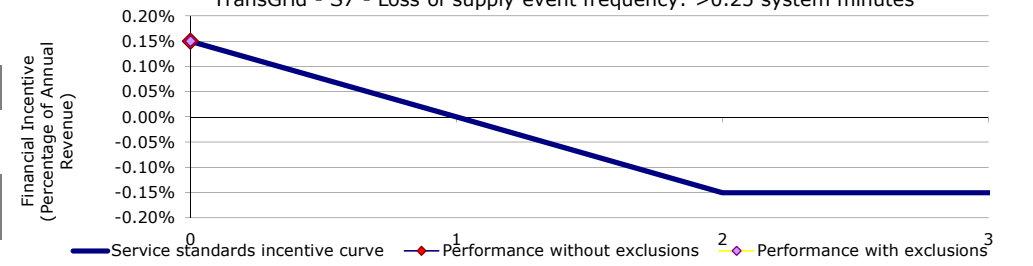
Formulae

When: 2.0 <

Conditions

No. of events = 1
No. of events = 0

TransGrid - S7 - Loss of supply event frequency: >0.25 system minutes



TransGrid - s7 - Loss of supply event frequency: >0.05 system minutes

Performance Targets

>0.05 system minutes
Weighting

Graph start	Collar	Target	Cap	Graph end
8	4.0	3.0	2.0	0
-0.0015	-0.0015	0.0000	0.0015	0.0015

Performance Outcomes

>0.05 system minutes
S-Factor

	without exclusions	with exclusions
=	2	2
=	0.15%	0.15%
S- Calc 1	-0.0015	-0.0015
S- Calc 2	0.0000	0.0000
	0.0015	0.0015

Performance Formulae

Performance

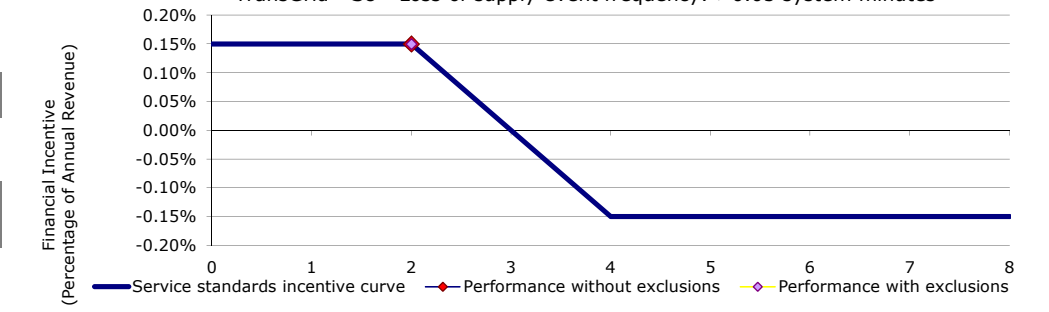
Formulae

When: 4.0 <

Conditions

No. of events = 3
No. of events = 2

TransGrid - S8 - Loss of supply event frequency: >0.05 system minutes



TransGrid - s9 - Average outage duration

Performance Targets

Graph start	Collar	Target	Cap	Graph end
567	267	144	68	63
-0.00200	-0.00200	0.00000	0.00200	0.00200

Performance Formulae

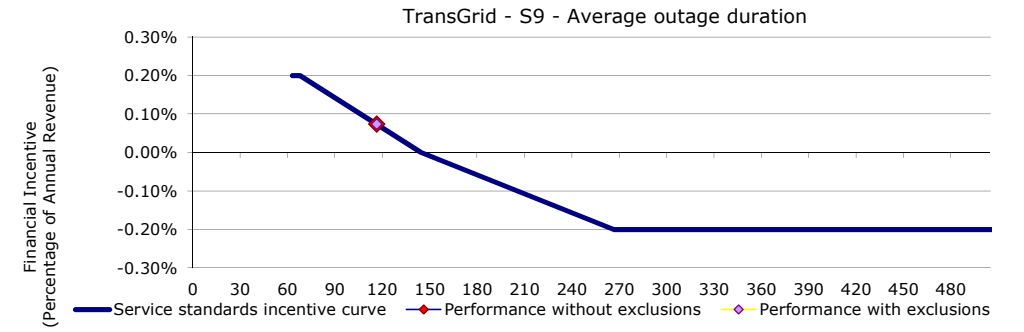
Performance	Formulae
=	-0.0020
=	0.0000 x No. of events + 0.0024
=	0.0000 x No. of events + 0.0038
=	0.0020

Performance Outcomes

Average outage duration =
S-Factor =

	without exclusions	with exclusions
Average outage duration	116	116
S-Factor	0.07%	0.07%
	S- Calc 1	S- Calc 2
	-0.0020	-0.0020
	0.0005	0.0005
	0.0007	0.0007
	0.0020	0.0020

When:	Conditions
267	< No. of events
144.49	≤ No. of events
67.97	≤ No. of events
	= No. of events



TransGrid - Performance outcomes

Aggregate outcome

S-factor	0.648%
Financial Incentive	\$4,682,911
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	17.86%	14.00%	0.14%	\$1,017,771	12.58%	0.19%	\$1,393,574	0.05%
s2	transformer outage - fault	14.92%	15.57%	-0.03%	-\$231,161	15.30%	-0.02%	-\$134,554	0.01%
s3	reactive plant - fault	15.54%	7.69%	0.10%	\$723,073	7.69%	0.10%	\$723,073	0.00%
s4	line outage - forced	14.98%	19.22%	0.00%	\$0	18.28%	0.00%	\$0	0.00%
s5	transformer outage - forced	20.25%	25.41%	0.00%	\$0	25.41%	0.00%	\$0	0.00%
s6	reactive plant - forced	20.39%	25.99%	0.00%	\$0	24.89%	0.00%	\$0	0.00%
s7	LOS >0.05 system minutes	3	2	0.15%	\$1,084,609	2	0.15%	\$1,084,609	0.00%
s8	LOS >0.25 system minutes	1	0	0.15%	\$0	0	0.15%	\$1,084,609	0.00%
s9	Average outage duration	144.49	116	0.07%	\$531,599	116	0.07%	\$531,599	0.00%
TOTALS				0.58%	\$3,125,891		0.65%	\$4,682,911	0.07%

Revenue 2016: \$723,072,893