

Statistics of Network Outage Submission and Desired Performance



Data extracted on 9 August 2024

Data prepared by Operations Planning



Purpose and Disclaimer

Purpose

AEMO has prepared this document to provide information on network outage submissions for work on transmission system.

The information in this document is derived on the date specified in the document from the information contained in the Network Outage Schedule (NOS) provided to AEMO by Transmission Network Service Providers (TNSPs) to meet their obligations.

Disclaimer

The information in this document is provided for explanatory purposes and may be subsequently updated or amended. The statistical performance indicators and metrics in this document may be refined or amended in future publications.

This document does not constitute legal, business, engineering or technical advice, and should not be relied on as a substitute for obtaining detailed advice about the National Electricity Law, the National Electricity Rules, or any other applicable laws, procedures or policies. AEMO has made reasonable efforts to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

Accordingly, to the maximum extent permitted by law, AEMO and its officers, employees and consultants involved in the preparation of this document:

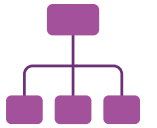
- make no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of the information in this document; and
- are not liable (whether by reason of negligence or otherwise) for any statements or representations in this document, or any omissions from it, or for any use or reliance on the information in it.

The TNSPs have advised AEMO that the information in NOS can change at short notice due to various operational circumstances. To the extent the information in this document is derived from information contained on or accessed from the NOS, please note that each TNSP:

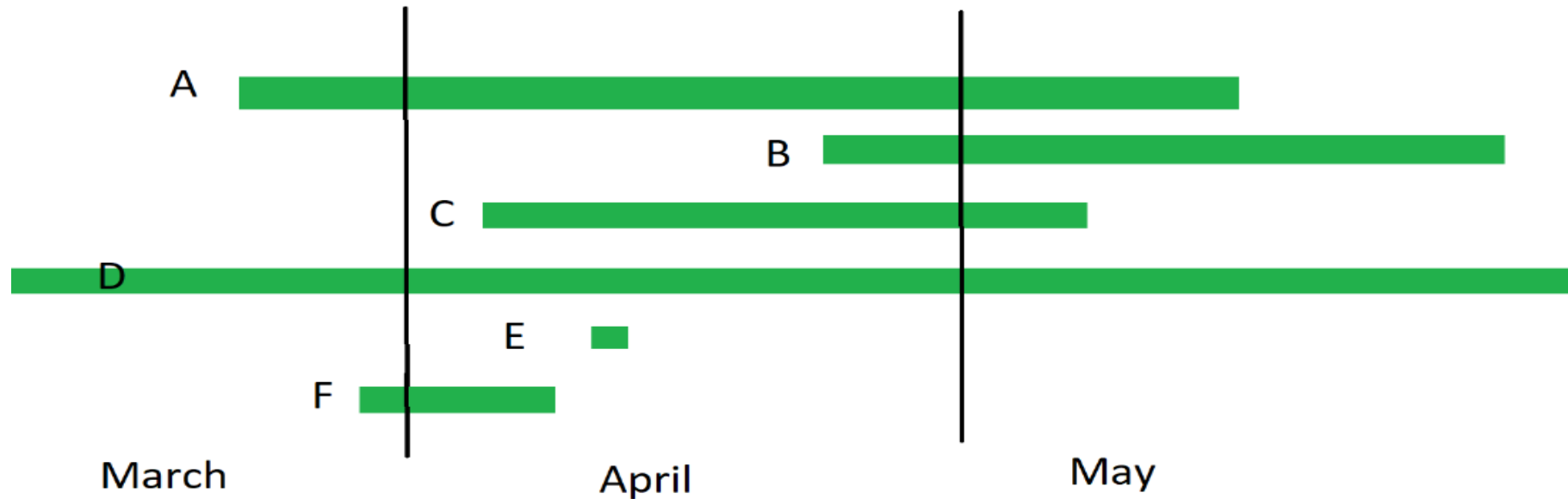
- does not guarantee or warrant the accuracy, completeness or currency of the information;
- reserves the right to make changes to the information provided to AEMO at any time; and
- will not be liable for any loss or damage arising out of or in connection with the use of the information.

Updates to Previous Reporting

- Reporting period covered is:
 - Six financial years 2018/19 – 2023/24**
- Statistics that cover all outage types
- Statistics that cover High Impact Outages (HIO) only
- Statistics that cover outages with invoked constraints
- Lead Time (Advance Notice Given)
- Outage Overrun statistics



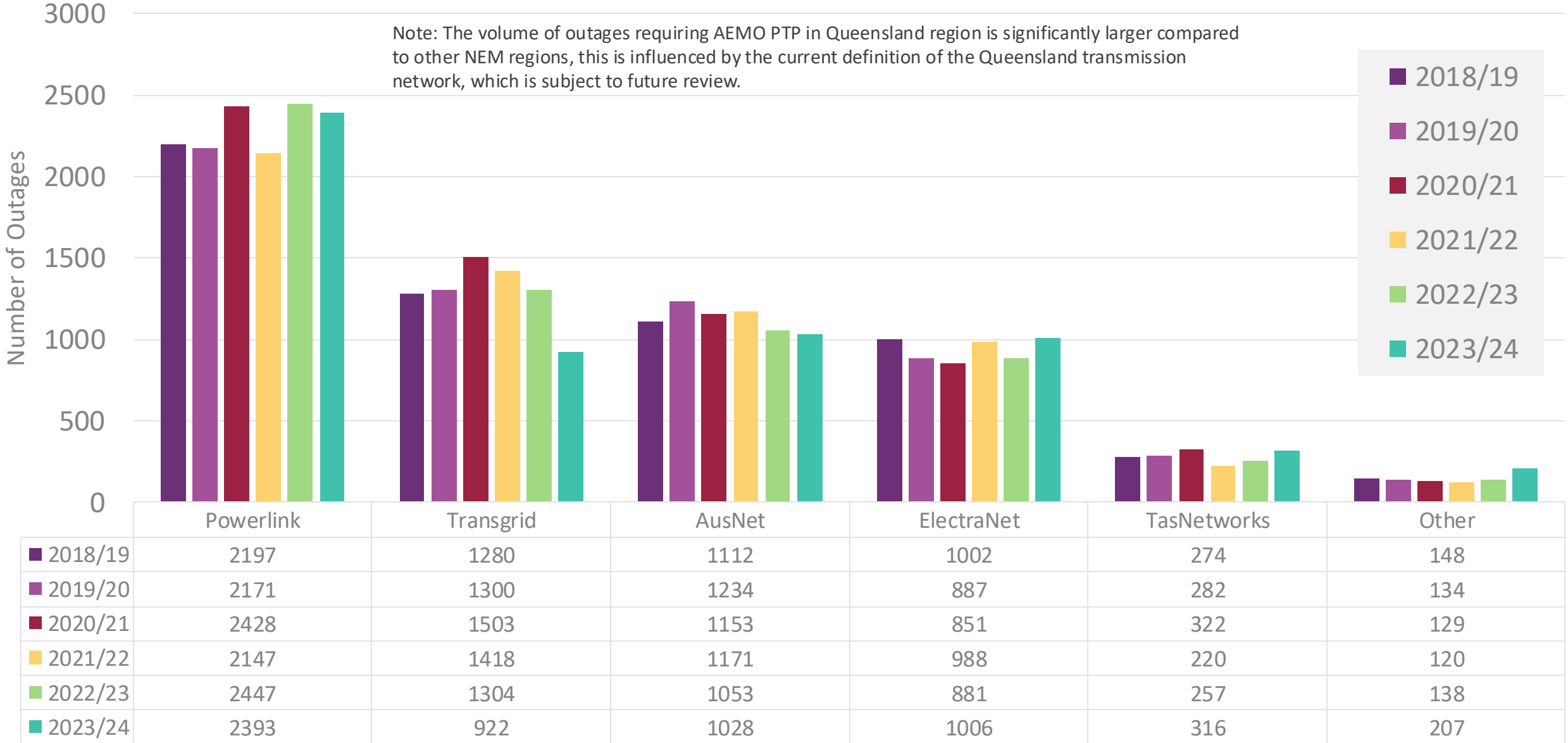
How outages are counted towards month/quarter/year



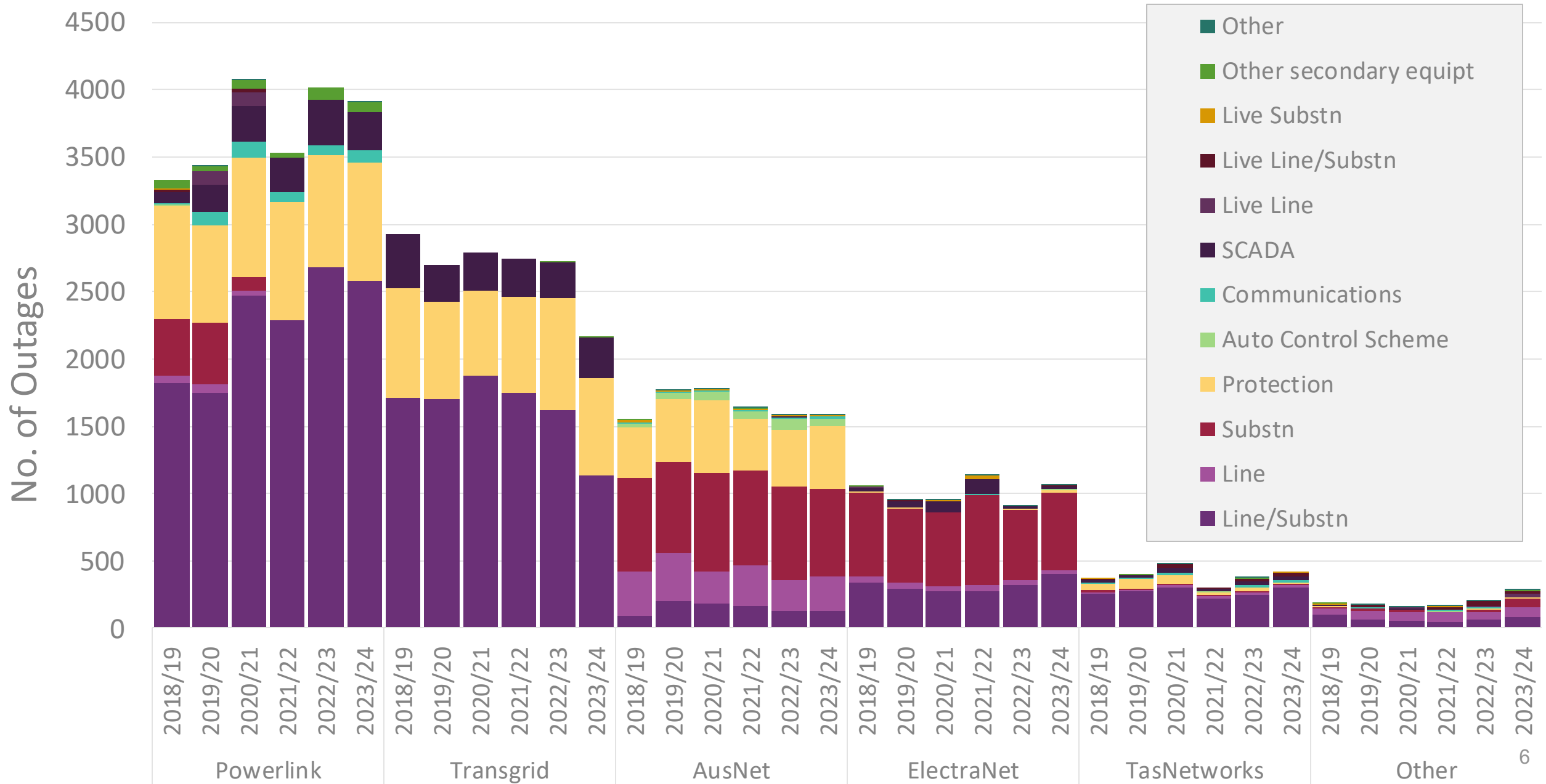
Outage B and C and E would be counted towards the tally for April. As the actual start date time is in April. Outage A would be counted towards the March Tally. Outage D would be counted towards whichever month it started in and would not be counted towards the tally for April. Most outages look like E, span for a few hours in a day, start and finish in the same month. Outage F is also tallied in the month of March (even though the major part is in April) because it started in March.

No. of Outages requiring PTP from AEMO (Primary Plant Taken OOS)

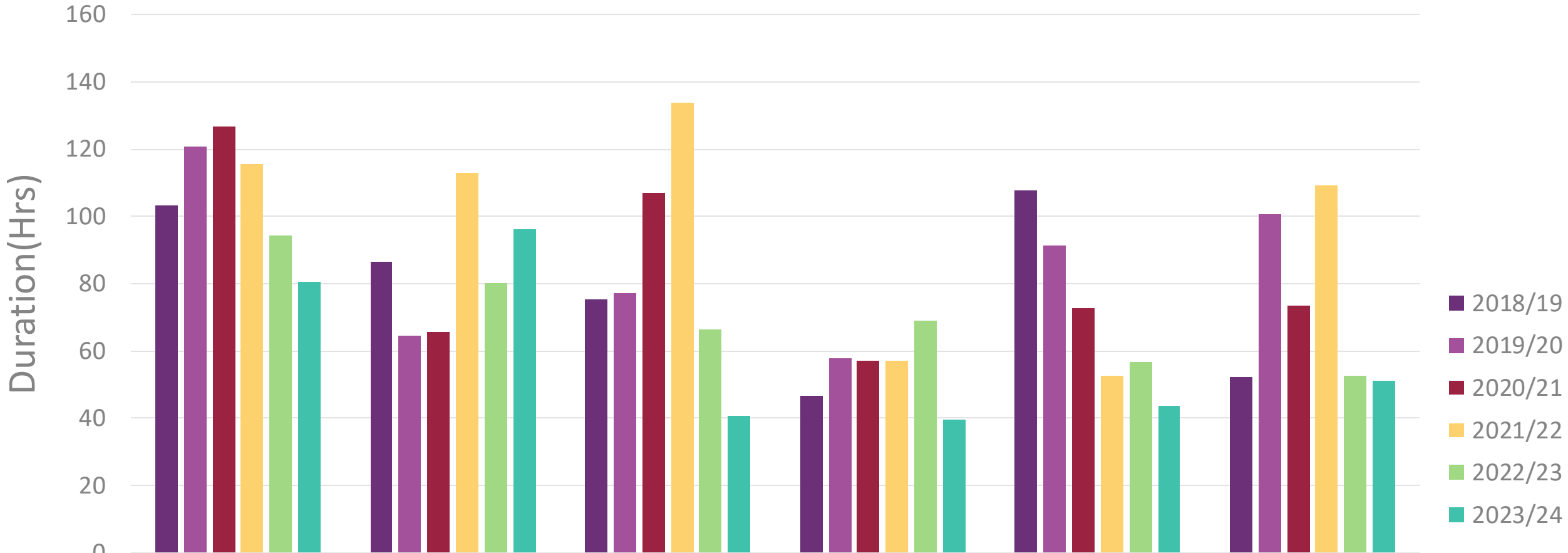
Note: The volume of outages requiring AEMO PTP in Queensland region is significantly larger compared to other NEM regions, this is influenced by the current definition of the Queensland transmission network, which is subject to future review.



All Types of Outages



Average Duration of Outages



	Powerlink	Transgrid	AusNet	ElectraNet	TasNetworks	Other
2018/19	103	87	75	47	108	52
2019/20	121	65	77	58	92	101
2020/21	127	66	107	57	73	73
2021/22	116	113	134	57	53	109
2022/23	94	80	67	69	57	53
2023/24	80	96	41	39	44	51

High Impact Outages (HIOs)

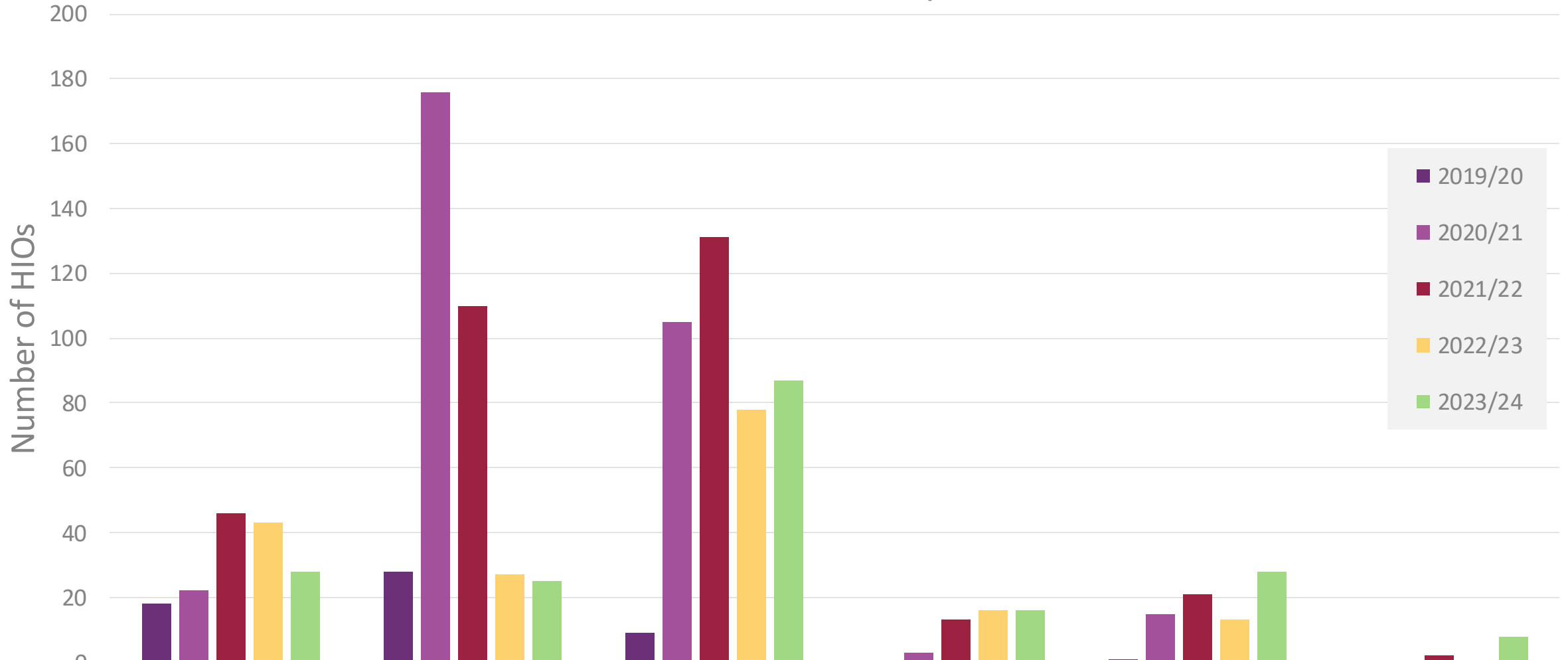
For information on what are HIOs refer to: <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-events-and-reports/network-outages>

AEMO Weekly HIO Report updates can be found here (updated by noon each Monday):

<http://www.nemweb.com.au/REPORTS/CURRENT/HighImpactOutages/>

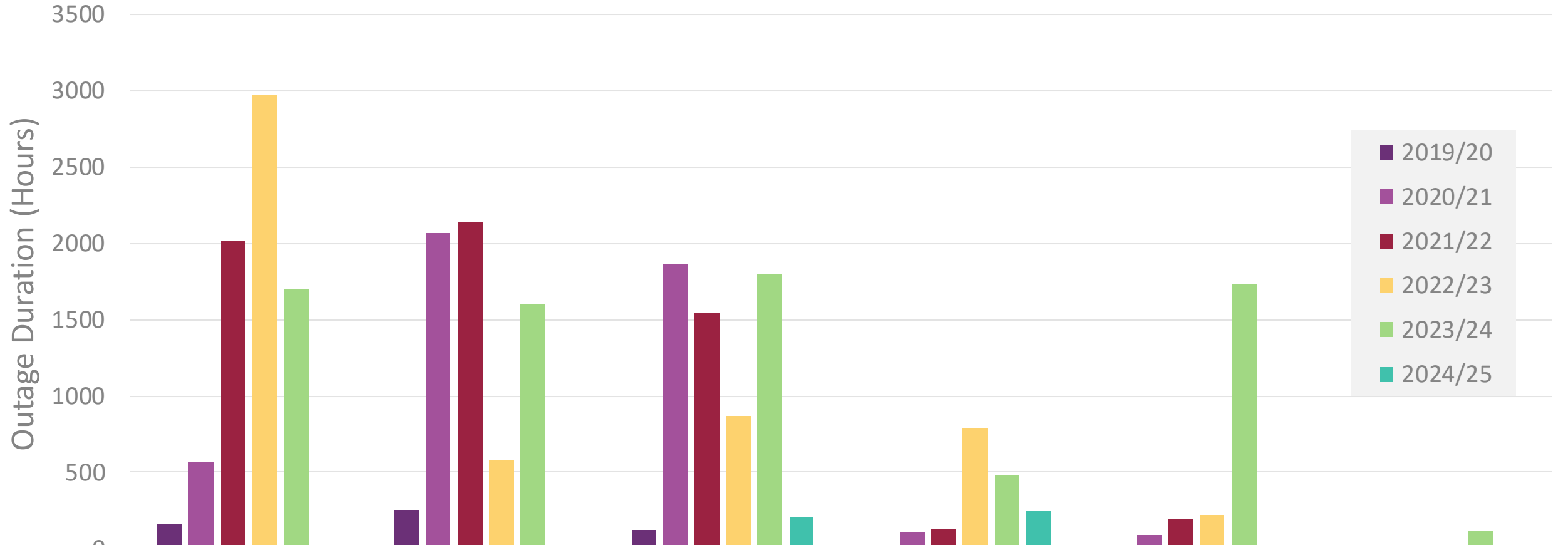
The concept of HIOs was introduced in April, 2017. Note, the data shown here is based on HIO tick-box in NOS. HIO tick-box in NOS was introduced very late in the 2019 calendar year (Q4 2019).

Number of HIOs taken by NSP



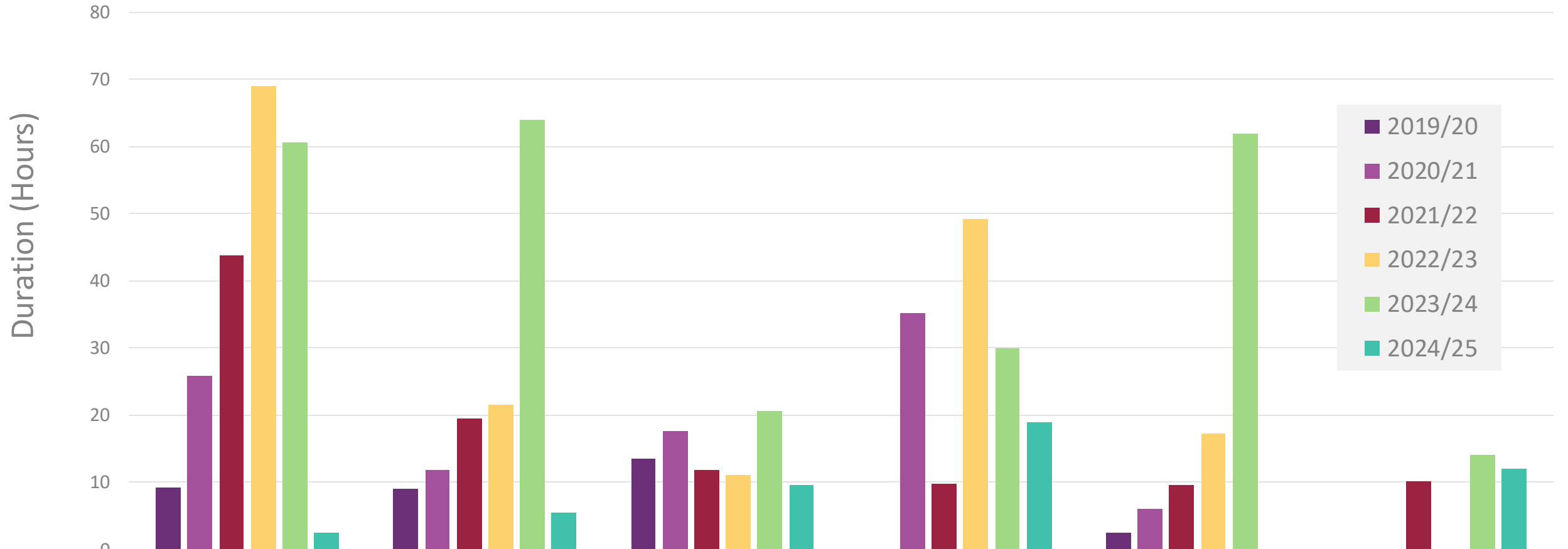
	Powerlink	Transgrid	AusNet	ElectraNet	TasNetworks	Other
2019/20	18	28	9		1	
2020/21	22	176	105	3	15	
2021/22	46	110	131	13	21	2
2022/23	43	27	78	16	13	
2023/24	28	25	87	16	28	8

HIO Total Duration



	Powerlink	Transgrid	AusNet	ElectraNet	TasNetworks	Other
2019/20	167	253	122		2	
2020/21	570	2071	1858	106	90	
2021/22	2015	2140	1546	127	200	20
2022/23	2970	584	870	788	224	
2023/24	1698	1599	1797	480	1734	112
2024/25	2	11	202	246		24

Average Duration of HIO



	Powerlink	Transgrid	AusNet	ElectraNet	TasNetworks	Other
2019/20	9	9	14		2	
2020/21	26	12	18	35	6	
2021/22	44	19	12	10	10	10
2022/23	69	22	11	49	17	
2023/24	61	64	21	30	62	14
2024/25	2	5	10	19		12

Lead-time (advance notice before the start of the outage)

Lead-time is defined as the difference between the actual start time of an outage and when the outage was submitted into NOS.

Lead-time is an important metric:

- If outages are submitted in a timely manner
 - It avoids clashes with Generators and other NSPs.
 - Minimises likelihood of multiple outage constraints being invoked.
 - Allows for improved planning activities from all parties and AEMO to assess:
 - The outage.
 - Contingency plans.
- More time to:
 - Identify and resolve issues.
 - Develop constraints if required.

Lead-time: Revised Method

Lead Time (days) = The actual start time of the outage minus the date time when the outage was submitted into NOS.

Two values are calculated:

1. Lead Time (NSP First ever submission into NOS): “Foot in the door, Favourable” value.

The actual start date of the outage could be different to what was originally submitted initially.

2. Lead Time (Accurate Submission): first instance when the outage was first submitted or resubmitted into NOS with the correct **start date** that **matches actual outage start date** (time does not need to match).

Lead Time Example

Outage Ref: TNSP_678503
 Equipment Description: Line X

Actual Start: 15/08/2022 06:21
 Actual Finish: 19/08/2022 14:45

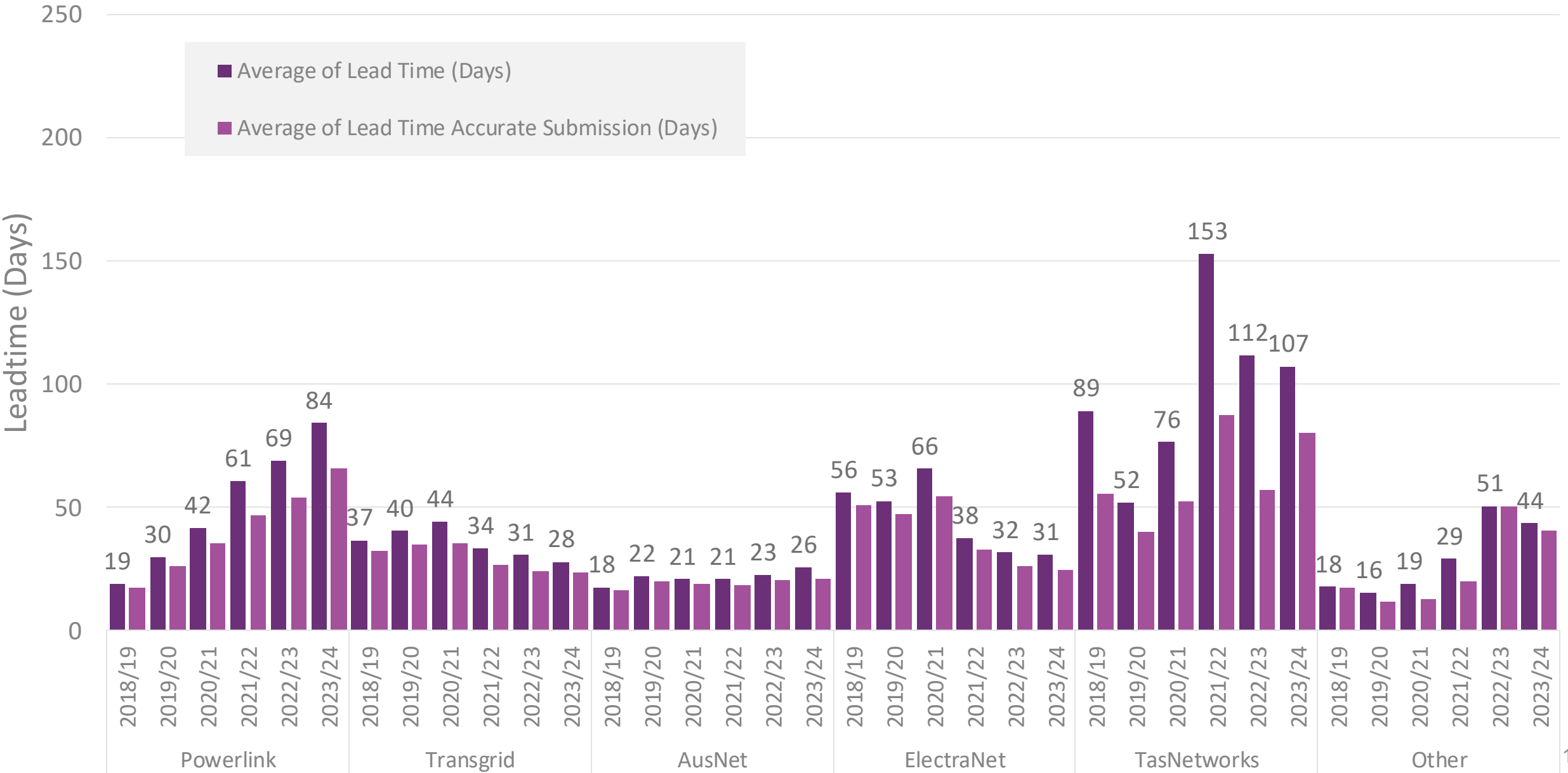
Lead Time (First Submission) calculation:
 15/08/2022 06:21 – 19/04/2022 16:41
 = 117.6 days

Lead Time (Accurate Submission) calculation:
 15/08/2022 06:21 – 06/07/2022 16:17
 = 39.6 days

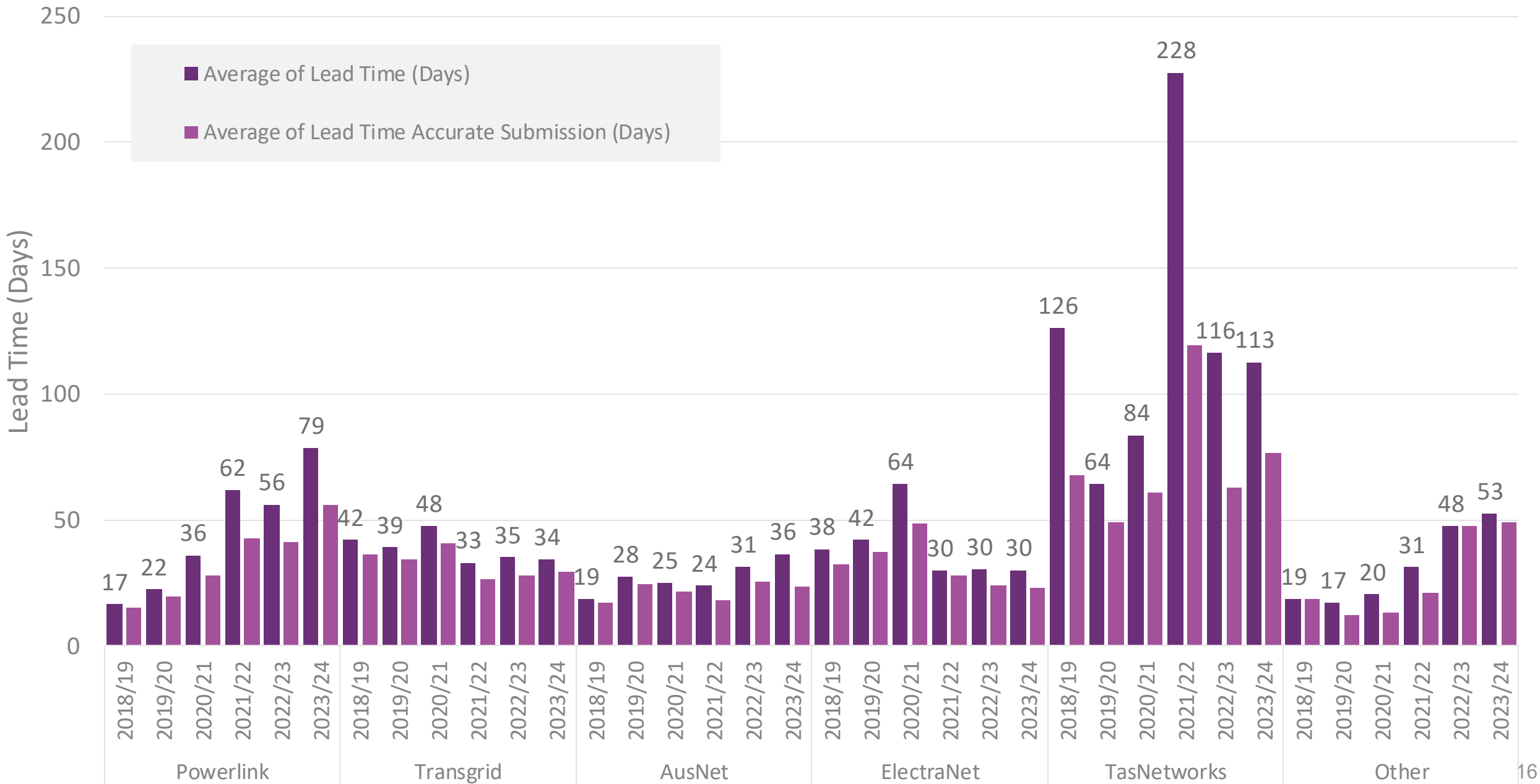
🔍 "Planned Dates" are blue. "Actual Dates" are black

19/08/2022 14:51	status COMPLETE	[15/08/2022 06:21 - 19/08/2022 14:45]	set by Ma
19/08/2022 14:51	status PTR	19/08/2022 09:45 , [15/08/2022 06:21 - 19/08/2022 14:45]	set by Ma
19/08/2022 14:49	status RESUBMIT	[15/08/2022 06:21 - 19/08/2022 14:45]	set by P8
19/08/2022 09:45	status PTR	19/08/2022 09:45 , [15/08/2022 06:21 - 20/08/2022 17:00]	set by Ma
15/08/2022 06:22	status PTP	15/08/2022 05:46 , [15/08/2022 06:21 - 20/08/2022 17:00]	set by NO
15/08/2022 06:22	status RESUBMIT	[15/08/2022 06:21 - 20/08/2022 17:00]	set by P8
15/08/2022 05:46	status PTP	15/08/2022 05:46 , [15/08/2022 06:00 - 20/08/2022 17:00]	set by To
14/08/2022 15:38	status PDLTP	[15/08/2022 06:00 - 20/08/2022 17:00]	set by Al
12/08/2022 12:28	status STLTP	[15/08/2022 06:00 - 20/08/2022 17:00]	set by Ti
10/08/2022 10:52	status MTLTP	[15/08/2022 06:00 - 20/08/2022 17:00]	set by Ki
09/08/2022 16:45	status RESUBMIT	[15/08/2022 06:00 - 20/08/2022 17:00]	set by P8
09/08/2022 15:30	status MTLTP	[15/08/2022 06:00 - 20/08/2022 17:00]	set by Ki
09/08/2022 09:51	status RESUBMIT	[15/08/2022 06:00 - 20/08/2022 17:00]	set by P8
04/08/2022 10:26	status MTLTP	[15/08/2022 06:00 - 20/08/2022 17:00]	set by Ay
04/08/2022 09:26	status RESUBMIT	[15/08/2022 06:00 - 20/08/2022 17:00]	set by P8
02/08/2022 13:13	status MTLTP	[15/08/2022 06:00 - 20/08/2022 17:00]	set by Ay
06/07/2022 16:17	status SUBMIT	[15/08/2022 06:00 - 20/08/2022 17:00]	set by P7
06/07/2022 16:17	status WDRAWN	[18/07/2022 06:00 - 23/07/2022 17:00]	set by NO
06/07/2022 16:17	status WD REQ	[18/07/2022 06:00 - 23/07/2022 17:00]	set by P7
04/07/2022 13:52	status SUBMIT	[18/07/2022 06:00 - 23/07/2022 17:00]	set by NO
04/07/2022 13:52	status RESUBMIT	[18/07/2022 06:00 - 23/07/2022 17:00]	set by P7
04/07/2022 13:52	status SUBMIT	[18/07/2022 06:00 - 23/07/2022 17:00]	set by NO
04/07/2022 13:52	status RESUBMIT	[18/07/2022 06:00 - 23/07/2022 17:00]	set by P7
22/06/2022 13:04	status SUBMIT	[18/07/2022 06:00 - 23/07/2022 17:00]	set by P7
22/06/2022 13:04	status WDRAWN	[11/07/2022 06:00 - 16/07/2022 17:00]	set by NO
22/06/2022 13:04	status WD REQ	[11/07/2022 06:00 - 16/07/2022 17:00]	set by P7
19/04/2022 16:41	status SUBMIT	[11/07/2022 06:00 - 16/07/2022 17:00]	set by P7

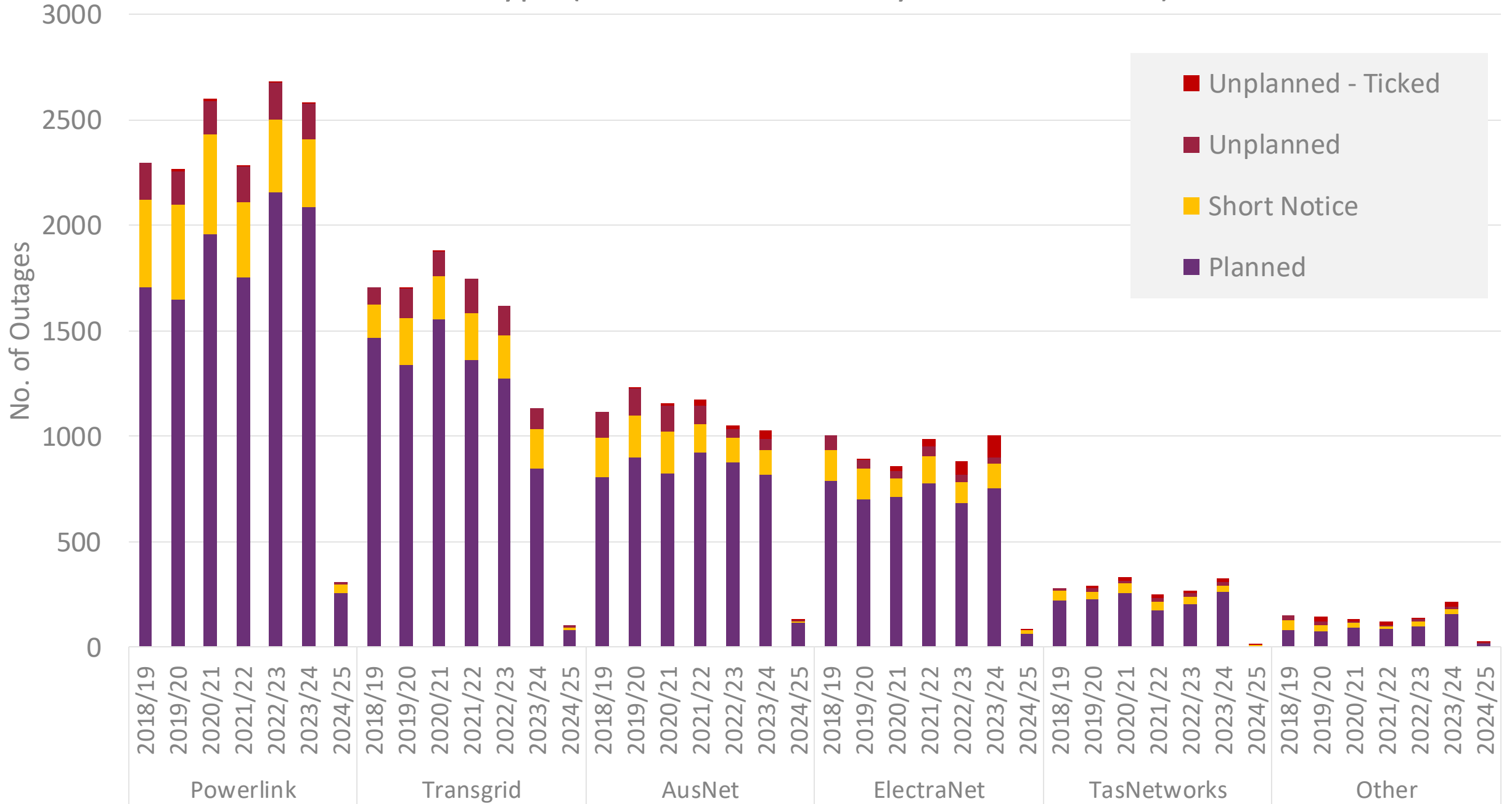
Average Lead Time (Days) of All Outages



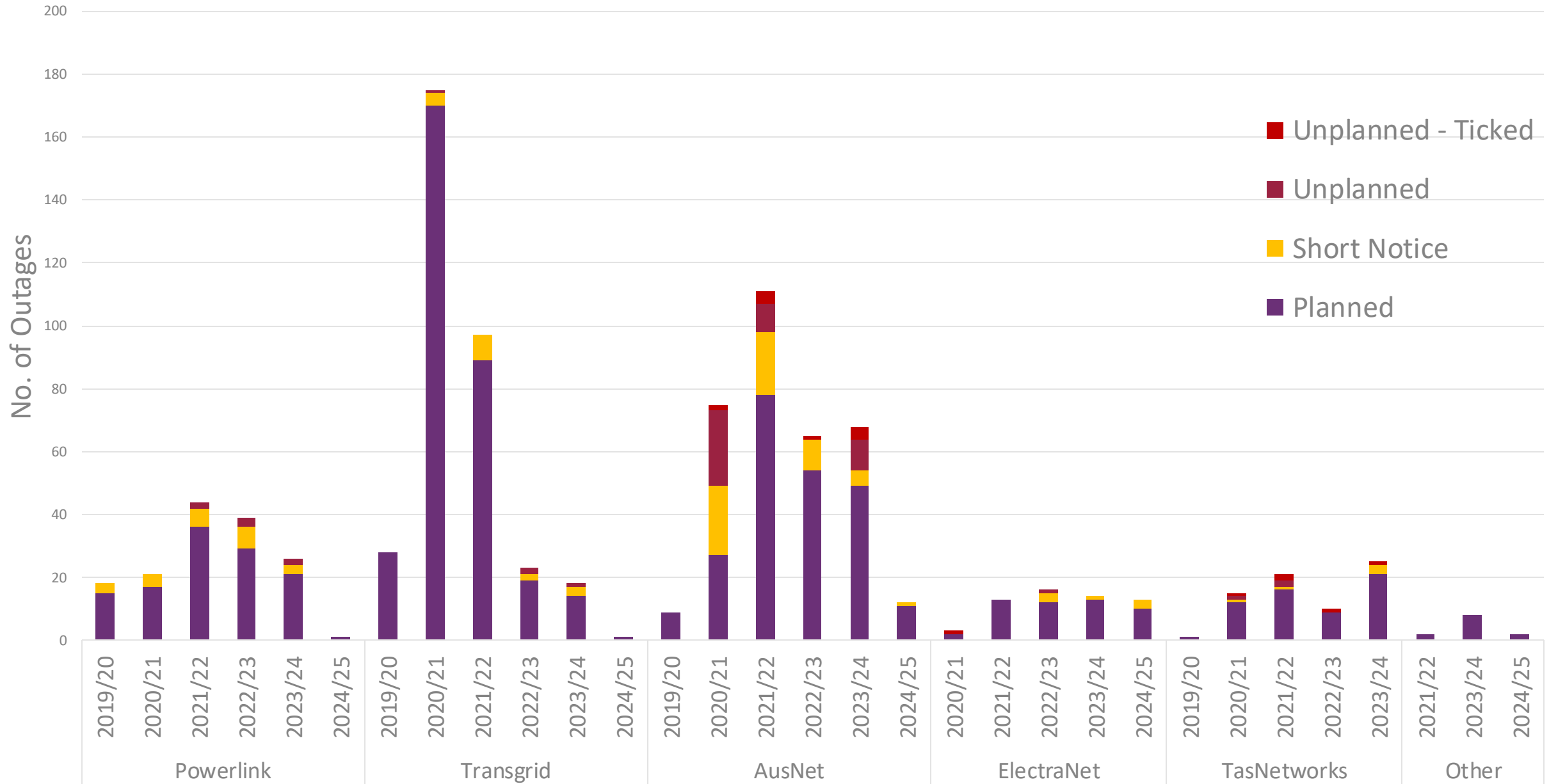
Lead Time for Outages with Invoked Constraint(s)



Notice Type (Short Notice is 4 Days or Less Notice)

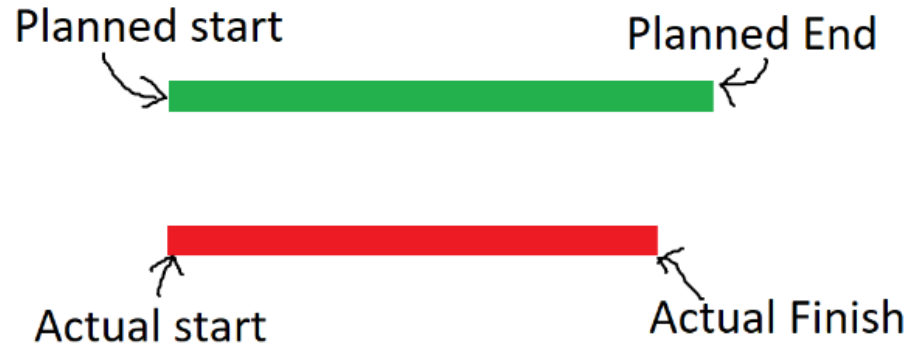


Notice Type of HIOs (Short Notice is 4 Days or Less Notice)

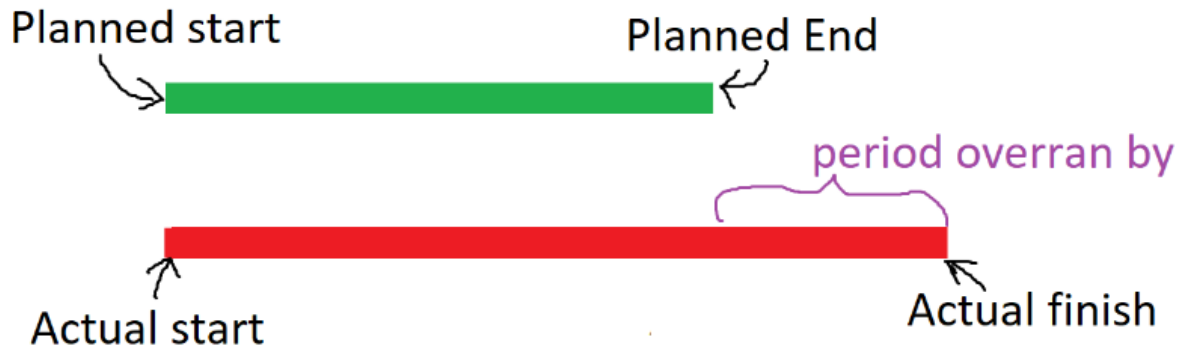


Outage Overrun – Return to Service

Example 1 – outage did not go beyond the planned end time:



Example 2 – outage went over the planned end time:



Outage Overrun: Revised Method

The revised method takes the outage "Planned End" time as the end time provided when the outage was first granted Pre-Dispatch Likely to Proceed (PDLTP) by AEMO control room. "Planned End" time revisions provided by NSP in any subsequent NOS outage entry updates (resubmissions) are not considered.

The revised method is illustrated below. The outage "Overrun" is calculated as the period commencing from 1400 hrs (when first PDLTP was granted) until outage "Actual" end time.

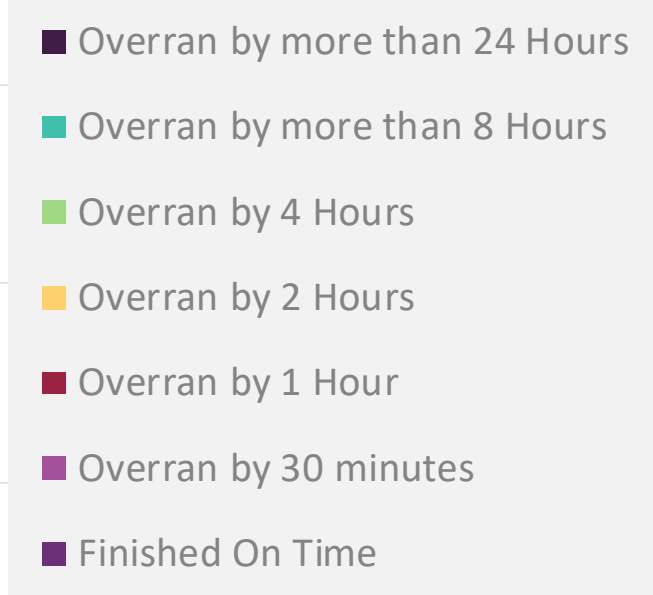


Overrun 2023/24

No. of Outages

2500
2000
1500
1000
500
0

If an outage finishes within 30 minutes of its planned finish datetime, then it is categorised as Finished On Time.



	Powerlink	Transgrid	AusNet	ElectraNet	TasNetworks	Other
Overran by more than 24 Hours	136	80	35	31	7	9
Overran by more than 8 Hours	60	25	24	18	4	7
Overran by 4 Hours	36	6	4	12	1	2
Overran by 2 Hours	89	41	18	49	14	3
Overran by 1 Hour	132	50	37	57	14	21
Overran by 30 minutes	124	54	39	68	16	11
Finished On Time	1816	666	871	771	260	154



For more information visit

aemo.com.au