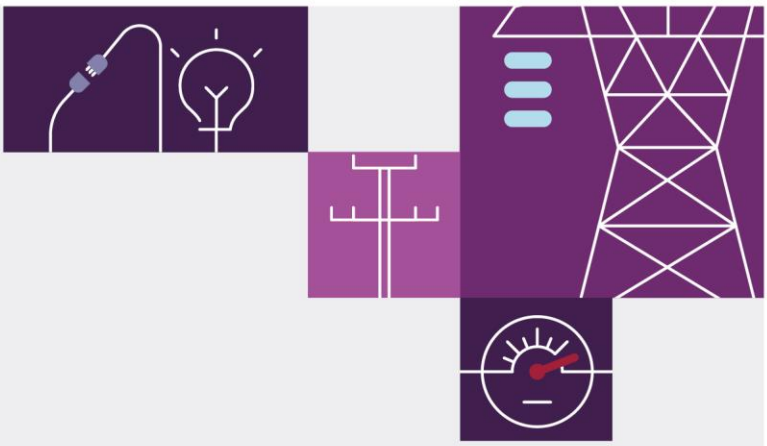
Unaccounted For Energy (UFE) Trends Report

May 2023

Information and analysis of UFE for the National Electricity Market



Important notice

Purpose

AEMO publishes the Unaccounted for Energy (UFE) Trends Report, under clause 3.15.5B of the National Electricity Rules (NER), to provide information and analysis of unaccounted for energy (UFE) in each local area to facilitate efficient decreases in UFE over time.

This publication has been prepared by AEMO using information for the period 3 October 2021 to 4 March 2023. Information made available after this date may have been included in this publication where practical.

Disclaimer

This document or the information in it may be subsequently updated or amended. This document does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about the National Electricity Law, the National Electricity Rules (NER), or any other applicable laws, procedures or policies. AEMO has made every effort to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

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Version control

Version	Release date	Changes
1	1/05/2023	

Executive summary

The Unaccounted for Energy (UFE) Trends Report provides information about UFE in each *local area* for the period 3 October 2021 to 4 March 2023. The content of the report addresses the requirements under 3.15.5B of the National Electricity Rules (NER) for AEMO to:

- Report on the total UFE for each *local area,*
- Determine UFE benchmarks upon which future reports would be based,
- Identify sources of UFE in each *local area*,
- Recommend UFE visibility improvements, and
- Recommend actions to reduce UFE for each *local area*.

Total UFE and the components of UFE for each *local area* have been calculated in accordance with formulations prescribed in NER 3.15.5.

The report identifies sources of UFE that will be analysed in future reports.

An interim solution, the “weights methodology”, was implemented to prevent energy volume spikes occurring following the application of the Five-Minute Load Profile (5MLP) in the *settlements* processes. Consultation on the development of a 5MLP longer-term profiling methodology to replace the “weights methodology” was undertaken and the modified 5MLP profiling methodology is to become effective from 1 October 2023. Longer-term options related to Net System Load Profiling (NSLP) will be the subject of further consultation.

Based on the information presented in the **UFE values by settlement data versions** charts, AEMO considers that significant improvement in UFE values will come from the further deployment of remotely read interval metering. This will bring into closer alignment the Prelim and Final UFE values with the Rev 1 and Rev 2 UFE values, as demonstrated in the Victorian *local areas*.

As there are no recommended actions that are related to activities that are linked to pricing regulatory cycles, AEMO did not facilitate a discussion forum prior to the release of this UFE Trends Report.

Contents

Figures

1 Introduction

1.1 Purpose and scope

The purpose of the UFE Trends Report is to provide information and analysis of UFE in each *local area* to facilitate efficient decreases in UFE over time.

The National Electricity Amendment (Global Settlements and Market Reconciliation) Rule 2018 requires AEMO to publish, at least once a year, a report on UFE that is prepared in accordance with the *UFE reporting guidelines*. The *UFE reporting guidelines,* made under 3.15.5B of the NER, is published on AEMO's UFE Information and Reports web page.

https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/metering-data/unaccounted-for-energy-ufe-information-and-reports

This UFE Trends Report has been prepared in accordance with the *UFE reporting guidelines*.

The UFE Trends Report is to cover a rolling 24 month period however, as UFE information only became available from 1 October 2021, this UFE Trends Report will cover the period 3 October 2021 to 4 March 2023. This period covers complete *billing periods,* i.e. complete trading weeks, for which *final statements* have been issued.

The content of this report includes:

1. Reporting on total UFE by *local area* over the reporting period.
2. Analysis of UFE in each *local area* against benchmarks.
3. Analysis of the sources of UFE in each *local area*,
4. Recommended actions to gain further visibility of UFE.
5. Recommended actions to reduce UFE.

Source data from which UFE Trends Reports and charts are derived and monthly UFE data with high level trend information is available via AEMO's UFE Information and Reports web page.

https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/metering-data/unaccounted-for-energy-ufe-information-and-reports

1.2 Definitions and interpretation

Terms defined in the National Electricity Law and the NER have the same meanings in this report unless otherwise specified in this report.

Terms defined in the NER are intended to be identified in this report by italicising them, but failure to italicise a defined term does not affect its meaning.

1.3 Key definitions – UFE components

For each *local area,* an amount representing UFE is determined by AEMO for each *trading interval* in accordance with 1.3.1.

Calculations detailed in 1.3.2 and 1.3.3 are also undertaken by AEMO to assist with the allocation of UFE for each *distribution network connection point*.

1.3.1 UFE calculation

In accordance with NER 3.15.5, for each *local area*, the UFE amount for each *trading interval* is determined by the following formula:

UFE = TME – DDME – ADME

Where:

UFE is total unaccounted for energy for a *local area*,

TME is total *energy* inflow into a *local area* from *transmission connection points*,

DDME is cross boundary *energy* flow between adjacent *distribution networks*. DDME is a positive value for the supplying distribution *local area* and a negative value for the receiving distribution *local area*, and

ADME is the aggregate of *energy* flows for each *connection point* in a *local area*.

UFE, TME, DDME and ADME information is available from the RM 46 Report for *financially responsible Market Participants* (FRMPs) and *Local Network Service Provides* (LNSPs).

1.3.2 UFE allocation

The allocation of UFE for every *distribution network connection point* in a *local area* is determined by the following formula:

UFEA = UFE x (DME/ADMELA)

Where:

UFEA is the allocation of *local area* unaccounted for *energy* for a *connection point*,

DME is the load component (ME- x DLF) at a *connection point* in the *local area*,

ME- is load component as recorded in the *metering data* at a *connection point* in the *local area*,

DLF is the *distribution loss factor* applicable at a *connection point* in the *local area*, and

ADMELA is the aggregate of all DME amounts in a *local area* for which a *Market Customer* is *financially responsible*.

UFEA and ADMELA information is available from the RM 43 and RM 46 Reports for FRMPs and LNSPs.

1.3.3 UFE Factor (UFEF)

The UFE Factor (UFEF) is used to facilitate the allocation of UFE to individual *connection points*.

UFEF = UFE/ADMELA

Where:

UFE is total unaccounted for *energy* for a *local area*, and

ADMELA is the aggregate of all DME amounts in a *local area* for which a *Market Customer* is *financially responsible*

UFEA = UFE x (DME/ADMELA), or can be expressed as:

UFEA = DME x (UFE/ADMELA), therefore

UFEA = DME x UFEF

UFEF is available from the RM 43 and RM 46 Reports for FRMPs and LNSPs.

2 Summary and analysis of UFE

2.1 Trend interpretation

The following charts provide a summary of the UFE calculation components, identified in Section 1.3, for each *local area* over the reporting period. The underlying data for each chart comes from values that are available to participants in MSATS RM43 and RM 46 Reports. As this data is sourced from AEMO's Metering Data Management system, load values are positive and generation values are negative.

Information presented in the charts is the total of each UFE component for a *day* and are displayed as kWh values. For the UFE Components charts, the left vertical axis scale is related to TME and ADME values and the right vertical axis is related to UFE values, and where applicable, DDME values.

Additional charts that support observations presented in this section are provided in Appendix A. These charts are:

- UFE for a *local area*
- UFE for a *local area* expressed as a percentage of *local area* ADME
- UFE components for a *local area* by settlement data version, i.e. Prelim, Final, Rev 1 and Rev 2.
- Profiles for each *local area*

Information presented in the charts is the total of each component for a *settlements day* and are displayed as kWh values.

Trends report charts are based on daily aggregation of UFE component values, that are available for Participants, from the RM43 and RM46 reports.

RM43 and RM46 reports provide UFE component values at *trading interval* level.

An interim solution, the "weights methodology", was implemented to prevent energy volume spikes occurring following the application of the Five-Minute Load Profile (5MLP) in the *settlements* processes. This methodology increases the system load component of the profiles, which artificially shifts the profiles up. Prior to any weights being applied, analysis of the system load is performed and confirmed with the respective Transmission Network Service Providers (TNSPs) and the Distribution Network Service Providers (DNSPs). The "weights methodology" has been applied to the AusNet Services, Energex and SA Power Networks *local areas* as indicated in sections 2.1.3, 2.1.6 and 2.1.11.

Consultation on the development of a 5MLP longer-term profiling methodology to replace the "weights methodology" was undertaken and the modified 5MLP profiling methodology is to become effective from 1 October 2023. Longer-term options related to Net System Load Profiling (NSLP) will be the subject of further consultation.

2.1.1 ActewAGL

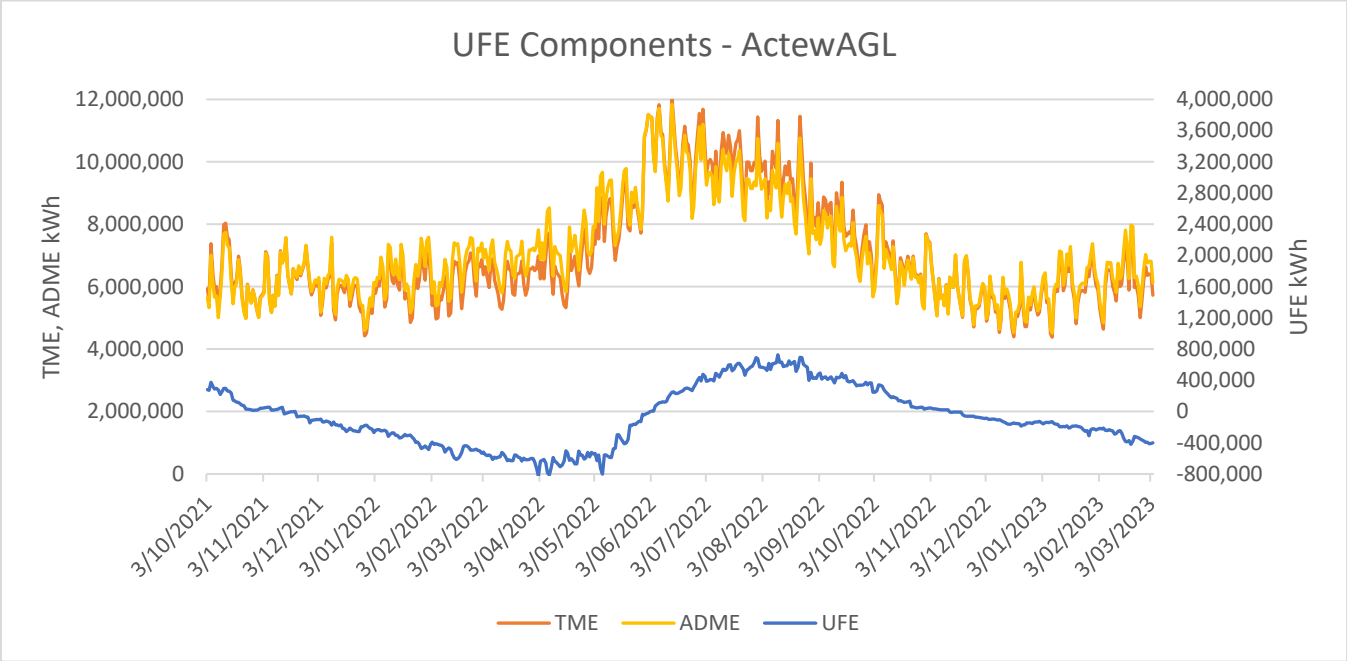


Figure 1 UFE Components – ActewAGL

Local Area Observations

ADME progressively increased with respect to TME over the October 2021 period resulting in UFE declining to zero. This represents an increase in the aggregate of *load* at end user *connection points* compared to the *local area energy* inflows.

ADME continues to increase with respect to TME over the November 2021 to April 2022 period and UFE becomes more negative.

ADME reduces with respect to TME over the May 2022 to August 2022 period and UFE increases (is less negative) to zero and continues to increase to its maximum value in August 2022.

For the September 2022 to March 2023 period, ADME increases with respect to TME and UFE decreases to zero then continues to become more negative.

2.1.2 Ausgrid

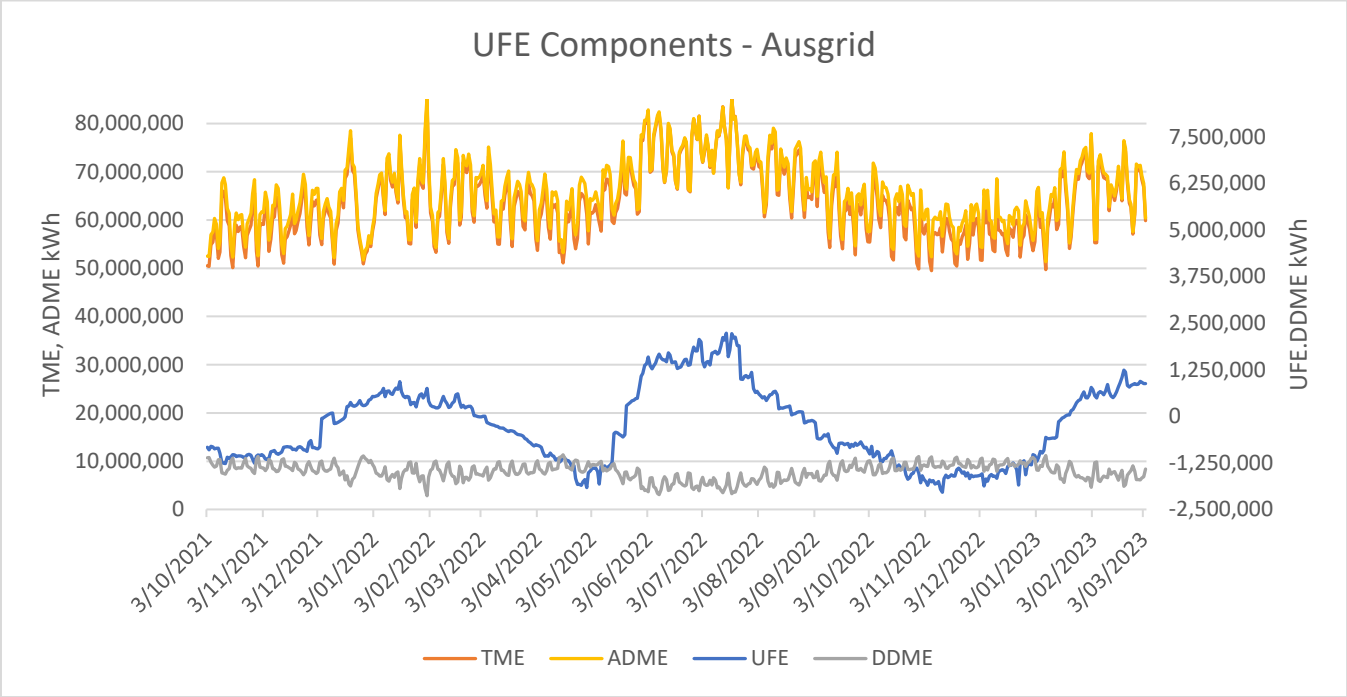


Figure 2 UFE Components – Ausgrid

Local Area Observations

Cross boundary *energy* inflows remained relatively steady over the reporting period. Rises and falls in UFE followed the relative increases and decreases, respectively, of ADME with respect to TME.

2.1.3 AusNet Services

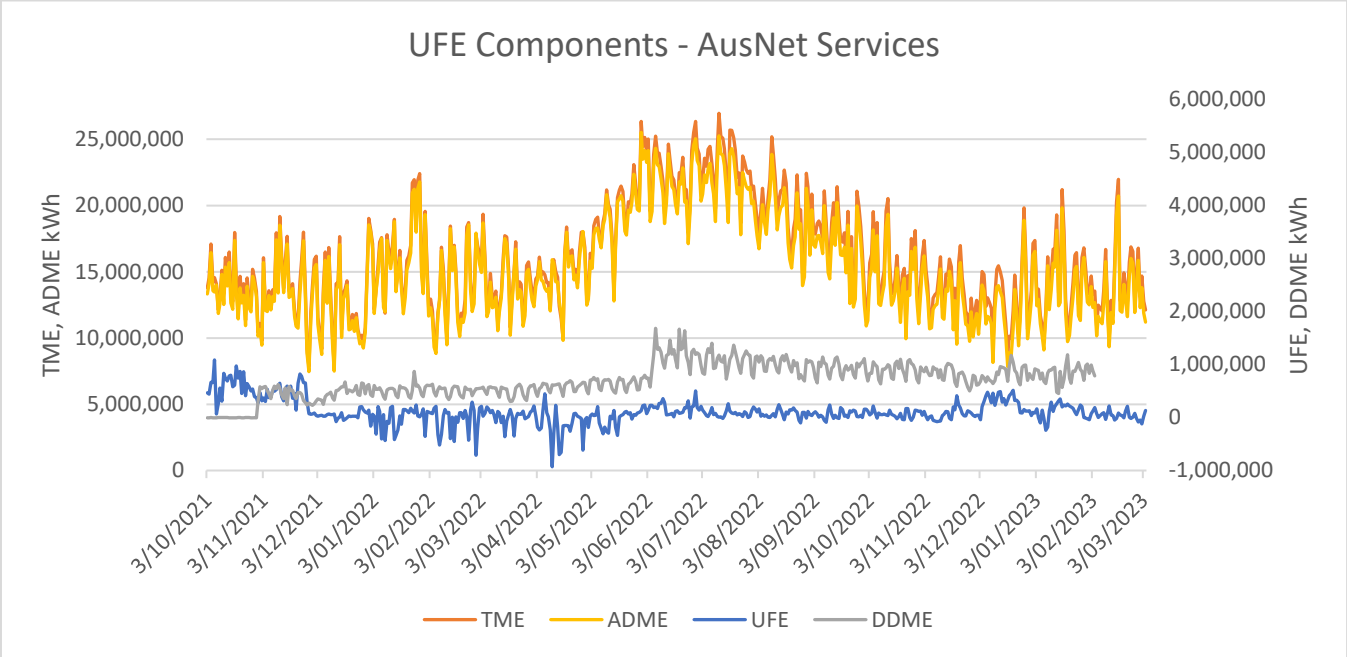


Figure 3 UFE Components – AusNet Services

Local Area Observations

TME is generally greater than ADME for the reporting period. Cross boundary *energy* outflows have kept UFE values relatively stable for the reporting period.

Weights have been applied to Final version settlement data from January 2022.

2.1.4 CitiPower

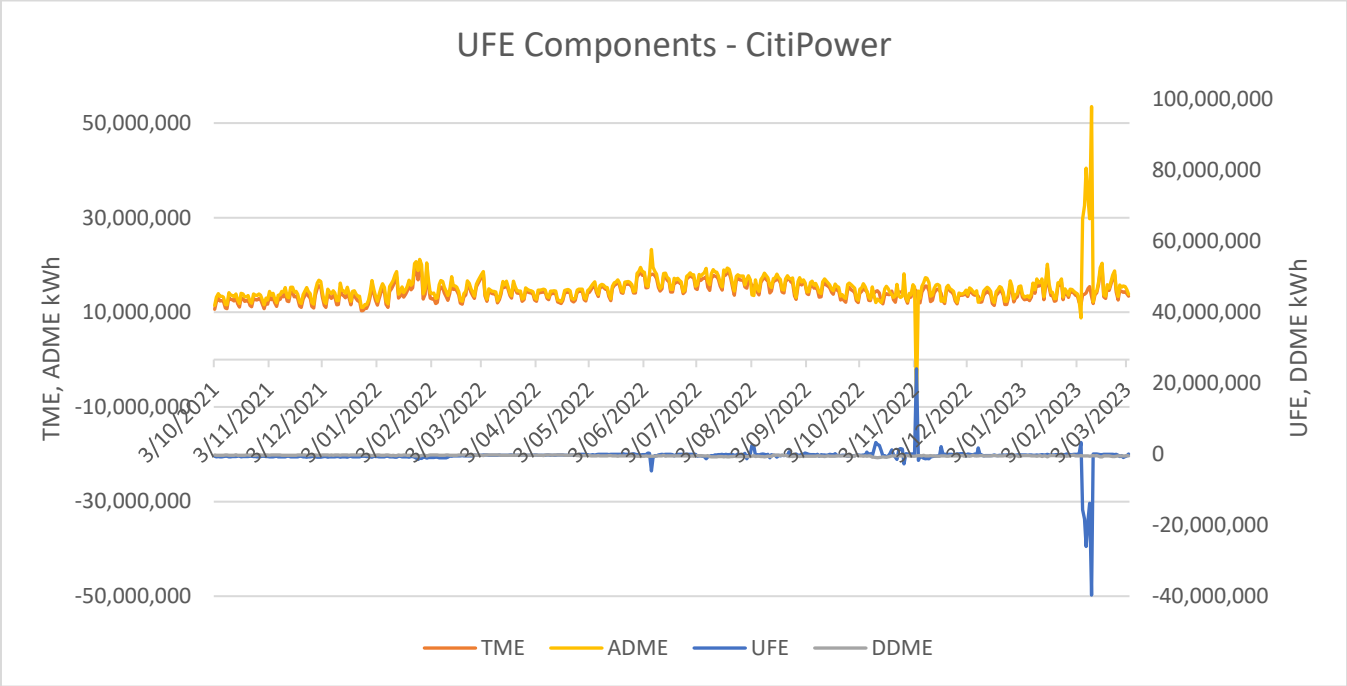


Figure 4 UFE Components – CitiPower

Local Area Observations

UFE has been relatively stable for the reporting period.

The spikes in November 2022 and February 2023 are related to NSLP spikes.

2.1.5 Endeavour Energy

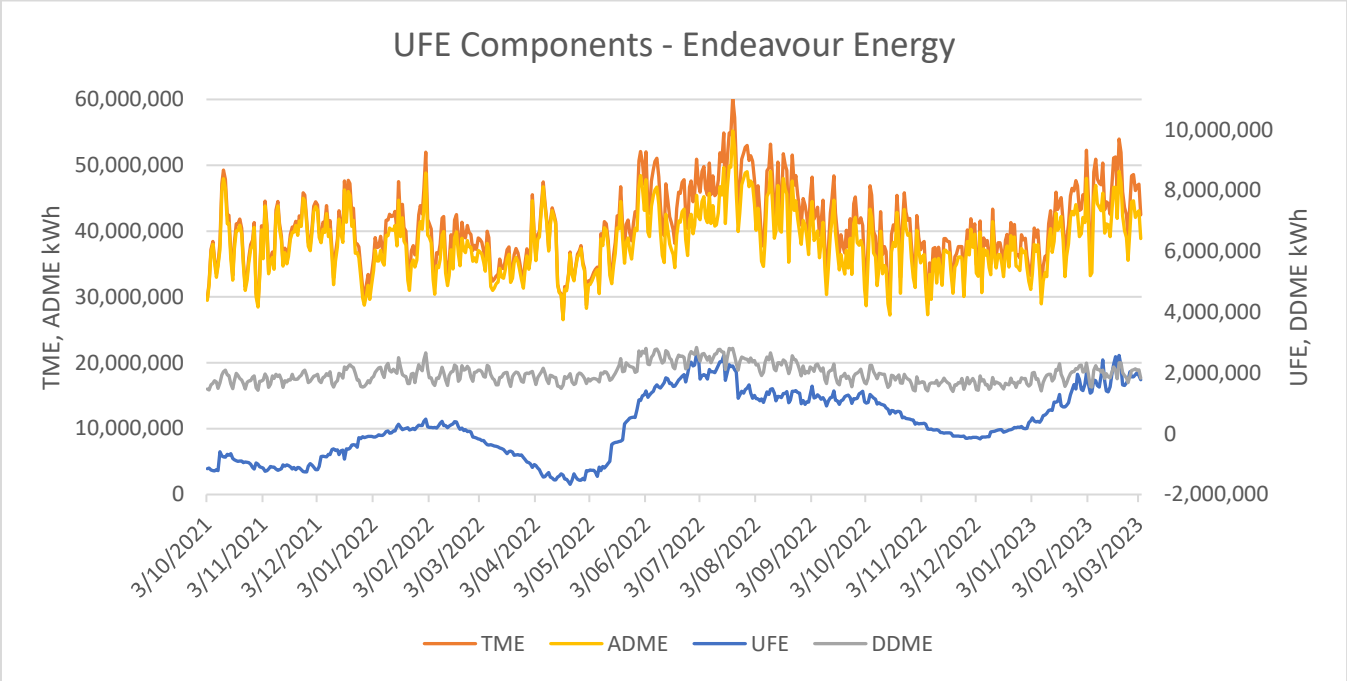


Figure 5 UFE Components – Endeavour Energy

Local Area Observations

Cross boundary *energy* outflows remained relatively steady over the reporting period. Rises and falls in UFE followed the relative increases and decreases, respectively, of ADME with respect to TME.

2.1.6 Energex

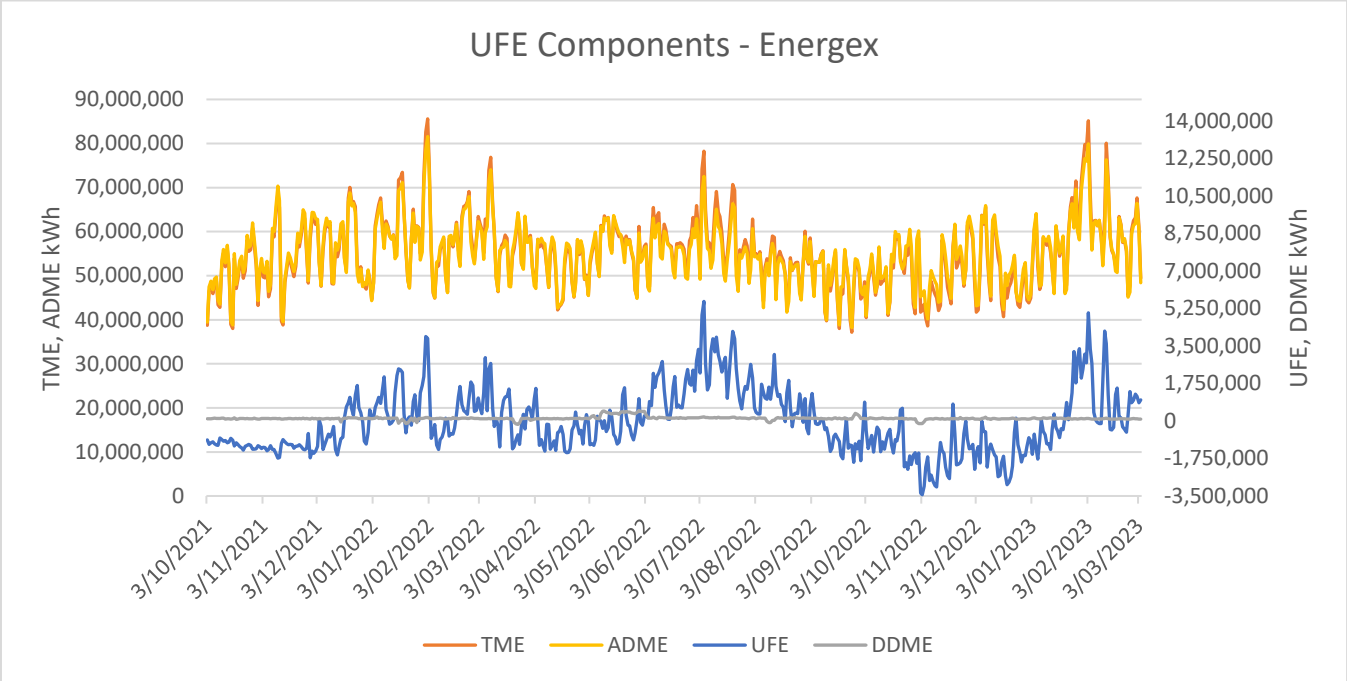


Figure 6 UFE Components – Energex

Local Area Observations

UFE increased as TME increased with respect to ADME.

Weights have been applied to Final version settlement data from December 2021.

2.1.7 Ergon

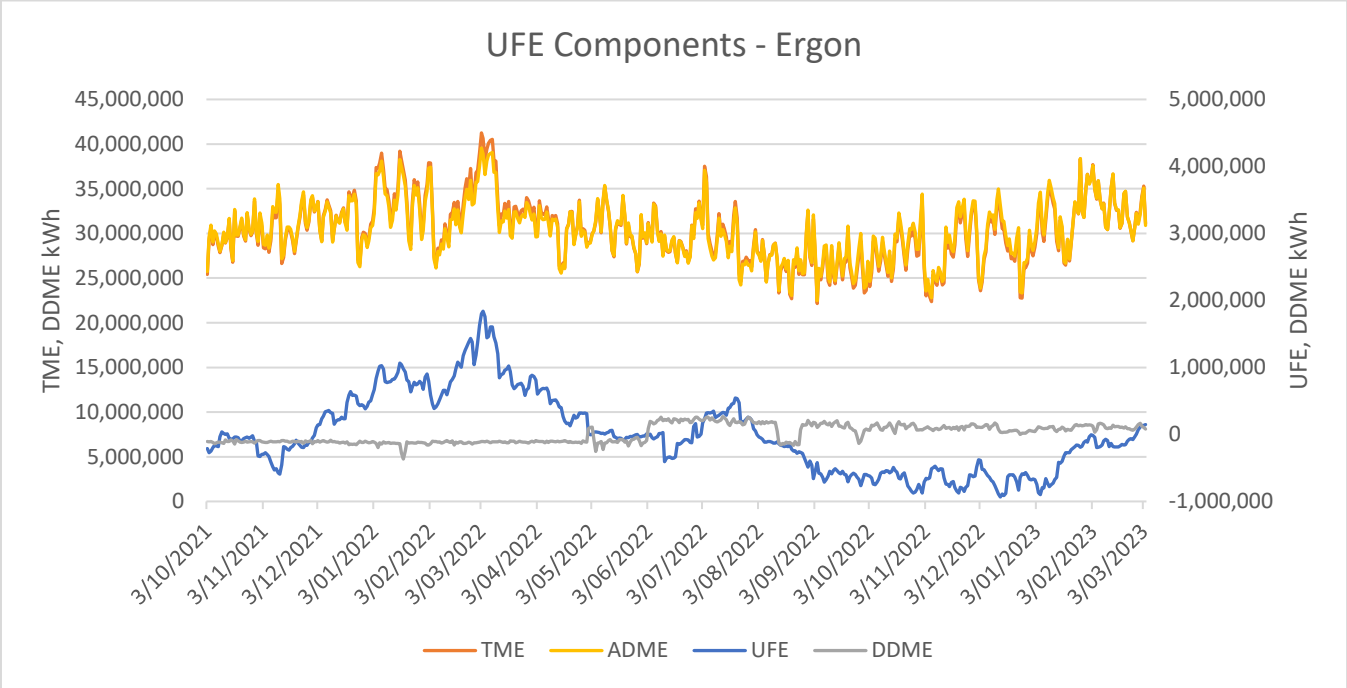


Figure 7 UFE Components – Ergon

Local Area Observations

UFE increased as TME increased with respect to ADME.

2.1.8 Essential Energy

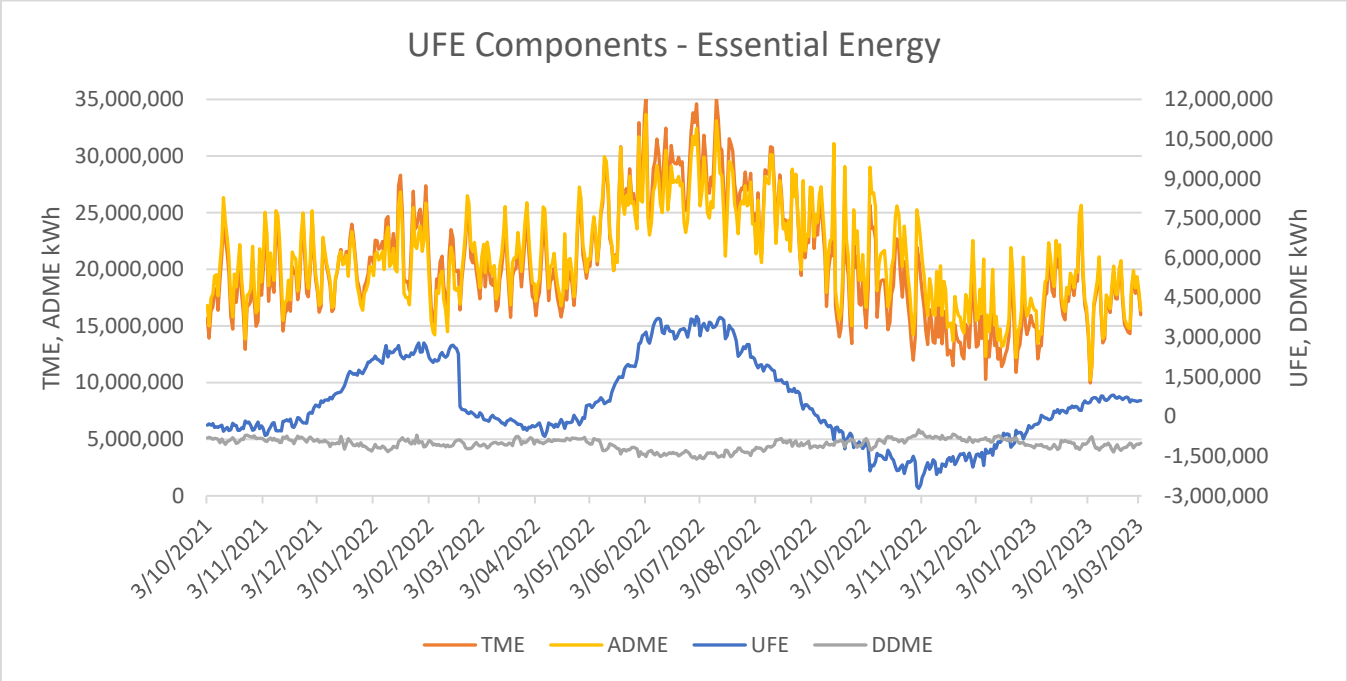


Figure 8 UFE Components – Essential Energy

Local Area Observations

Cross boundary *energy* inflows remained relatively steady over the reporting period. Rises and falls in UFE followed the relative increases and decreases, respectively, of ADME with respect to TME.

2.1.9 Jemena

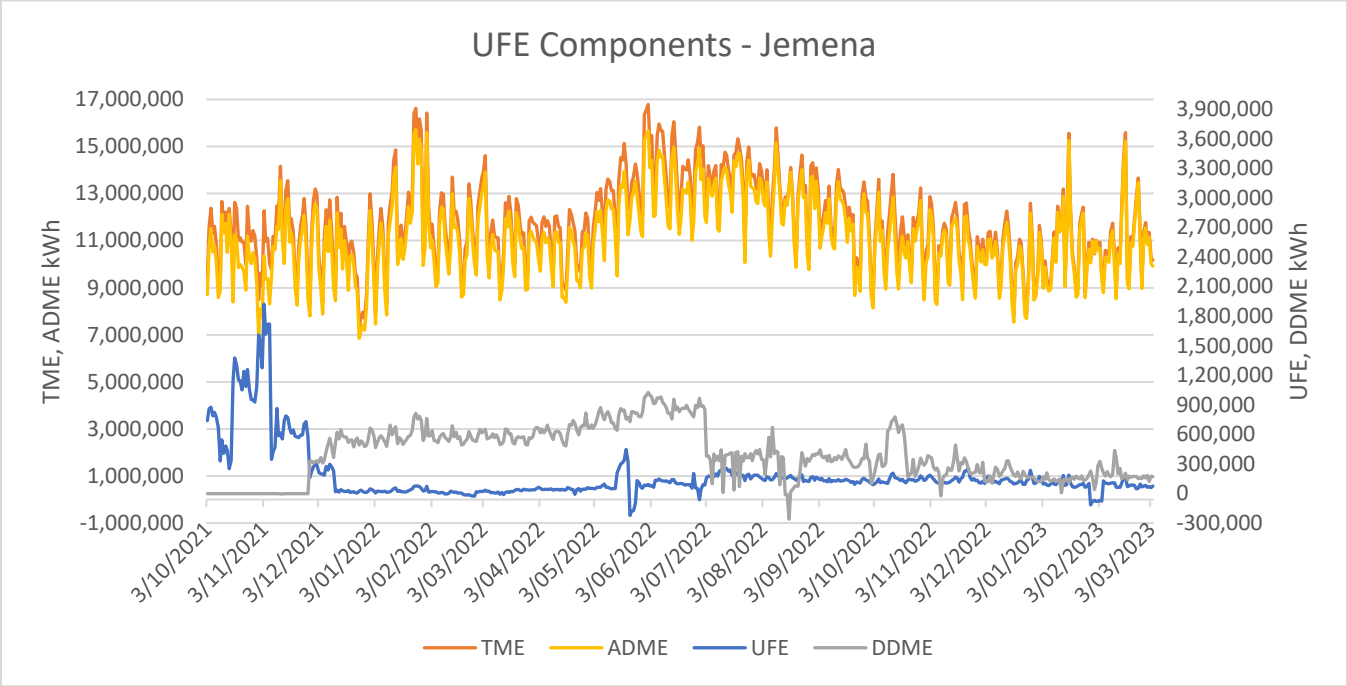


Figure 9 UFE Components – Jemena

Local Area Observations

TME is generally greater than ADME for the reporting period. Cross boundary *energy* outflows have kept UFE values relatively stable for the reporting period.

2.1.10 Powercor

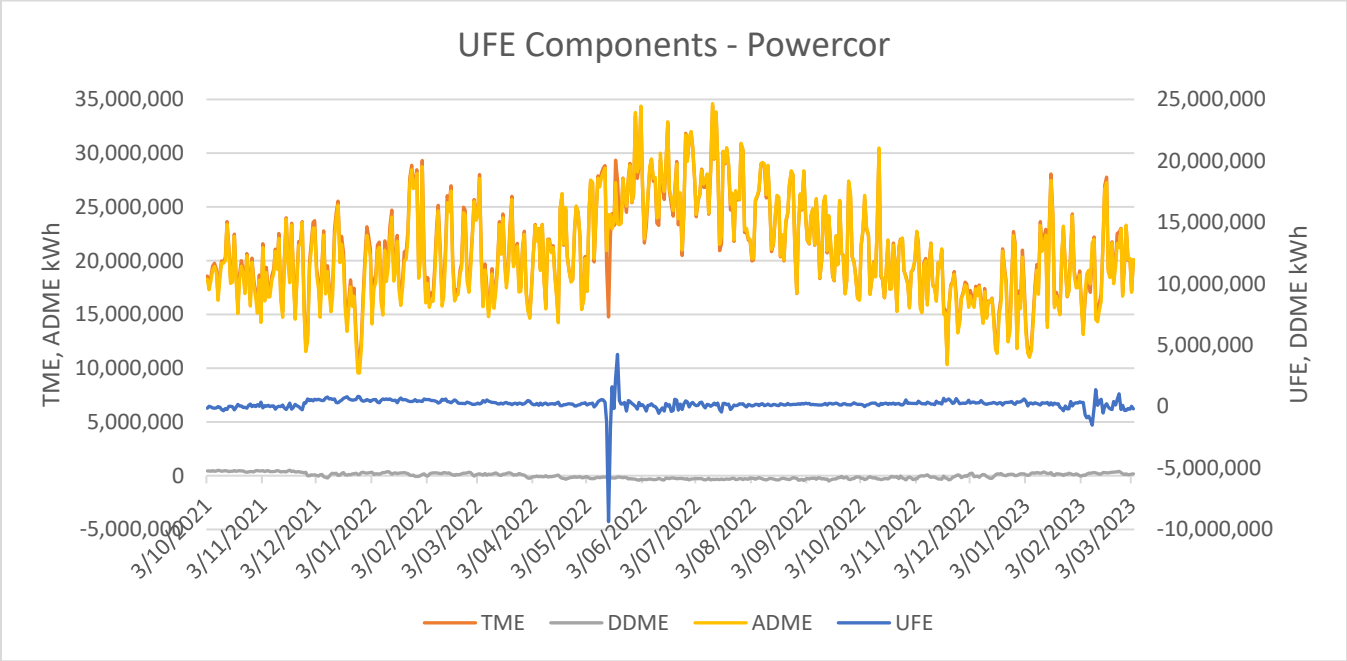


Figure 10 UFE Components – Powercor

Local Area Observations

ADME is generally greater than TME for the reporting period. Cross boundary *energy* inflows have kept UFE values relatively stable for the reporting period.

2.1.11 SA Power Networks

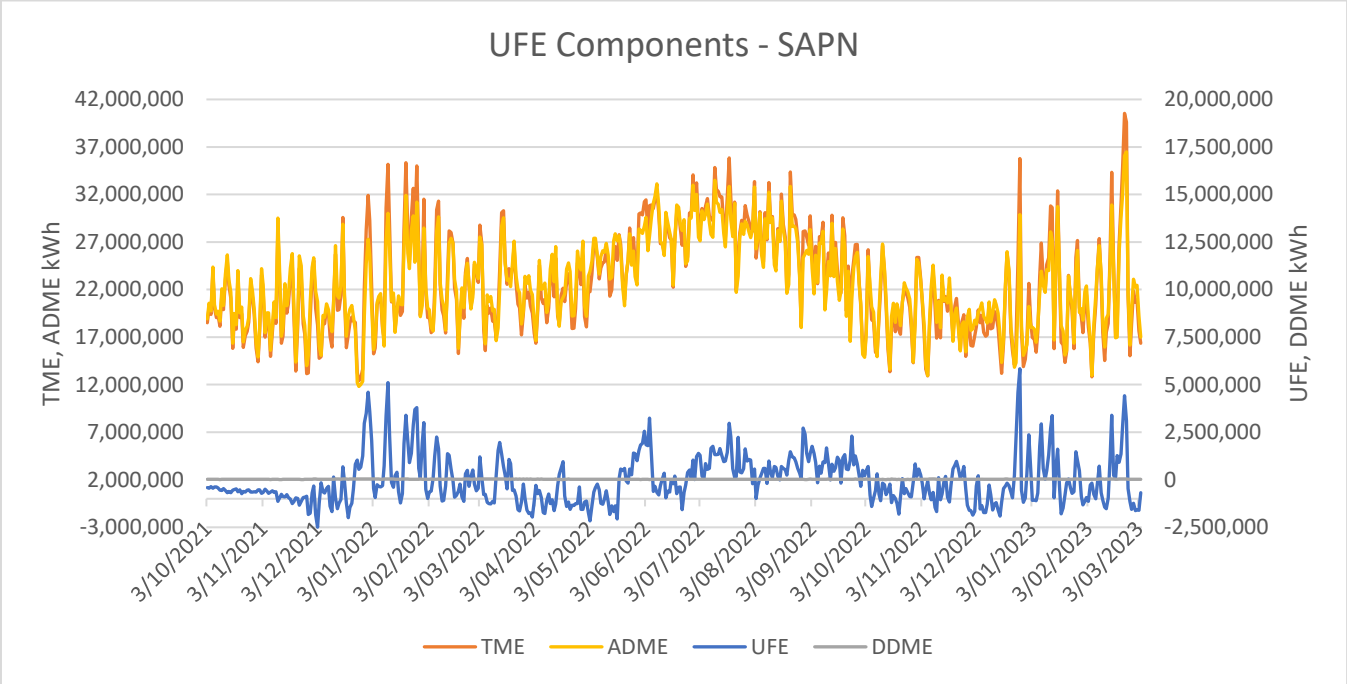


Figure 11 UFE Components – SA Power Networks

Local Area Observations

TME and ADME fluctuations throughout the reporting period result in periods where TME is greater than ADME, producing positive UFE values, and periods where ADME is greater that TME, producing negative UFE values.

Weights have been applied to Final version settlement data since December 2021.

2.1.12 TasNetworks

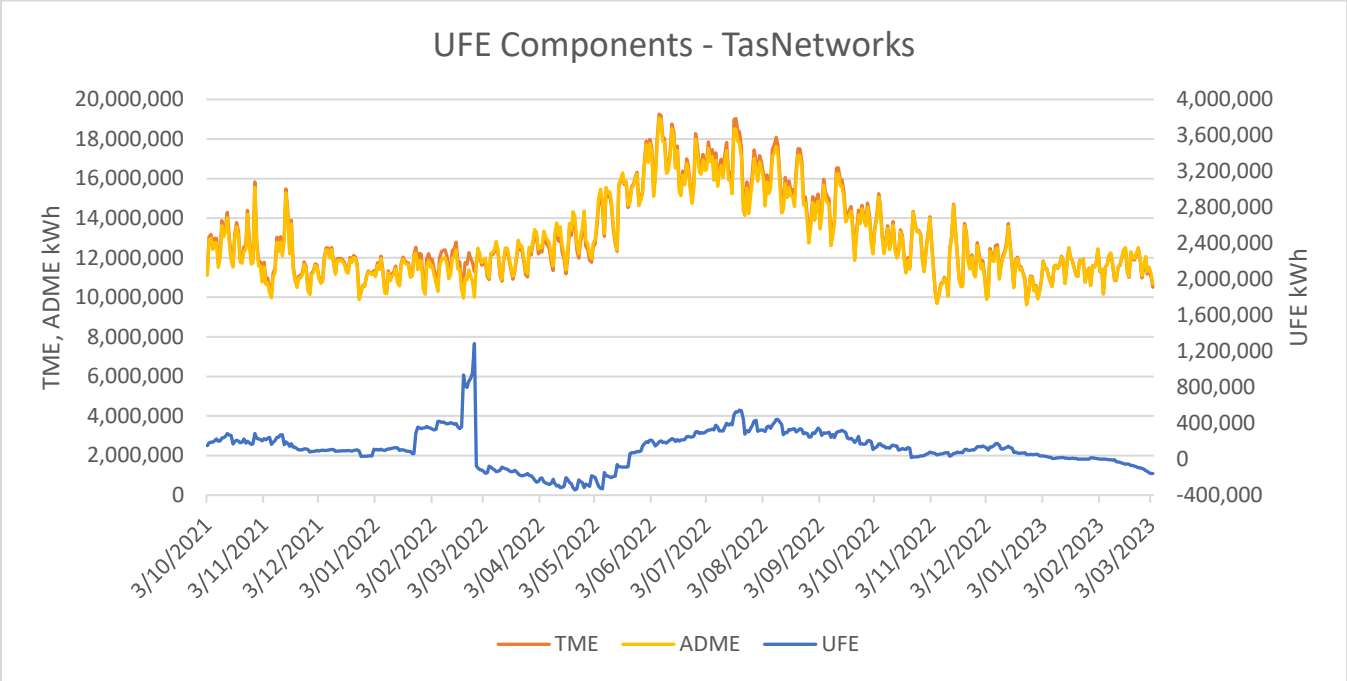


Figure 12 UFE Components – TasNetworks

Local Area Observations

TME and ADME fluctuations throughout the reporting period result in periods where TME is greater than ADME, producing positive UFE values, and periods where ADME is greater that TME, producing negative UFE values.

2.1.13 United Energy

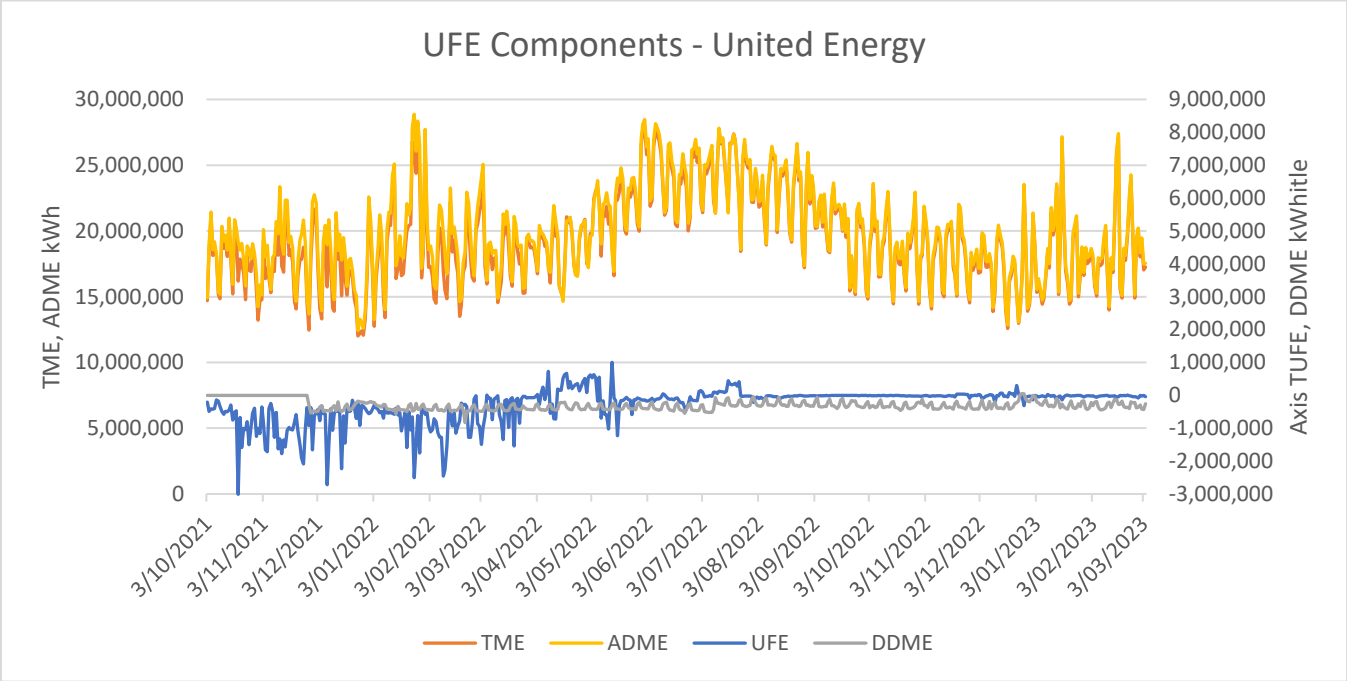


Figure 13 UFE Components – United Energy

Local Area Observations

ADME was greater than TME for the period up to March 2022, consequently UFE values were negative for the period. Cross boundary *energy* inflows stabilised from May 2022 and UFE also stabilised.

3 UFE benchmark analysis

Analysis of the unaccounted for *energy* amounts in each *local area* in the reporting period is to be performed against benchmarks that have been determined by AEMO.

Charts in this section show the average, for a day, of maximum, minimum, average and median values of UFE, over the months of May 2022 and February 2023. The range (difference between maximum and minimum values) of the values is also shown in the charts.

As complete *metering data* sets only became available from late April 2022, the UFE positions for each *local area* for May 2022 are used as the “benchmarks” for this UFE Trends Report. The February 2023 UFE positions will be used as the benchmarks for the next UFE Trends Report.

Generally, the Median and Average UFE values for each *local area* are similar for May 2022 and February 2023. Ausgrid and Endeavour Energy had higher UFE values in February 2023 compared with May 2022.

3.1 ActewAGL

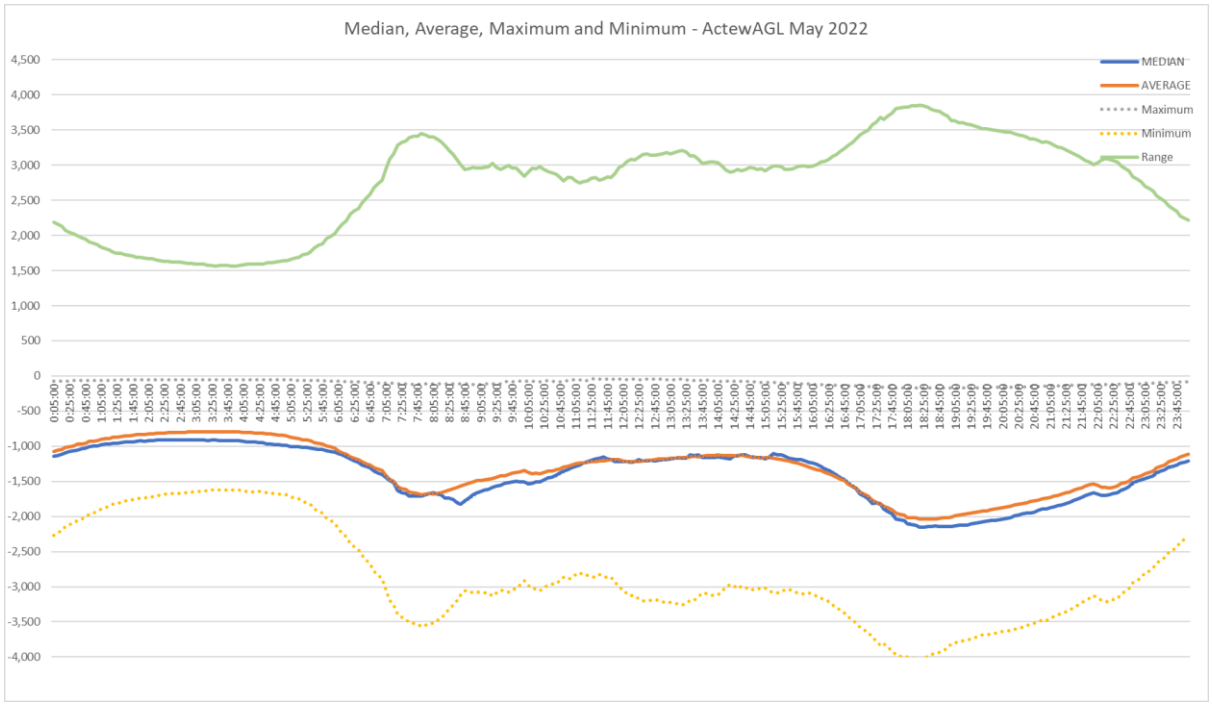


Figure 14 UFE Median, Average, Maximum and Minimum – ActewAGL May 2022

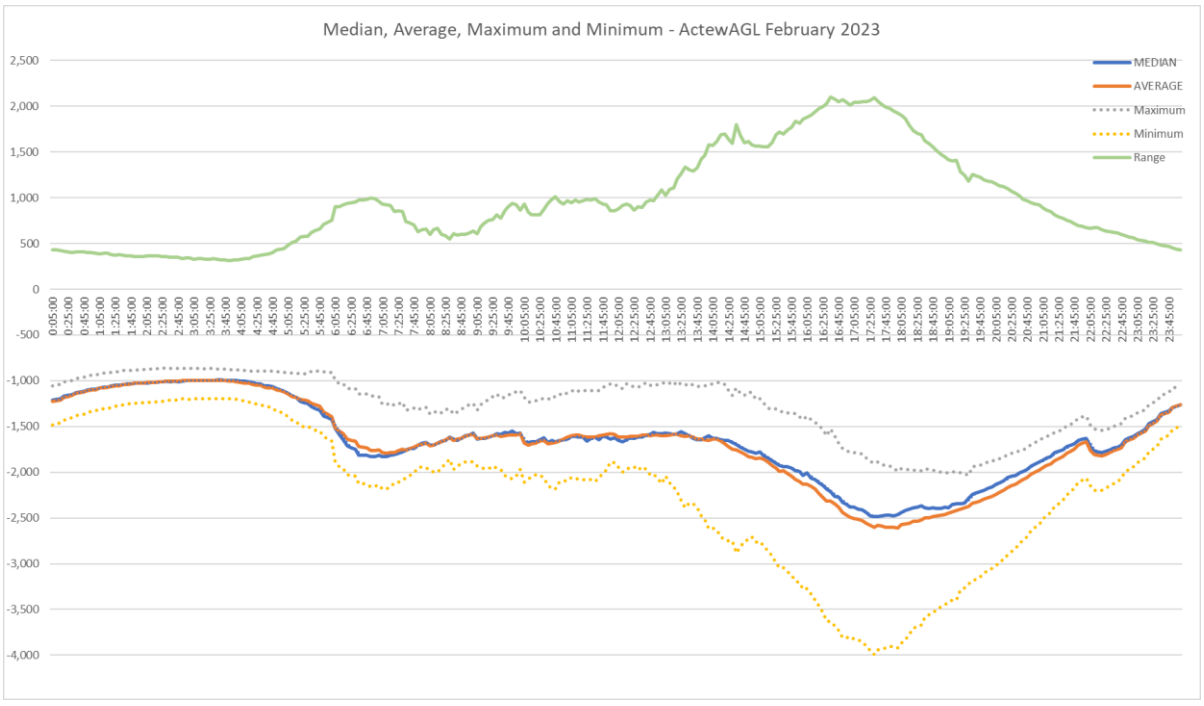


Figure 15 UFE Median, Average, Maximum and Minimum – ActewAGL February 2023

3.2 Ausgrid

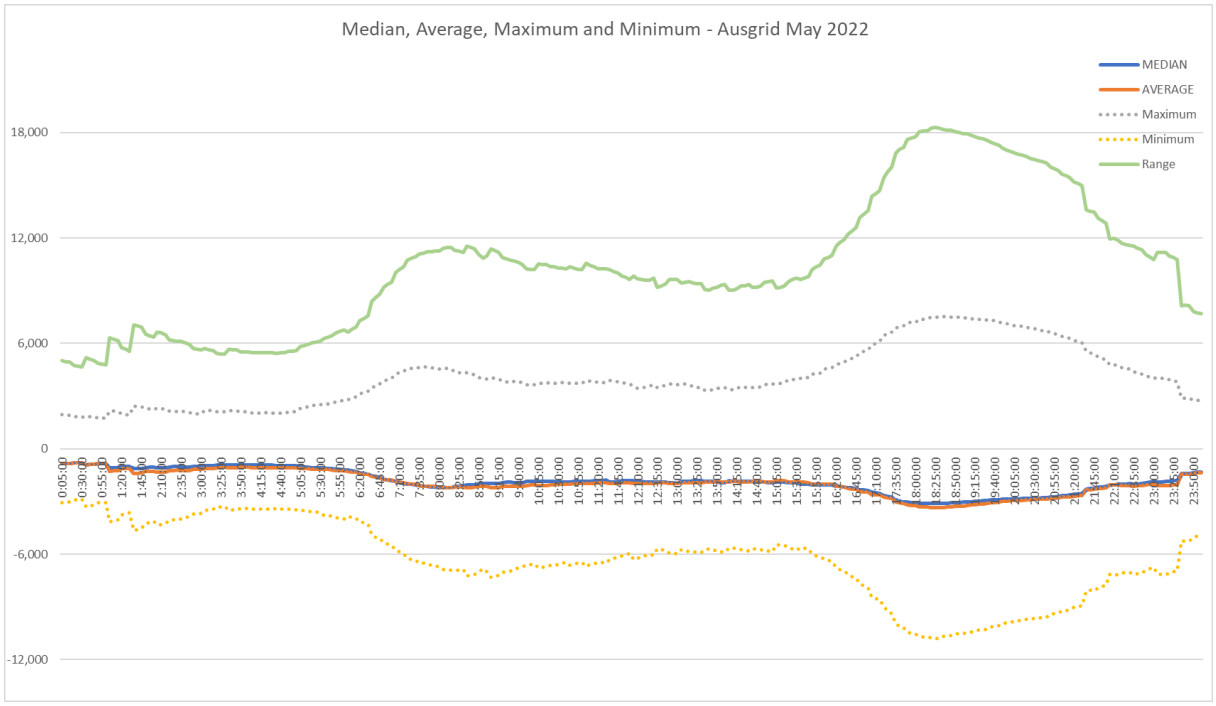


Figure 16 UFE Median, Average, Maximum and Minimum – Ausgrid May 2022

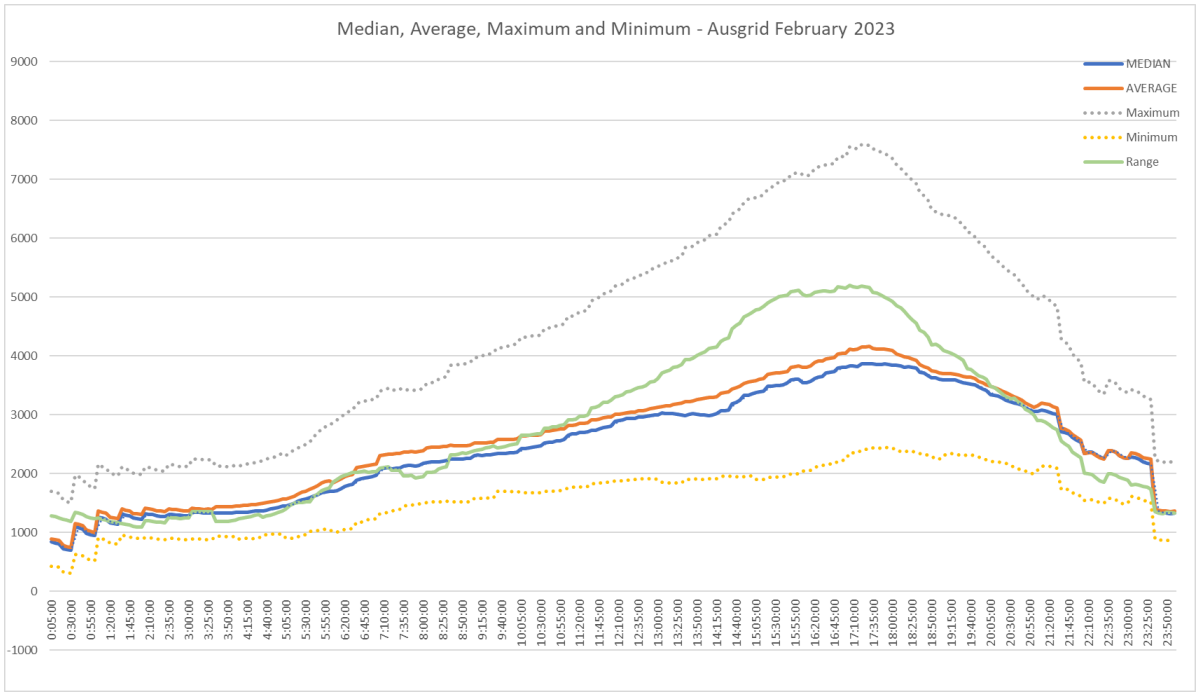


Figure 17 UFE Median, Average, Maximum and Minimum – Ausgrid February 2023

3.3 AusNet Services

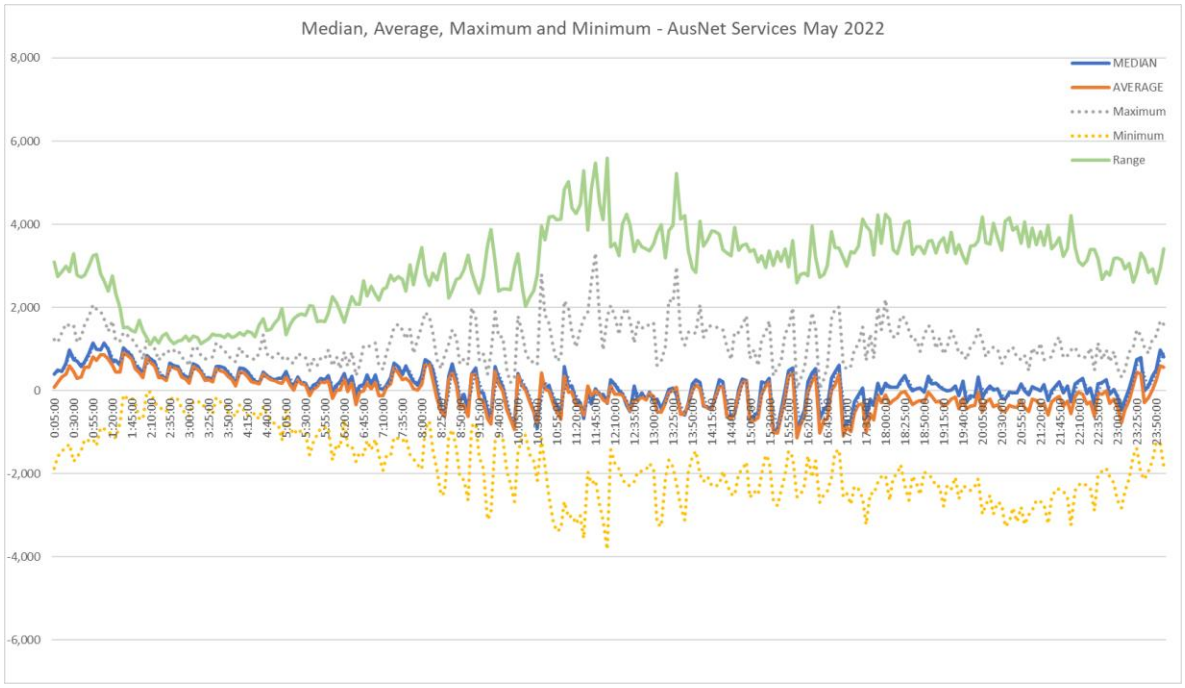


Figure 18 UFE Median, Average, Maximum and Minimum – AusNet Services May 2022

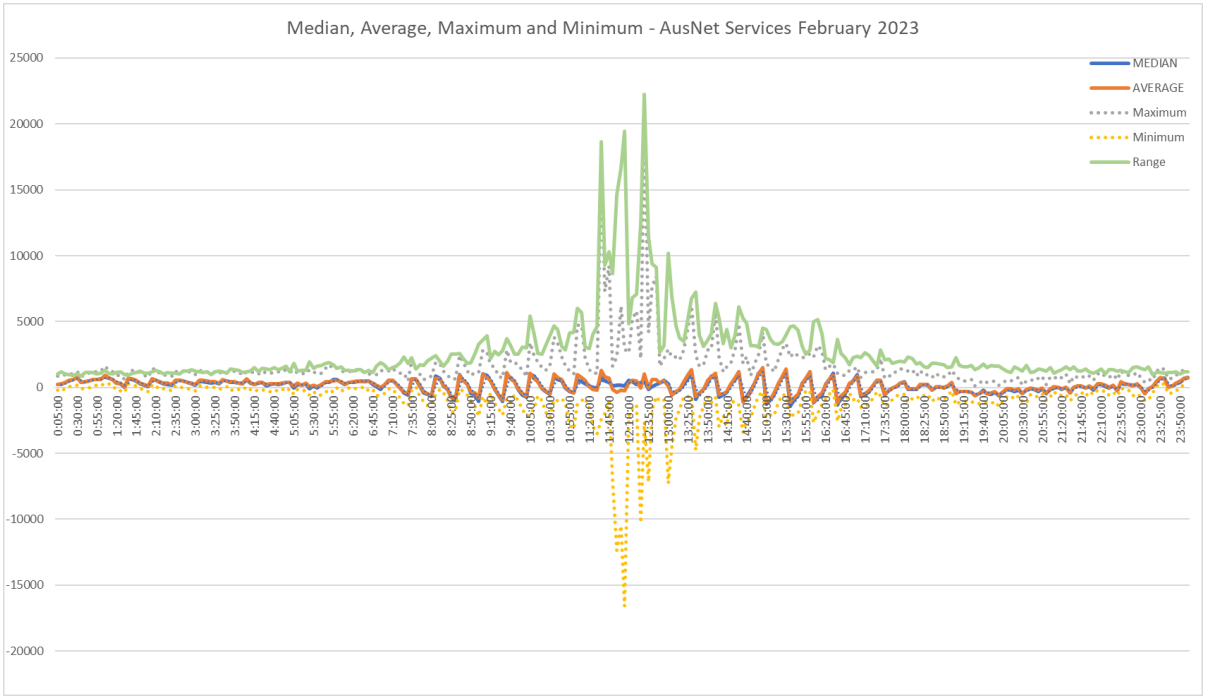


Figure 19 UFE Median, Average, Maximum and Minimum – AusNet Services February 2023

3.4 CitiPower

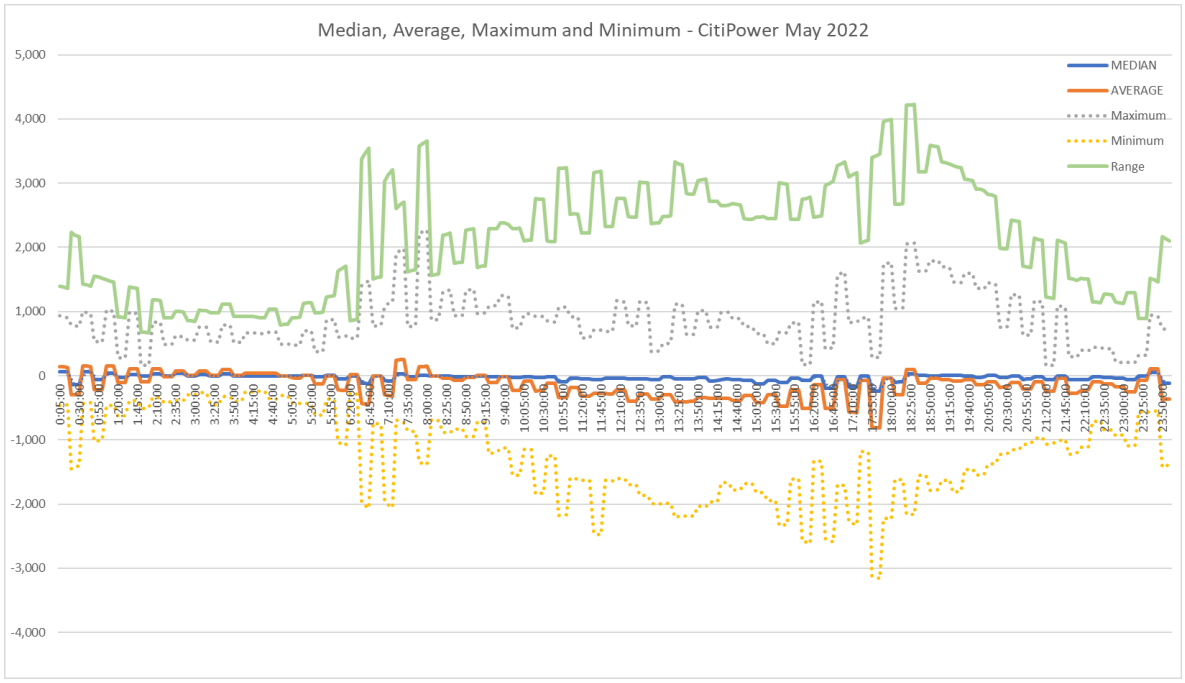


Figure 20 UFE Median, Average, Maximum and Minimum – CitiPower May 2022

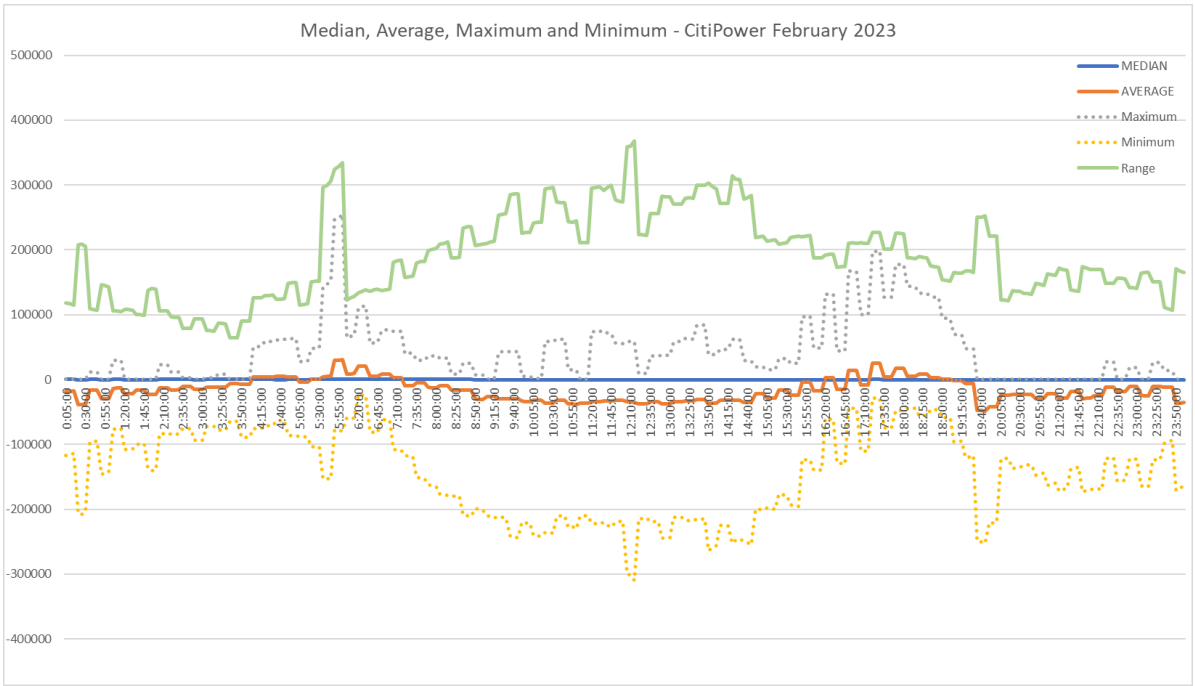


Figure 21 UFE Median, Average, Maximum and Minimum – CitiPower February 2023

3.5 Endeavour Energy

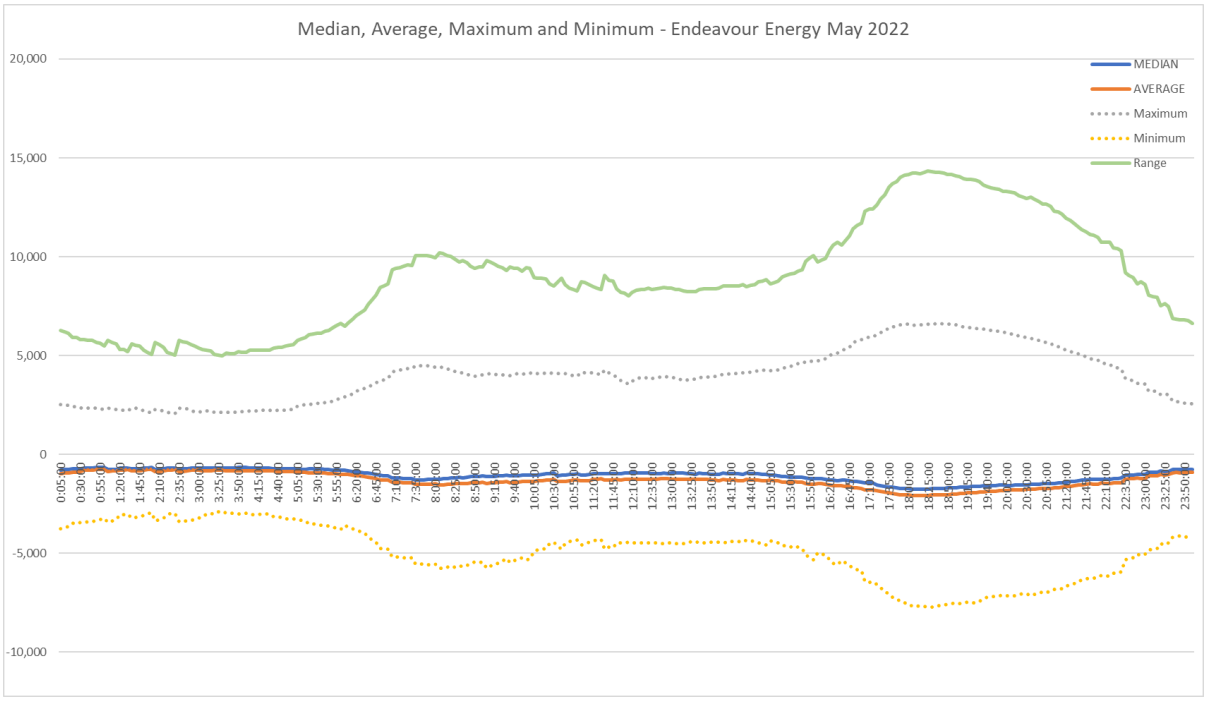


Figure 22 UFE Median, Average, Maximum and Minimum – Endeavour Energy May 2022

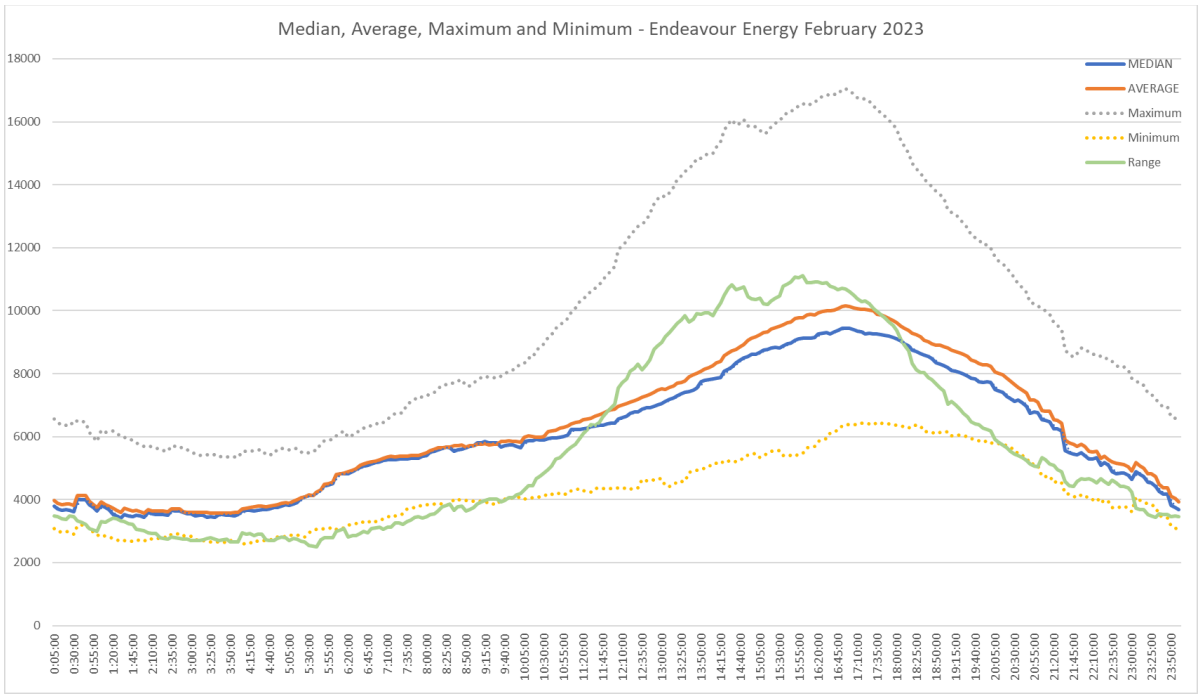


Figure 23 UFE Median, Average, Maximum and Minimum – Endeavour Energy February 2023

3.6 Energex

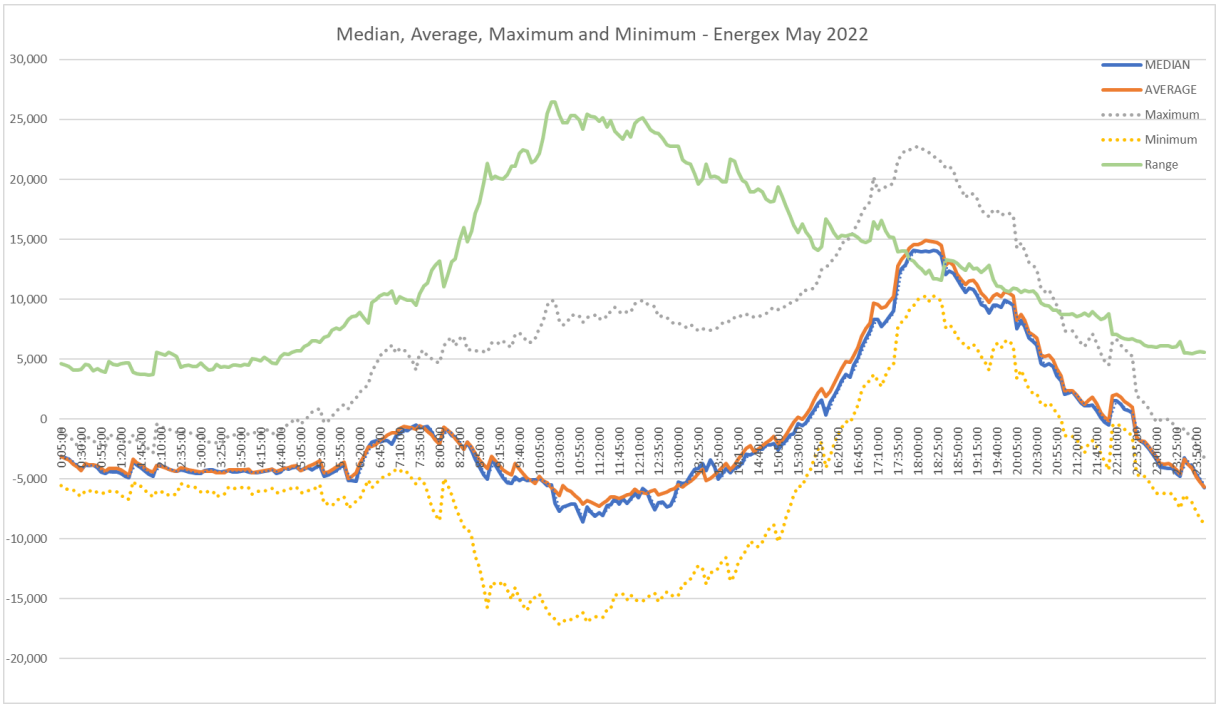


Figure 24 UFE Median, Average, Maximum and Minimum – Energex May 2022

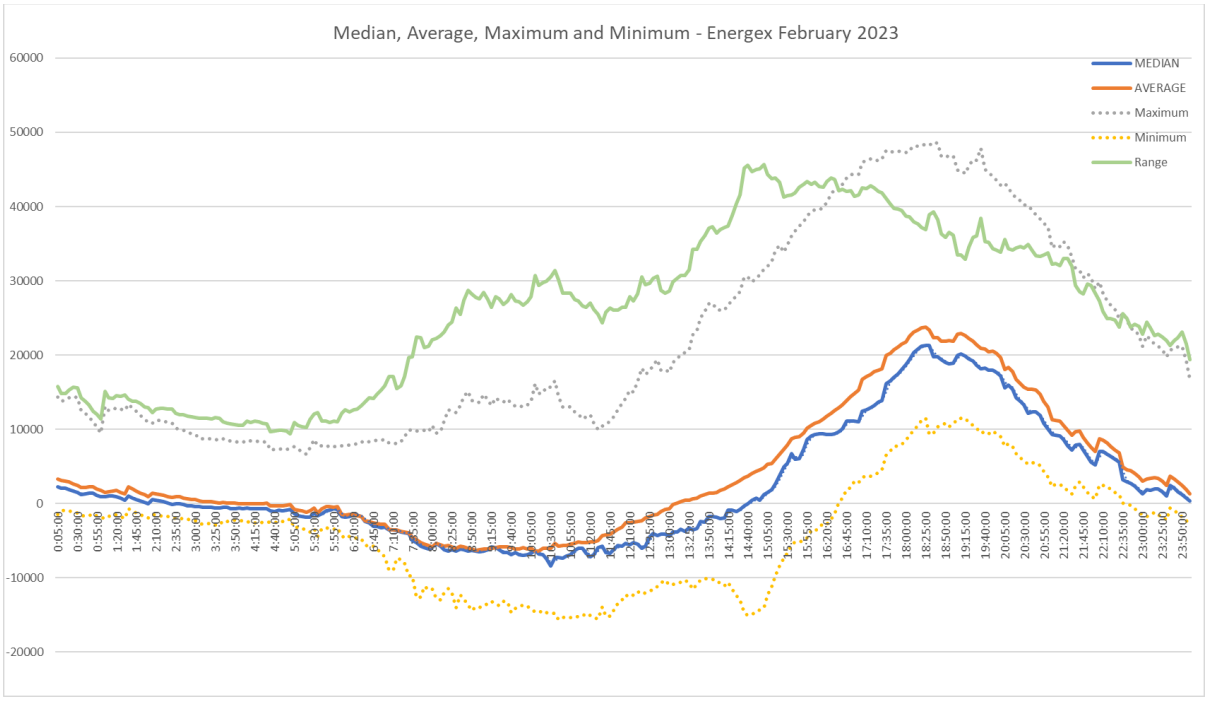


Figure 25 UFE Median, Average, Maximum and Minimum – Energex February 2023

3.7 Ergon

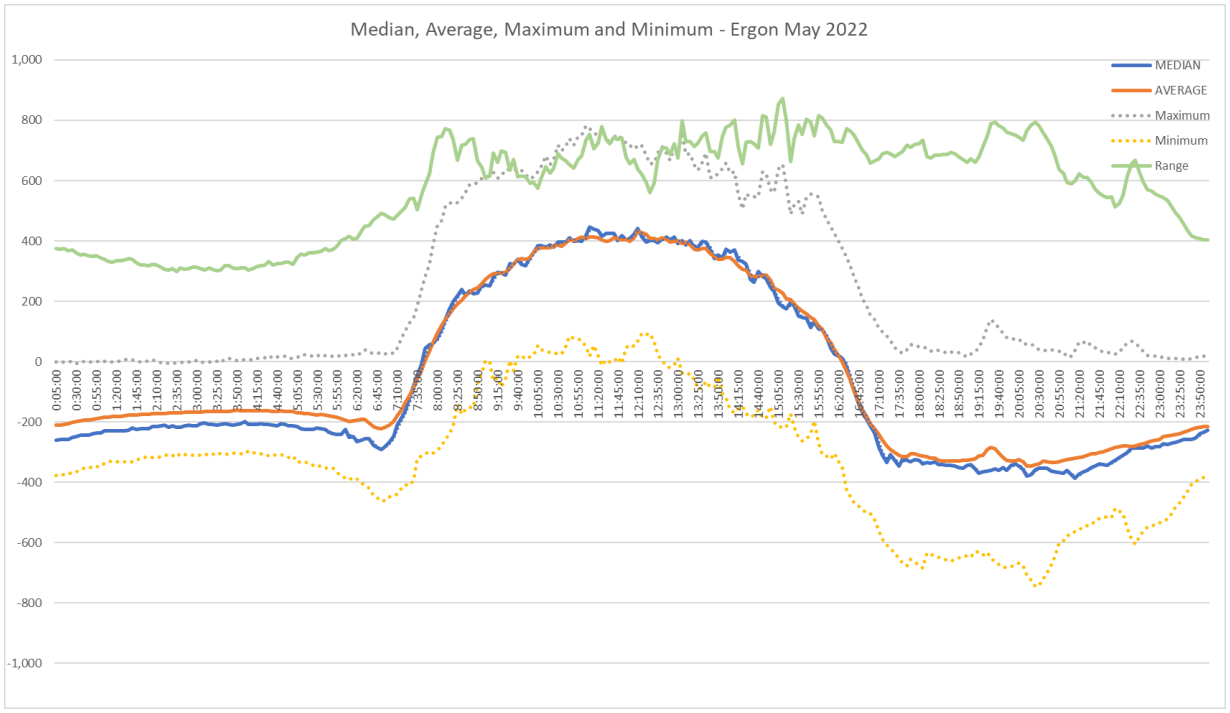


Figure 26 UFE Median, Average, Maximum and Minimum – Ergon May 2022

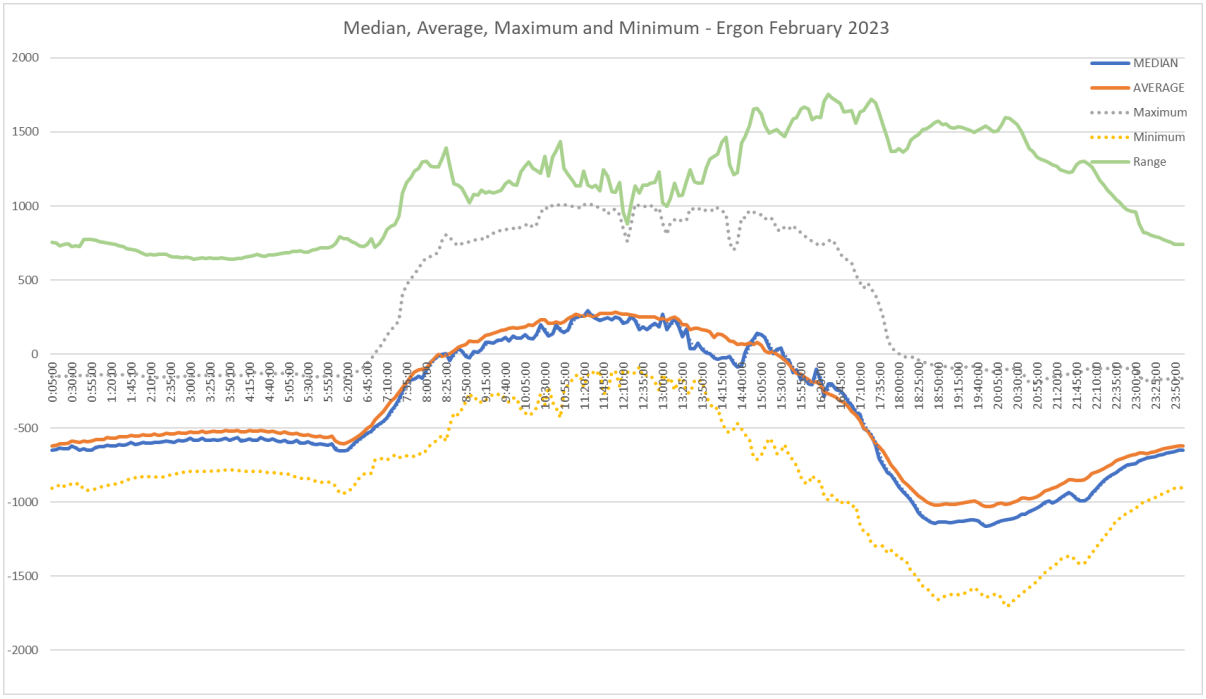


Figure 27 UFE Median, Average, Maximum and Minimum – Ergon February 2023

3.8 Essential Energy

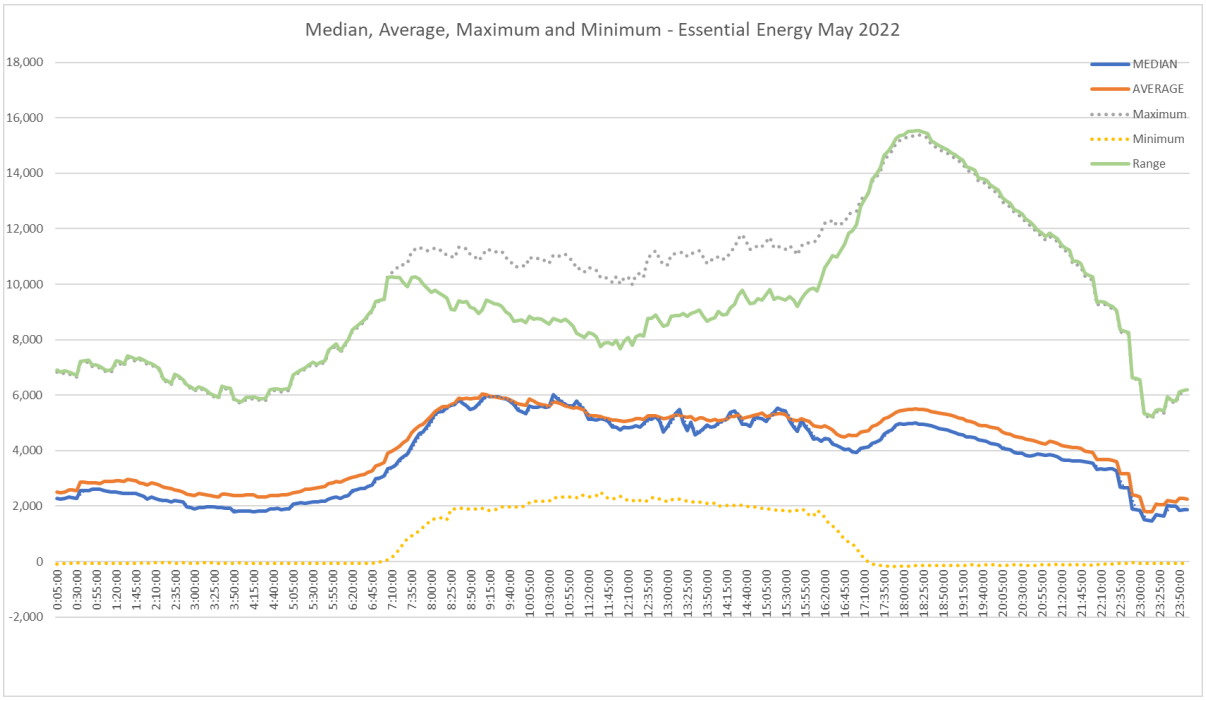


Figure 28 UFE Median, Average, Maximum and Minimum – Essential Energy May 2022

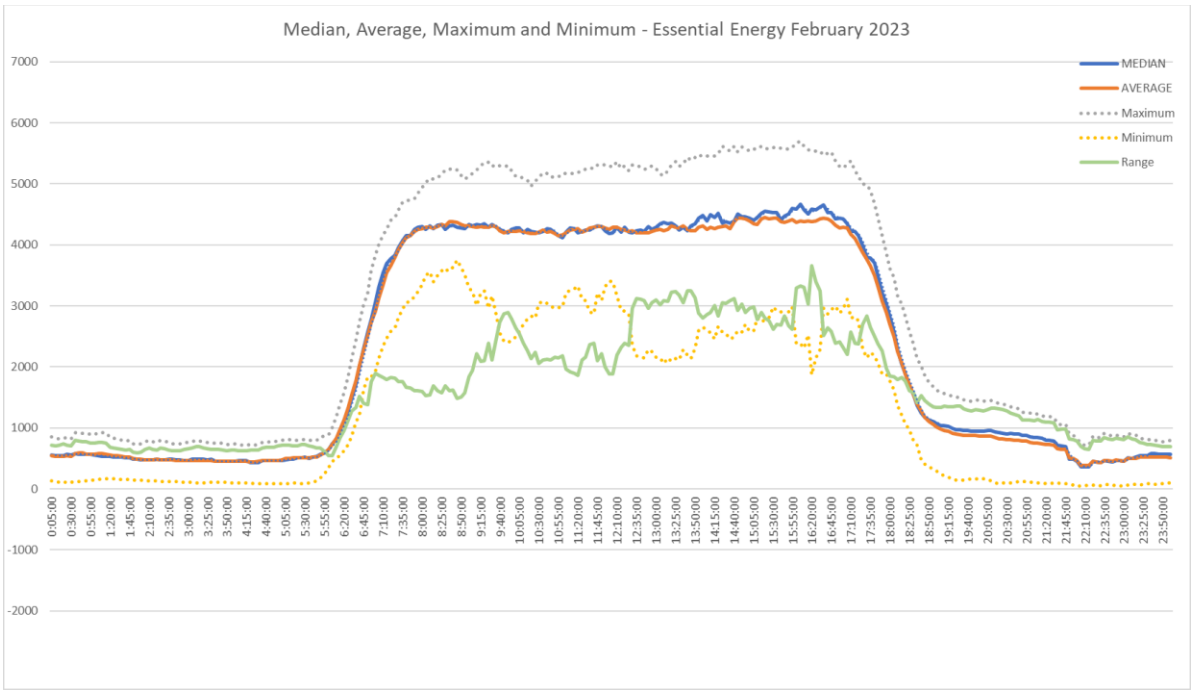


Figure 29 UFE Median, Average, Maximum and Minimum – Essential Energy February 2023

3.9 Jemena

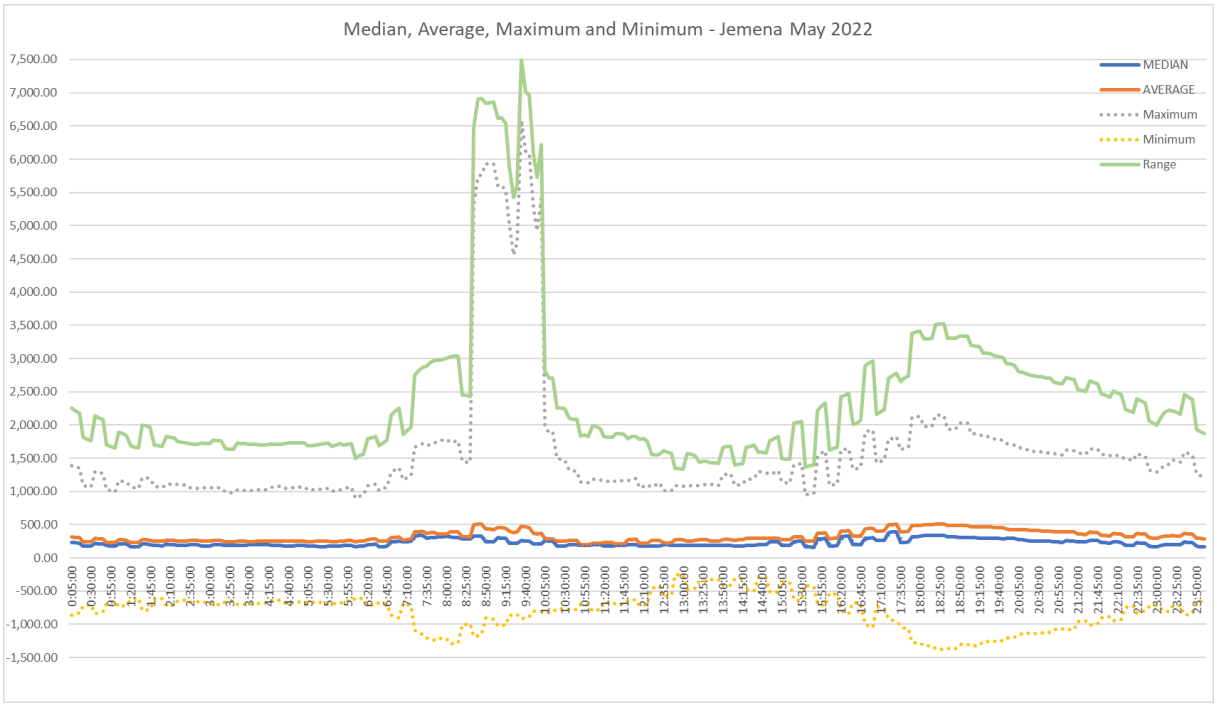


Figure 30 UFE Median, Average, Maximum and Minimum – Jemena May 2022

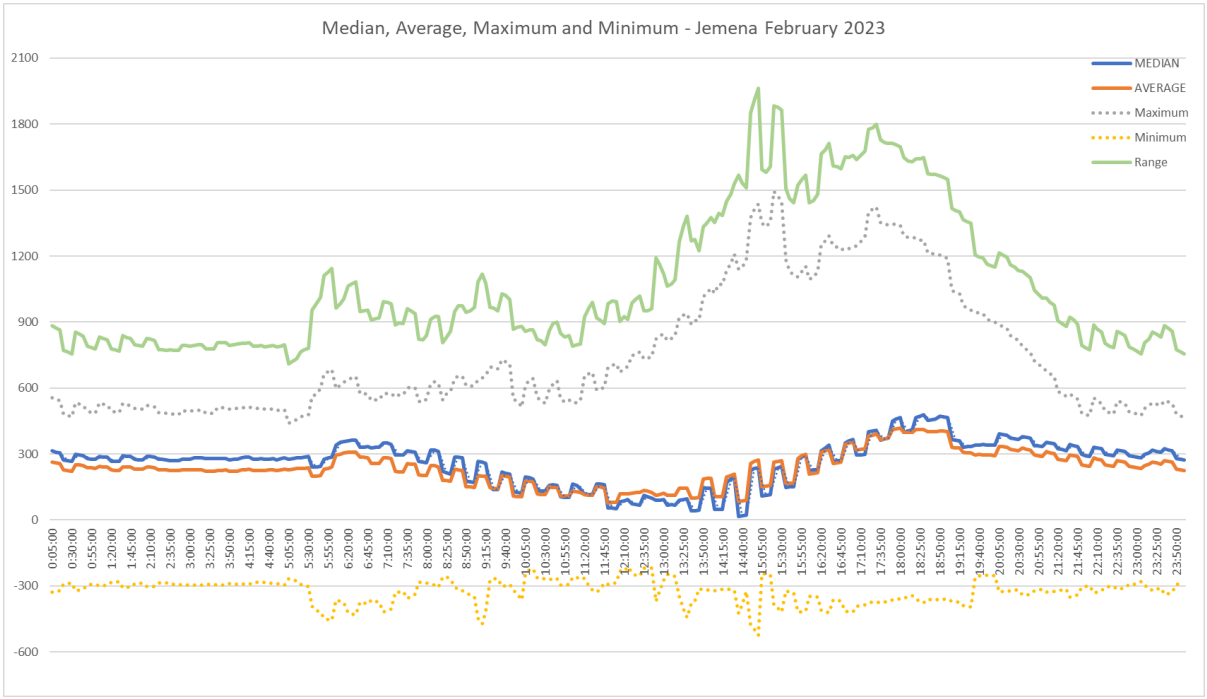


Figure 31 UFE Median, Average, Maximum and Minimum – Jemena February 2023

3.10 Powercor

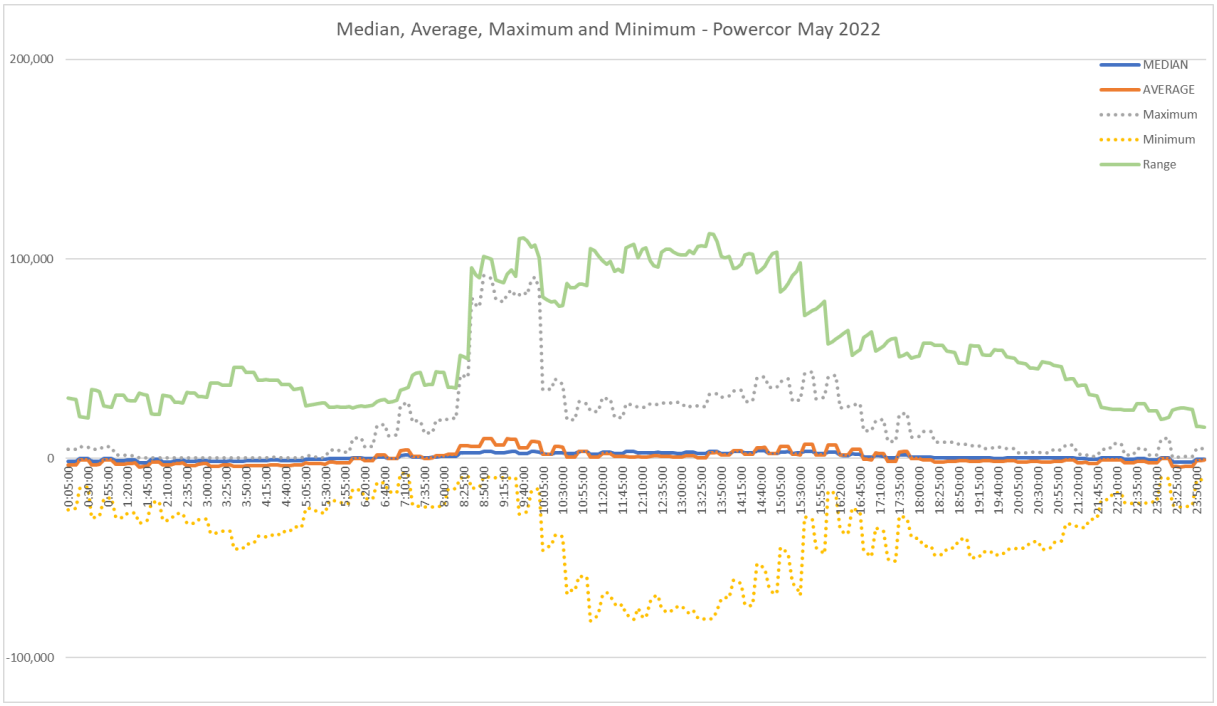


Figure 32 UFE Median, Average, Maximum and Minimum – Powercor May 2022

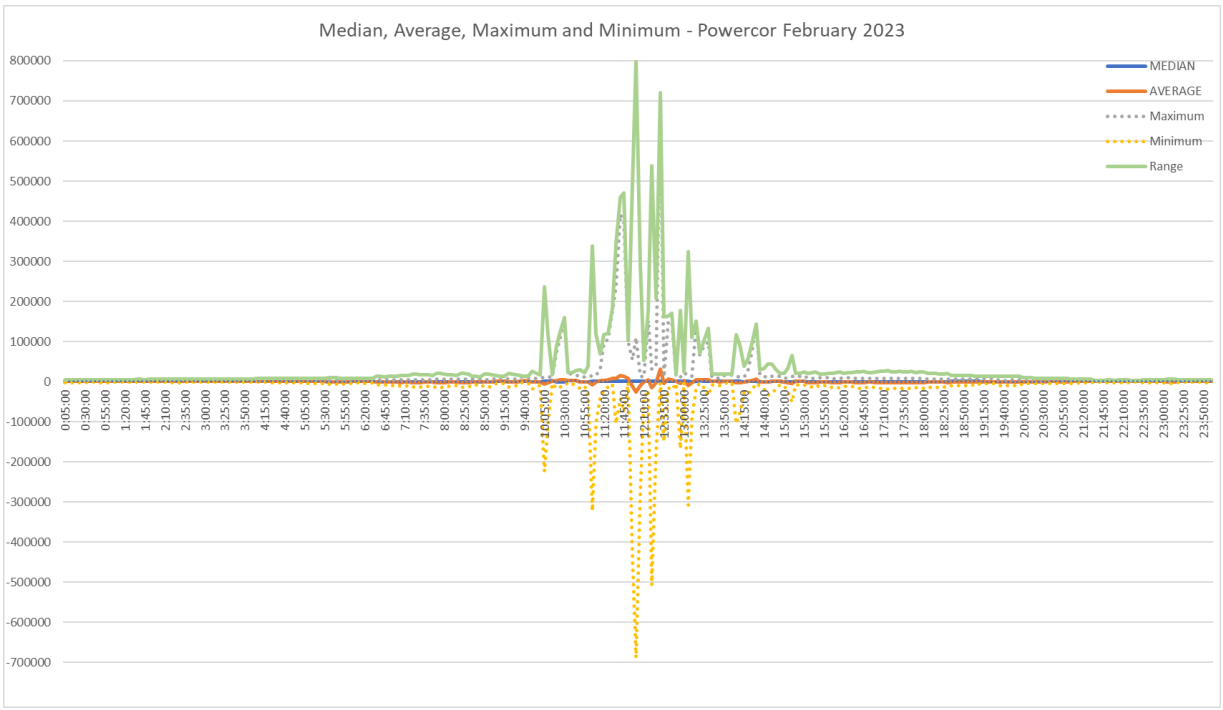


Figure 33 UFE Median, Average, Maximum and Minimum – Powercor February 2023

3.11 SA Power Networks

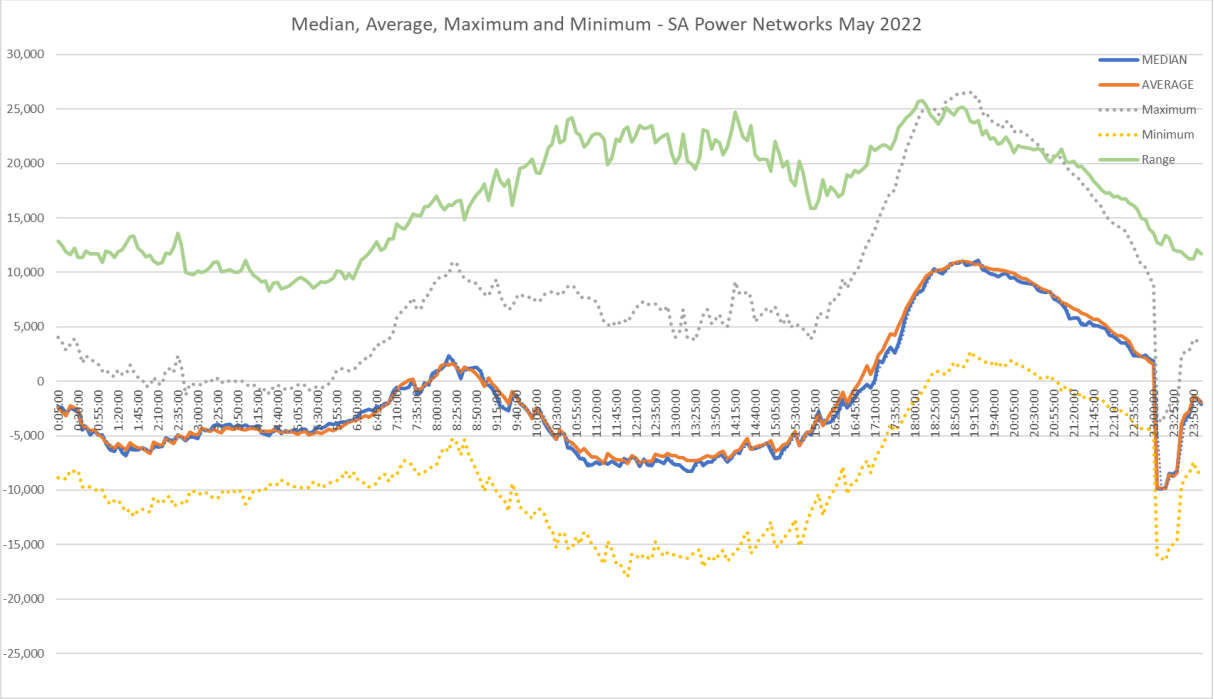


Figure 34 UFE Median, Average, Maximum and Minimum – SA Power Networks May 2022

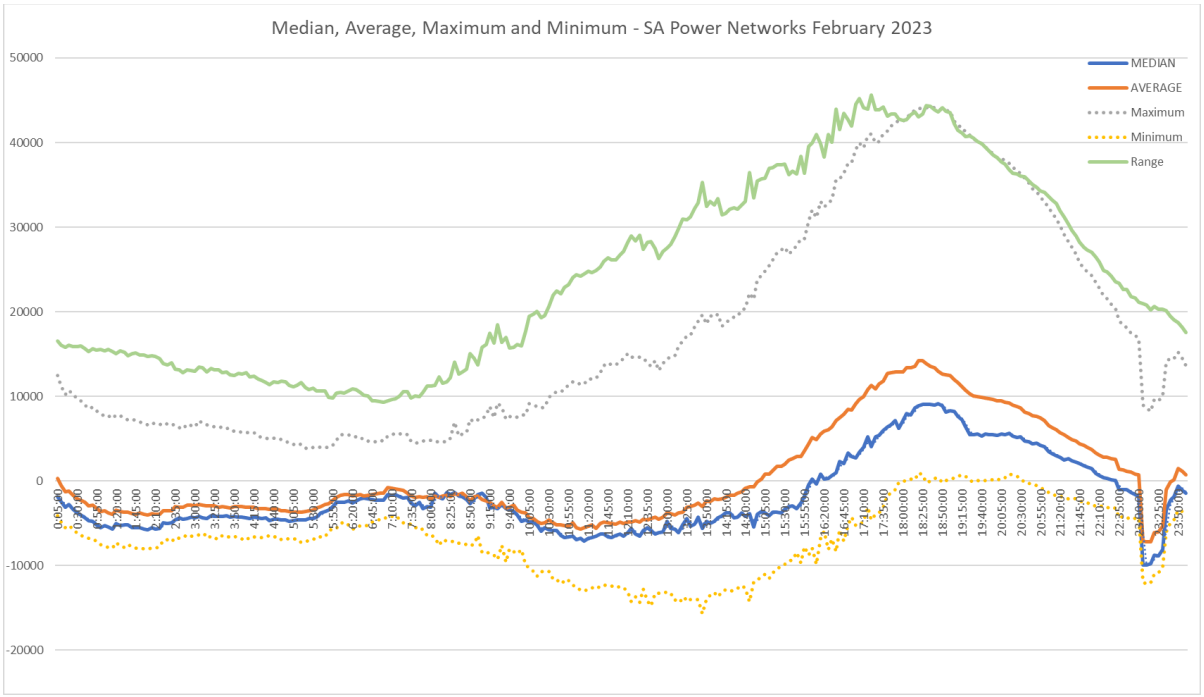


Figure 35 UFE Median, Average, Maximum and Minimum – SA Power Networks February 2023

3.12 TasNetworks

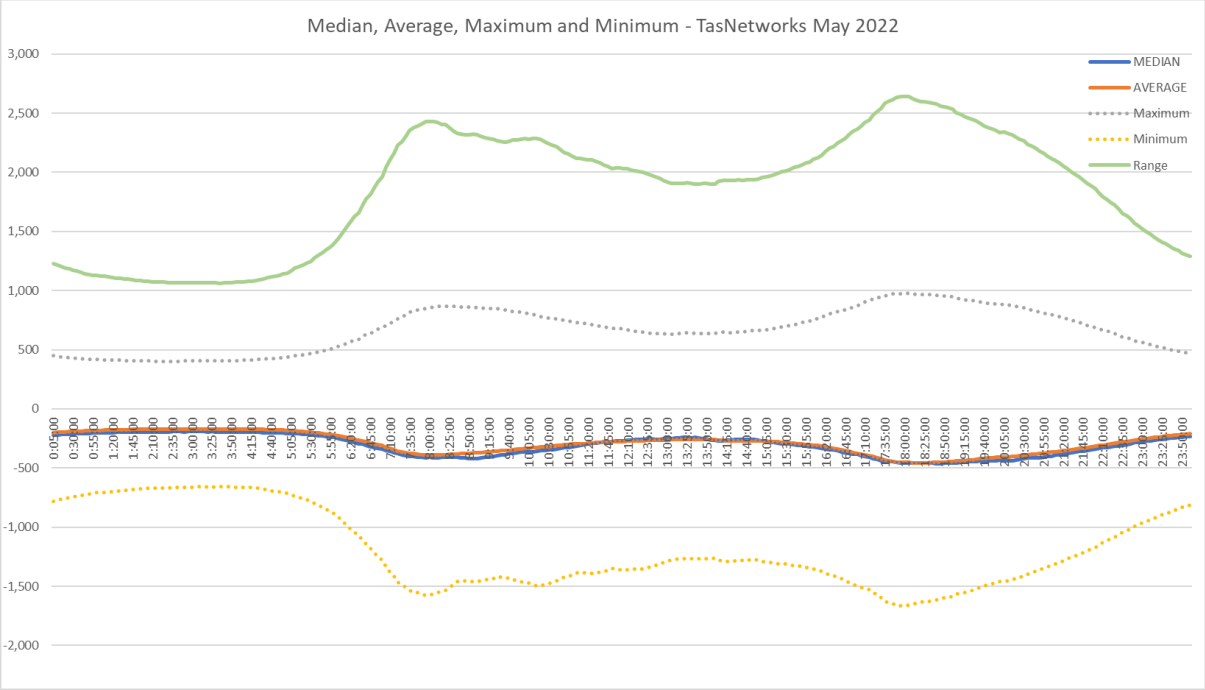


Figure 36 UFE Median, Average, Maximum and Minimum – TasNetworks May 2022

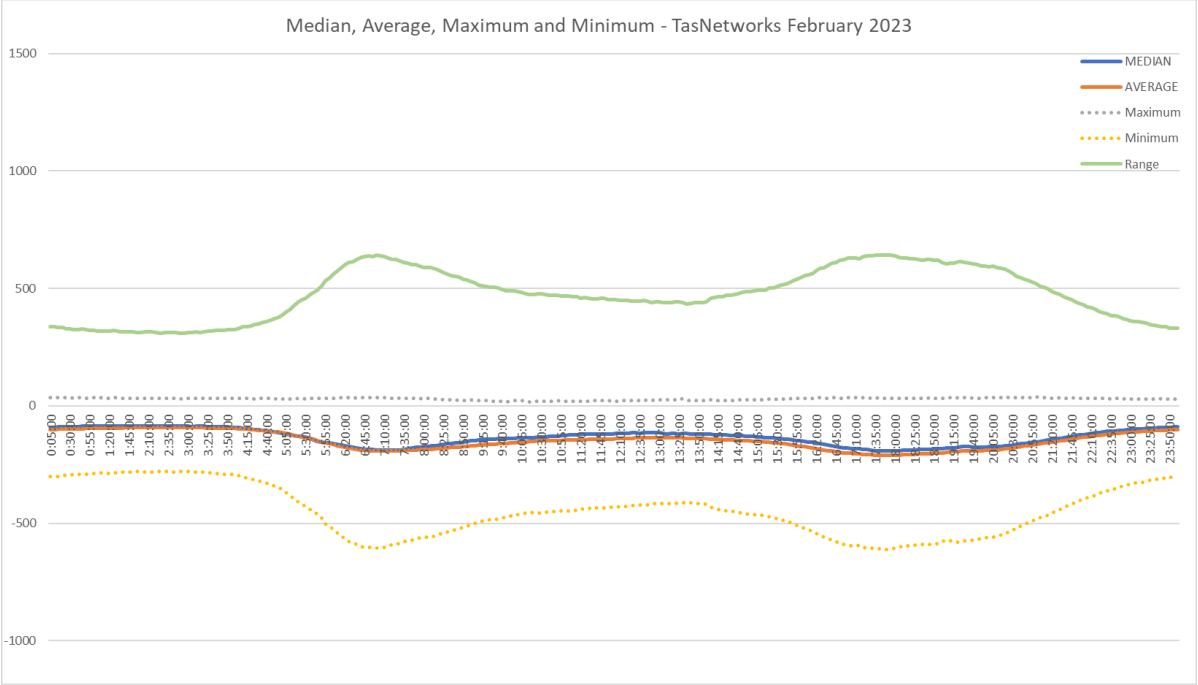


Figure 37 UFE Median, Average, Maximum and Minimum – TasNetworks February 2023

3.13 United Energy

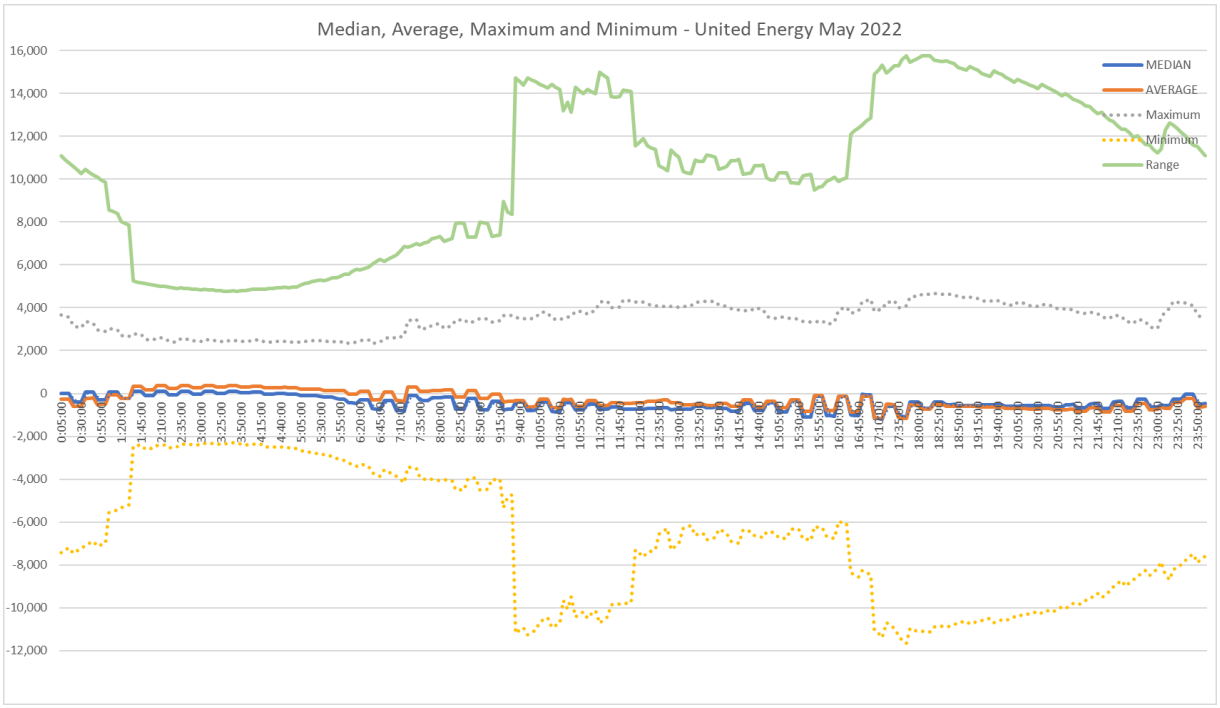


Figure 38 UFE Median, Average, Maximum and Minimum – United Energy May 2022

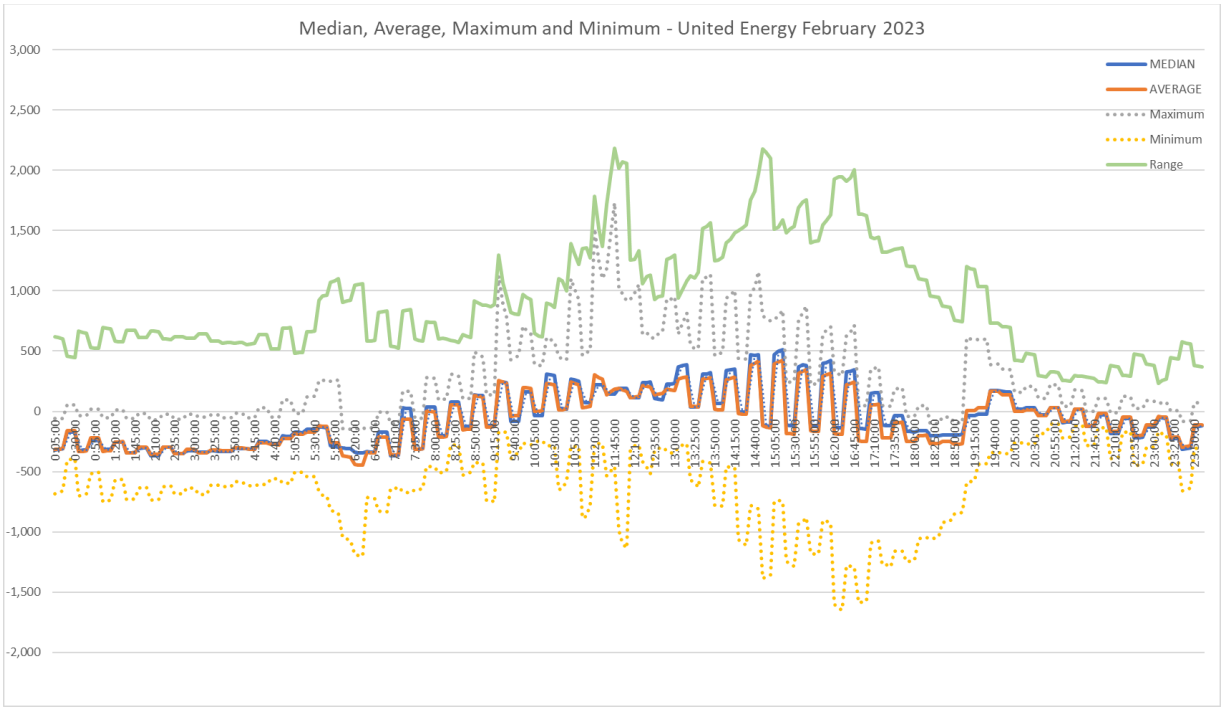


Figure 39 UFE Median, Average, Maximum and Minimum – United Energy February 2023

4 UFE source analysis

AEMO is required to undertake an analysis of the sources of UFE in each *local area* in order to recommend actions to reduce UFE. The areas of UFE source analysis would include:

- Time factors (e.g. season, day, time of day) that produce patterns of UFE that are occurring are likely to be important in identifying causes and solutions to reduce UFE.
- The sources of UFE and their respective solutions are diverse, therefore identifying the likely sources of UFE will be crucial to identifying actions to reduce UFE. This analysis will include the following variables that modify metering data:
    - DLF value changes – historical analysis of DLFs
    - Accumulation (BASIC) *meter* replacement with interval *meters*
    - 15 and 30-minute *metering data* transition to 5-minute *metering data*
    - Type 7 *loads* transitioned to metered arrangements
    - NCONUML loads transitioned to alternative calculation methodologies
    - Review of profiling methodologies
    - Review of UFE values by settlement data versions
    - Review impact of unmetered temporary emergency cross boundary *energy* volumes

4.1 DLF Values

This section of the UFE Trends Report provides, for each *local area*, a table of DLF codes and values for a five year period.

Some DLFs have reduced over the five year period and some have increased. The changes appear to very marginal as the increases or decreases have only been at the third or fourth decimal place.

DLF source data is available on AEMO's "Loss factors and regional boundaries" web page via the link below.

https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/loss-factors-and-regional-boundaries

4.1.1 DLF codes and values – ActewAGL

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
ACT	AH00	1.0153	1.0136	1.0111	1.0106	1.0178
ACT	AL00	1.0467	1.0471	1.0447	1.043	1.0369
ACT	AS01	1.013	1.0062	1.0136	1.0176	1.0129
ACT	AS02	1.0137	1.01	1.0152	1.0104	1.0178
ACT	AS04	0.9997	0.9997	0.9998	0.9997	0.9997
ACT	AS05	0.9971	0.9971	0.9971	0.9971	0.9971

ACT	AS06	0.9984	0.9983	0.9985	0.9985	0.9985
ACT	AS07	0.9983	0.999	0.9994	0.999	0.9995

4.1.2 DLF codes and values – Ausgrid

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 0 2022	2022 - 2023
NSW	J500	1.008	1.016	1.0166	1.0071	1.0124
NSW	J521	1.0355	1.0355	1.0355	1.0355	1.0355
NSW	J522	1.0134	1.0134	1.0134	1.0134	1.0134
NSW	J541	1.0065	1.0123	1.0145	1.0094	1.0103
NSW	J543	1.0082	1.0012	1.0012	1.0103	1.0072
NSW	J550	1.002	1.0023	1.0022	1.0063	1.0037
NSW	J560	1.0076	1.007	1.0059	1.0068	1.0081
NSW	J570	1.0723	1.0723	1.0723	1.0723	1.0723
NSW	J580	1.004	1.0049	1.0035	1.0018	1.0048
NSW	J590	1.0001	1.0045	1.0049	1.0045	1.0049
NSW	J600	1.0092	1.0068	1.0049	1.0028	1.0033
NSW	J601	1.004	1.0076	1.0066	1.0139	1.0033
NSW	J605	1.0062	1.0056	1.0057	1.0056	1.0051
NSW	J610	1.0117	1.0087	1.0124	1.0061	1.0072
NSW	J615	1.0036	1.0054	1.0046	1.0083	1.0126
NSW	J620	1.002	1.0008	1.0009	1.0053	1.0051
NSW	J630	1.0047	1.0031	1.0031	1.0037	1.0067
NSW	J635	1.0041	1.0026	1.0025	1.0031	1.0019
NSW	J640	1.0011	1.0004	1	1.0096	1.0091
NSW	J645	1.0026	1.0048	1.0045	1.0053	1.0057
NSW	J655	1.0004	1.0046	1.0032	1.008	1.0086
NSW	J660	1.0108	1.0116	1.0105	1.011	1.0123
NSW	J670	1.012	1.0134	1.0123	1.0153	1.0175
NSW	J680	1.0276	1.0311	1.0111	1.0129	1.0145
NSW	J690	1.0229	1.0229	1.0229	1.0229	1.0229
NSW	J700	1.0067	1.0033	1.0033	1.0041	1.0082
NSW	J710	1.0051	1.0051	1.0051	1.0051	1.0051
NSW	J720	1.0281	1.0281	1.0281	1.0281	1.0281
NSW	J721	1.0177	1.0177	1.0177	1.0177	1.0177
NSW	J731	1.0125	1.0125	1.0125	1.0125	1.0125
NSW	J732	1.0205	1.0205	1.0205	1.0205	1.0205
NSW	J750	1.0262	1.0262	1.0262	1.0262	1.0262
NSW	J770	1.0179	1.0089	1.013	1.0155	1.0154
NSW	J771	1.0117	1.0202	1.0172	1.0075	1.012
NSW	J772	1.0197	1.0094	1.008	1.0082	1.0114
NSW	J773	1.0336	1.0166	1.0096	1.0176	1.0148
NSW	J774	1.0084	1.0148	1.0217	1.0096	1.0128

NSW	J775	1.018	1.0472	1.0227	1.0283	1.0226
NSW	J777	1.005	1.0088	1.0123	1.0084	1.0078
NSW	J778	1.0143	1.0164	1.0068	1.0076	1.0051
NSW	J779	1.0101	1.0183	1.0203	1.014	1.0148
NSW	J780	1.0156	1.0084	1.0113	1.0119	1.0099
NSW	J781	1.003	1.0032	1.0029	1.0032	1.0075
NSW	J782	1.003	1.003	1.003	1.0032	1.0075
NSW	J783	1.003	1.0028	1.0027	1.0117	1.0098
NSW	J784			1.0197	1.01	1.0131
NSW	J785			1.0135	1.0094	1.009
NSW	J786			1.0148	1.0084	1.0107
NSW	J787			1.002	1.0024	1.0034
NSW	J788			1.0244	1.0089	1.0168
NSW	J789			1.0136	1.0035	1.0074
NSW	J790			1.0192	1.0192	1.0192
NSW	J791				1.0172	1.0106
NSW	J792				1.0066	1.0147
NSW	J793				1.0135	1.0214
NSW	J794				1.0029	1.0029
NSW	J795					1.0057
NSW	J796					1.0044
NSW	J800	1.0011	1.0008	1	1.0037	1.0038
NSW	J881	1.0032	1.0044	1.0047	1.0046	1.0105
NSW	J882	1.035	1.035	1.035	1.035	1.035
NSW	J883	1.0128	1.0128	1.0128	1.0128	1.0128
NSW	J884	1.0128	1.0128	1.0128	1.0128	1.0128
NSW	J885	1	1	1	1.005	1.0015
NSW	J886	1.0009	1.0007	1.0006	1.0006	1.0011
NSW	J887	1.0009	1.0007	1.0006	1.0006	1.0011
NSW	JASH	1.0265	1.0265	1.0265	1.0265	1.0265
NSW	JCAP	1	1	1	1.0007	1.0007
NSW	JGEN	1.0096	1.0043	1.0041	1.0056	0.9978
NSW	JGLB	1.0021	1.0037	1.0028	1.004	1.0034
NSW	JGN1				0.935	0.9472
NSW	JGN2					0.9969
NSW	JHBH	1.0164	1.009	1.0088	1.0102	1.0111
NSW	JHSH	1.0197	1.0127	1.0123	1.0139	1.0149
NSW	JK23	1.005	1.007	1.0069	1.0059	1.0058
NSW	JK24	1.0195	1.0128	1.0123	1.0123	1.0123
NSW	JKUR	1	1	1	1	1
NSW	JL1L	1.0544	1.0532	1.0514	1.0519	1.0517
NSW	JL2L	1.0544	1.0532	1.0514	1.0519	1.0517
NSW	JL40	1.048	1.05	1.0479	1.0484	1.0489
NSW	JLDL	1.0544	1.0532	1.0514	1.0519	1.0517
NSW	JLSL	1.0477	1.046	1.0444	1.0453	1.0455
NSW	JLSP	1.0609	1.0568	1.0546	1.0563	1.0562

NSW	JLSU	1.0505	1.0461	1.0445	1.0461	1.0462
NSW	JPAT	1.0619	1.0619	1.0619	1.0619	1.0619
NSW	JRED	1.0007	1.0007	1.0007	1.0007	1.0007
NSW	JSBS	1.0095	1.0048	1.0044	1.0059	1.0058
NSW	JSSS	1.0095	1.0048	1.0044	1.0059	1.0058
NSW	JTOL	1.001	1.0006	1.0004	1.0077	1.0119
NSW	JTRN	1	1	1	1	1
NSW	GENT					1.0147

4.1.3 DLF codes and values – AusNet Services

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
VIC	LASL	1.0205	1.0187	1.0174	1.0269	1.0212
VIC	LASS	1.0046	1.0018	1.0018	1.0036	1.0022
VIC	LBSL	1.0283	1.0262	1.0254	1.0345	1.0289
VIC	LBSS	1.0124	1.0093	1.0099	1.0113	1.0098
VIC	LCHL	1.0463	1.0468	1.0448	1.0519	1.0524
VIC	LCHS	1.0305	1.0299	1.0293	1.0286	1.0334
VIC	LDLL	1.0681	1.068	1.0679	1.0726	1.0746
VIC	LDLS	1.0523	1.051	1.0524	1.0494	1.0556
VIC	LELL	1.0755	1.0752	1.0757	1.0802	1.0824
VIC	LELS	1.0597	1.0583	1.0602	1.057	1.0634
VIC	LG02	1.0397	1.0386	1.0361	1.0337	1.0316
VIC	LG03	1.0422	1.0338	1.0262	1.0149	1.0115
VIC	LG04	1.0233	1.028	1.0279	1.0293	1.0232
VIC	LG05	0.9952	0.9945	0.9965	0.9958	0.9894
VIC	LG06	1.0218	1.0294	0.9982	0.9973	0.9906
VIC	LG07	1.0446	1.0395	1.0354	1.0333	1.0368
VIC	LG08	1.0071	1.0016	1.0063	1.007	1.0145
VIC	LG09	1.0337	1.0237	1.0219	1.0199	1.022
VIC	LG10		1.0142	1.0139	1.0089	1.0219
VIC	LG11			0.9992	0.9992	0.9993
VIC	LG12			0.9998	0.9998	1
VIC	LL01	1.0271	1.031	1.0383	1.039	1.0297
VIC	LL02	1.0007	1.0026	1.0009	1.0043	1.003
VIC	LL03	1.0343	1.0343	1.0343	1.0343	1.0343
VIC	LL04	1.0664	1.0664	1.0664	1.0664	1.0664
VIC	LL05	1.0038	1.0045	1.0042	1.0005	1.0006
VIC	LL06		1.0462	1.041	1.041	1.041

4.1.4 DLF codes and values – CitiPower

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023

VIC	EDSD	1.0415	1.0413	1.0418	1.0412	1.04
VIC	EHVC	1.0154	1.016	1.0159	1.0153	1.0129
VIC	ELVE	1.0476	1.0474	1.0509	1.05	1.0488
VIC	ESS1	1.0152	1.0152	1.0152	1.0152	1.0152
VIC	ESS2	1.0132	1.0132	1.0132	1.0132	1.0132
VIC	ESS3	1.014	1.014	1.014	1.014	1.014
VIC	ESS4	1.0169	1.0164	1.0166	1.0164	1.0148
VIC	ESTA	1.004	1.0042	1.0041	1.004	1.003
VIC	EZSB	1.0122	1.0124	1.0122	1.0117	1.01

4.1.5 DLF codes and values – Endeavour Energy

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
NSW	HHV1	1.0106	1.0148	1.0134	1.0156	1.0155
NSW	HHVL	1.0154	1.0148	1.017	1.0157	1.0162
NSW	HHVT	1.0101	1.0101	1.0116	1.0109	1.0116
NSW	HHY1	1.0115	1.0137	1.0135	1.0137	1.0135
NSW	HHY2	1.0135	1.0135	1.0135	1.0135	1.0135
NSW	HHY3	1.0129	1.0128	1.0136	1.0121	1.0146
NSW	HHY4	1.0113	1.0145	1.0153	1.0144	1.0144
NSW	HHY5	1.0259	1.0259	1.0259	1.0259	1.0259
NSW	HHY7	1.0107	1.0125	1.0125	1.0125	1.0107
NSW	HHY8					1.0082
NSW	HIC1	1.0126	1.014	1.0148	1.0144	1.0134
NSW	HLVL	1.0648	1.0628	1.0687	1.0682	1.068
NSW	HLVT	1.0437	1.0416	1.0477	1.0476	1.0493
NSW	HNC1	0.9994	0.9998	1.0005	1.0001	1.0018
NSW	HNVL	1.0026	1.0022	1.0026	1.0025	1.0025
NSW	HSTL	1.0092	1.009	1.0107	1.0104	1.0114
NSW	HSTS	1.0062	1.0057	1.0062	1.0065	1.0069
NSW	HTF1	1.0008	1.0036	1.0031	1.0028	1.0029
NSW	HTF2	1.0068	1.0073	1.0073	1.0066	1.0072
NSW	HTF3		1.0031	1.0024	1.0038	1.0042
NSW	HTV1	1.0035	1.0033	1.0035	1.0032	1.0036
NSW	HTV2	1.0029	1.0028	1.0026	1.0023	1.0036
NSW	HTV3					1
NSW	HTV4	1.0075	1.0078	1.0071	1.0065	1.0181
NSW	HTV6		1.0007	1.0012	1.0012	1.001
NSW	HTV7		1.0011	1.0012	1.0013	1.0011
NSW	HTV8		1.0013	1.0027	1.002	1.0096
NSW	HTX1	1.0145	1.019	1.0136	1.015	1.013
NSW	HTX2	0.9981	0.9837	1.0655	1.0512	1.0619
NSW	HTX3	1.0179	1.0065	1.0257	1.0343	1.0285
NSW	HTX4	1.017	1.01	1.0294	1.0376	1.025

NSW	HTX5	1.0127	1.0169	1.0055	1.0108	1.0071
NSW	HTX6	1.0106	1.0106	1.0103	1.0101	1.0107
NSW	HTX7	1.0045	1.0045	1.0045	1.0045	1.0062
NSW	HTX8	1.0076	1.0077	1.0074	1.0071	1.0072
NSW	HTX9	1.0037	1.0046	1.0041	1.004	1.004
NSW	HTXA	1.0086	1.0086	1.0083	1.0083	1.0086
NSW	HTXB	1.0063	1.0099	1.0049	1.0073	1.004
NSW	HTY1	1.012	1.012	1.012	1.012	1.012
NSW	HTY2	1.0039	1.0039	1.0039	1.0039	1.0039
NSW	HTY3	1.0064	1.0073	1.0067	1.0059	1.0064
NSW	HTY4	1.0264	1.0288	1.0266	1.0261	1.0279
NSW	HTY5	1.0356	1.0408	1.0497	1.0529	1.039
NSW	HTY6	1.0051	1.0051	1.0051	1.0051	1.0051
NSW	HTY7	1.0084	1.0134	1.0087	1.011	1.0079
NSW	HTY9	1.0154	1.0154	1.0032	1.0078	1.004
NSW	HTYA	1.0174	1.0174	1.0149	1.0144	1.017
NSW	HTYB	1.0058	1.006	1.0054	1.005	1.0055
NSW	HTYC	1.011	1.0048	1.0044	1.004	1.004
NSW	HTYD		1.0033	1.0033	1.0033	1.0033
NSW	HTYE		1.006	1.0062	1.0059	1.0055

4.1.6 DLF codes and values – Energex

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
QLD	F1CH	1.0198	1.02311	1.0196	1.02021	1.02198
QLD	F1CL	1.0387	1.04218	1.03815	1.04344	1.04443
QLD	F1ZH	1.0131	1.01537	1.01228	1.01299	1.01431
QLD	F3CL	1.009	1.01085	1.00844	1.00893	1.01017
QLD	FACI	1.08795	1.08215	1.09561	1.07884	1.08657
QLD	FALK	1.01448	1.01082	1.0094	1.00882	1.00807
QLD	FAPB	1.0134	1.01354	1.01338	1.01274	1.01238
QLD	FAPL	1.01064	1.01064	1.01064	1.01064	1.01064
QLD	FAPM	1.01807	1.01807	1.01807	1.01807	1.01807
QLD	FBAC	1.01226	1.01382	1.01359	1.01412	1.0173
QLD	FBCC	1.01274	1.01116	1.01073	1.01136	1.0113
QLD	FBEP	1.00881	1.01067	1.01138	1.00954	1.01065
QLD	FBOC	1.00903	1.01264	1.01012	1.00967	1.01013
QLD	FBRR	1.00646	1.00841	1.04952	1.04952	1.04952
QLD	FCAL	1.01247	1.00959	1.00884	1.01235	1.00839
QLD	FCLT	1.0045	1.00528	1.0051	1.00519	1.00561
QLD	FCRL	1.03086	1.02581	1.01527	1.02212	1.05066
QLD	FCST	1.0047	1.0034	1.00331	1.00248	1.00352
QLD	FEAN	1.00678	1.00721	1.00693	1.00546	1.00556
QLD	FEAS	1.00635	1.00752	1.00732	1.00597	1.00569

QLD	FEIB	1.01568	1.01623	1.01326	1.01435	1.02033
QLD	FENG	1.00959	1.00959	1.00959	1.00959	1.00959
QLD	FGBI	1.00622	1.00479	1.00413	1.00386	1.00355
QLD	FGHP	1.00792	1.00795	1.0081	1.00693	1.00972
QLD	FHDL	1.00717	1.00543	1.00174	1.00119	1.00147
QLD	FHDU	1.01355	1.04421	1.01361	1.01301	1.01257
QLD	FHPR	1.15949	1.15949	1.15949	1.15949	1.15949
QLD	FHYS	1.04984	1.05012	1.05051	1.0492	1.05573
QLD	FICT	1.00932	1.00972	1.01251	1.00777	1.00653
QLD	FIST	1.00598	1.00598	1.00598	1.00598	1.00598
QLD	FJPC	1.00549	1.00549	1.00549	1.00549	1.00549
QLD	FLCL	1.0534	1.05592	1.052	1.05871	1.0611
QLD	FLEA		1.01954	1.01954	1.01954	1.01954
QLD	FLEM		1.04057	1.04057	1.04057	1.04057
QLD	FLGP	1.01431	1.01225	1.01109	1.01301	1.01023
QLD	FLMD	1.01244	1.01377	1.0106	1.00715	1.0091
QLD	FLWH	1.00105	1.00636	1.00608	1.00624	1.00622
QLD	FLWT	1.00591	1.0009	1.00071	1.00062	1.00075
QLD	FMRP	1.05236	1.05928	1.05755	1.06497	1.06018
QLD	FNBW	1.13083	1.12115	1.13761	1.13142	1.12721
QLD	FNPD	1.02176	1.02607	1.02164	1.02219	1.01835
QLD	FNST	1.00349	1.00349	1.00349	1.00349	1.00349
QLD	FPAH	1.01613	1.01767	1.01054	1.00931	1.01135
QLD	FPCF	1.01424	1.01342	1.01313	1.01384	1.01384
QLD	FQB	1.00263	1.0017	1.00244	1.00234	1.00142
QLD	FQBH	1.00031	1.0003	1.00026	1.0003	1.00026
QLD	FQBW	1.00235	1.01047	1.00151	1.00135	1.00161
QLD	FQC	1.00003	1.00003	1.00004	1.00003	1.00009
QLD	FQCB	1.04304	1.00969	1.01024	1.00834	1.01001
QLD	FQCH	1.00611	1.00655	1.00295	1.00522	1.00687
QLD	FQCL	1.03776	1.04186	1.04763	1.04572	1.03624
QLD	FQG	1.01333	1.01622	1.0132	1.01767	1.01688
QLD	FQL	1.0007	1.00069	1.00072	1.00117	1.00065
QLD	FQML				1.00001	1.00001
QLD	FQNG			1.00556	1.00534	1.00595
QLD	FQP	1.00724	1.01004	1.00738	1.00594	1.00604
QLD	FQR	1.00039	1.00035	1.00051	1.00053	1.00036
QLD	FQRS	1.00022	1.00027	1.00034	1.00028	1.00019
QLD	FQRW	1.00651	1.00524	1.0058	1.00558	1.00558
QLD	FQT	1.00806	1.00703	1.00481	1.00934	1.00793
QLD	FQUE	1.00882	1.00725	1.00799	1.01208	1.01337
QLD	FQW	1.00076	1.0008	1.00169	1.00884	1.01249
QLD	FRAF	1.01749	1.01806	1.01718	1.01825	1.02123
QLD	FRBH	1.00764	1.00895	1.0062	1.00658	1.00761
QLD	FRPT	1.00506	1.00249	1.00065	1.00268	1.00086
QLD	FSBB	1.0306	1.03191	1.03771	1.04608	1.03766

QLD	FSC	1.00955	1.007	1.00633	1.00645	1.0061
QLD	FSFT	1.01374	1.01161	1.01025	1.01136	1.00978
QLD	FSHG	1.02707	1.15806	1.16209	1.17019	1.13587
QLD	FSSS	1.0037	1.00463	1.0039	1.00314	1.00381
QLD	FSTC	1.01272	1.01123	1.01076	1.01258	1.01017
QLD	FSUH	1.01174	1.01358	1.0101	1.01095	1.01095
QLD	FSWP	1.01429	1.0073	1.00882	1.00875	1.00782
QLD	FTD	1.0086	1.0072	1.00659	1.00784	1.00761
QLD	FTTB	1.03923	1.04307	1.03718	1.0399	1.0486
QLD	FUQ1	1.00592	1.00526	1.0048	1.00469	1.00462
QLD	FUQ2	1.01262	1.01262	1.01262	1.01262	1.01262
QLD	FUQC	1.02713	1.03233	1.03562	1.01749	1.01675
QLD	FVP	1.00233	1.00827	1.0091	1.01082	1.00829
QLD	FVSF	1.07431	1.0611	1.05123	1.04629	1.0547
QLD	FWGC	1.00576	1.00509	1.00488	1.00506	1.00507
QLD	FWHG	1.07612	1.0917	1.05895	1.09492	1.0801
QLD	FWSC	1.01049	1.01049	1.01049	1.01049	1.01049

4.1.7 DLF codes and values – Ergon

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
QLD	GA01	0.946	0.952	0.959	0.951	0.947
QLD	GA02	0.82	0.82	0.82	1.01	1.008
QLD	GA03	0.94	0.94	0.94	0.944	0.904
QLD	GA04	0.993	0.993	1.005	0.994	0.983
QLD	GA05	0.991	0.991	0.989	0.987	0.983
QLD	GA06	0.963	0.963	0.963	0.969	0.925
QLD	GA07		1.001	1.001	1.001	1.001
QLD	GA09		0.987	0.987	0.987	0.987
QLD	GA10		0.987	0.987	0.987	0.987
QLD	GA11		0.945	0.945	0.965	0.967
QLD	GA12					0.972
QLD	GBSB	1	1	1	1	1
QLD	GEHB	1.016	1.016	1.011	1.016	1.018
QLD	GEHL	1.036	1.036	1.031	1.036	1.036
QLD	GELB	1.075	1.071	1.075	1.073	1.068
QLD	GELL	1.087	1.075	1.093	1.077	1.083
QLD	GESB	1.007	1.006	1.005	1.004	1.005
QLD	GESL	1.012	1.012	1.008	1.011	1.015
QLD	GS02	1.006	1.009	1.004	1.006	1.008
QLD	GS05	1.005	1.005	1.005	1.005	1.005
QLD	GS06	1.006	1.003	1.005	1.006	1.006
QLD	GS12	1.02	1.014	0.981	1	0.995
QLD	GS13	1.004	1	1	1.01	1.007

QLD	GS14	1.005	1.004	1.006	1.007	1.005
QLD	GS18	1.004	1	1.001	1.003	1.004
QLD	GS19	1.03	1.069	1.046	1.047	1.078
QLD	GS21	1.002	1.001	1.002	1.003	1.001
QLD	GS22	1.001	1	1.004	1.006	1.005
QLD	GS23	1.025	1.025	1.025	1.025	1.025
QLD	GS24	1.008	1.008	1.008	1.008	1.008
QLD	GS26	0.992	0.999	0.999	0.992	0.993
QLD	GS29	0.976	0.95	0.987	0.995	0.992
QLD	GS30	0.976	0.95	0.987	0.995	0.992
QLD	GS33	1.003	1.003	1.003	1.003	1.003
QLD	GS34	1	1	1	1	1
QLD	GS40	1.095	1.095	1.086	1.084	1.079
QLD	GS41	1.001	1.001	1.001	1.001	1.001
QLD	GS44	1.006	1.006	1.006	1.006	1.006
QLD	GS49	0.95	0.985	0.882	0.89	0.94
QLD	GS50	1.017	1.017	1.017	1.017	1.017
QLD	GS51	1.004	1	0.999	1.007	1.007
QLD	GS55	0.978	0.987	0.981	0.985	0.984
QLD	GS56	0.988	0.981	0.986	1	0.974
QLD	GS60	1.034	1.034	1.034	1.034	1.034
QLD	GS61	1.001	1.001	1.001	1.001	1.001
QLD	GS62	1.019	1.013	1.008	1.016	1.013
QLD	GS63	1.019	1.019	1.019	1.019	1.019
QLD	GS64	1.009	1.008	1.008	1.007	1.006
QLD	GS65	1.01	1.005	1.008	1.003	1.003
QLD	GS66	1.011	1.011	1.011	1.011	1.011
QLD	GS67	0.976	0.984	0.992	0.997	0.978
QLD	GS69	1.006	1.001	1.002	1.007	1.006
QLD	GS70	1.001	1	1	1.004	1.004
QLD	GS71	1	0.998	1	1	0.996
QLD	GS73	1.001	1.001	1.001	1.001	1.001
QLD	GS74	1	0.998	1.009	1.001	1.002
QLD	GS76	0.948	0.939	0.958	0.959	0.964
QLD	GS77	1.006	1.009	1.004	1.007	1.001
QLD	GS78	0.978	0.978	0.978	0.978	0.978
QLD	GS79	0.977	0.974	0.966	0.978	0.975
QLD	GS80	0.994	0.998	1.002	1	0.998
QLD	GS81	0.987	0.991	0.991	0.996	0.995
QLD	GS82	1.008	1.009	1.008	1.012	1.01
QLD	GS83	1.006	1.001	1.002	1.009	1.002
QLD	GS84	1	1.001	0.998	1	1
QLD	GS85	1.065	1.096	1.082	1.072	1.081
QLD	GS86	1.008	1.013	1.006	1.007	1.002
QLD	GS87	1.008	1.007	1.004	1.005	1.006
QLD	GS88	1.012	1.017	1.008	1.008	1.002

QLD	GS89	1	1	0.999	1.001	1
QLD	GS90	1.002	1.001	1.006	1.008	1.004
QLD	GS91	0.898	0.876	0.902	0.926	0.927
QLD	GS92	0.999	1.005	0.995	1	0.999
QLD	GS93	0.988	0.988	0.981	0.985	0.968
QLD	GS95	1	1	1.001	0.999	0.999
QLD	GS96	0.897	0.89	0.89	0.887	0.868
QLD	GS97	0.991	0.991	1.007	1	0.994
QLD	GS98	0.954	0.954	0.956	0.955	0.915
QLD	GS99	0.964	0.964	0.964	0.963	0.972
QLD	GWHB	1.07	1.063	1.044	1.06	1.064
QLD	GWHL	1.103	1.095	1.078	1.113	1.106
QLD	GWLB	1.149	1.144	1.118	1.173	1.156
QLD	GWLL	1.171	1.161	1.233	1.24	1.224
QLD	GWSB	1.026	1.037	1.029	1.024	1.021
QLD	GWSL	1.064	1.062	1.04	1.051	1.056

4.1.8 DLF codes and values – Essential Energy

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
NSW	BH0A	1.0328	1.032	1.0301	1.0309	1.029
NSW	BH5A	1.0195	1.0191	1.0185	1.0182	1.0159
NSW	BL0A	1.0745	1.0691	1.0664	1.0637	1.0609
NSW	BL5A	1.0556	1.0554	1.0544	1.0506	1.0485
NSW	BS02	0.9671	0.9381	0.9375	0.9296	0.9334
NSW	BS03	1.0174	0.9991	0.9963	0.997	0.9986
NSW	BS0A	1.0108	1.0099	1.011	1.0119	1.0104
NSW	BS32	1.108	1.1057	1.0989	1.0859	1.0567
NSW	BS33	1.0851	1.0634	1.0563	1.0481	1.02
NSW	BS34	1.1027	1.1027	1.1027	1.1027	1.1027
NSW	BS35	1.0133	1.0121	1.0135	1.0141	1.013
NSW	BS37	1	1	1	1	1
NSW	BS38	1.0164	1.0192	1.0085	1.0102	1.0118
NSW	BS39	1.021	1.0444	1.0339	1.0253	1.0251
NSW	BS40	1.0827	1.061	1.0555	1.0495	1.0239
NSW	BS41	1.1264	1.1039	1.0848	1.0651	1.0651
NSW	BS43	1.0193	0.9882	0.9949	0.9953	0.9933
NSW	BS44	0.9964	0.9942	0.9969	0.9956	0.9993
NSW	BS45	1.045	1.0514	1.0443	1.0335	1.0264
NSW	BS46	1.0492	1.0578	1.0256	1.0391	1.0318
NSW	BS47	0.9526	0.9526	0.9526	0.9526	0.9526
NSW	BS48	0.9853	0.9905	0.9852	0.975	0.9781
NSW	BS50	0.9764	0.9788	0.9831	0.972	0.9751
NSW	BS51	1.0084	1.01	1.0046	1.0063	1.0063

NSW	BS52	1.0521	1.0449	1.045	1.0413	1.0232
NSW	BS53	1.0065	1.0099	1.01	1.0087	1.0075
NSW	BS54	0.9832	0.982	0.982	0.9705	0.9772
NSW	BS55	0.9917	0.9913	0.9917	0.9838	0.9832
NSW	BS56	1.0133	1.0121	1.0135	1.0141	1.013
NSW	BS57	0.9757	0.9805	0.9591	0.9419	0.9217
NSW	BS58	0.9835	0.9751	0.985	0.9835	0.9815
NSW	BS60	1.0066	1.0123	1.0153	1.0121	1.0112
NSW	BS61	0.9832	1.0033	1.0008	0.9982	0.9841
NSW	BS62	0.9984	1.0013	0.9956	0.9909	0.9828
NSW	BS63	0.9929	0.996	0.9938	0.9983	0.9983
NSW	BS64		0.9781	0.9597	0.9462	0.9294
NSW	BS65			0.98	0.9803	0.9768
NSW	BS66			0.9931	0.9908	0.9853
NSW	BS67				1.0126	1.0181
NSW	BS68				1.0262	1.0289
NSW	BS69			0.9812	0.9812	0.9801
NSW	BS70				0.9169	0.9263
NSW	BS71				0.9904	0.9878
NSW	BS72					1.0517
NSW	BS73					0.9544
NSW	BS74					0.9291

4.1.9 DLF odes and values – Jemena

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
VIC	CAFP	1.0026	1.0026	1.0026	1.0026	1.0026
VIC	CAGP	1.0133	1.0118	1.0097	1.0108	1.0095
VIC	CAHH	1.0164	1.0147	1.012	1.013	1.0116
VIC	CAPA	1.0049	1.0033	1.0024	1.0025	1.002
VIC	CFMC	1.0107	1.0107	1.0107	1.0107	1.0107
VIC	CHBL	1.0235	1.0187	1.0158	1.0169	1.0139
VIC	CHBS	1.0107	1.0092	1.0077	1.0087	1.0071
VIC	CHCA	1.011	1.011	1.011	1.011	1.011
VIC	CHCL	1.0378	1.0299	1.0249	1.0253	1.0206
VIC	CHCS	1.025	1.0205	1.0168	1.0172	1.0138
VIC	CLDL	1.0581	1.0451	1.0425	1.0455	1.0397
VIC	CLDS	1.0454	1.0357	1.0344	1.0373	1.033
VIC	CLEL	1.0654	1.0513	1.0476	1.0512	1.0446
VIC	CLES	1.0526	1.0418	1.0394	1.043	1.0379
VIC	CSAL	1.0177	1.0138	1.0118	1.0124	1.0102
VIC	CSAS	1.0049	1.0043	1.0037	1.0042	1.0034
VIC	CSOG	0.9884	0.9891	0.9917	0.9872	0.9881
VIC	CSPL		1.01	1.0081	1.0088	1.0079

VIC	CSPT	1.0131	1.0131	1.0131	1.0131	1.0131
VIC	CVPC	1.0092	1.0081	1.0068	1.0086	1.0079

4.1.10 DLF Codes and values – Powercor

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
VIC	KAB	1.0162	1.0162	1.0162	1.0162	1.0162
VIC	KAD	1.0127	1.0155	1.0167	1.0115	1.0091
VIC	KAF	1.0068	1.0068	1.0069	1.0068	1.0069
VIC	KAF1	1.0008	1.0005	1.0005	1.0005	1.0006
VIC	KAL	1.0343	1.0353	1.0388	1.0373	1.0378
VIC	KAO					1.0022
VIC	KAS	1.0043	1.0039	1.0035	1.0035	1.0033
VIC	KAT			1.0109	1.0109	1.0113
VIC	KBC	1.0318	1.0334	1.0444	1.0311	1.0375
VIC	KBF	1.0651	1.0651	1.0651	1.0651	1.0651
VIC	KBL	1.0401	1.0409	1.0442	1.0426	1.0428
VIC	KBN	1.0082	1.0086	1.0083	1.0082	1.0081
VIC	KBP	0.9774	0.9774	0.9846	0.9825	0.9753
VIC	KBS	1.0101	1.0095	1.0089	1.0088	1.0083
VIC	KCB	1.0306	1.0133	0.9624	0.9183	0.9018
VIC	KCF	1.0335	1.0428	1.0788	1.0323	1.0146
VIC	KCH	0.9641	0.9638	0.992	0.9689	0.9654
VIC	KCL	1.0658	1.0657	1.0683	1.0662	1.066
VIC	KCO		0.9811	0.9811	0.9811	0.9811
VIC	KCS	1.0358	1.0343	1.033	1.0324	1.0315
VIC	KDA	1.0015	1.0015	1.0015	1.0015	1.0015
VIC	KDA1	1.0087	1.0089	1.0118	1.0118	1.012
VIC	KDA2	1.0017	1.0017	1.0017	1.0017	1.0017
VIC	KDL	1.0923	1.0912	1.093	1.09	1.0896
VIC	KDS	1.0623	1.0598	1.0577	1.0562	1.0551
VIC	KEL	1.1011	1.0996	1.1006	1.0975	1.0972
VIC	KES	1.0711	1.0682	1.0653	1.0637	1.0627
VIC	KGD	1.001	1.001	1.001	1.001	1.001
VIC	KGE	1.0091	1.0091	1.0091	1.0091	1.0091
VIC	KGJ	1.002	1.002	1.0022	1.0021	1.0022
VIC	KGK	1.0042	1.0042	1.0042	1.0042	1.0042
VIC	KGS	0.986	0.9951	0.9901	0.9859	0.9796
VIC	KKS	0.9886	0.9886	0.9852	0.9797	0.9731
VIC	KKW	0.9185	0.9179	0.9155	0.9171	0.9316
VIC	KLD	1.0086	1.0074	1.0074	1.0074	1.0074
VIC	KMG	0.9586	0.958	1.001	0.9823	0.982
VIC	KML	0.9087	0.9042	0.9087	0.9077	0.9102
VIC	KNS	0.9927	0.9927	0.9875	0.9871	0.9852

VIC	KOH	0.8966	0.8906	0.8919	0.8907	0.8933
VIC	KRD	1.0075	1.0074	1.0071	1.0096	1.0094
VIC	KSB	1.0556	1.0567	1.0555	1.0524	1.0493
VIC	KSE	1.0495	1.0472	1.0469	1.0484	1.0572
VIC	KSG	1.0746	1.0746	1.0746	1.0746	1.0746
VIC	KTE	1.044	1.0459	1.0459	1.0459	1.0459
VIC	KWS	0.9986	0.9986	0.9986	0.9985	0.9982
VIC	KYD	0.9845	0.9845	0.9845	0.9845	0.9845
VIC	KYP		0.9818	0.9818	0.9818	0.9818
VIC	KYS	0.9947	1.0046	1.0536	0.9842	0.9627
VIC	KYW	1.0335	1.0428	1.0788	1.0323	1.0146

4.1.11 DLF Codes and values – SA Power Networks

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
SA	BP01					0.996
SA	NAB1	1.007	1.01	1.01	1.01	1.01
SA	NAC1	1.02	1.02	1.02	1.02	1.02
SA	NAC2	1.012	1.008	1.008	1.008	1.008
SA	NAS1	0.997	0.989	0.989	0.989	0.989
SA	NAS2	0.997	0.989	0.989	0.989	0.989
SA	NB09			0.993	0.993	0.993
SA	NBA1	1.001	1.001	1.001	1.001	1.001
SA	NBO1			0.993	0.993	0.993
SA	NCDW	0.973	0.972	0.972	0.972	0.972
SA	NCL1	1.009	1.005	1.002	1.002	1.004
SA	NDS1	1.013	1.016	1.008	1.008	1.008
SA	NDS2	1.013	1.016	1.008	1.008	1.008
SA	NDS4			1.01	1.01	1.01
SA	NDS5				1.011	1.011
SA	NDS8				1.011	1.011
SA	NDS9			1.01	1.01	1.01
SA	NGM1	1.009	1.009	1.009	1.009	1.009
SA	NGM2	1.007	1.007	1.007	1.007	1.007
SA	NGT1	1.006	1.007	1.007	1.007	1.007
SA	NHA1				0.973	0.973
SA	NHA9				0.973	0.973
SA	NHN1	1.002	1.003	1.003	1.003	1.002
SA	NHN2	1.002	1.003	1.003	1.003	1.003
SA	NHV1	1.052	1.048	1.051	1.0503	1.0449
SA	NIF1	1.011	1.01	1.01	1.01	1.01
SA	NKC4	1.01	1.01	1.01	1.01	1.01
SA	NLV1	1.088	1.08	1.084	1.0985	1.0903
SA	NLV2	1.11	1.101	1.107	1.117	1.107

SA	NOS1	1.001	1	1.001	1.001	1.001
SA	NOS2	1	1.001	1	1	1
SA	NP01					0.996
SA	NPS1	1	1	1	1	1
SA	NPS3	1.007	1.007	1.007	1.007	1.007
SA	NRA1	1.007	1.009	1.01	1.01	1.01
SA	NRA2	1.011	1.012	1.012	1.012	1.012
SA	NRT1	1.003	1.002	1.004	1.005	1.005
SA	NSHW	1.009	0.995	0.995	0.995	0.995
SA	NSP1	1.004	1.003	1.004	1.004	1.004
SA	NSP2	1.004	1.003	1.004	1.004	1.004
SA	NST1				1.0163	1.0149
SA	NTGN	1.003	1	1	1	1
SA	NTGS	0.998	1	1.003	1.003	1.003
SA	NZS1	1.024	1.022	1.023	1.0265	1.0243
SA	XOX1	1.056	1.056	1.056	1.056	1.056

4.1.12 DLF Codes and Values – TasNetworks

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
TAS	PACH	1	1	1	1	1
TAS	PADS					1.0397
TAS	PAHV					1.0136
TAS	PALV					1.0579
TAS	PAST					1.0059
TAS	PATR					1
TAS	PAZN					1.0098
TAS	PBGM	1.0118	1.0118	1.0118	1.0118	1.0118
TAS	PBSM	1.0118	1.0132	1.011	1.0132	1.0147
TAS	PDDS	1.0463	1.0487	1.0469	1.0324	1.0397
TAS	PDHV	1.0177	1.0204	1.0147	1.0135	1.0136
TAS	PDLV	1.0639	1.0609	1.0557	1.0583	1.0579
TAS	PDST	1	1	1	1.0056	1.0059
TAS	PDTC	0.9763	0.9753	0.972	0.972	0.972
TAS	PDZN	1	1	1	1.0084	1.0098
TAS	PEDE	1	1	1	1	1
TAS	PEDS	1.0544	1.0548	1.0478	1.0324	1.0397
TAS	PEHE	1	1	1	1	1
TAS	PEHV	1.0222	1.0237	1.0181	1.0135	1.0136
TAS	PELV	1.084	1.082	1.0785	1.0583	1.0579
TAS	PEMW	0.9205	0.955	0.9588	0.9588	0.9588
TAS	PEST	1	1	1	1.0056	1.0059
TAS	PEZN	1	1	1	1.0084	1.0098
TAS	PHDS	1.0266	1.0266	1.0238	1.0324	1.0397

TAS	PHGM	1	1	1	1	1
TAS	PHHV	1.0123	1.0124	1.0112	1.0135	1.0136
TAS	PHLV	1.0389	1.0394	1.0407	1.0583	1.0579
TAS	PHST	1.0042	1.0046	1.0034	1.0056	1.0059
TAS	PHZN	1.0064	1.0065	1.0053	1.0084	1.0098
TAS	PNDS	1.0304	1.0356	1.0329	1.0324	1.0397
TAS	PNHV	1.0086	1.0133	1.0111	1.0135	1.0136
TAS	PNLV	1.0568	1.0539	1.0543	1.0583	1.0579
TAS	PNST	1	1	1	1.0056	1.0059
TAS	PNZN	1	1	1	1.0084	1.0098
TAS	PSDS	1.0449	1.0401	1.0395	1.0324	1.0397
TAS	PSHV	1.0183	1.0169	1.0171	1.0135	1.0136
TAS	PSLV	1.0547	1.0557	1.0579	1.0583	1.0579
TAS	PSPU	0.9909	0.9914	0.9915	0.9915	0.9915
TAS	PSST	1	1	1.0002	1.0056	1.0059
TAS	PSZN	1.0003	1.0002	1.0004	1.0084	1.0098
TAS	PTDS	1.0245	1.0251	1.0244	1.0324	1.0397
TAS	PTHV	1.0072	1.0077	1.0077	1.0135	1.0136
TAS	PTLV	1.0451	1.0428	1.0439	1.0583	1.0579
TAS	PTST	1	1	1	1.0056	1.0059
TAS	PTZN	1	1	1	1.0084	1.0098
TAS	PWDS	1.0398	1.0336	1.0305	1.0324	1.0397
TAS	PWHV	1.0144	1.015	1.0125	1.0135	1.0136
TAS	PWLV	1.0545	1.051	1.0482	1.0583	1.0579
TAS	PWST	1.0009	1.0017	1.0017	1.0056	1.0059
TAS	PWZN	1.0049	1.0057	1.0038	1.0084	1.0098

4.1.13 DLF codes and values – United Energy

Jurisdiction	Code	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
VIC	MC01	1.0081	1.0098	1.0095	1.0084	1.0077
VIC	MC02	1.0147	1.0175	1.0144	1.0125	1.0128
VIC	MC03	1.0052	1.0058	1.0057	1.0042	1.003
VIC	MC04	1.0236	1.0272	1.0276	1.0231	1.0223
VIC	MC05	1.0094	1.0106	1.0108	1.0095	1.0088
VIC	MC06	1.0109	1.0123	1.0125	1.0111	1.0102
VIC	MC07	1.0169	1.0208	1.0179	1.0156	1.016
VIC	MC08	1.0165	1.0188	1.0196	1.0169	1.0166
VIC	MG01	1.0088	1.0101	1.0111	1.0081	1.0093
VIC	MHBL	1.0238	1.0243	1.0243	1.024	1.0223
VIC	MHBS	1.0093	1.0099	1.0098	1.0091	1.0085
VIC	MHCL	1.029	1.0295	1.0296	1.0298	1.0274
VIC	MHCS	1.0146	1.0151	1.0151	1.0149	1.0135
VIC	MLDL	1.0542	1.0569	1.0557	1.0533	1.0485

VIC	MLDS	1.0398	1.0426	1.0411	1.0384	1.0346
VIC	MLEL	1.0678	1.0714	1.0708	1.0673	1.0609
VIC	MLES	1.0533	1.057	1.0563	1.0525	1.0471
VIC	MSAL	1.0184	1.0184	1.0183	1.0187	1.0176
VIC	MSAS	1.004	1.004	1.0038	1.0039	1.0038
VIC	XGW1	0.986	0.9951	0.9901	0.9901	0.9901

4.2 Accumulation Metering Migration to 5-minute Metering

This section of the UFE Trends Report provides, for each *local area*, the number of accumulation *metering installations* that were transitioned to 5-minute metering over the reporting period.

This section also provides an indication of the changes to the *accumulation metering data* and, where applicable, changes to controlled load *metering data* for the period commencing with trading week 17 April 2022 – 23 April 2022 (Start) to trading week 26 February 2023 – 4 March 2023 (End).

Charts related to this section are provided in Appendix A1.3. The first chart for each *local area* shows the stacked profile *energy* volumes under the *local area load* curve. The second chart for each *local area* shows the percentage of the *local area load* related each profile group in that *local area*.

LOCAL AREA	Oct-Dec 21	Jan-Mar 22	Apr-Jun 22	Jul-Sep 22	Oct-Dec 22	Jan-Mar 23	Total
ActewAGL	1,770	1,657	1,667	2,114	2,070	1,398	10,676
Ausgrid	9,742	9,062	10,602	11,131	13,251	11,094	64,882
AusNet Services	62	113	91	75	81	43	465
CitiPower	38	34	16	96	203	20	407
Endeavour Energy	8,607	9,747	15,144	13,272	14,660	9,956	71,386
Energex	14,513	18,325	22,640	17,256	16,690	12,586	102,010
Ergon	15,869	15,651	8,875	8,861	15,947	9,922	75,125
Essential Energy	10,252	9,830	11,609	9,586	8,787	9,315	59,379
Jemena	22	19	18	20	23	8	110
Powercor	163	71	60	174	449	33	950
SA Power Networks	12,535	12,943	14,480	17,458	14,558	9,315	81,289
TasNetworks	5,985	3,688	5,093	8,394	8,458	8,014	39,632
United Energy	347	319	394	487	422	222	2,191

Figure 40 Accumulation NMIs transitioned to 5-minute metering

LOCAL AREA	Trading Week	ADME	Accumulation	Controlled Load	Accum % of ADME	CL % of ADME
ActewAGL	Start	49,362,783	15,677,388	N/A	31.76%	N/A
	End	46,032,023	12,978,509	N/A	28.19%	N/A
Ausgrid	Start	424,440,743	70,750,947	10,795,473	16.67%	2.54%
	End	472,863,974	77,607,520	8,290,584	16.41%	1.75%
AusNet Services	Start	105,999,467	31,983,982	N/A	30.17%	N/A
	End	90,723,490	30,280,493	N/A	33.38%	N/A
CitiPower	Start	96,933,277	-820,719	N/A	-0.85%	N/A
	End	104,017,222	-99,968	N/A	-0.10%	N/A
Endeavour Energy	Start	222,119,828	68,383,036	12,497,273	30.79%	5.63%
	End	296,184,671	76,262,737	7,973,186	25.75%	2.69%
Energex	Start	361,741,758	209,889,982	21,067,714	58.02%	5.82%
	End	403,917,359	245,632,926	16,582,315	60.81%	4.11%
Ergon	Start	207,580,719	67,732,049	N/A	32.63%	N/A
	End	225,946,331	72,089,291	N/A	31.91%	N/A
Essential Energy	Start	137,522,680	53,676,119	13,044,014	39.03%	9.48%
	End	125,329,501	55,519,436	11,332,501	44.30%	9.04%
Jemena	Start	72,009,717	1,000,199	N/A	1.39%	N/A
	End	73,556,711	988,494	N/A	1.34%	N/A
Powercor	Start	151,319,123	1,421,797	N/A	0.94%	N/A
	End	137,423,778	-1,137,235	N/A	-0.83%	N/A
SA Power Networks	Start	155,588,763	173,425,491	4,941,188	111.46%	3.18%
	End	140,050,772	191,564,581	3,140,489	136.78%	2.24%
TasNetworks	Start	91,754,912	25,442,773	N/A	27.73%	N/A
	End	79,425,088	16,563,491	N/A	20.85%	N/A
United Energy	Start	131,589,104	4,851,965	N/A	3.69%	N/A
	End	127,688,156	100,060	N/A	0.08%	N/A

Figure 41 Approximate accumulation and controlled load energy volumes % of ADME

4.3 15 and 30-minute Metering Migration to 5-minute Metering

This section of the UFE Trends Report provides, for each *local area*, the number of 15 and 30-minute *metering installations* thar were transitioned to 5-minute metering over the reporting period.

This section also provides an indication of the changes to the accumulation metering data and, where applicable, changes to controlled load metering data for the period commencing with trading week 17 April 2022 – 23 April 2022 (Start) to trading week 26 February 2023 – 4 March 2023 (End).

Charts related to this section are provided in Appendix A1.3. The first chart for each *local area* shows the stacked profile *energy* volumes under the *local area load* curve. The second chart for each *local area* shows the percentage of the *local area load* related each profile group in that *local area*.

LOCAL AREA	Oct-Dec 21	Jan-Mar 22	Apr-Jun 22	Jul-Sep 22	Oct-Dec 22	Jan-Mar 23	Total
ActewAGL	250	12,231	12,860	936	31,960	373	58,610
Ausgrid	2,973	51,096	157,194	34,183	138,296	3,697	387,439
AusNet Services	742	752	7,192	60,710	2,875	915	73,186
CitiPower	569	367	226	14,018	4,026	578	19,784
Endeavour Energy	1,434	31,129	99,253	37,155	128,892	1,492	299,355
Energex	2,875	47,890	137,066	58,489	159,469	1,738	407,527
Ergon	3,390	7,846	170,169	10,980	2,584	639	195,608
Essential Energy	923	14,079	41,628	32,259	140,671	1,310	230,870
Jemena	368	169	14,264	23,110	1,225	390	39,526
Powercor	834	235	266	84,674	12,425	1,163	99,597
SA Power Networks	2,278	31,590	89,514	35,173	114,645	1,626	274,826
TasNetworks	1,510	12,363	25,138	55,505	29,320	691	124,527
United Energy	721	282	230	47,797	28,949	512	78,491

Figure 42 15 and 30-minute NMIs transitioned to 5-minute metering

LOCAL AREA	Trading Week	ADME	Trading Interval	Non-Trad Int	TI % of ADME	Non-TI % of ADME
ActewAGL	Start	49,362,783	14,074,264	14,018,144	28.51%	28.40%
	End	46,032,023	23,213,670	5,791,460	50.43%	12.58%
Ausgrid	Start	424,440,743	170,740,363	164,950,990	40.23%	38.86%
	End	472,863,974	283,048,698	111,520,927	59.86%	23.58%
AusNet Services	Start	105,999,467	21,224,082	85,189,869	20.02%	80.37%
	End	90,723,490	34,033,172	59,243,442	37.51%	65.30%
CitiPower	Start	96,933,277	43,716,529	52,223,634	45.10%	53.88%
	End	104,017,222	64,464,537	36,839,639	61.97%	35.42%
Endeavour Energy	Start	222,119,828	81,606,973	61,417,725	36.74%	27.65%
	End	296,184,671	211,129,388	27,946,609	71.28%	9.44%
Energex	Start	361,741,758	166,593,448	76,500,185	46.05%	21.15%
	End	403,917,359	259,274,975	28,908,836	64.19%	7.16%
Ergon	Start	207,580,719	101,188,325	37,511,942	48.75%	18.07%
	End	225,946,331	135,688,070	17,460,916	60.05%	7.73%
Essential Energy	Start	137,522,680	21,892,883	45,957,368	15.92%	33.42%
	End	125,329,501	40,696,315	20,077,928	32.47%	16.02%
Jemena	Start	72,009,717	37,421,526	39,752,197	51.97%	55.20%
	End	73,556,711	50,787,654	30,473,005	69.05%	41.43%
Powercor	Start	151,319,123	44,466,007	107,034,962	29.39%	70.73%
	End	137,423,778	71,413,844	67,334,379	51.97%	49.00%
SA Power Networks	Start	155,588,763	71,570,709	32,926,655	46.00%	21.16%
	End	140,050,772	84,120,999	14,548,200	60.06%	10.39%
TasNetworks	Start	91,754,912	38,107,753	25,251,640	41.53%	27.52%
	End	79,425,088	57,179,856	4,391,393	71.99%	5.53%
United Energy	Start	131,589,104	44,175,335	82,620,127	33.57%	62.79%
	End	127,688,156	75,966,510	49,322,551	59.49%	38.63%

Figure 43 Approximate TI and Non-TI energy volumes % of ADME

4.4 Unmetered Loads Migration to Metered Arrangements

No type 7 or NCONUML metering installations were migrated to *metered* arrangements during the reporting period.

4.5 NCONUML Alternative Calculation Methodologies

No alternative calculation methodologies were introduced for NCONUML *metering installations* during the reporting period.

4.6 Review of Profiling Methodologies

This section of the UFE Trends Report provides, for each *local area*, a chart of the volume of profiled *metering data* over the reporting period related to the following profiling methods:

- Net System Load Profile (NSLP),
- Controlled Load Profile (CLP), and
- 15 and 30-minute *metering data* profiled to 5-minute

The *energy* volumes related to each profiling method are expressed as a percentage of the *local area load*.

Charts related to this section are provided in Appendix A1.3. The first chart for each *local area* shows the stacked profile *energy* volumes under the *local area load* curve. The second chart for each *local area* shows the percentage of the *local area load* related each profile group in that *local area*.

An interim solution, the “weights methodology”, was implemented to prevent energy volume spikes occurring following the application of the 5MLP in the *settlements* processes. Consultation on the development of a 5MLP longer-term profiling methodology to replace the “weights methodology” was undertaken and the modified 5MLP profiling methodology is to become effective from 1 October 2023. Longer-term options related to NSLP will be the subject of further consultation.

4.7 Review of UFE Values by Settlement Data Versions

This section of the UFE Trends Report provides, for each *local area*, a chart of UFE values for each settlement data version, i.e. Prelim, Final, Rev 1 and Rev 2. The UFE values are aggregated for each day over the reporting period.

Generally, Prelim and Final UFE values follow each other closely and Rev 1 and Rev 2 UFE values follow each other closely. Victorian *local areas*, generally show Prelim/Final and Rev 1/Rev 2 UFE values following each other, but non-Victorian *local areas* generally show significant differences between Prelim/Final UFE values and Rev 1/Rev 2 UFE values.

Charts related to this section are provided in Appendix A1.2.

4.8 Review of Unmetered Cross Boundary Energy Volumes

No unmetered cross boundary energy volumes were identified during the reporting period.

5 Recommendations – UFE visibility improvements

AEMO is required to make recommendations to improve visibility of unaccounted for *energy* in each *local area.*

With UFE being aggregated to the *local area* level a key function of the reporting framework will be to identify when and how more granular information should be gathered to identify UFE.

Analysis of *local areas* to determine whether more granular geographic UFE information is likely to be valuable will be an on-going undertaking by AEMO to provide additional UFE visibility. Time factors (e.g. season, and day) that produce patterns of UFE that are occurring are likely to be important in identifying causes and solutions to reduce UFE. Seasonal variation in UFE values can be seen in the UFE Components charts in section 2.1.

The existence of virtual TNIs in some *local areas* prevents analysis of UFE components at a TNI level for that *local area*. As there are only two *local* areas that do not have virtual TNIs, AEMO considers that there is little value, at this stage, in undertaking UFE analysis at a TNI level.

6 Recommendations – UFE reduction actions

AEMO is required to recommend actions to reduce the amounts of unaccounted for *energy* in each *local area*, including without limitation any actions AEMO recommends ought to be taken by *Market Participants*, *Network Service Providers*, the AER and AEMO.

While global settlements will improve the information provided regarding UFE and the incentives on retailers to minimise UFE, there are a number of possible actions that are the responsibilities of either DNSPs (e.g. accuracy of DLF calculations) or AEMO (e.g. unmetered load profiling procedures) to resolve and the reporting framework will make recommendations for these to occur. Furthermore, there may be cases over time where the global settlements arrangements can be improved and AEMO will recommend such actions.

Having reviewed the information presented in the **UFE values by settlement data versions** charts, Appendix A1.2, AEMO considers that significant improvement in UFE values will come from the further deployment of remotely read interval metering. This will bring into closer alignment the Prelim and Final UFE values with the Rev 1 and Rev 2 UFE values, as demonstrated in the Victorian *local areas*.

As there are no recommended actions that are related to activities that are linked to pricing regulatory cycles, AEMO did not facilitate a discussion forum prior to the release of this UFE Trends Report.

A1. UFE analysis supporting information

The charts provided in this Appendix provide additional information to support UFE analysis in each *local area*. These charts are:

- UFE for a *local area*
- UFE for a *local area* expressed as a percentage of *local area* ADME
- UFE values for a *local area* by settlement data version, i.e. Prelim, Final, Rev 1 and Rev 2
- Profiles for each *local area*

UFE for a local area charts the aggregate of UFE values for each *day* over the reporting period. The UFE values are determined by the UFE calculation that is detailed in section 1.3.1.

UFE as a percentage of ADME charts the aggregate of UFE values as a percentage of the aggregate of ADME values for each *day* over the reporting period. This shows the variability of UFE with respect to the aggregate of *energy* flows for each *connection point* in a *local area*.

UFE values by settlement data version (Prelim, Final, Rev 1, Rev 2) charts the aggregate of each UFE component value (UFE, TME, DDME, ADME) for each *day* over the reporting period.

Profiles for each local area chart the volume of profiled *metering data* over the reporting period related to:

- Net System Load Profile (NSLP)
- Controlled Load Profile (CLP)
- 15 and 30-minute *metering data* profiled to 5-minute *metering data.*

A1.1 UFE and UFE % of ADME for local areas

A1.1.1 ActewAGL

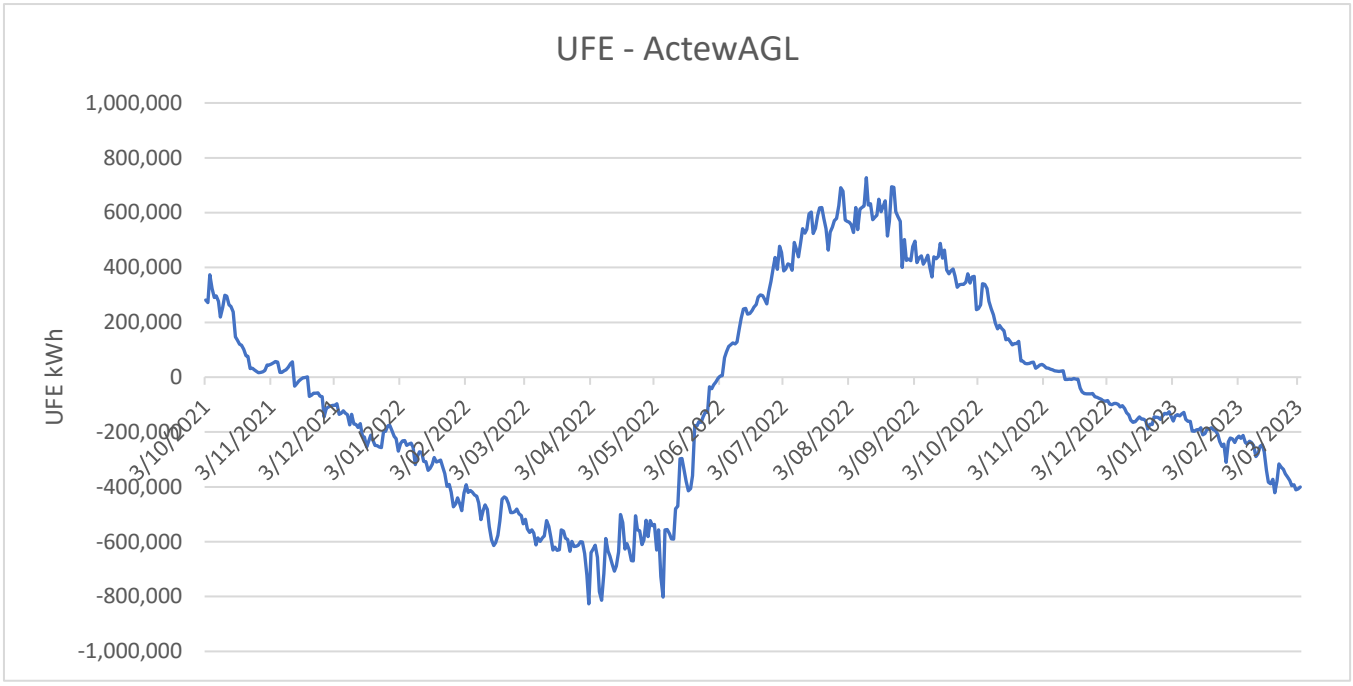


Figure 44 UFE – ActewAGL

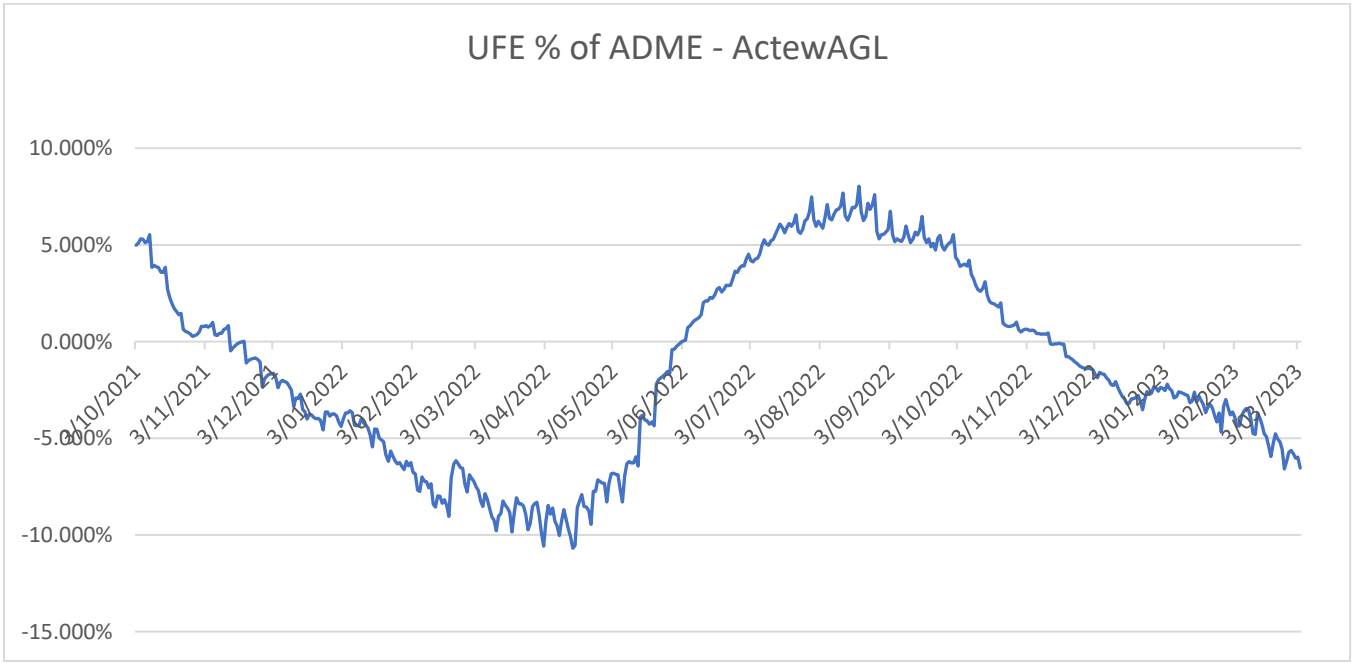


Figure 45 UFE % of ADME – ActewAGL

A1.1.2 Ausgrid

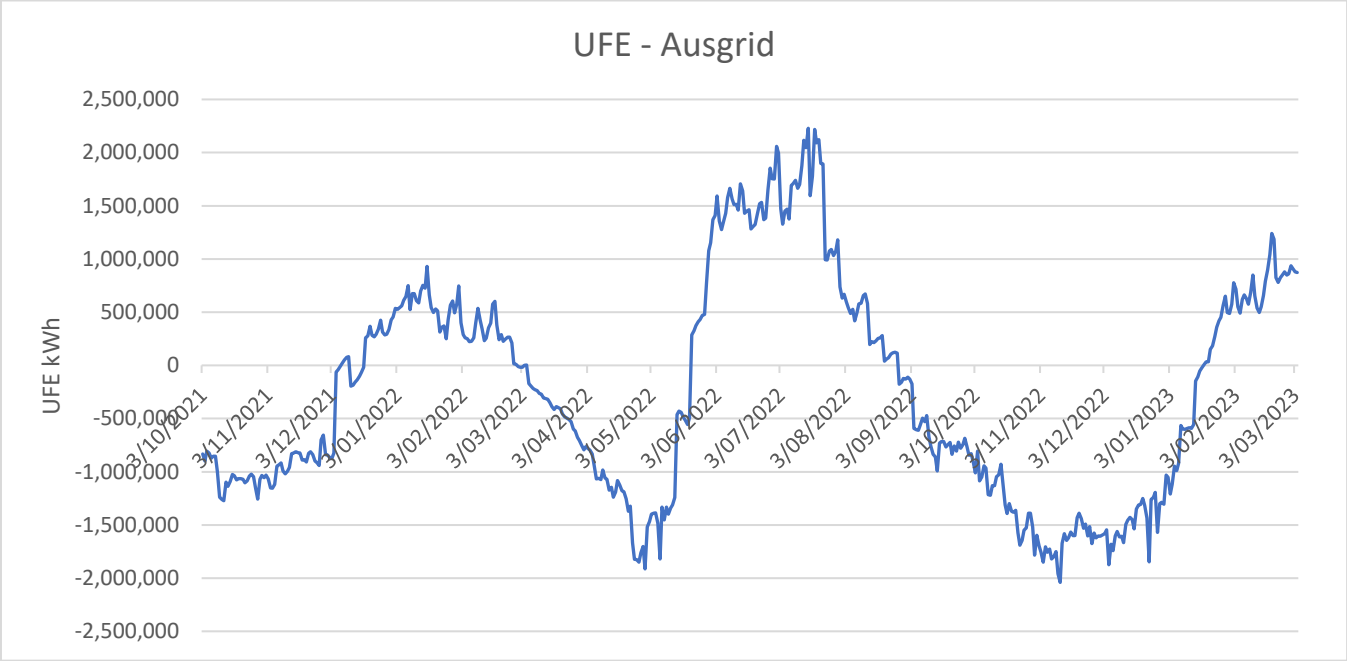


Figure 46 UFE – Ausgrid

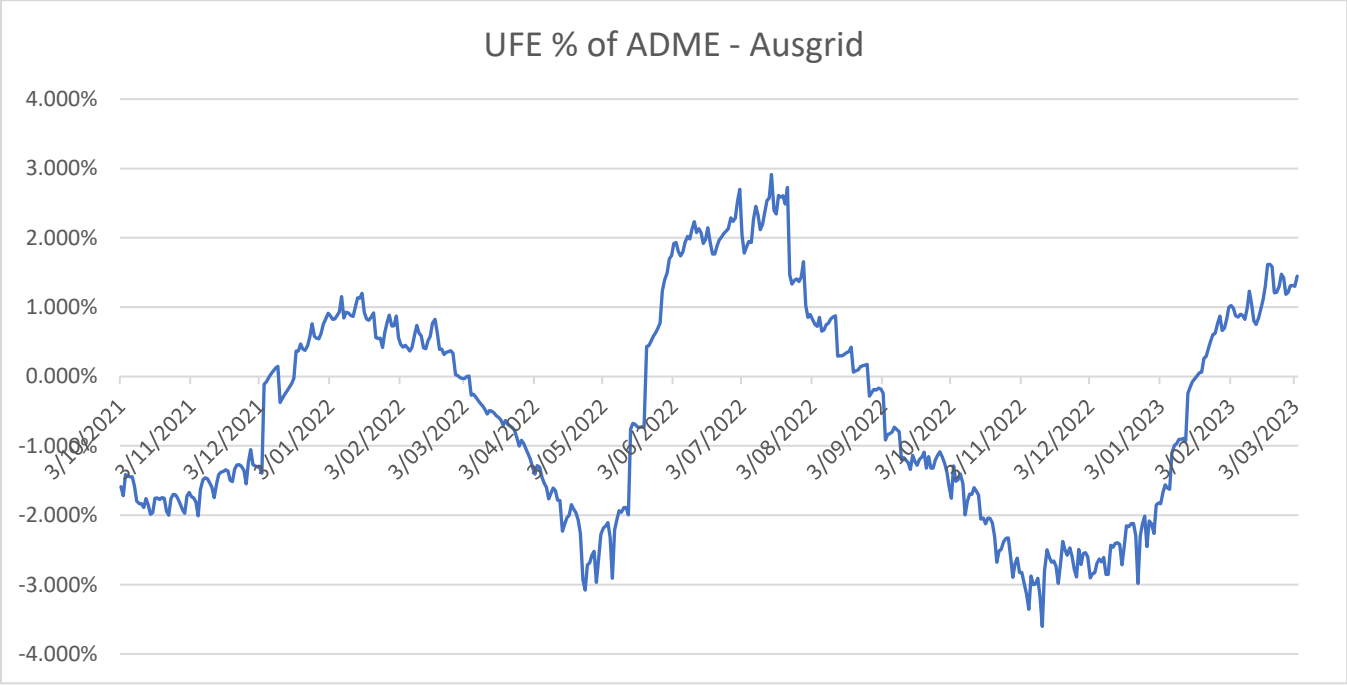


Figure 47 UFE % of ADME Ausgrid

A1.1.3 AusNet Services

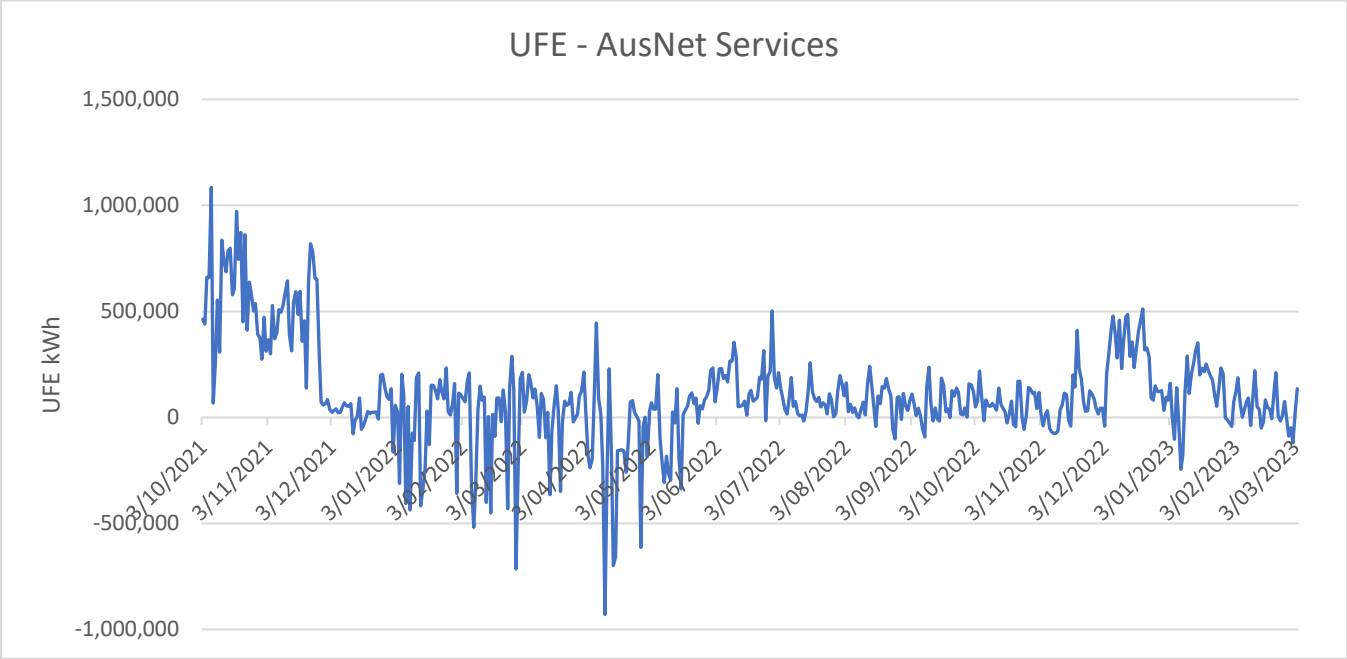


Figure 48 UFE – AusNet Services

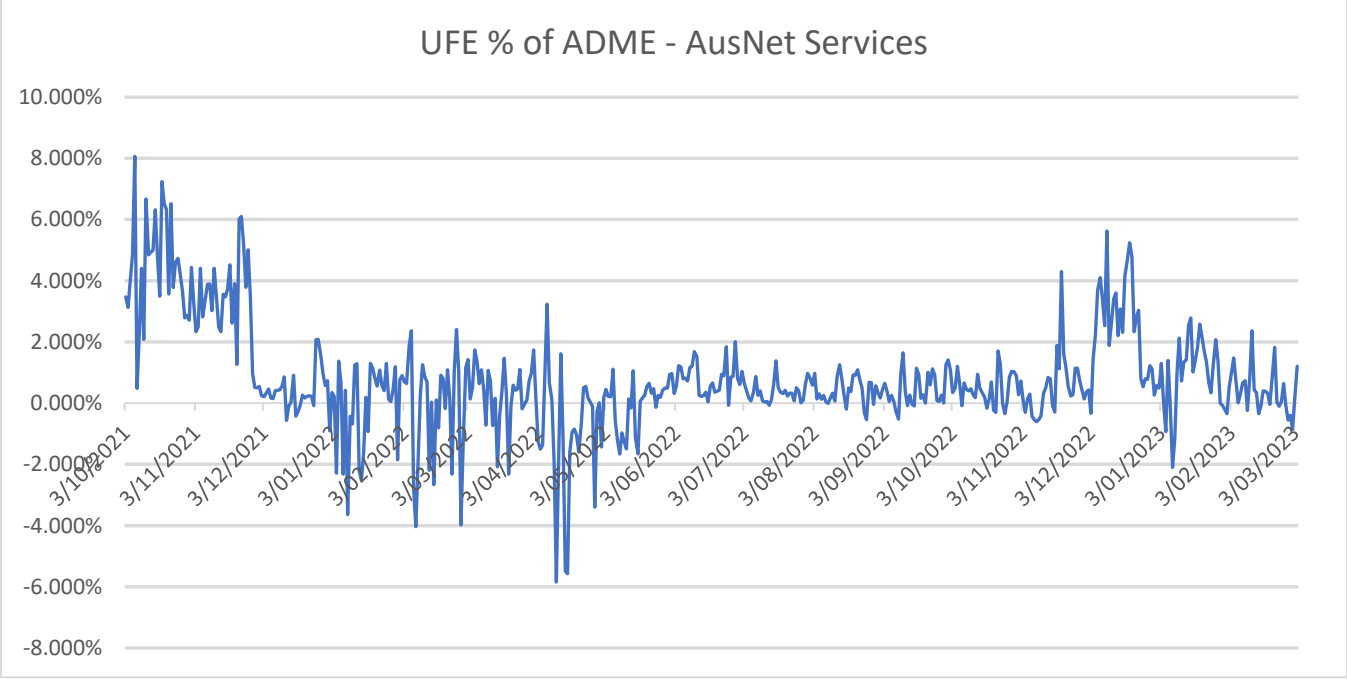


Figure 49 UFE % of ADME – AusNet Services

A1.1.4 CitiPower

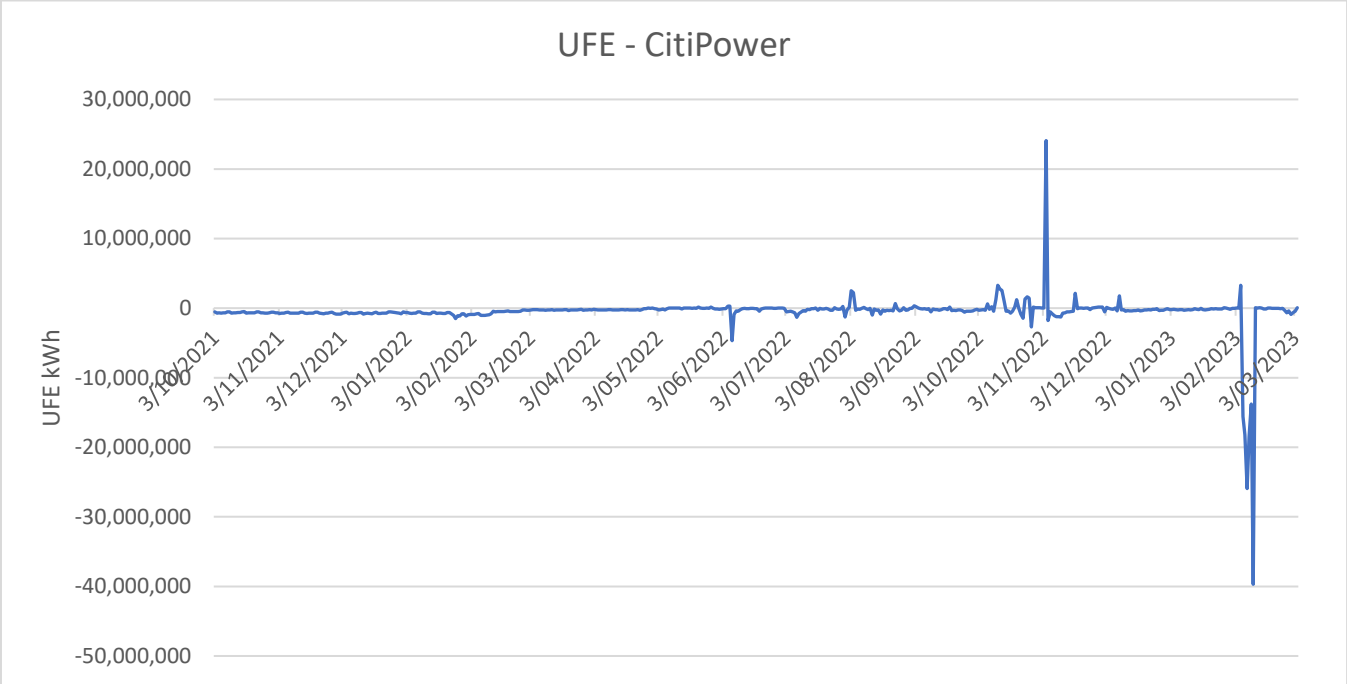


Figure 50 UFE – CitiPower

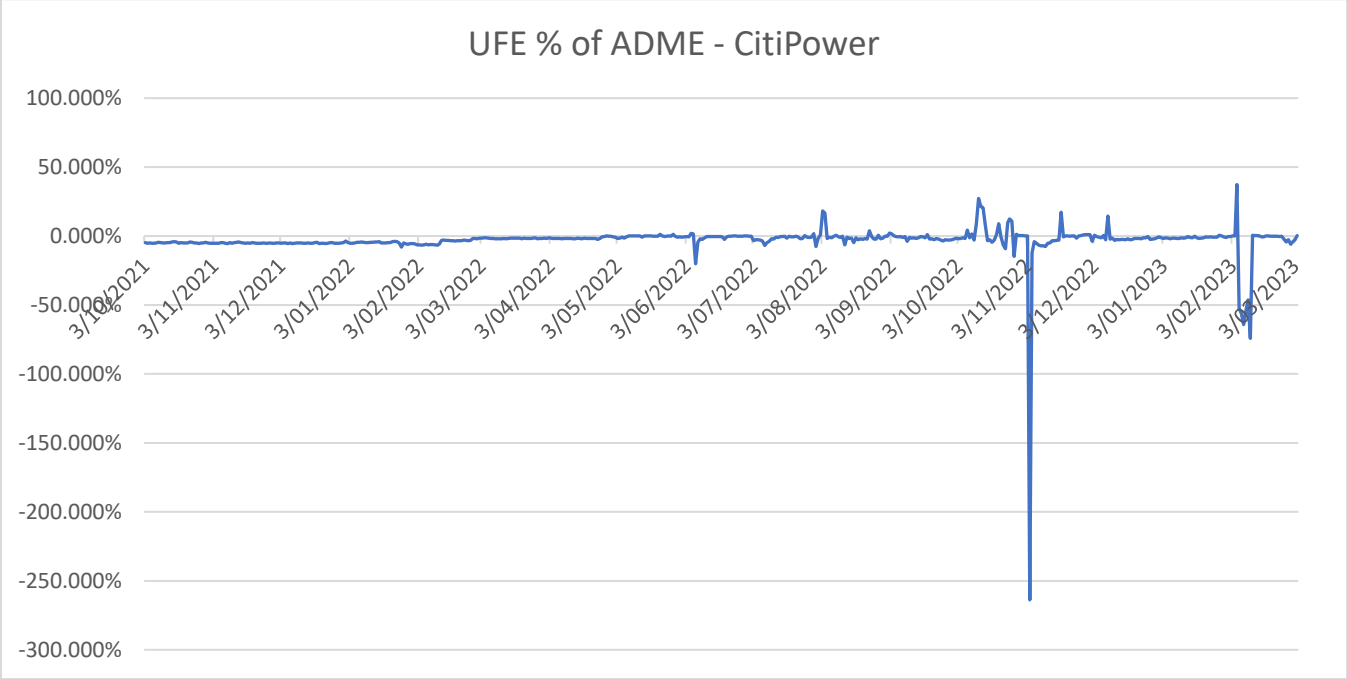


Figure 51 UFE % of ADME – CitiPower

A1.1.5 Endeavour Energy

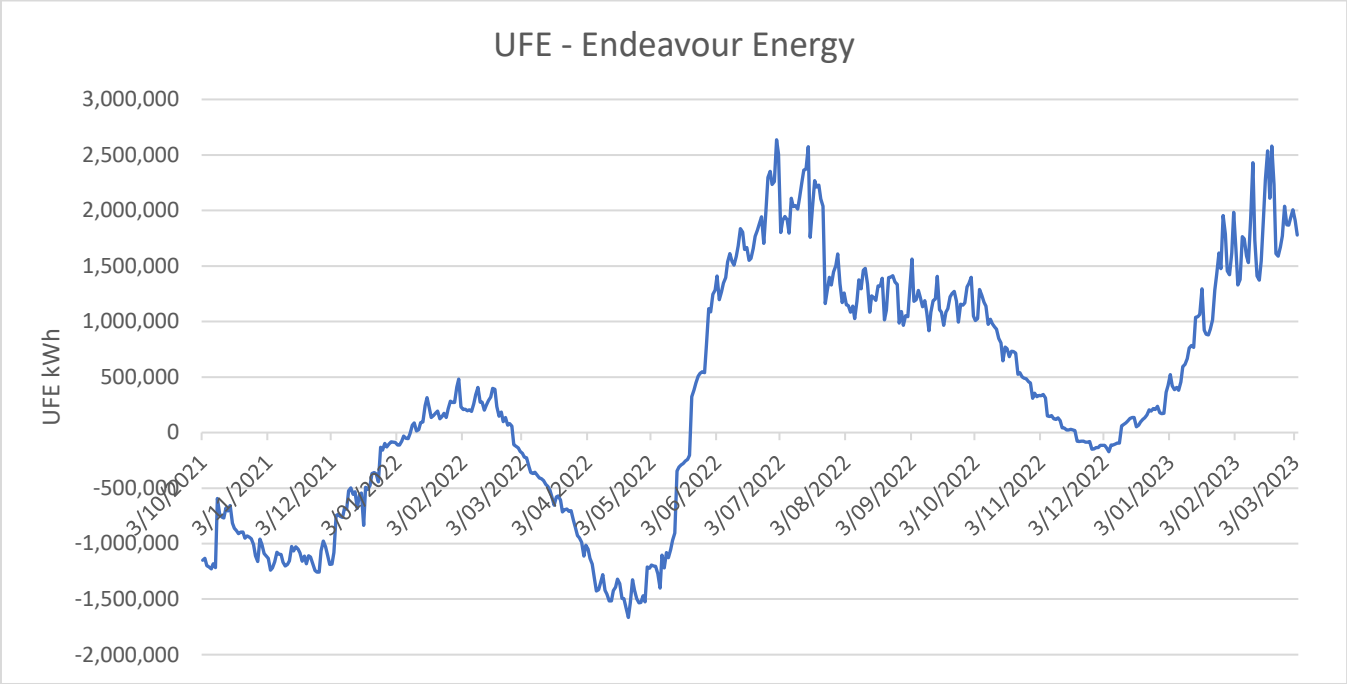


Figure 52 UFE – Endeavour Energy

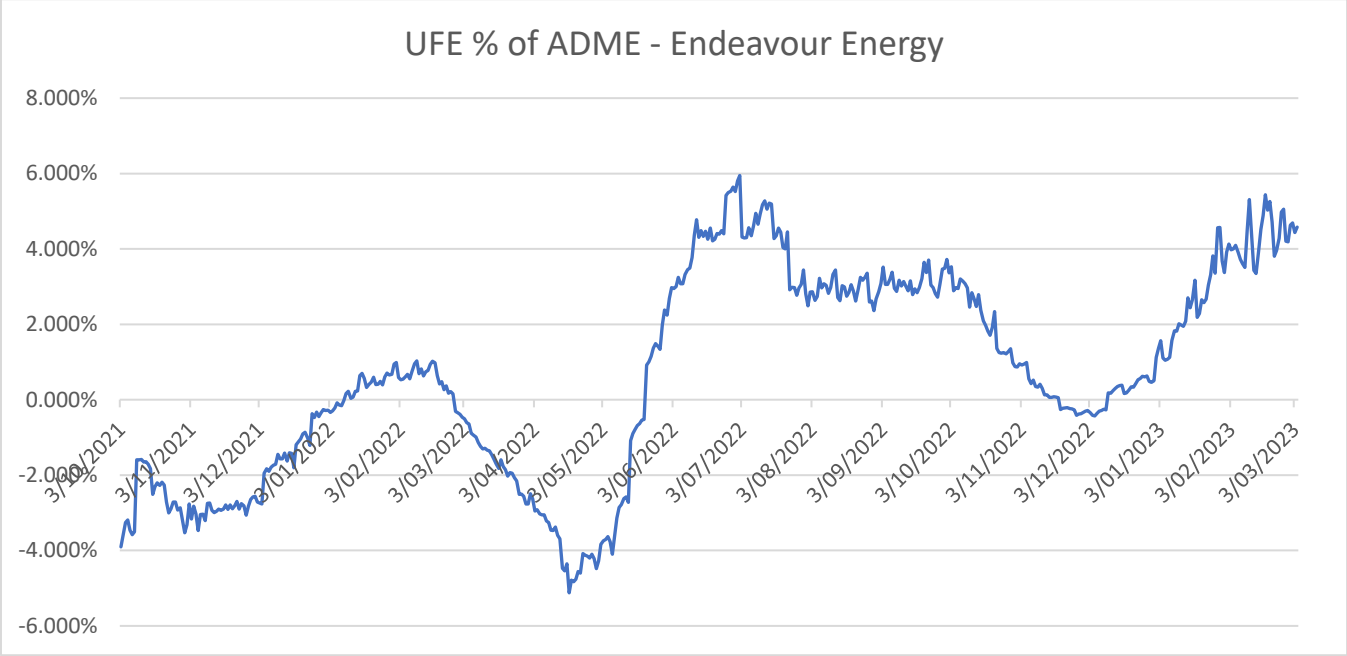


Figure 53 UFE % of ADME – Endeavour Energy

A1.1.6 Energex

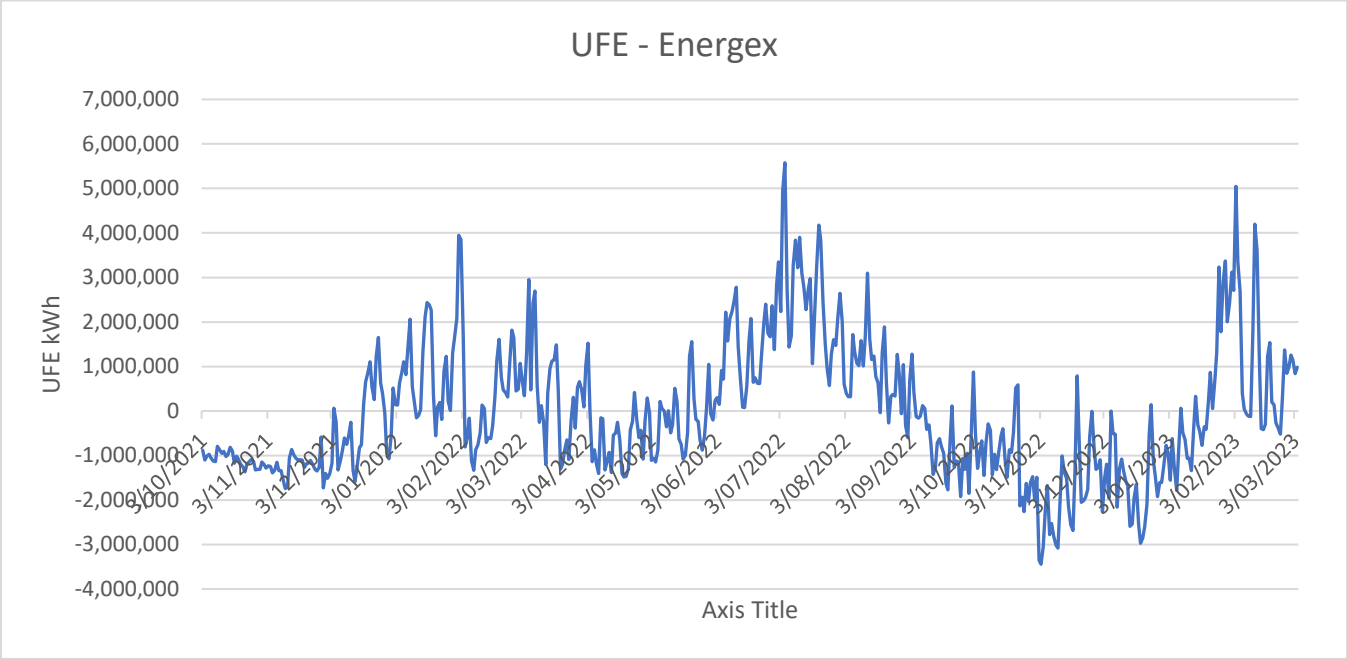


Figure 54 UFE – Energex

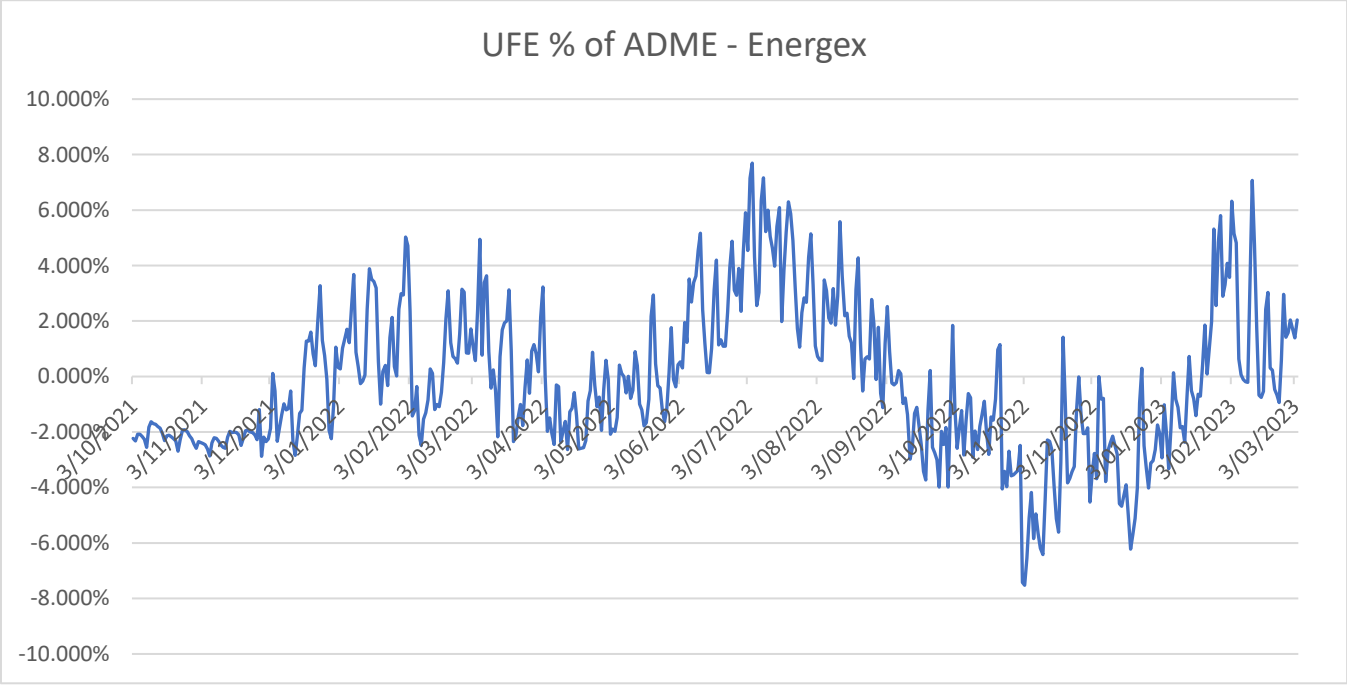


Figure 55 UFE % of ADME – Energex

A1.1.7 Ergon

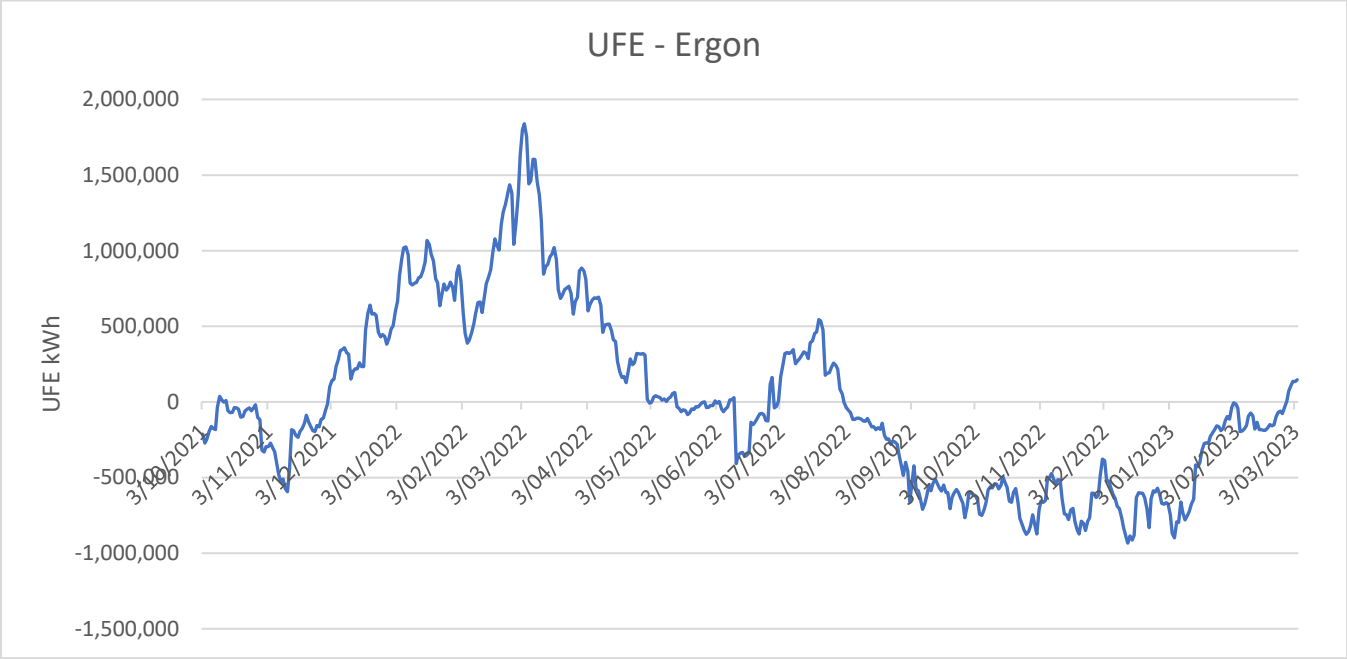


Figure 56 UFE – Ergon

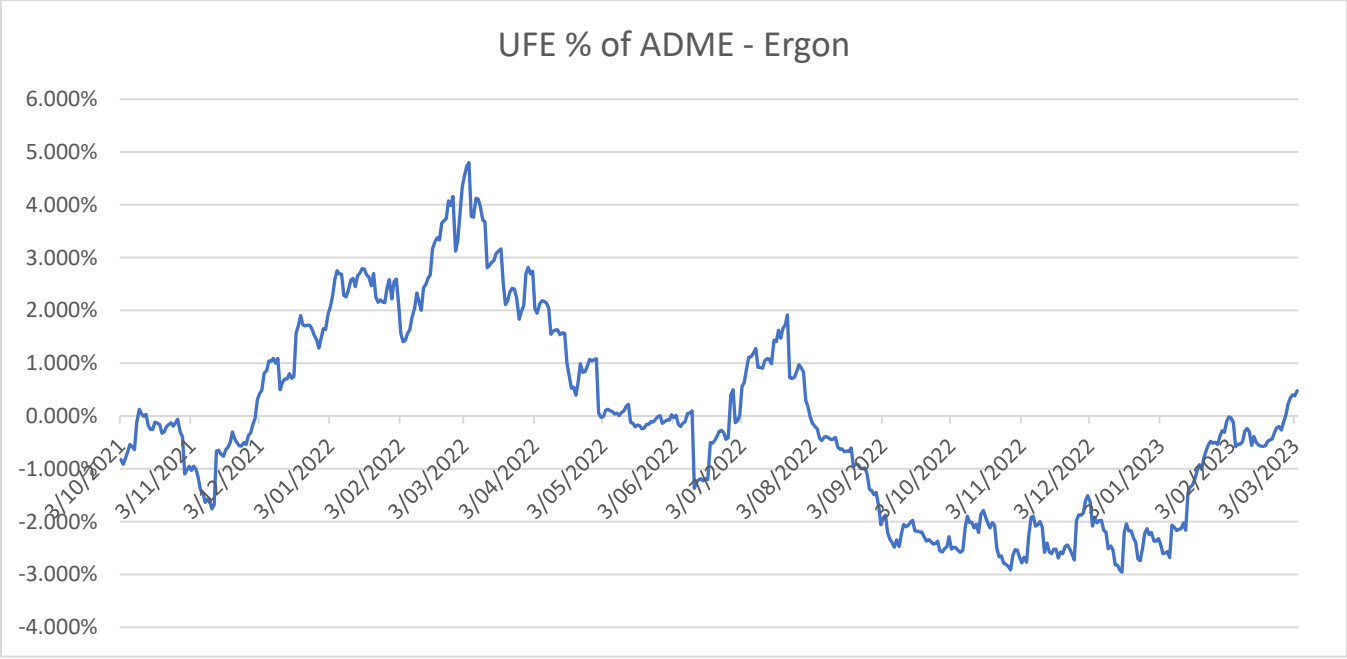


Figure 57 UFE % of ADME – Ergon

A1.1.8 Essential Energy

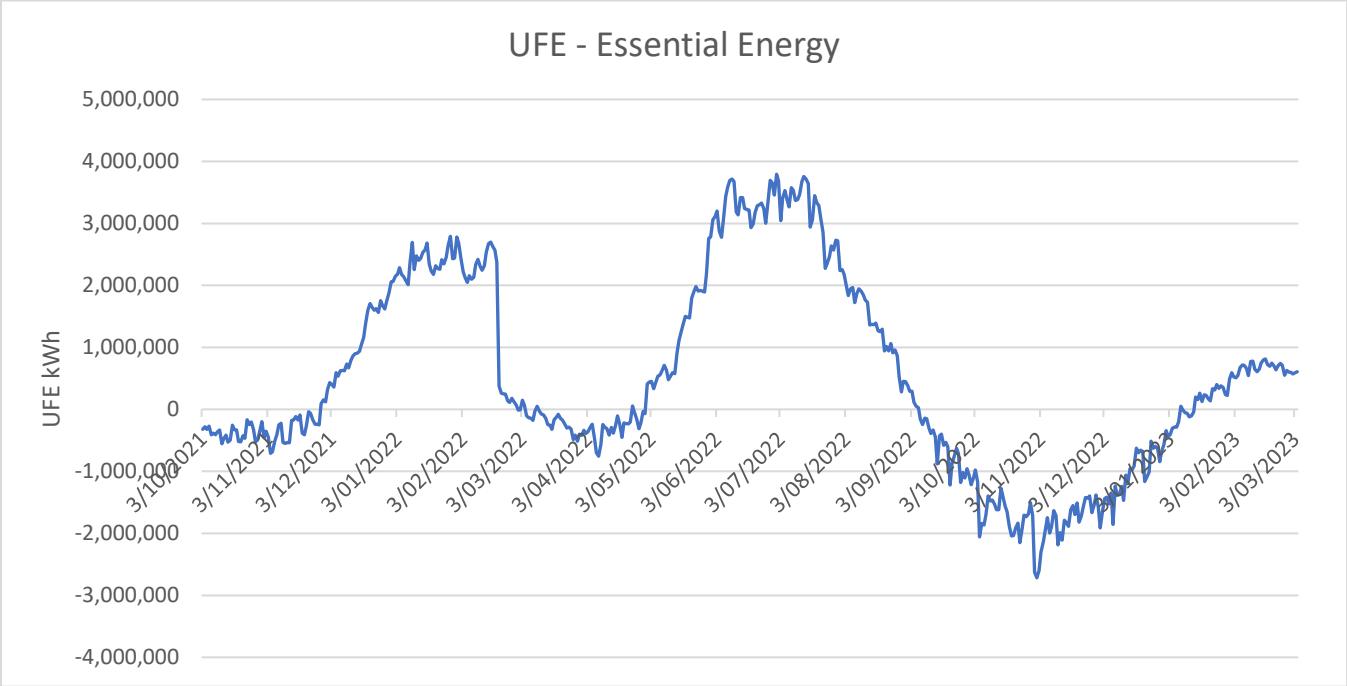


Figure 58 UFE – Essential Energy

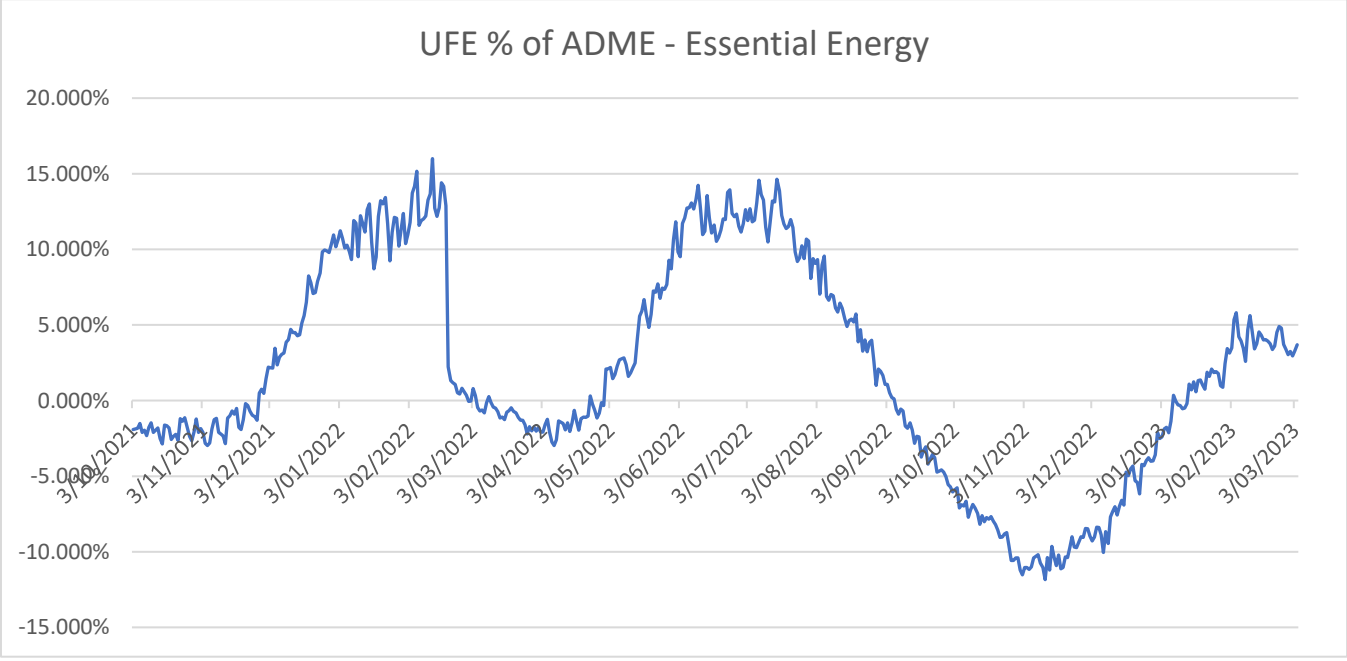


Figure 59 UFE % of ADME – Essential Energy

A1.1.9 Jemena

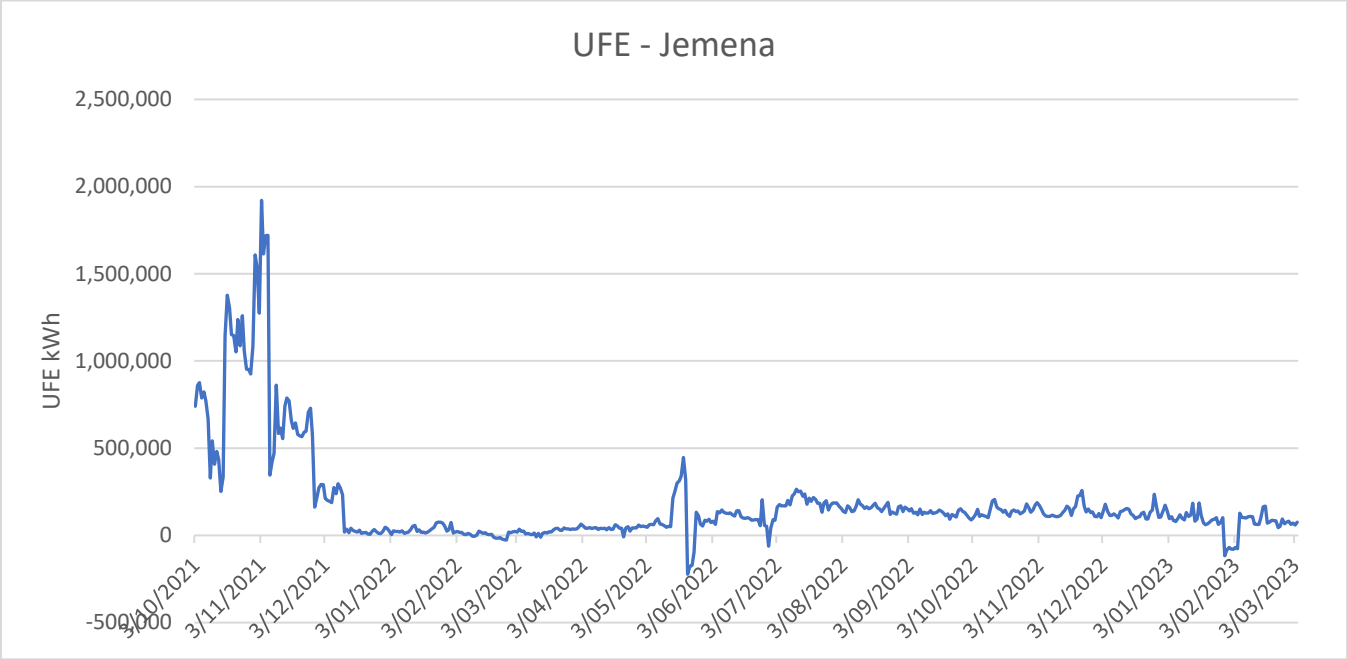


Figure 60 UFE – Jemena

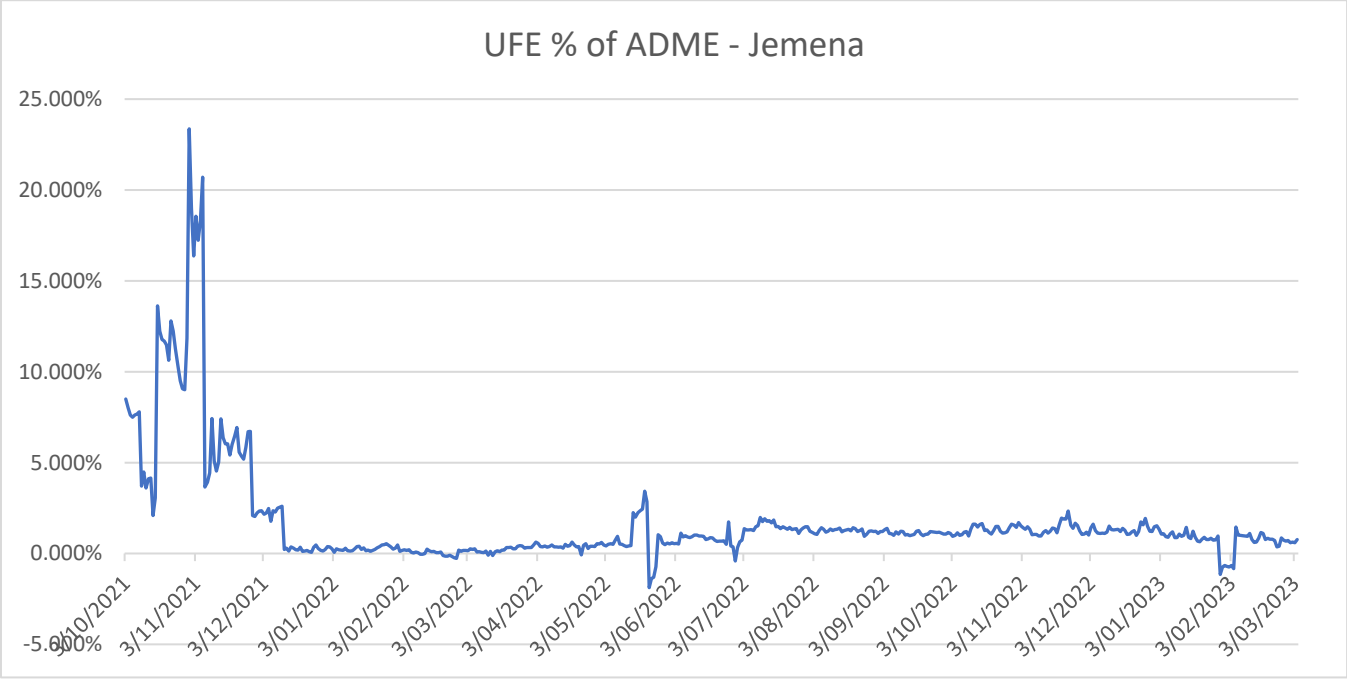


Figure 61 UFE % of ADME – Jemena

A1.1.10 Powercor

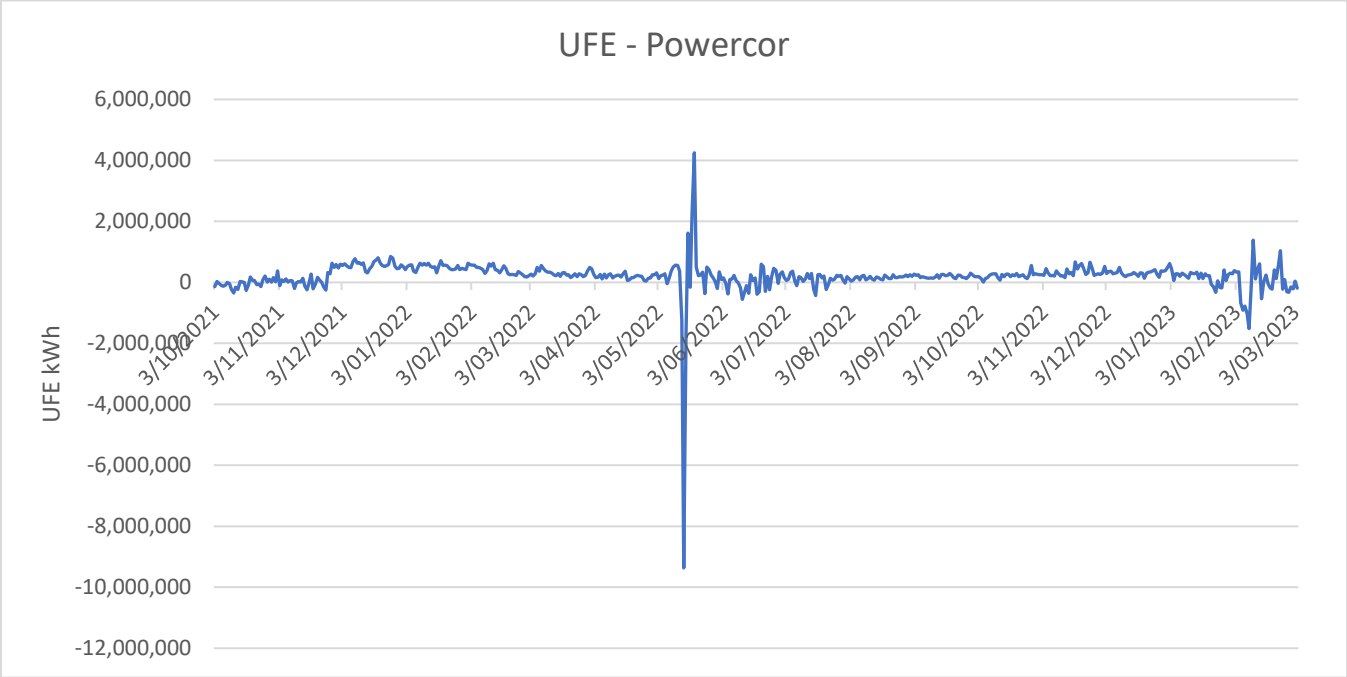


Figure 62 UFE – Powercor

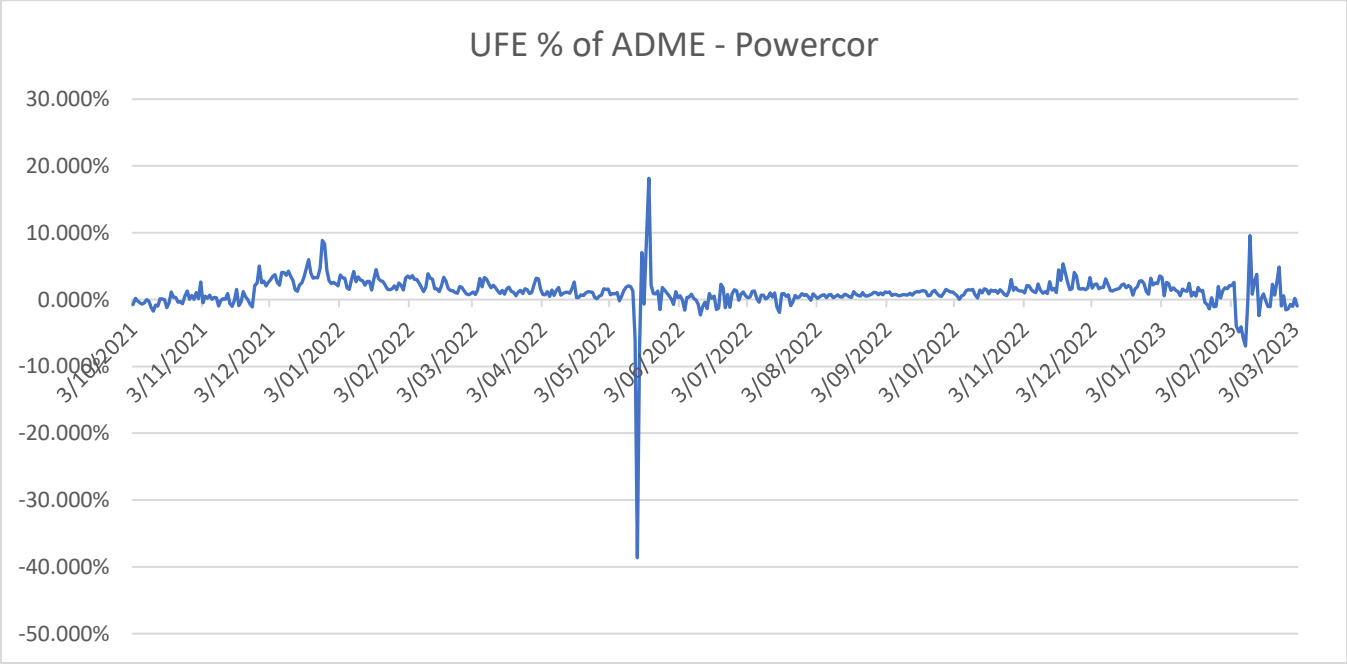


Figure 63 UFE % of ADME – Powercor

A1.1.11 SA Power Networks

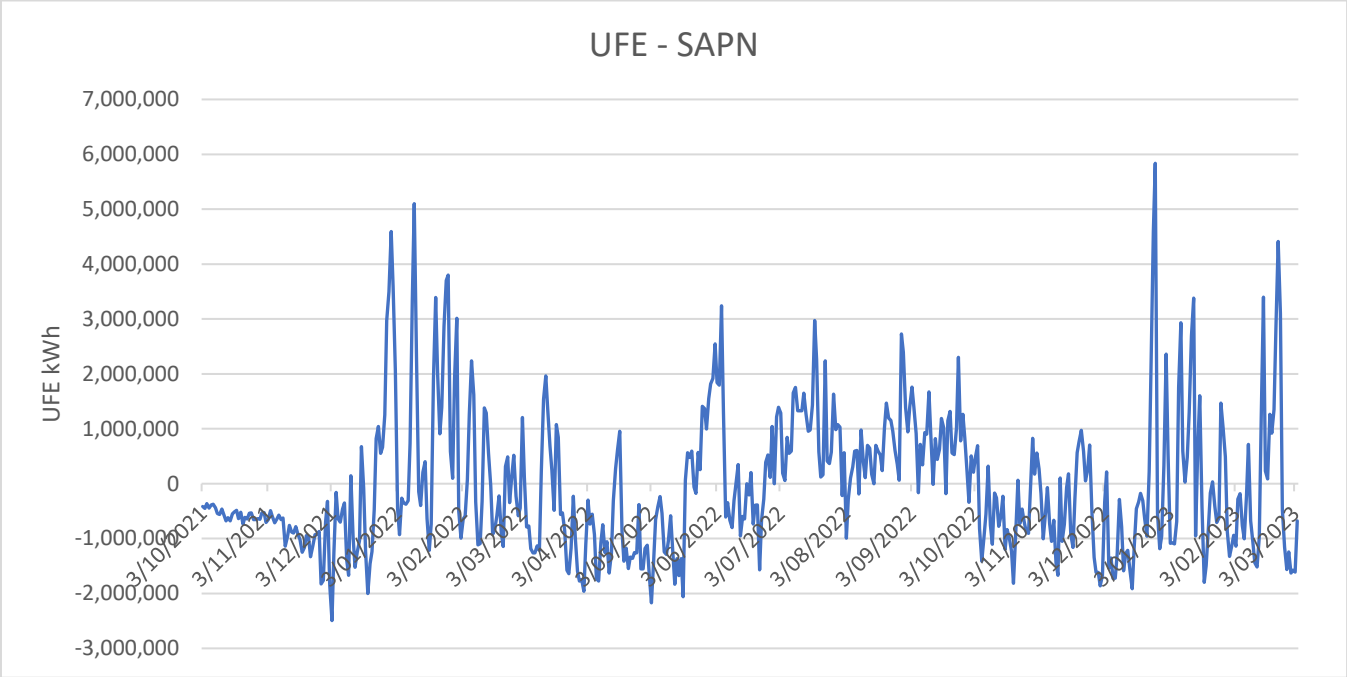


Figure 64 UFE – SA Power Networks

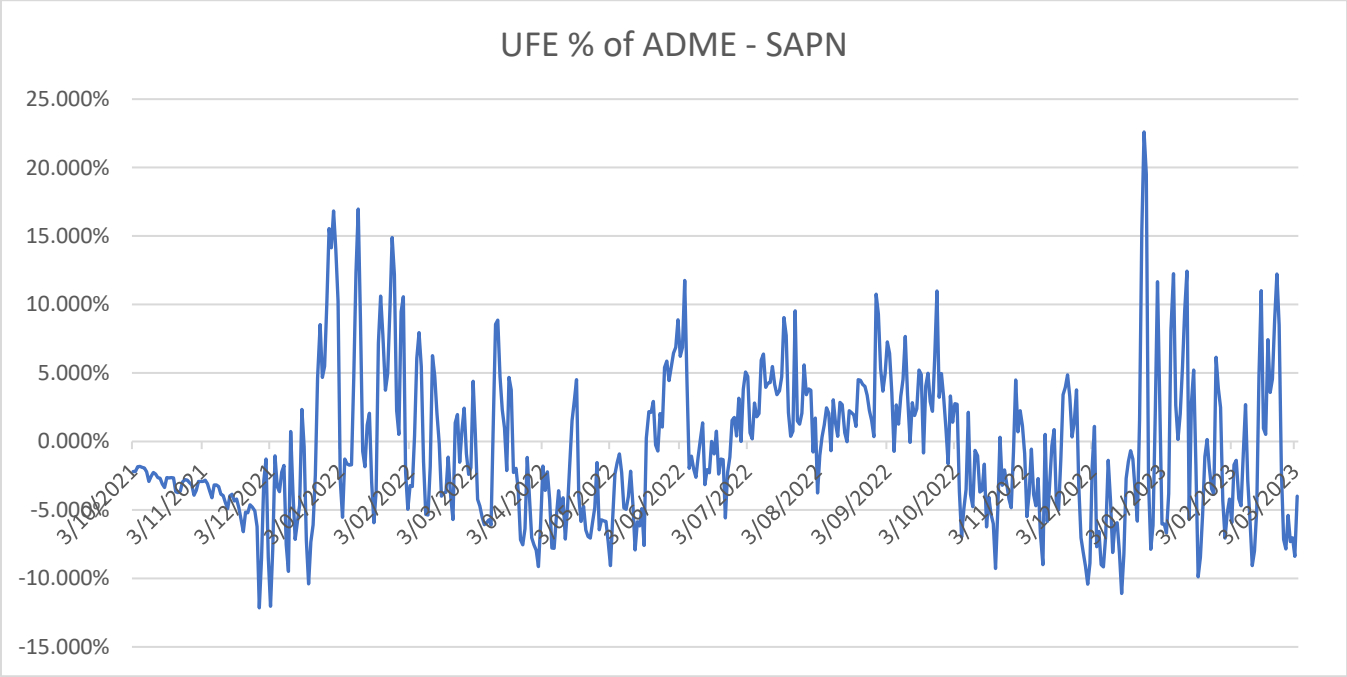


Figure 65 UFE % of ADME – SA Power Networks

A1.1.12 TasNetworks

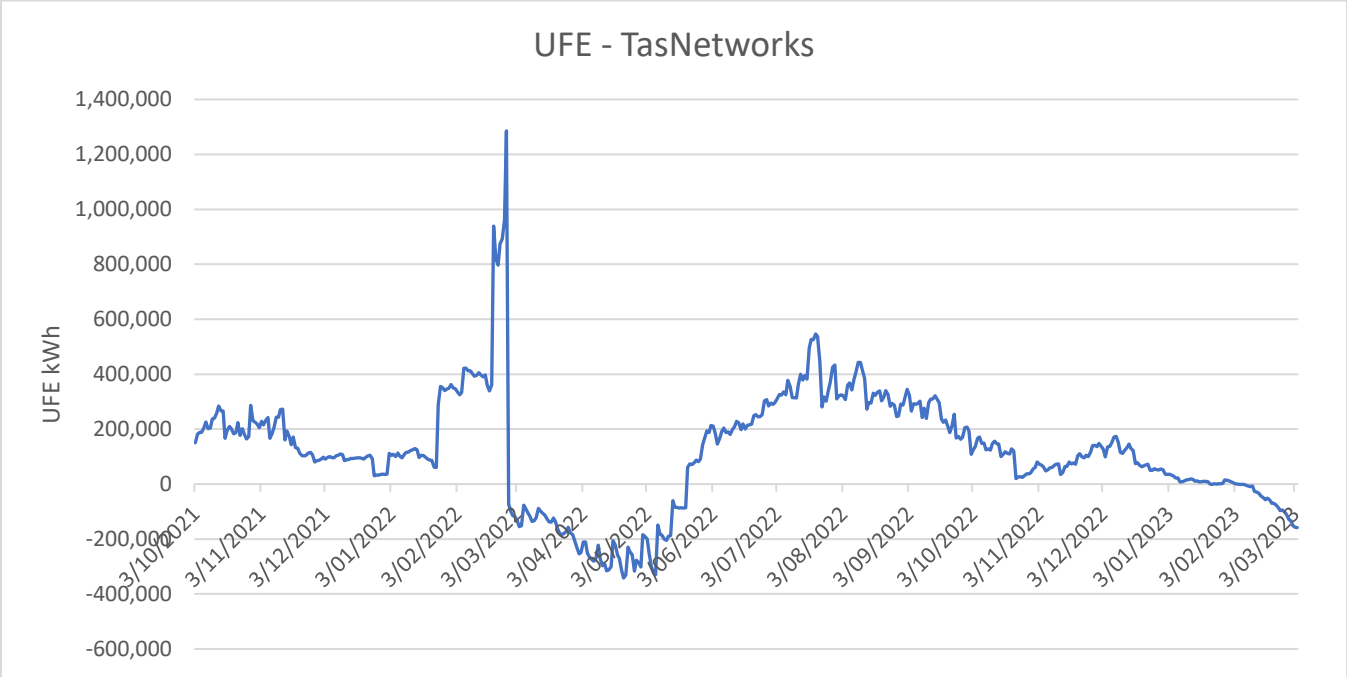


Figure 66 UFE – TasNetworks

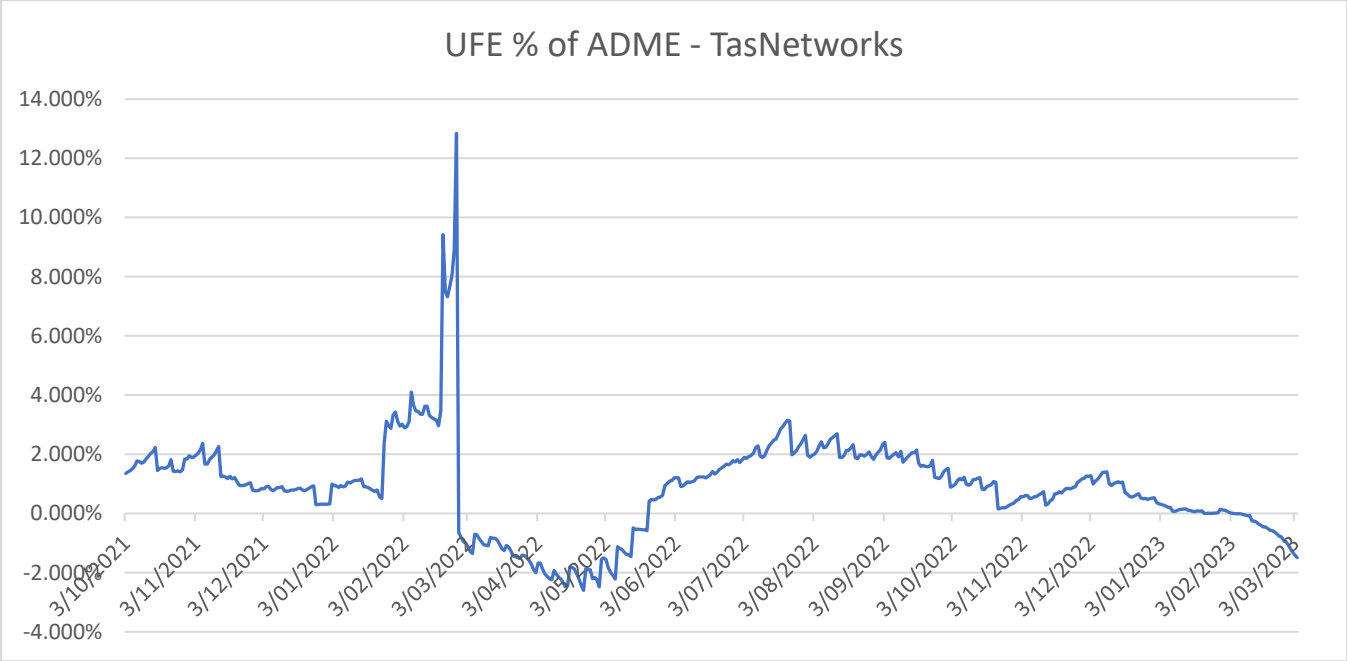


Figure 67 UFE % of ADME – TasNetworks

A1.1.13 United Energy

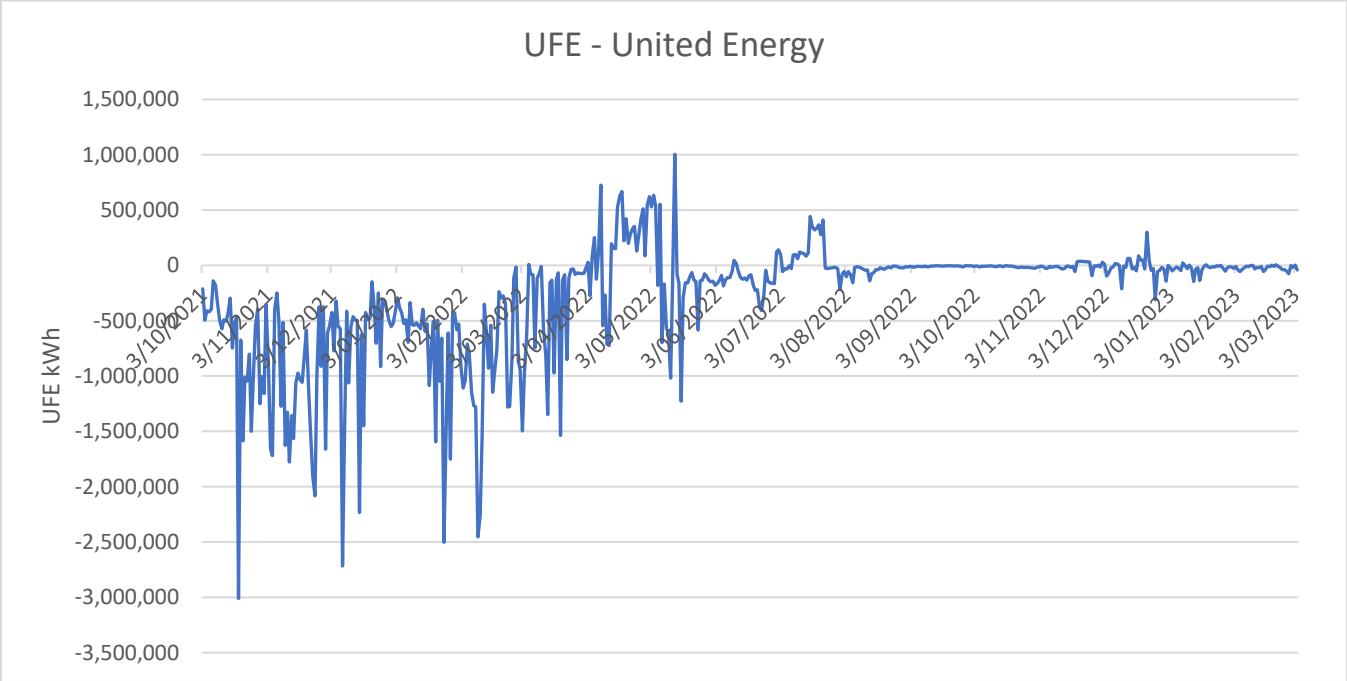


Figure 68 UFE – United Energy

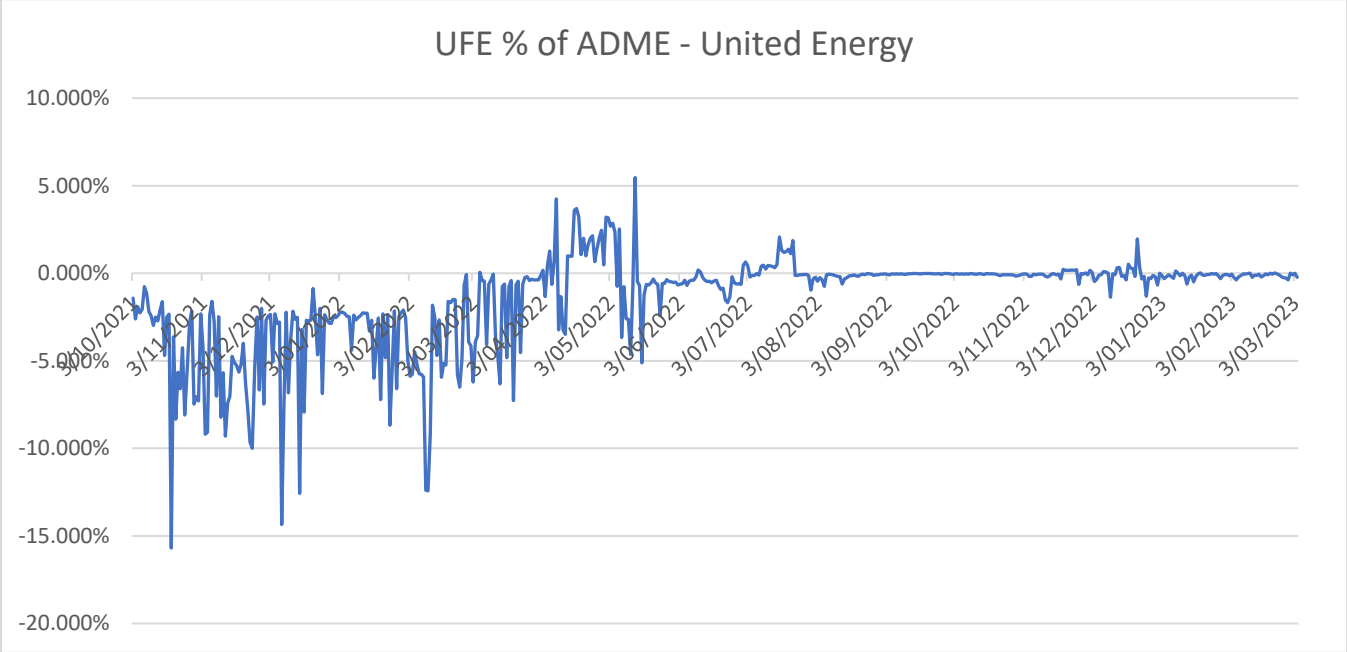


Figure 69 UFE % of ADME – United Energy

A1.2 UFE components by settlement data type

The charts in this section of the UFE Trends Report provide additional information to support UFE analysis in each *local area*. These charts are based on weekly values for:

- UFE components for the *local area* by settlement data version, i.e. Prelim, Final, Rev 1 and Rev 2.

UFE **components by settlement data version** (Prelim, Final, Rev1, Rev2) charts the aggregate of each UFE component value (UFE, TME, DDME, ADME) for each *day* over the reporting period.

Generally, Prelim and Final UFE values follow each other closely and Rev 1 and Rev 2 UFE values follow each other closely. Victorian *local areas*, generally show Prelim/Final and Rev 1/Rev 2 UFE values following each other, but non-Victorian *local areas* generally show significant differences between Prelim/Final UFE values and Rev 1/Rev 2 UFE values.

The line charts show settlement data versions as follows:

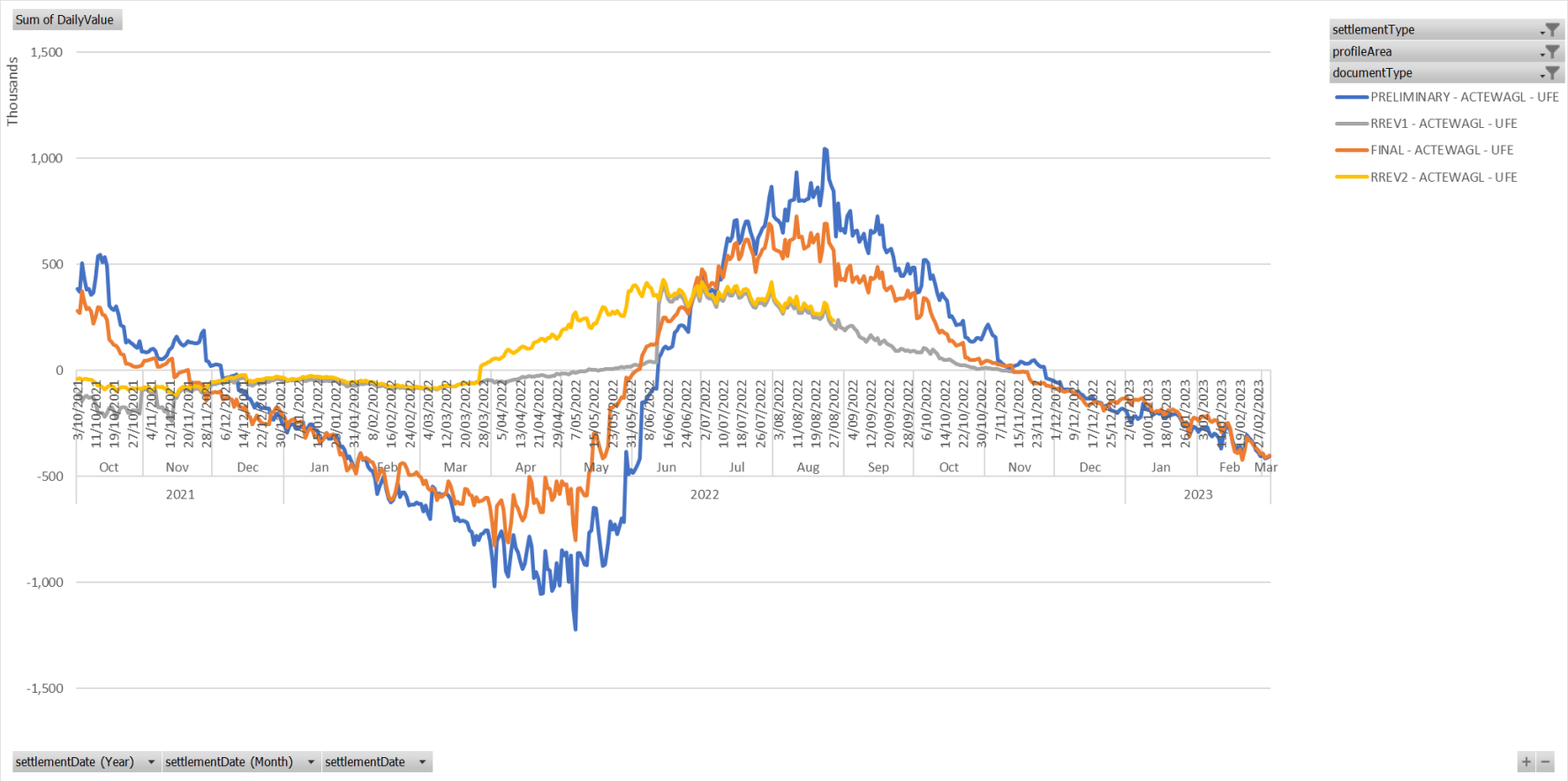
Blue line represents PRELIM UFE values

Gray line represents REV 1 UFE values

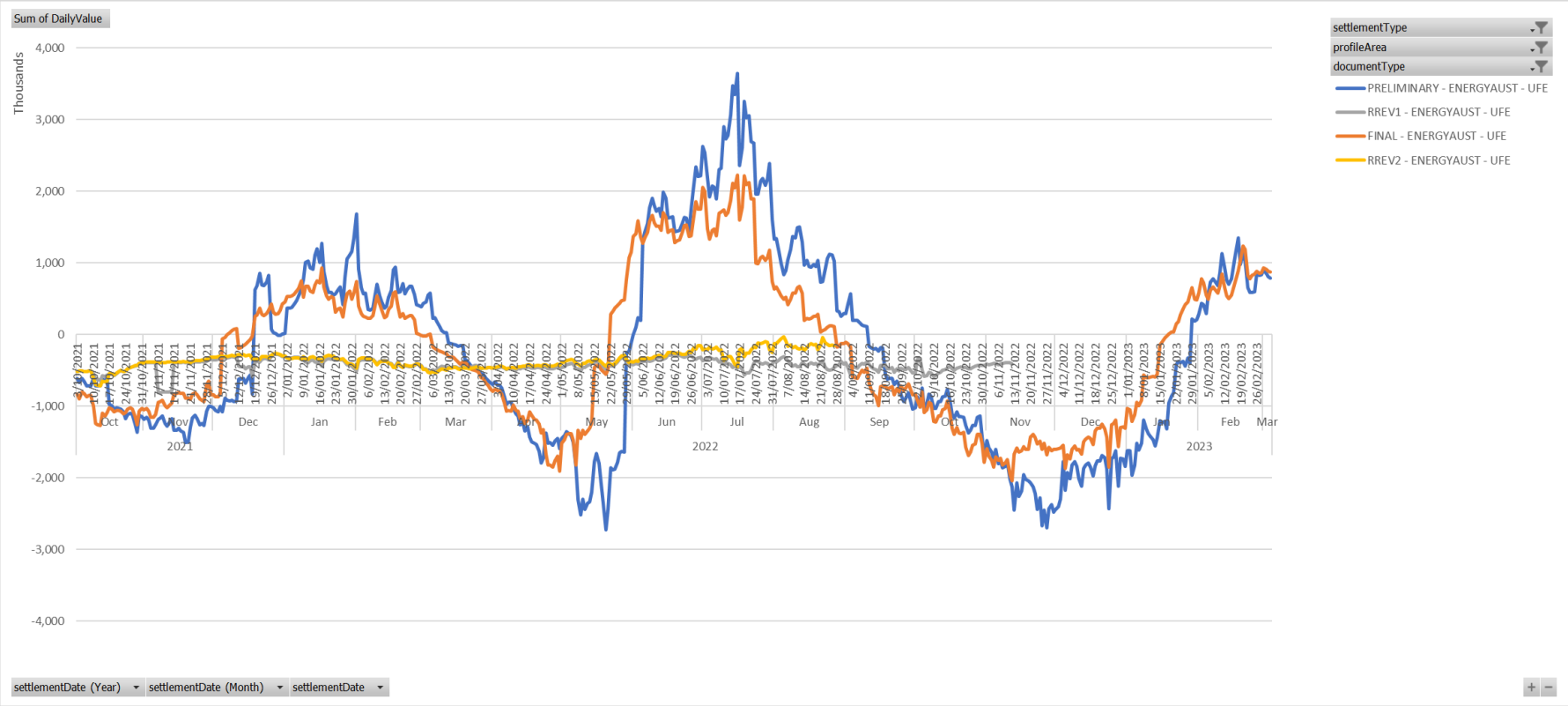
Orange line represents FINAL UFE values

Yellow line represents REV 2 UFE values

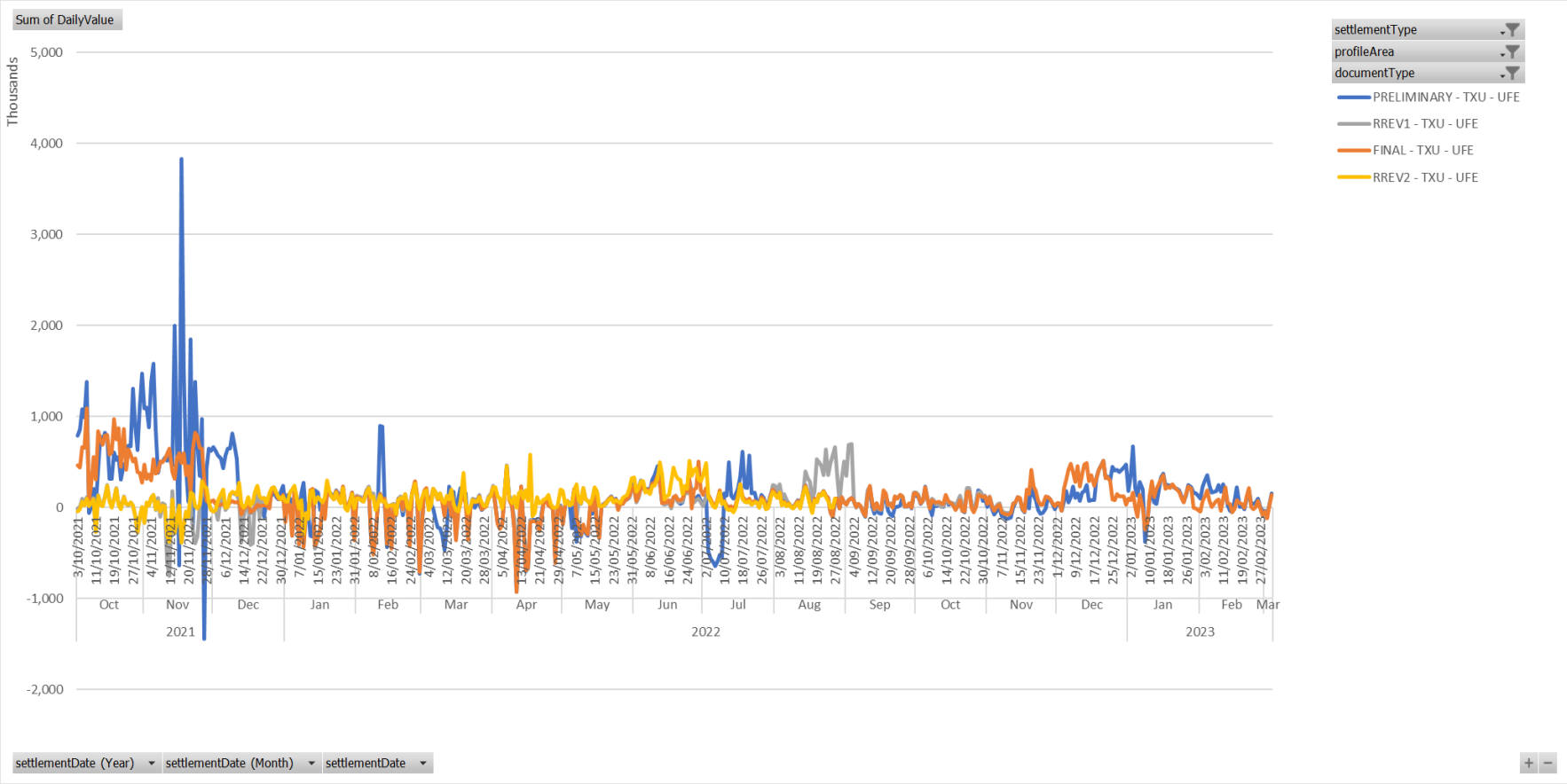
A1.2.1 ActewAGL



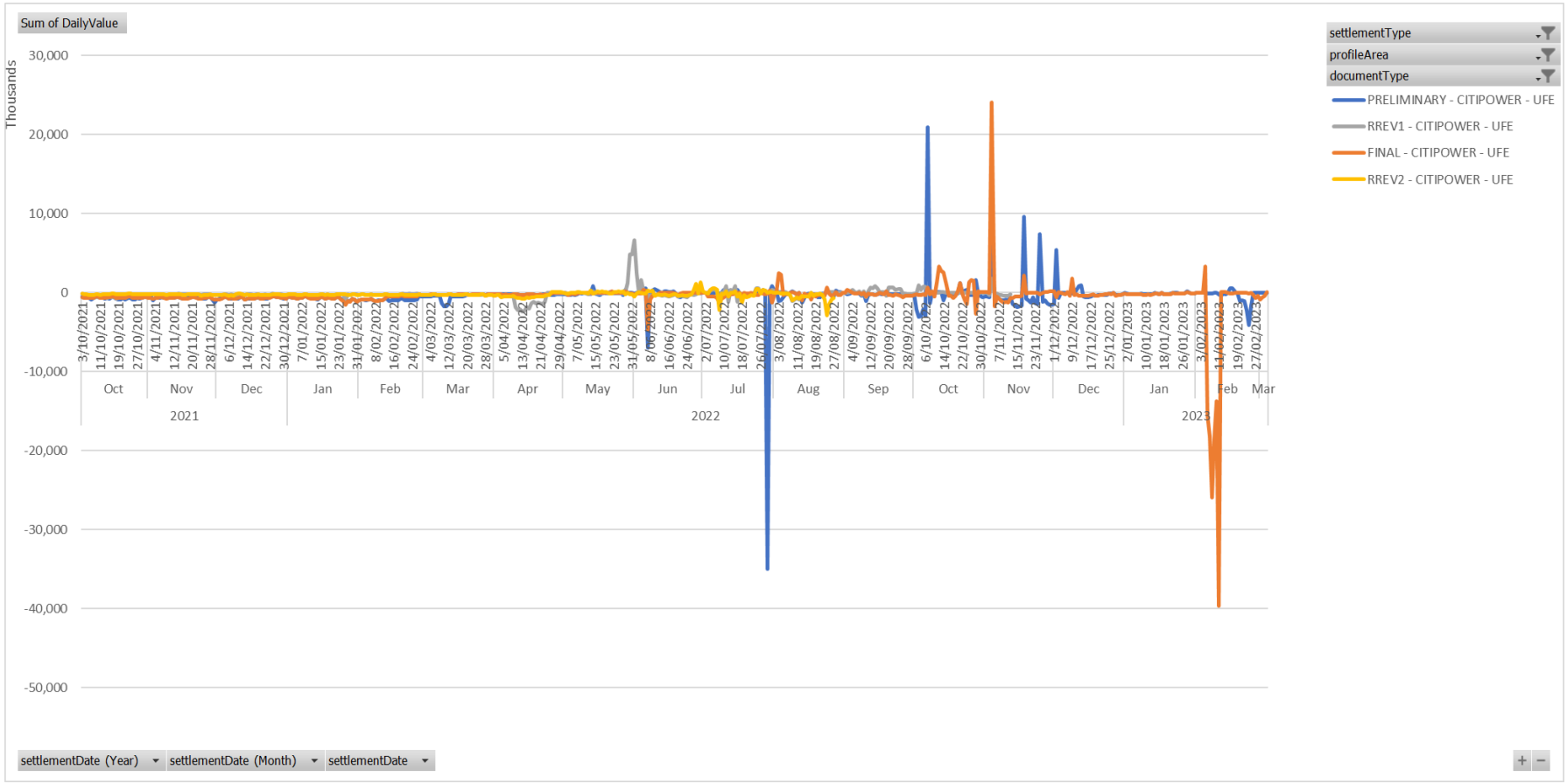
A1.2.2 Ausgrid



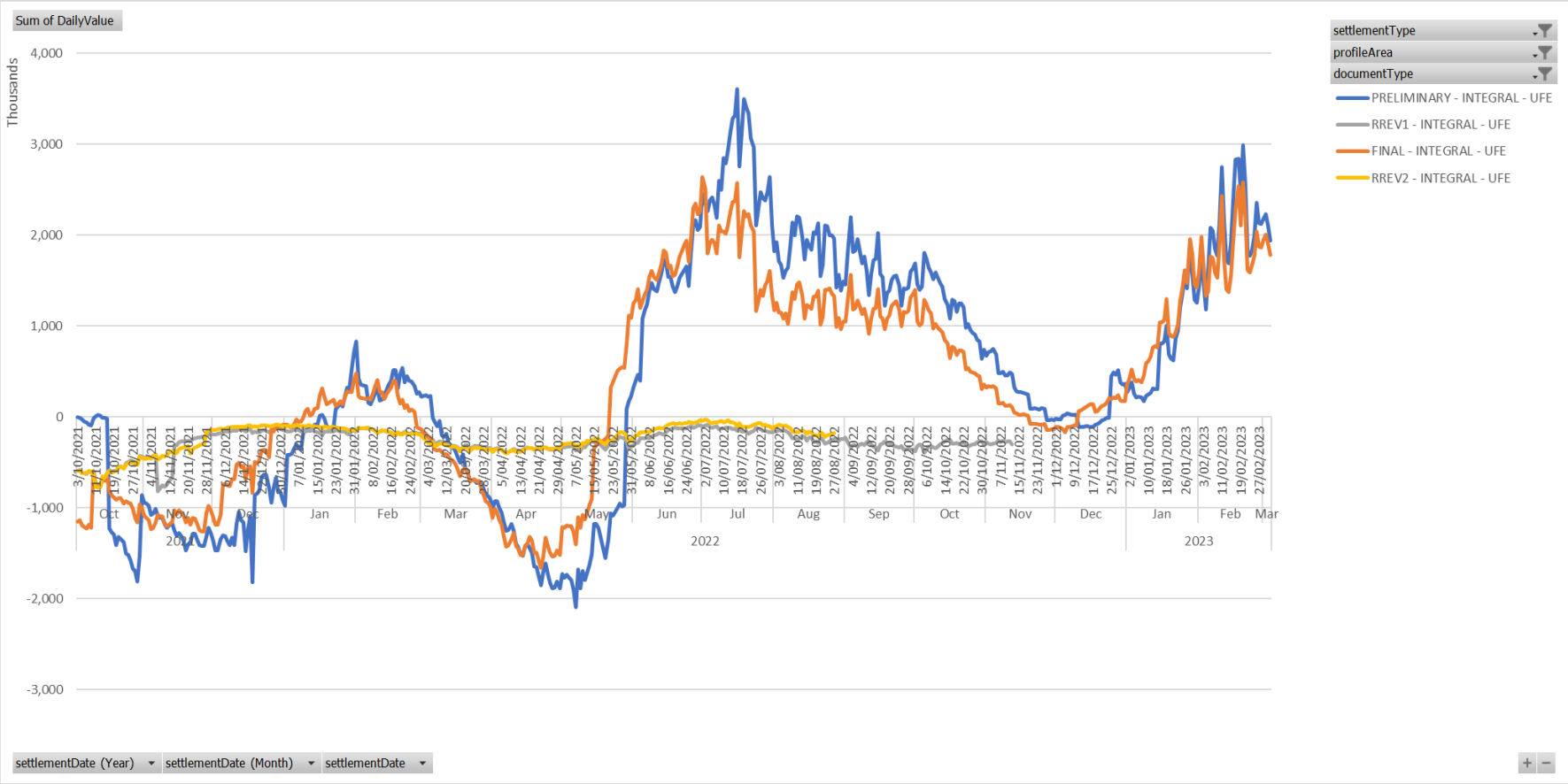
A1.2.3 AusNet Services



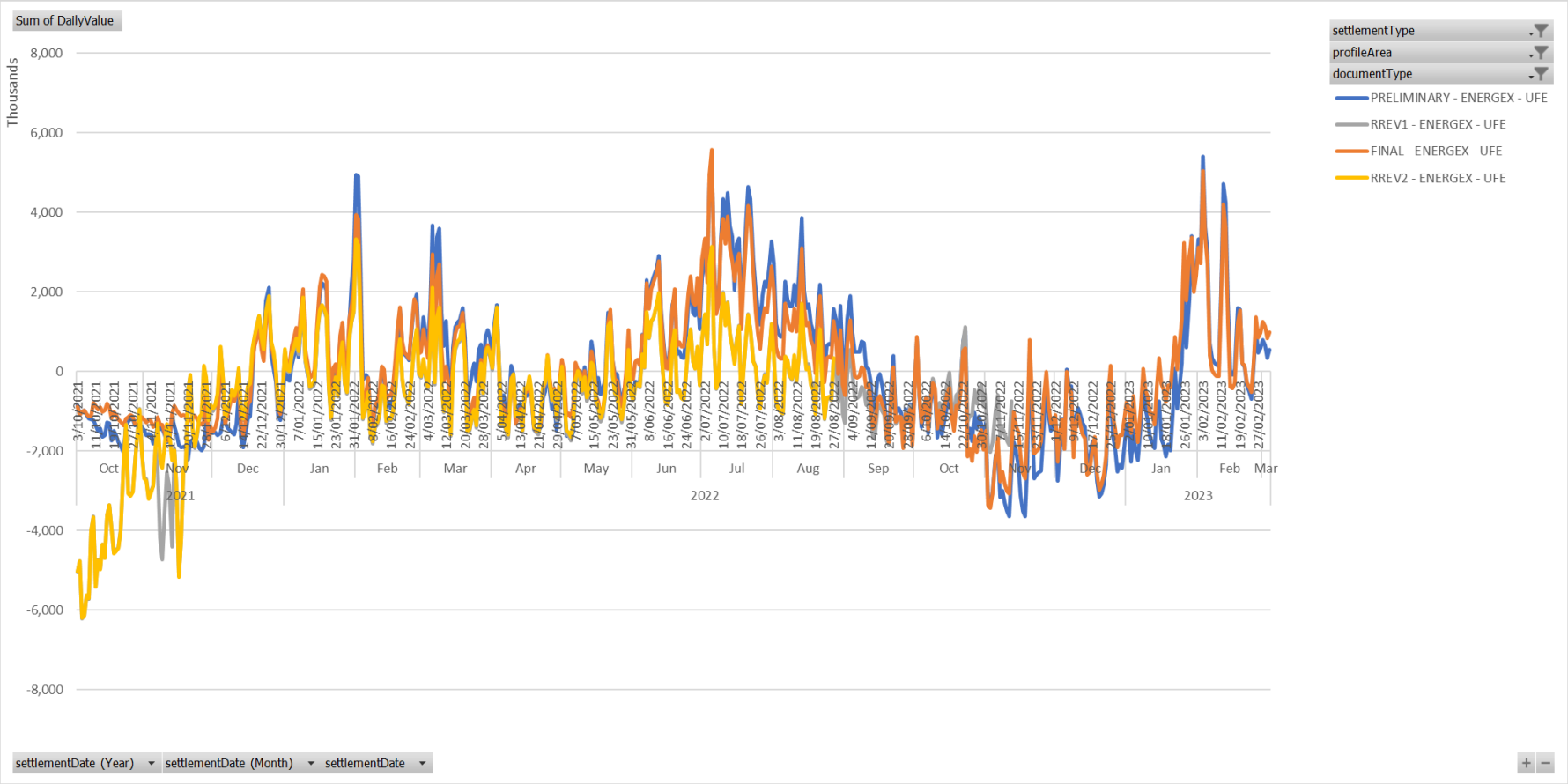
A1.2.4 CitiPower



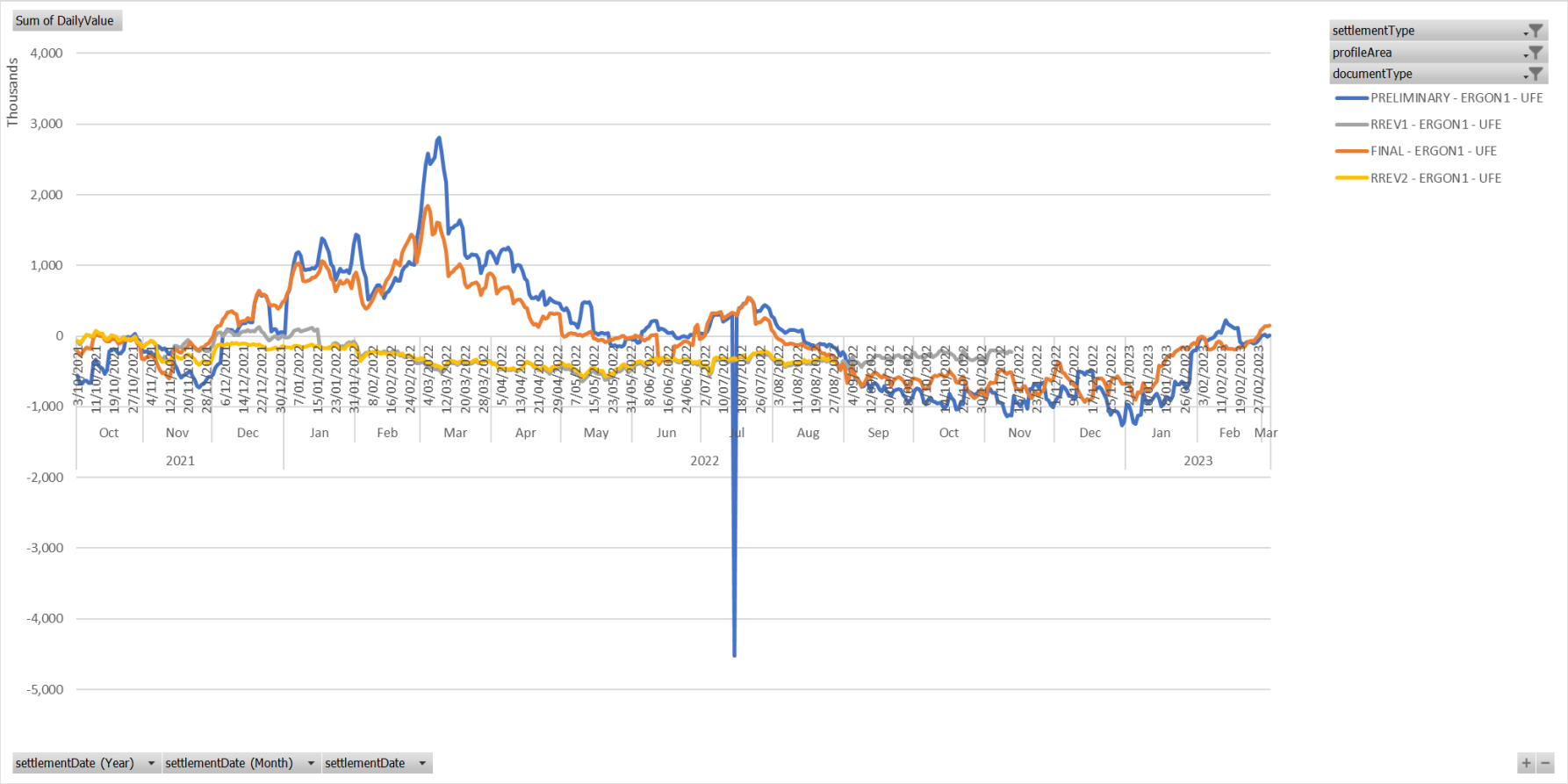
A1.2.5 Endeavour Energy



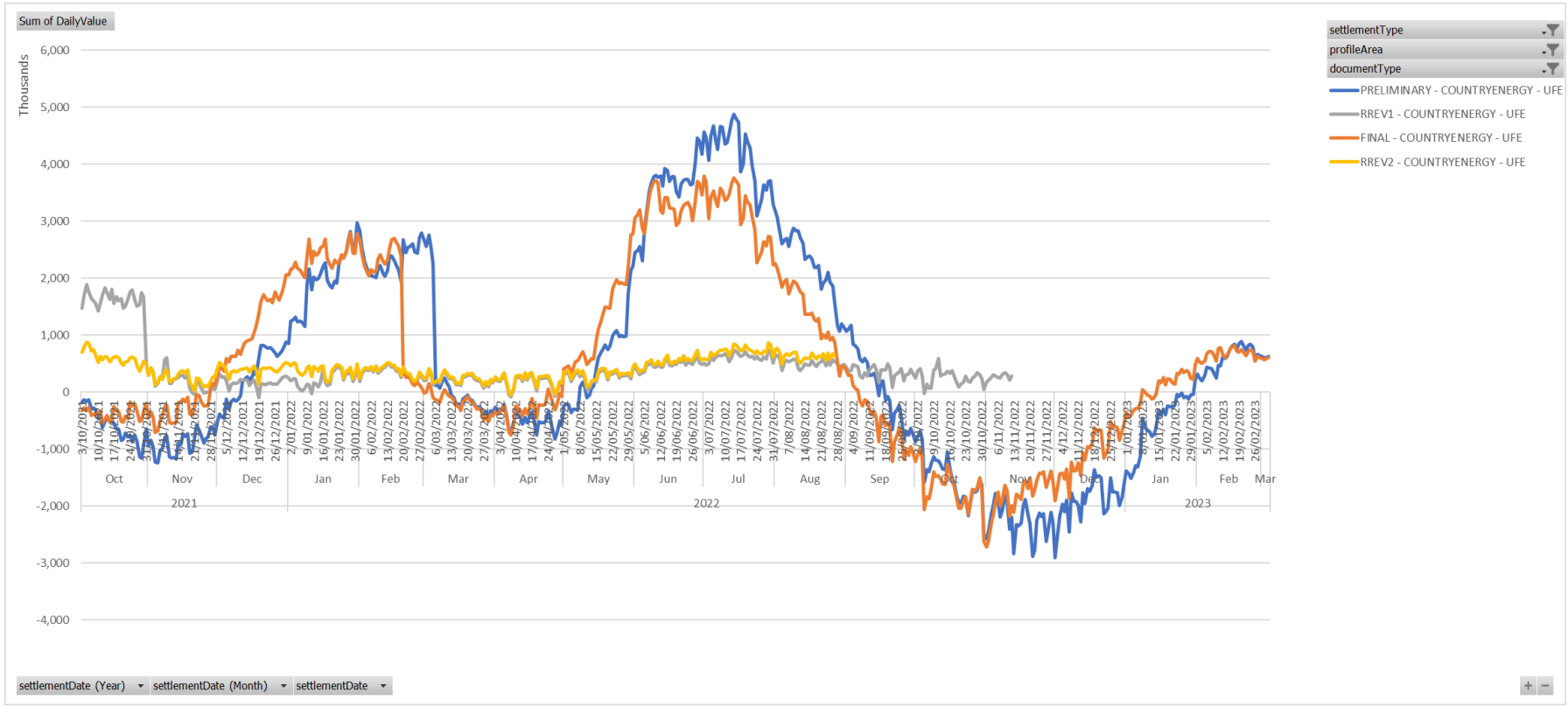
A1.2.6 Energex



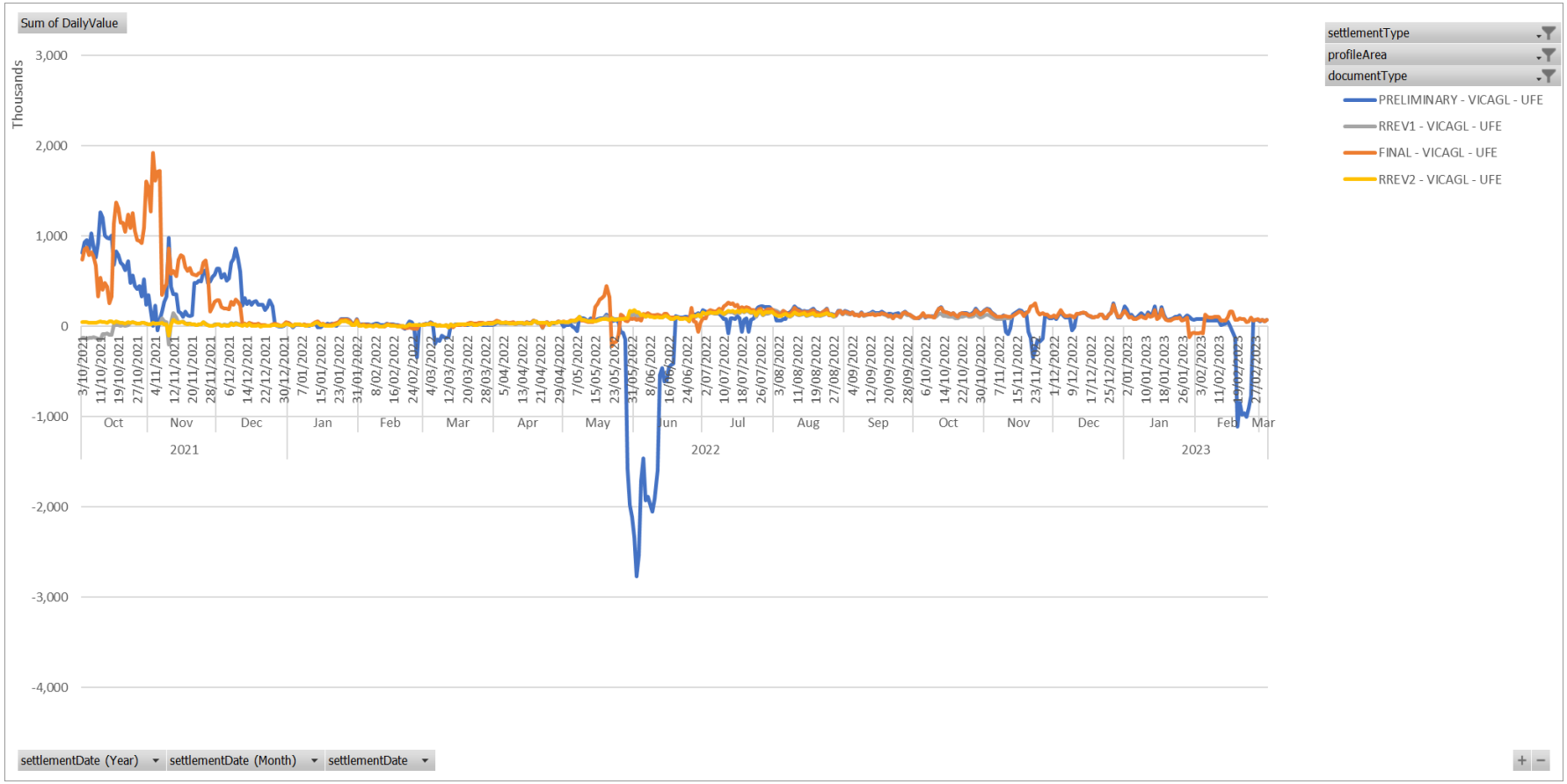
A1.2.7 Ergon


Sum of DailyValue
Thousands
4,000
3,000
2,000
1,000
0
-1,000
-2,000
-3,000
-4,000
-5,000
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
2021
2022
2023
settlementType
profileArea
documentType
PRELIMINARY - ERGON1 - UFE
RREV1 - ERGON1 - UFE
FINAL - ERGON1 - UFE
RREV2 - ERGON1 - UFE
settlementDate (Year)
settlementDate (Month)
settlementDate

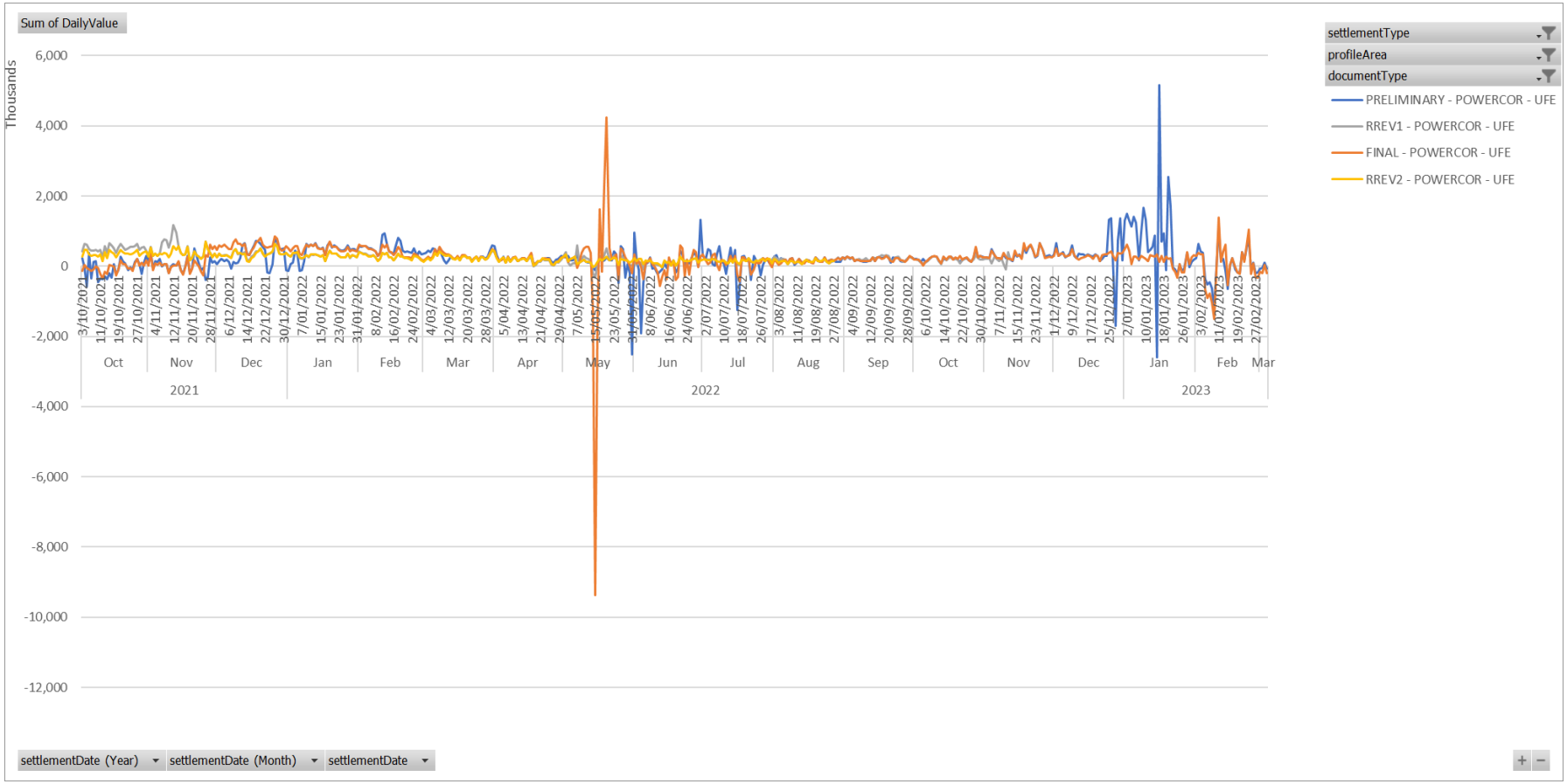
A1.2.8 Essential Energy



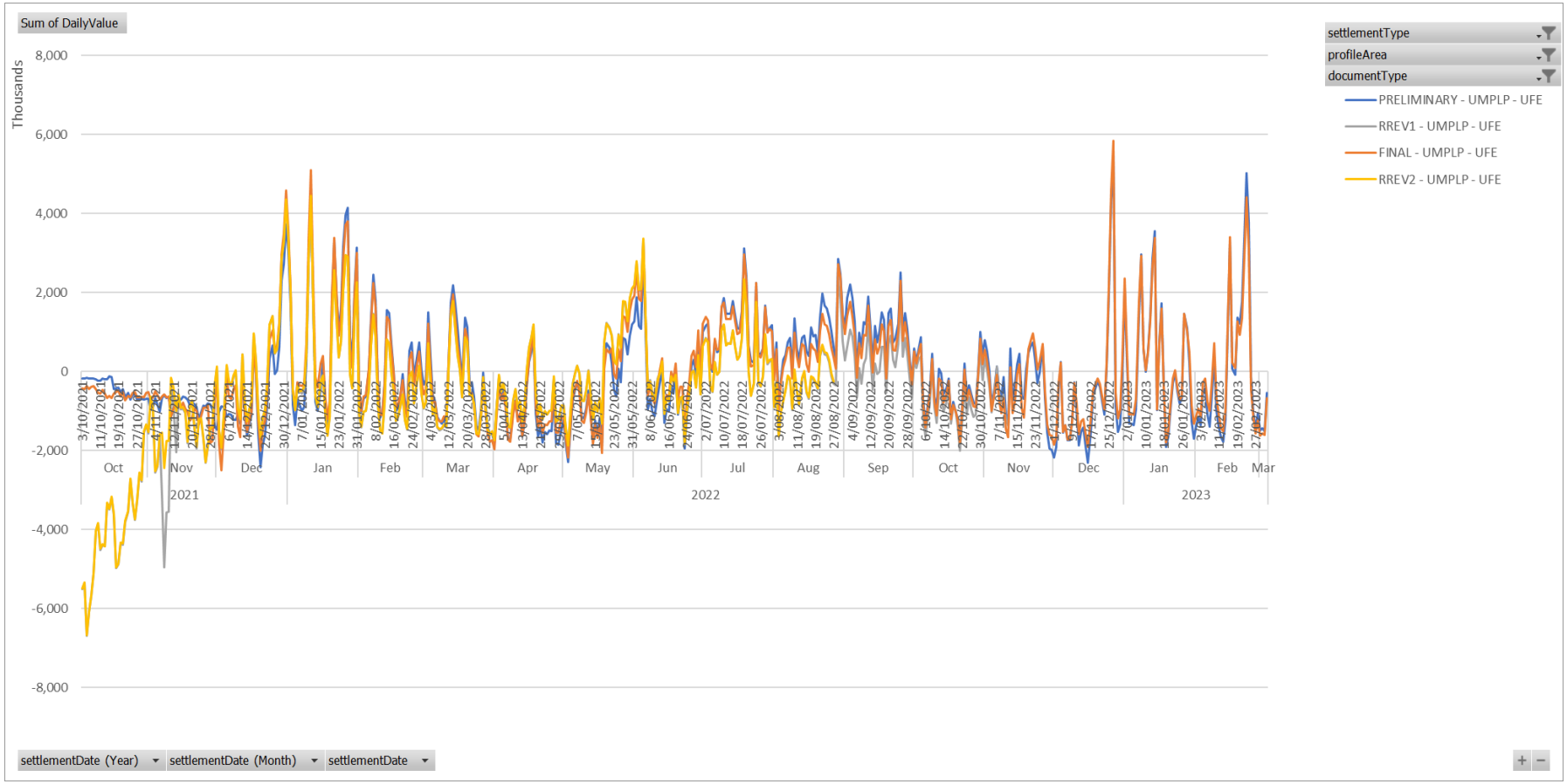
A1.2.9 Jemena


Sum of DailyValue
Thousands
3,000
2,000
1,000
0
-1,000
-2,000
-3,000
-4,000
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
2021
2022
2023
settlementType
profileArea
documentType
PRELIMINARY - VICAGL - UFE
RREV1 - VICAGL - UFE
FINAL - VICAGL - UFE
RREV2 - VICAGL - UFE
settlementDate (Year)
settlementDate (Month)
settlementDate

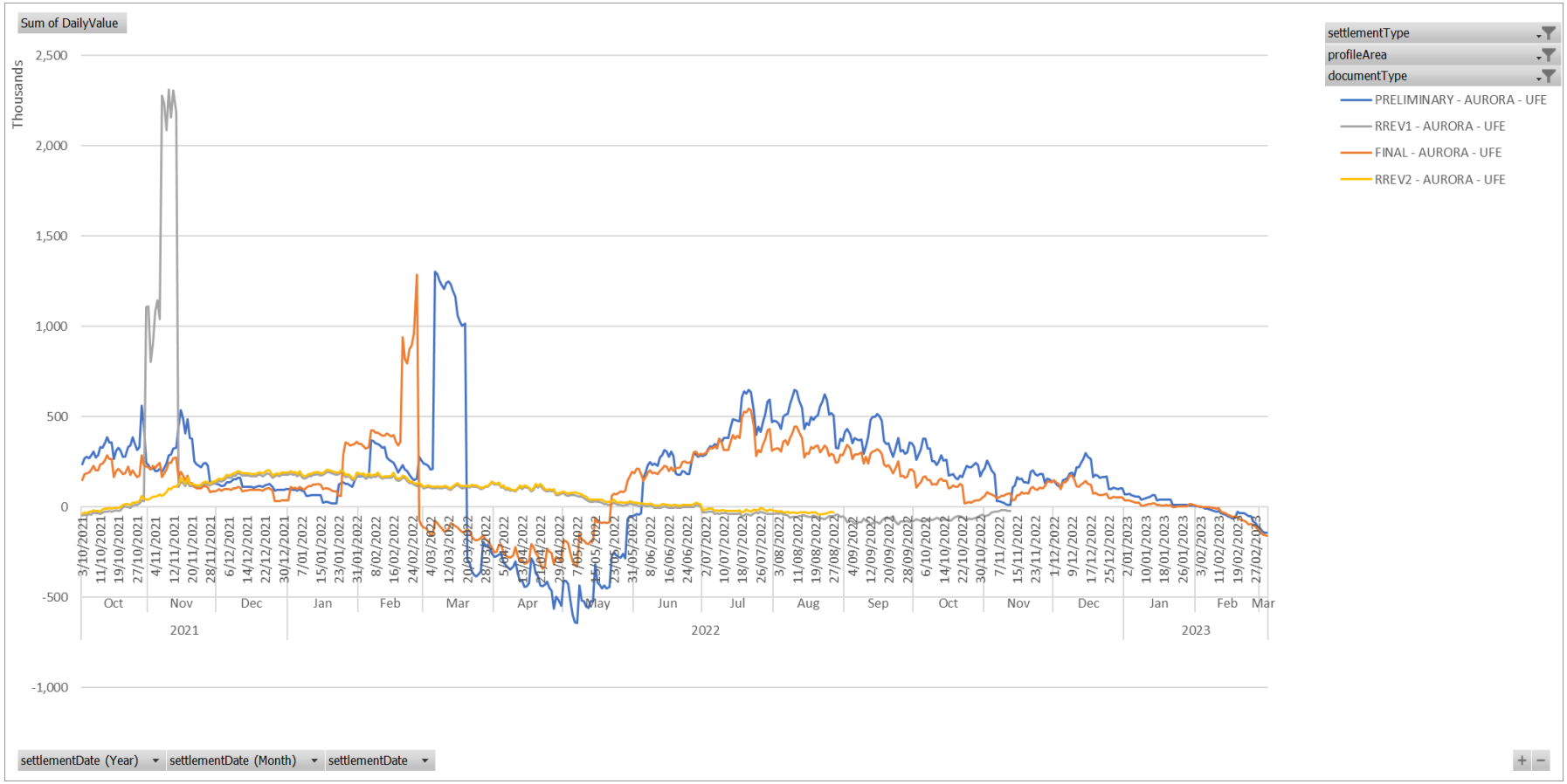
A1.2.10 Powercor



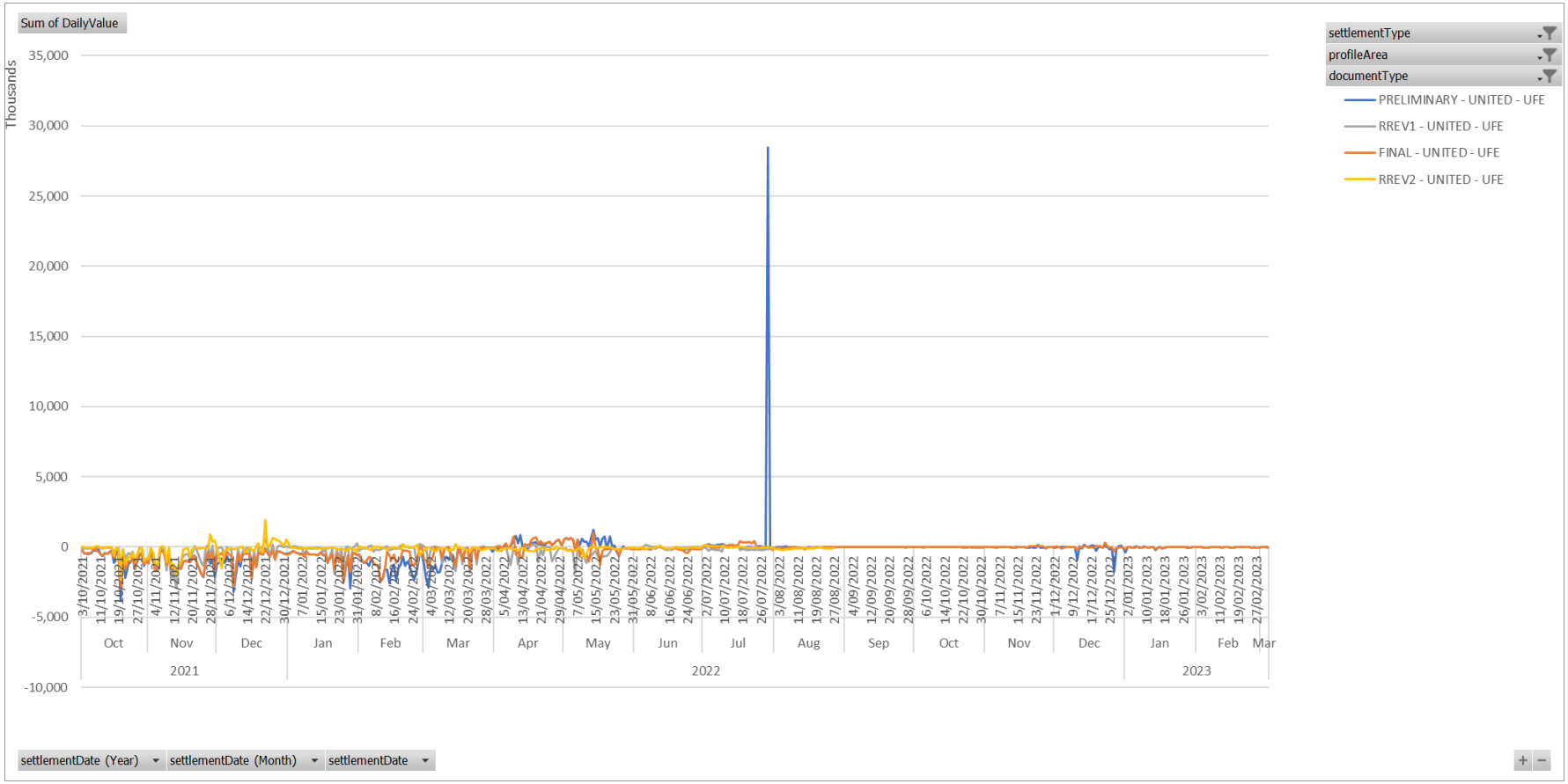
A1.2.11 SA Power Networks



A1.2.12 TasNetworks



A1.2.13 United Energy



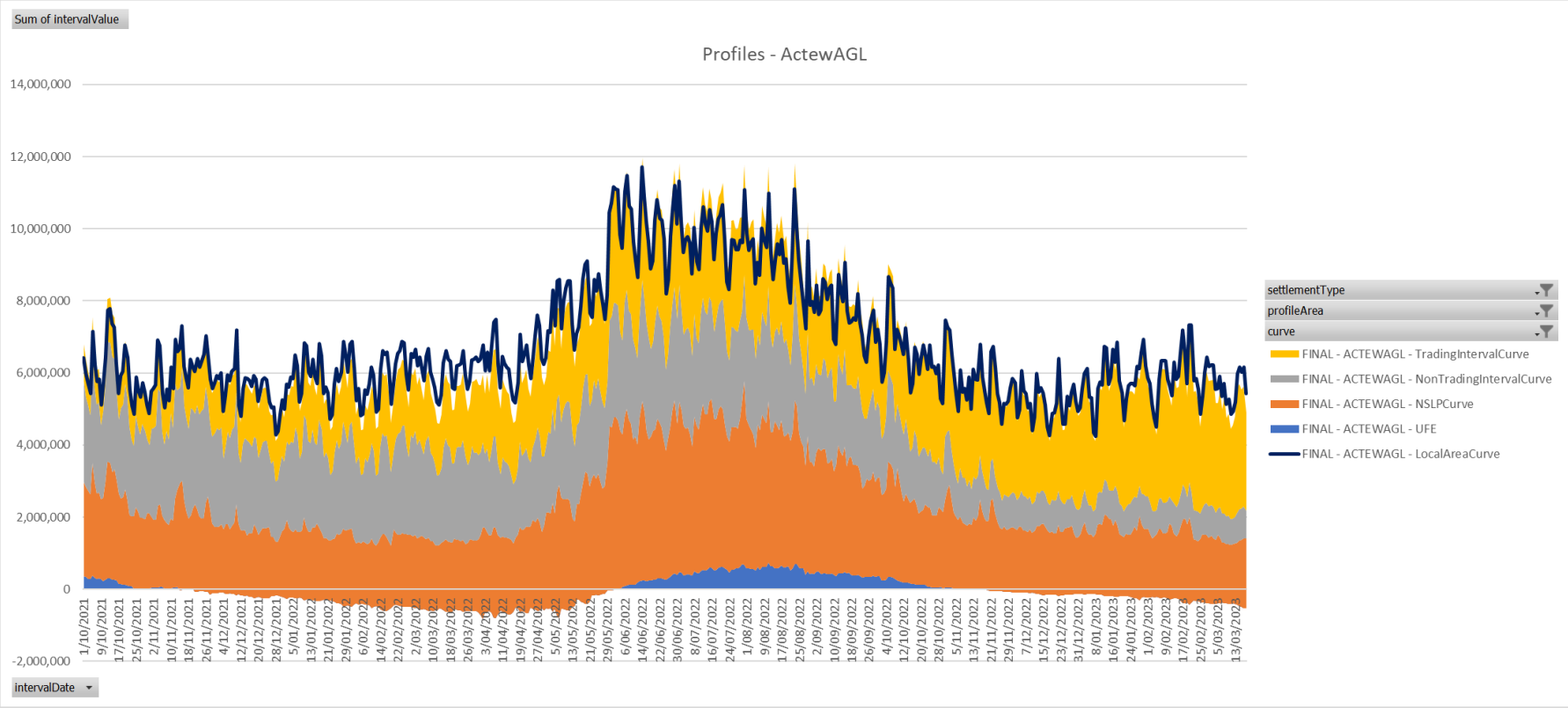
A1.3 Profiles for each local area

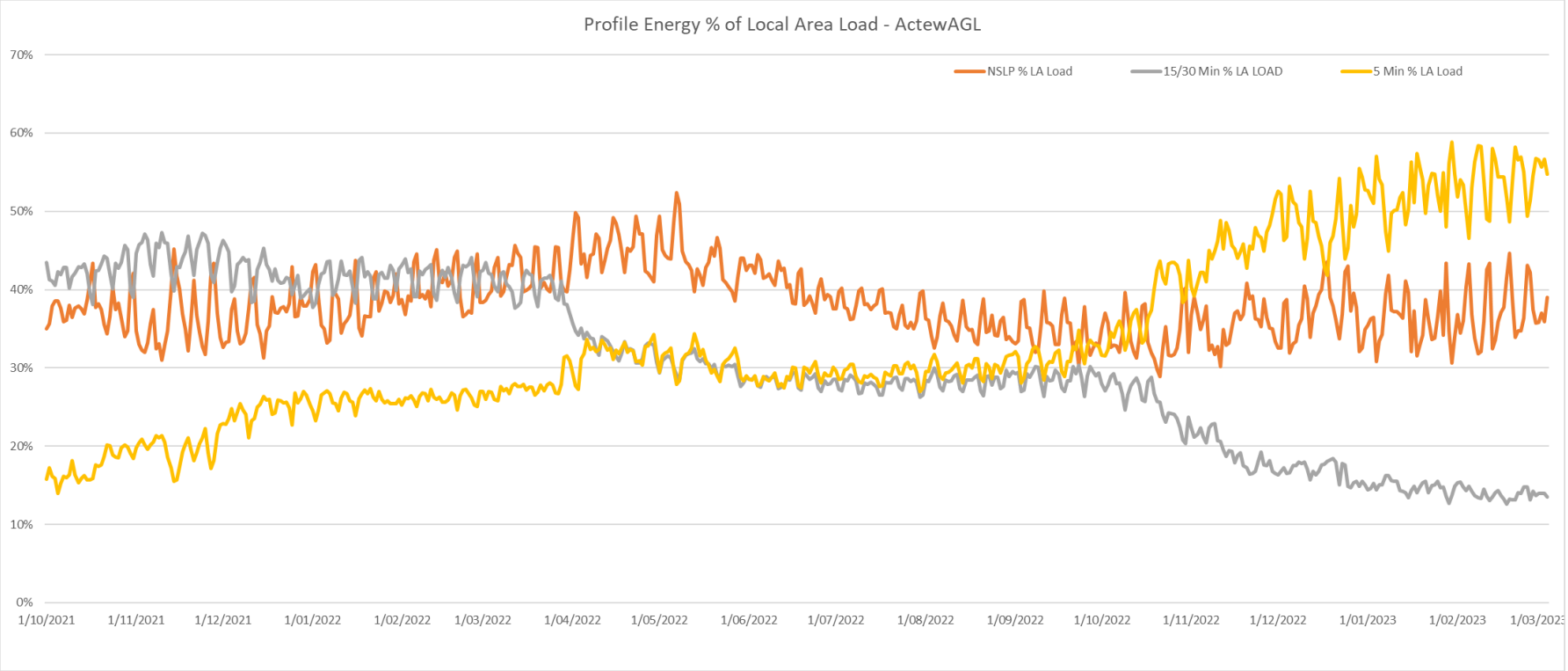
Charts in this section show the volume of profiled *metering data* over the reporting period related to the following profiling methods:

- Net System Load Profile (NSLP),
- Controlled Load Profile (CLP), and
- 15 and 30-minute *metering data* profiled to 5-minute
- The *energy* volumes related to each profiling method are expressed as a percentage of the *local area load*.

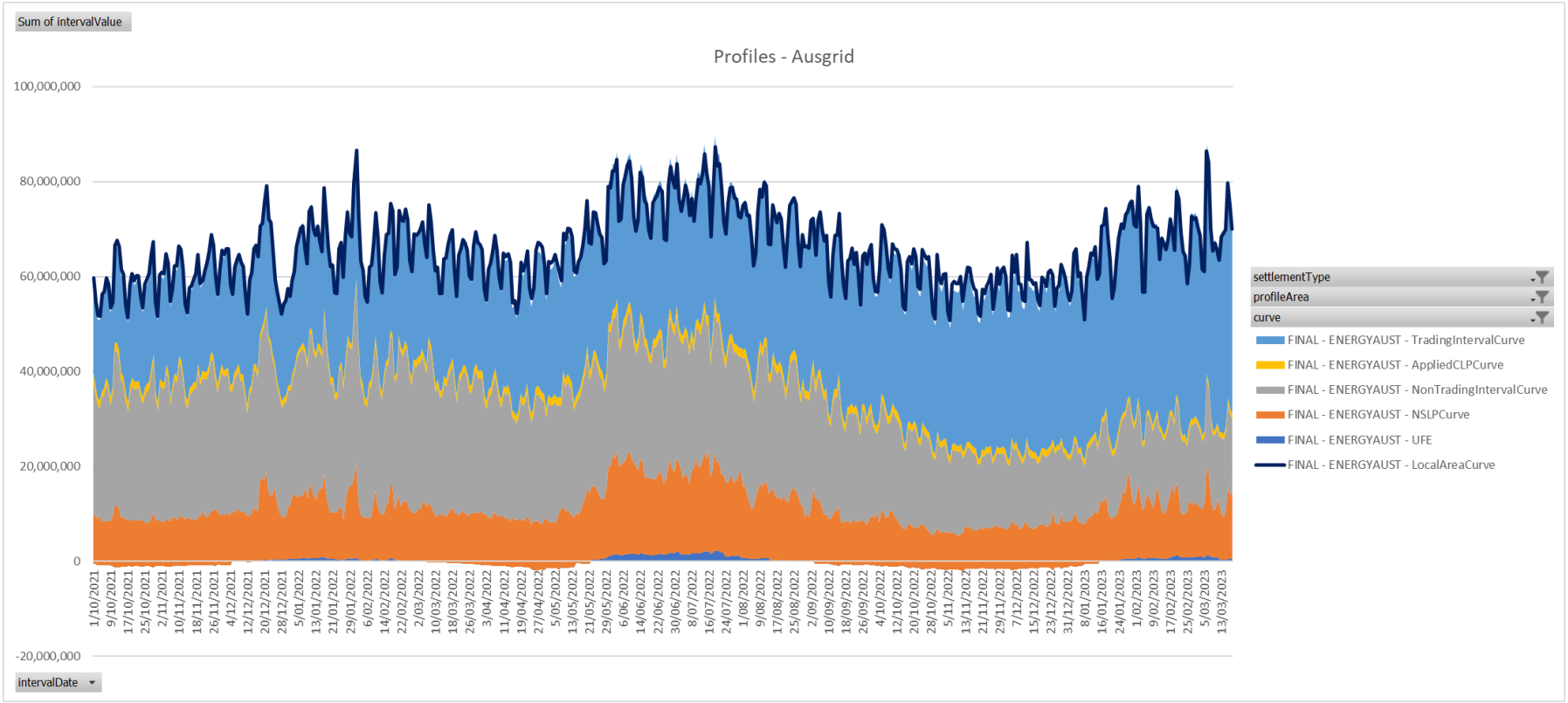
The first chart for each *local area* shows the stacked profile energy volumes under the *local area load* curve. The second chart for each *local area* shows the percentage of the *local area load* related each profile group in that *local area*.

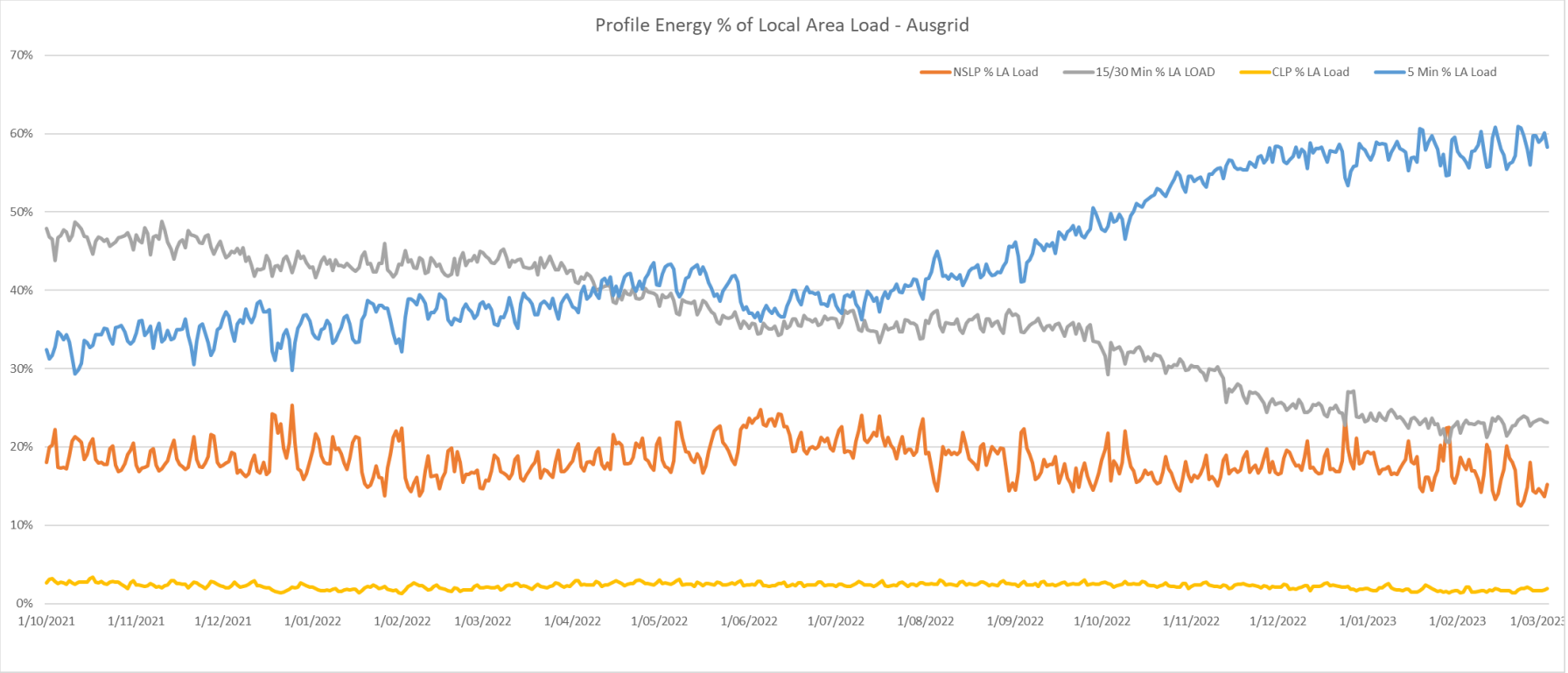
A1.3.1 ActewAGL



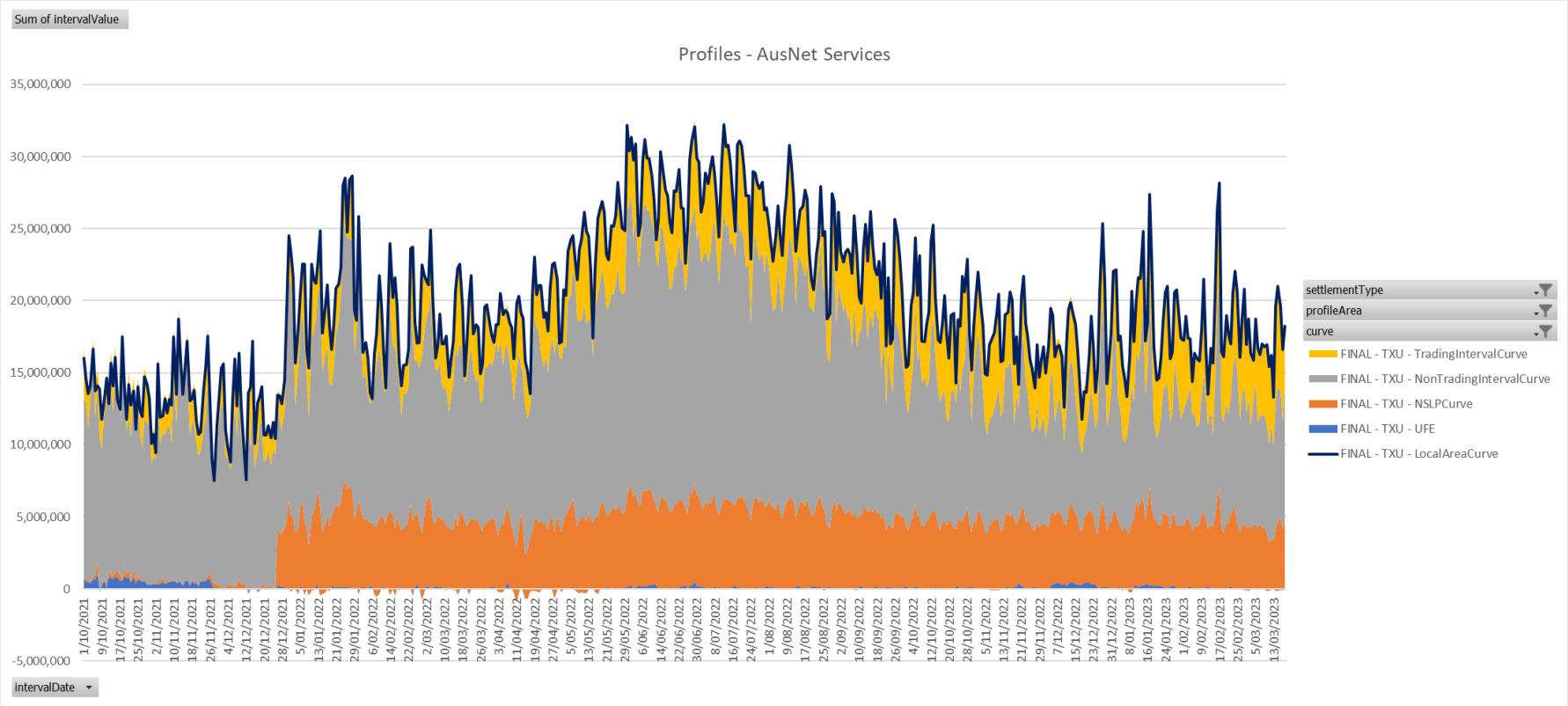

Profile Energy % of Local Area Load - ActewAGL
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
70%
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

A1.3.2 Ausgrid

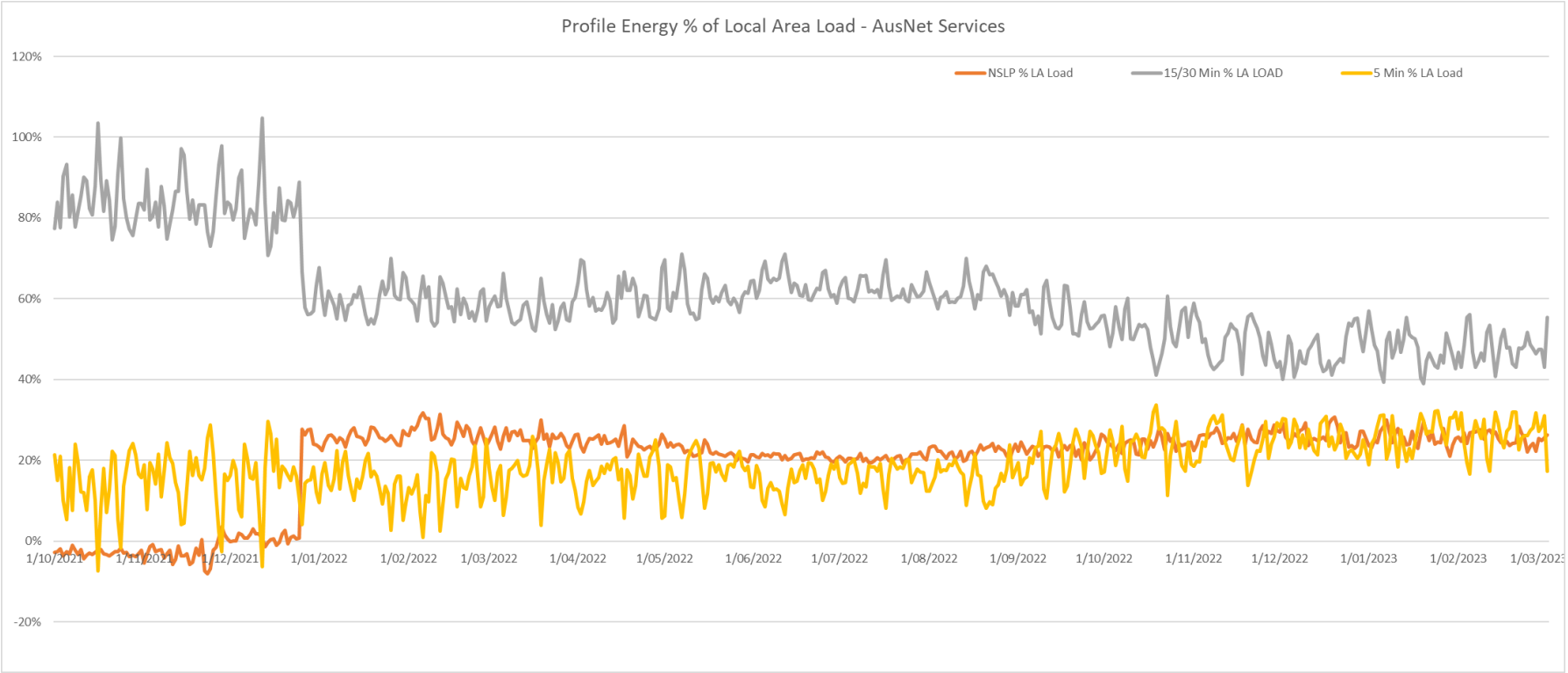



Profile Energy % of Local Area Load - Ausgrid
NSLP % LA Load
15/30 Min % LA LOAD
CLP % LA Load
5 Min % LA Load
70%
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

A1.3.3 AusNet Services



Weights have been applied to Final version settlement data from January 2022.


Profile Energy % of Local Area Load - AusNet Services
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
120%
100%
80%
60%
40%
20%
0%
-20%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
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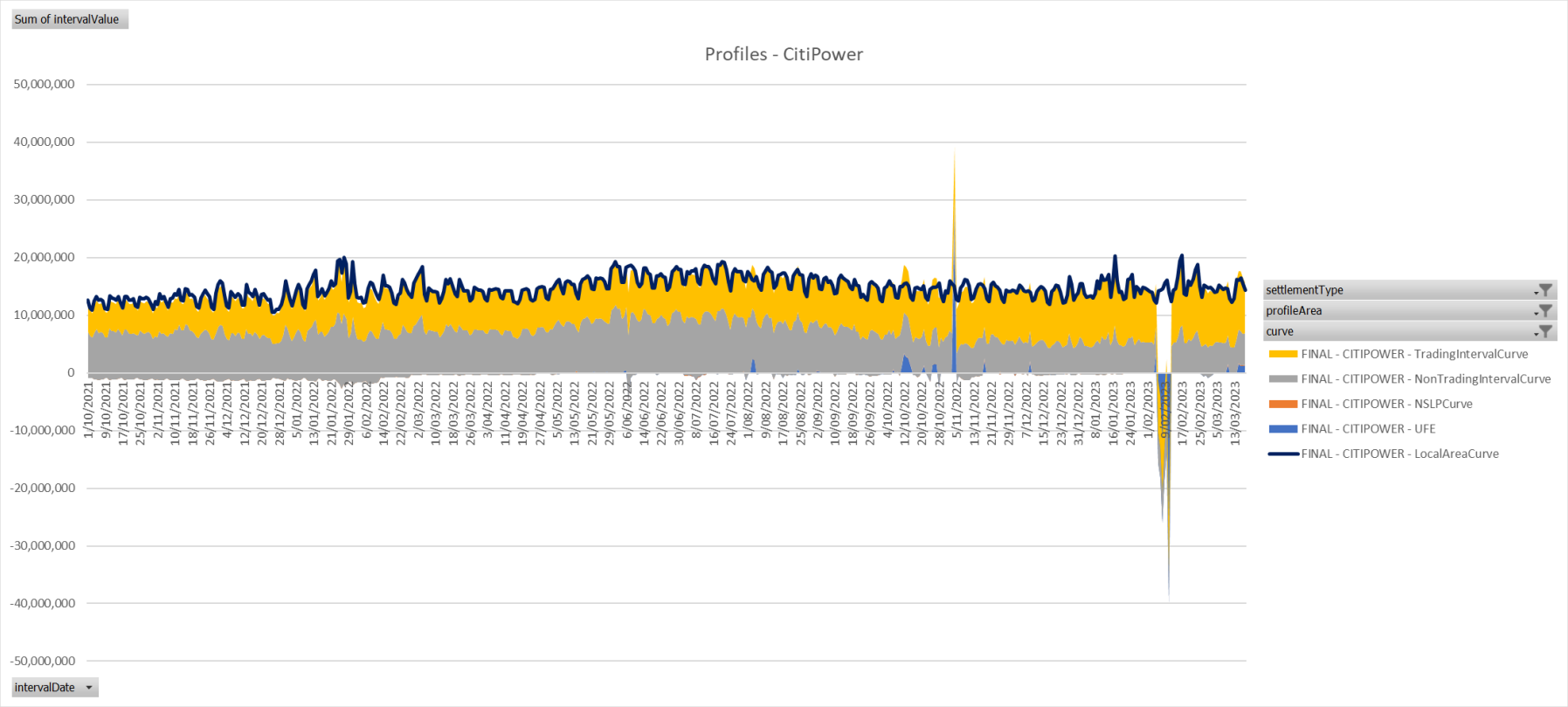
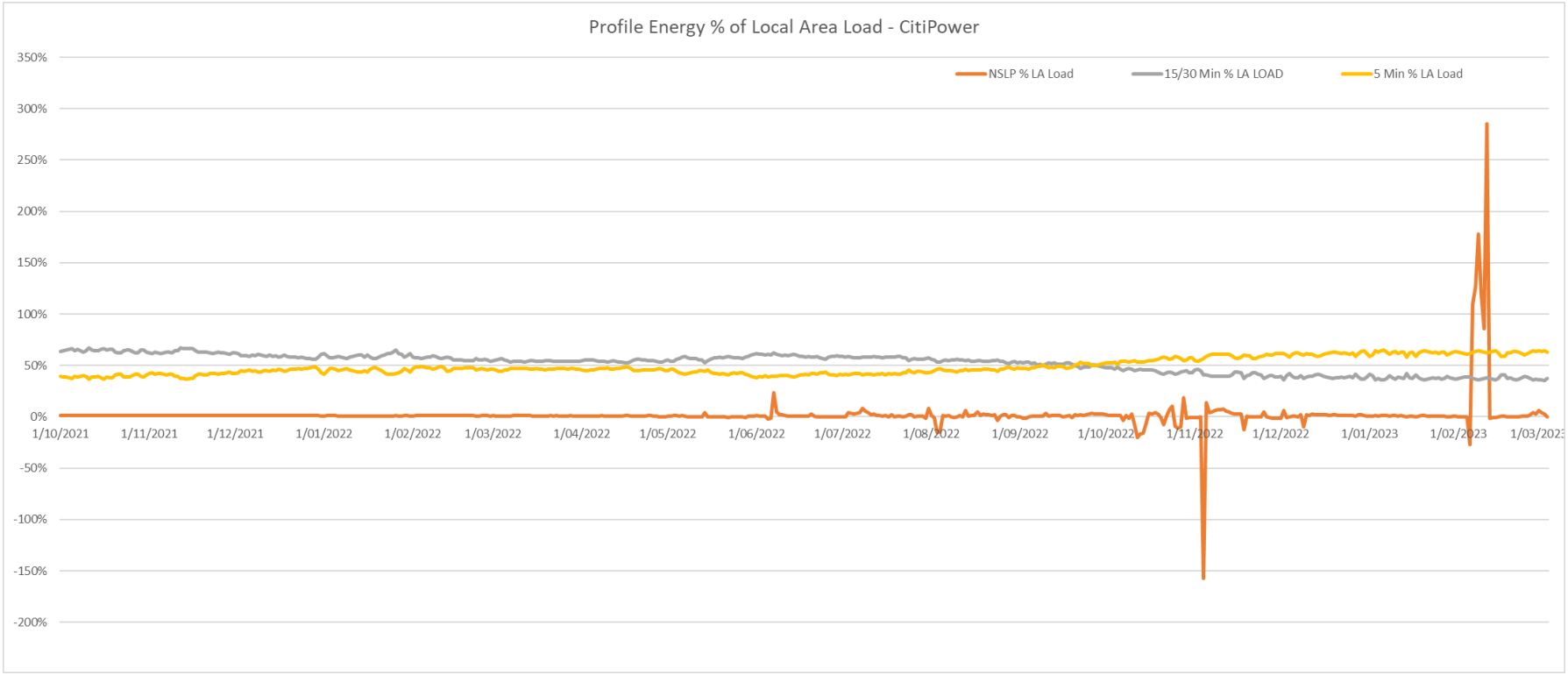
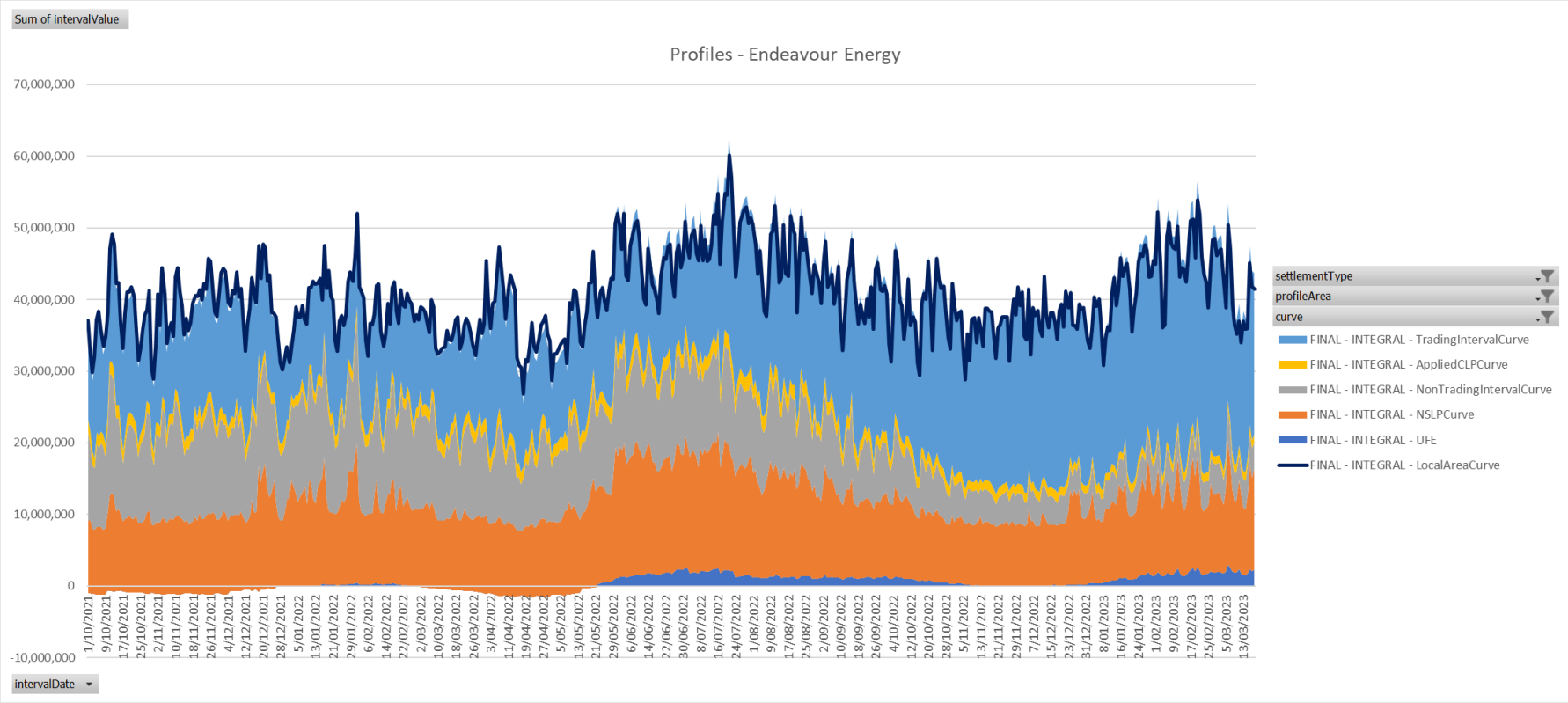
1/12/2022
1/01/2023
1/02/2023
1/03/2023

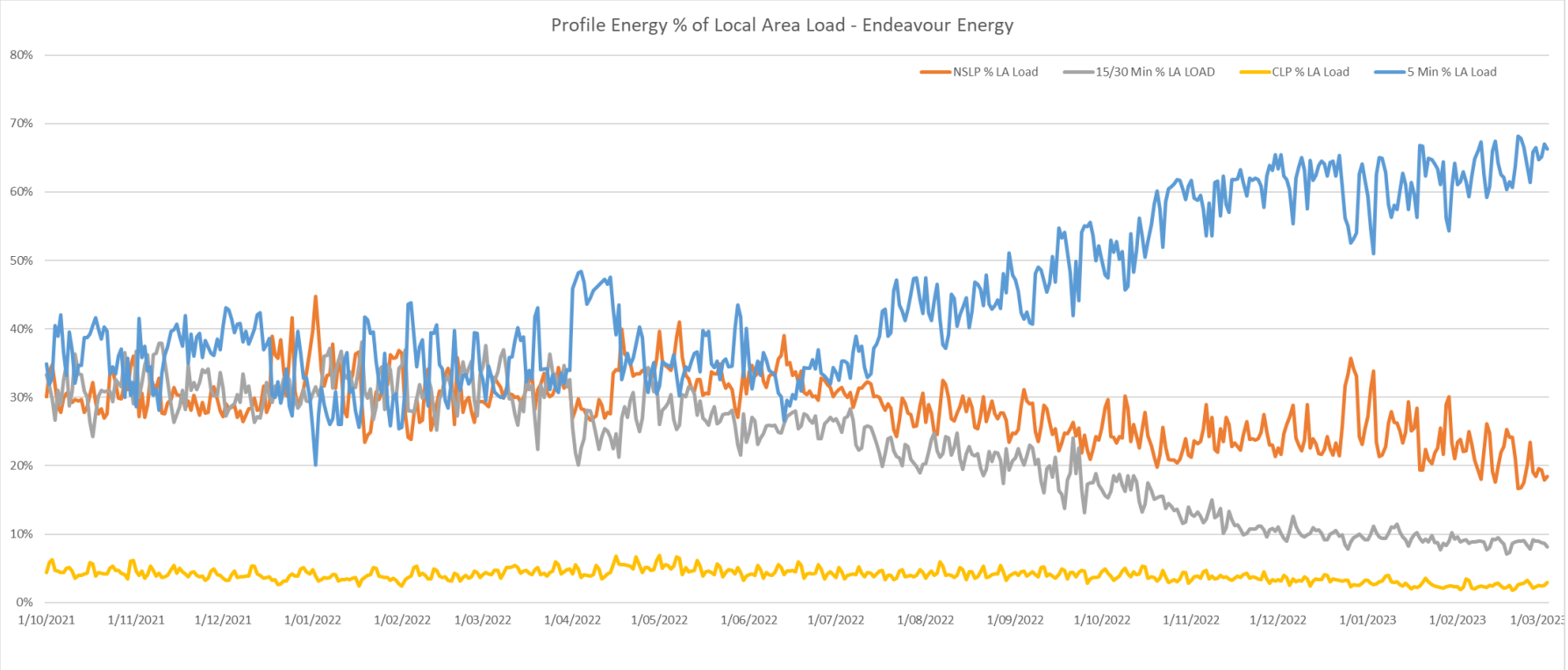
A1.3.4 CitiPower



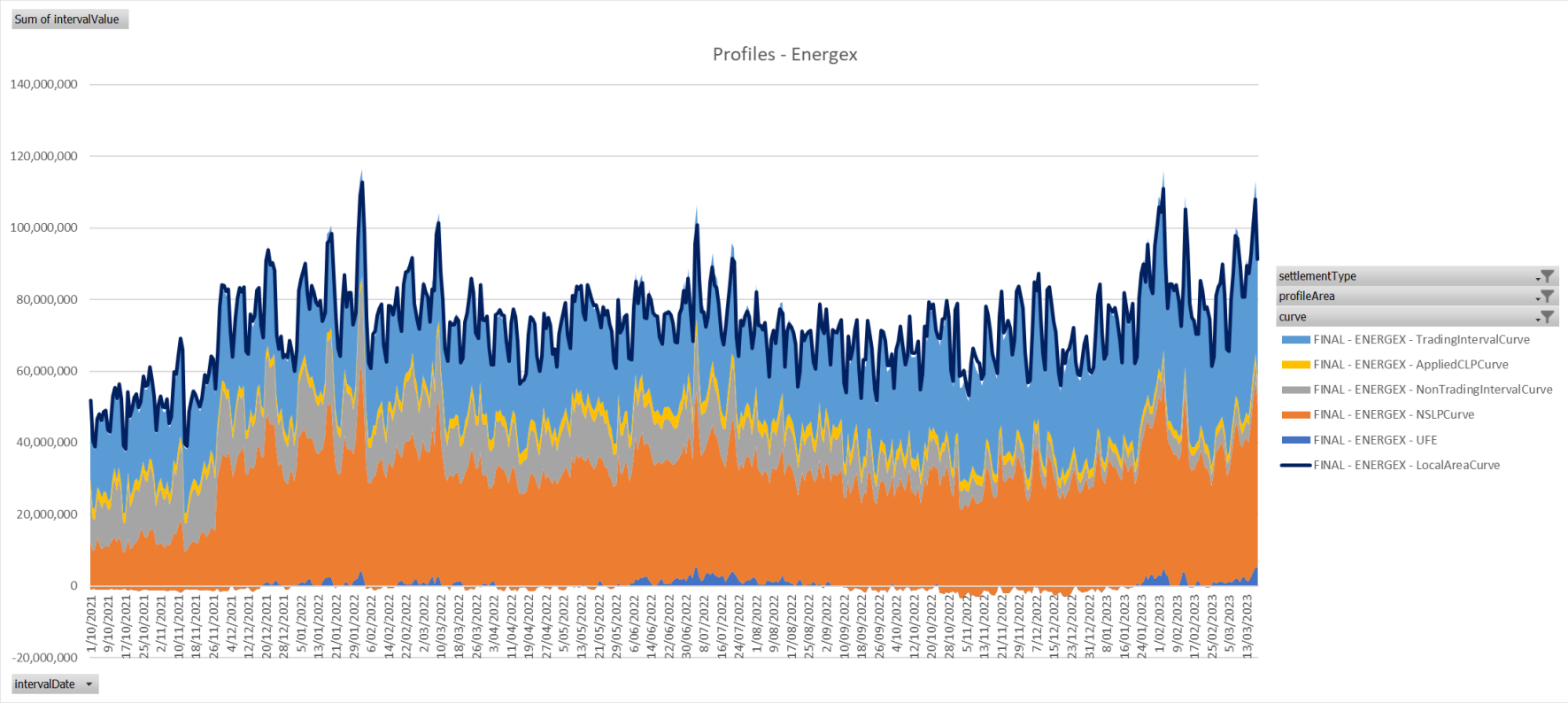

Profile Energy % of Local Area Load - CitiPower
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
350%
300%
250%
200%
150%
100%
50%
0%
-50%
-100%
-150%
-200%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

A1.3.5 Endeavour Energy

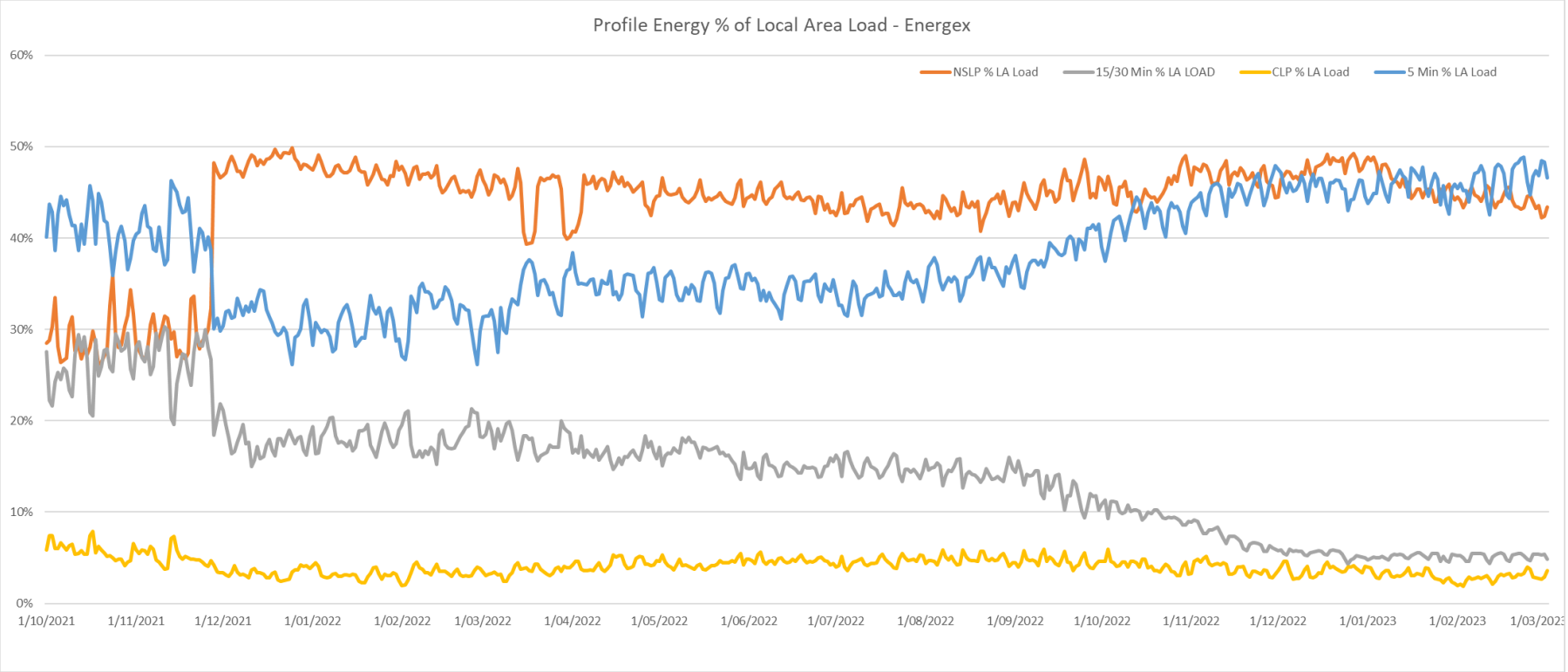



Profile Energy % of Local Area Load - Endeavour Energy
NSLP % LA Load
15/30 Min % LA LOAD
CLP % LA Load
5 Min % LA Load
80%
70%
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

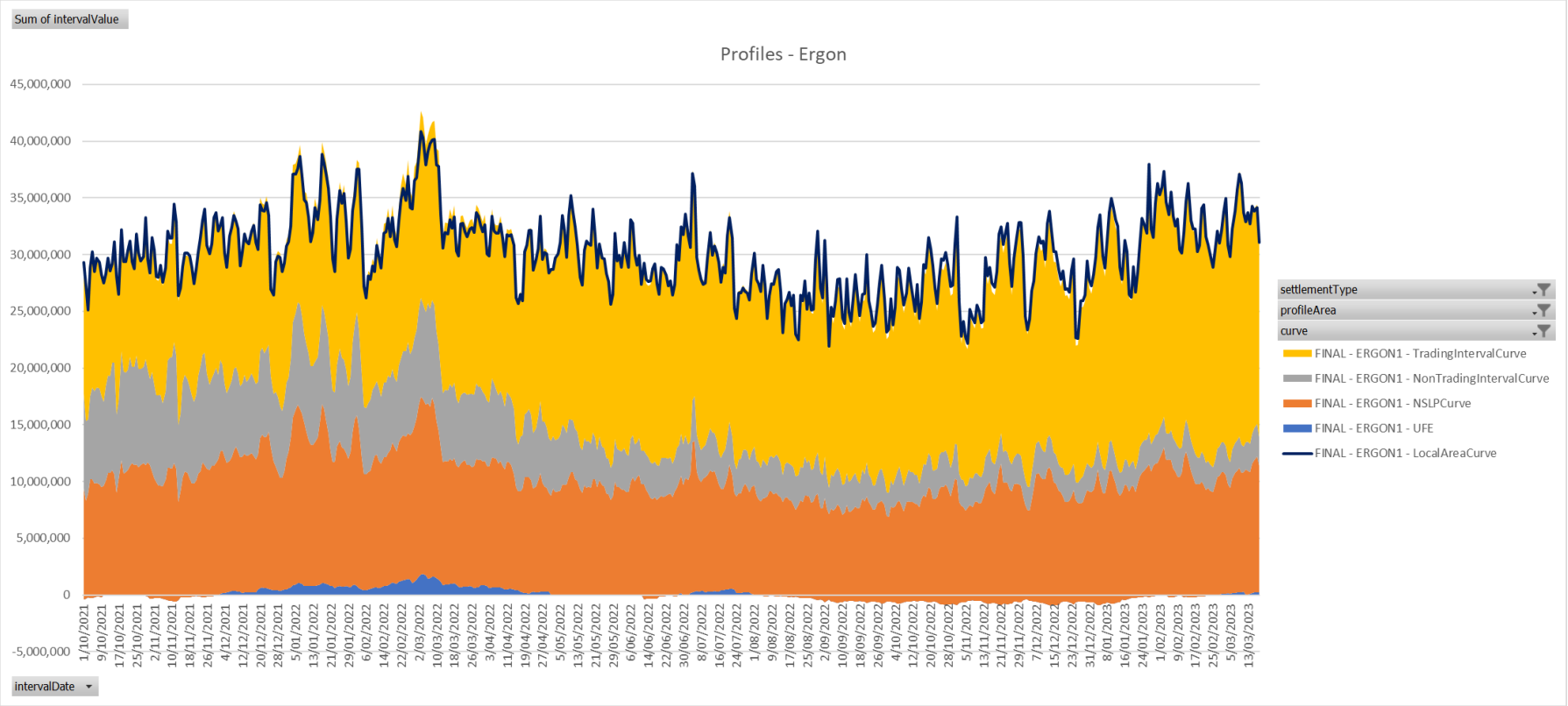
A1.3.6 Energex

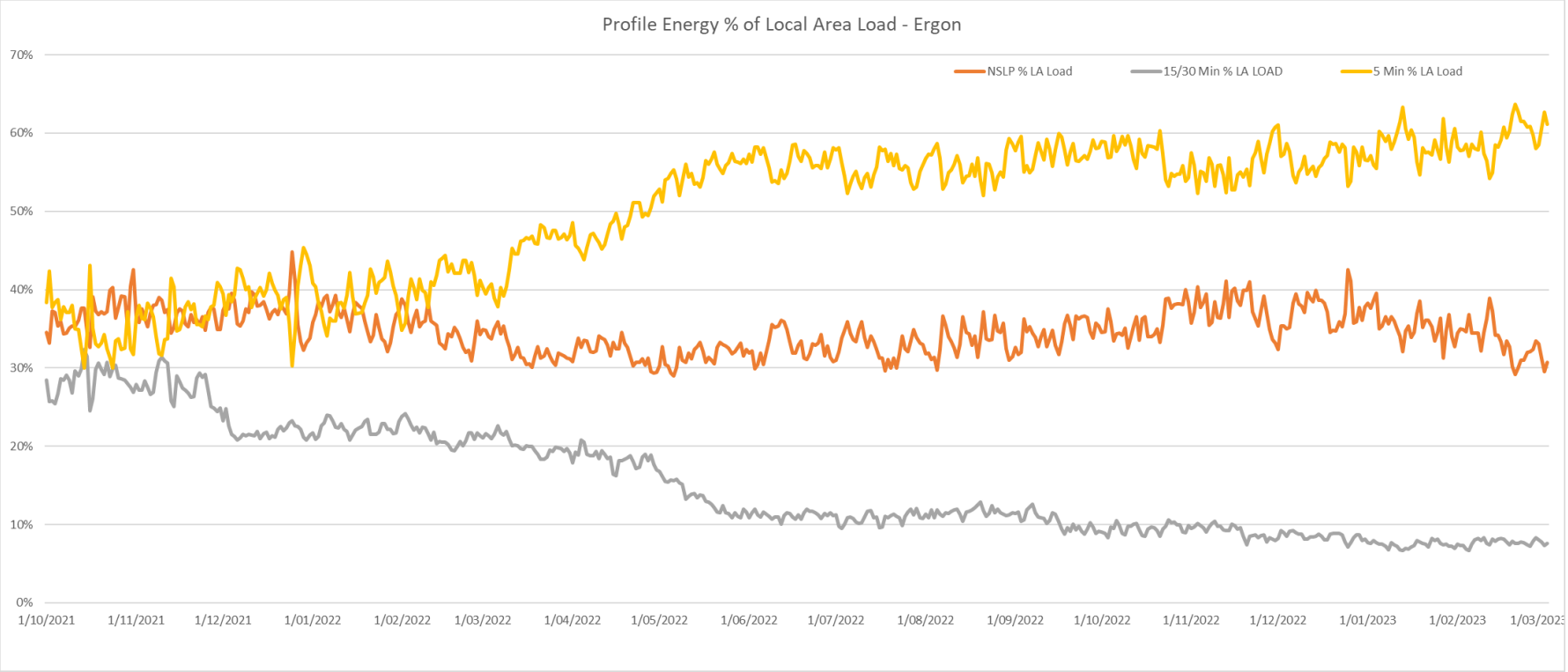


Weights have been applied to Final version settlement data from December 2021.

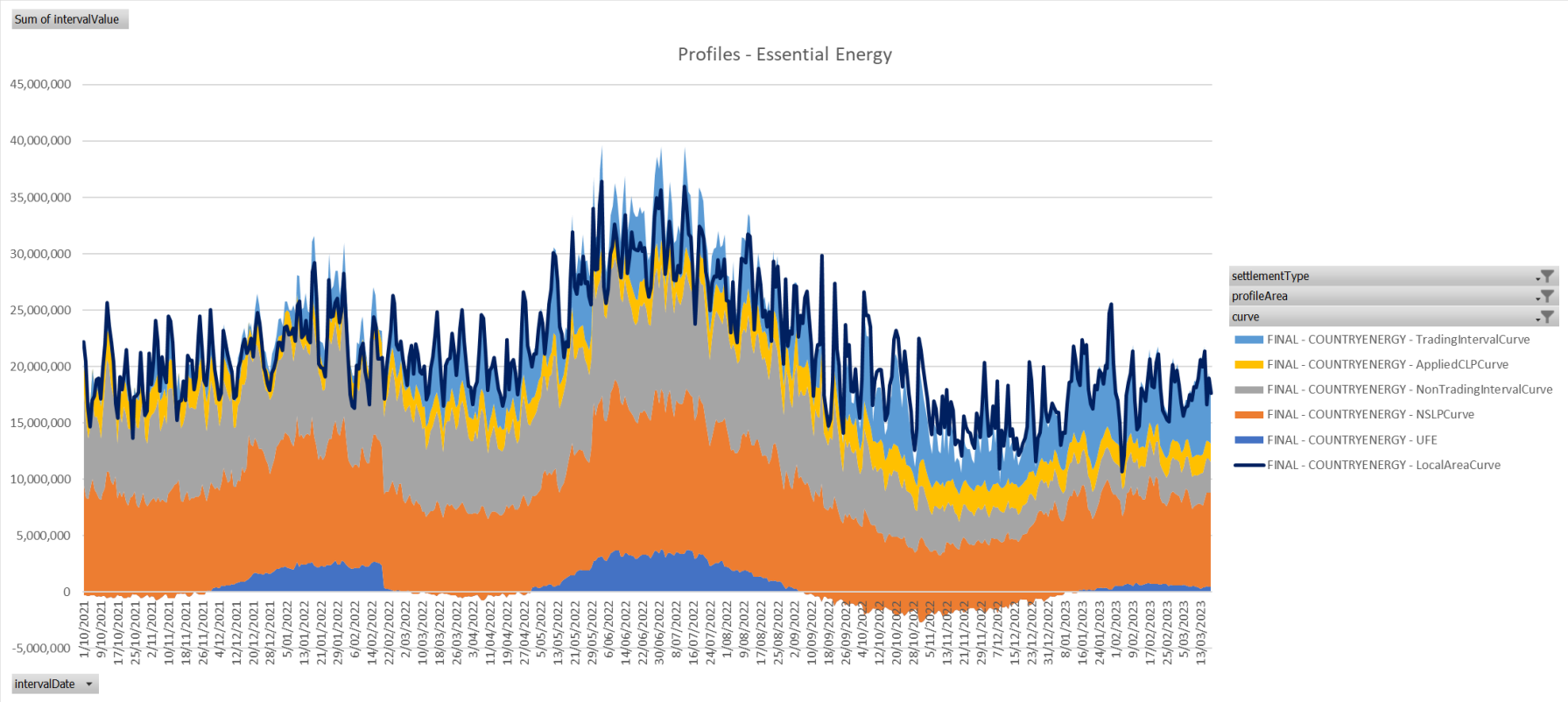

Profile Energy % of Local Area Load - Energex
NSLP % LA Load
15/30 Min % LA LOAD
CLP % LA Load
5 Min % LA Load
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

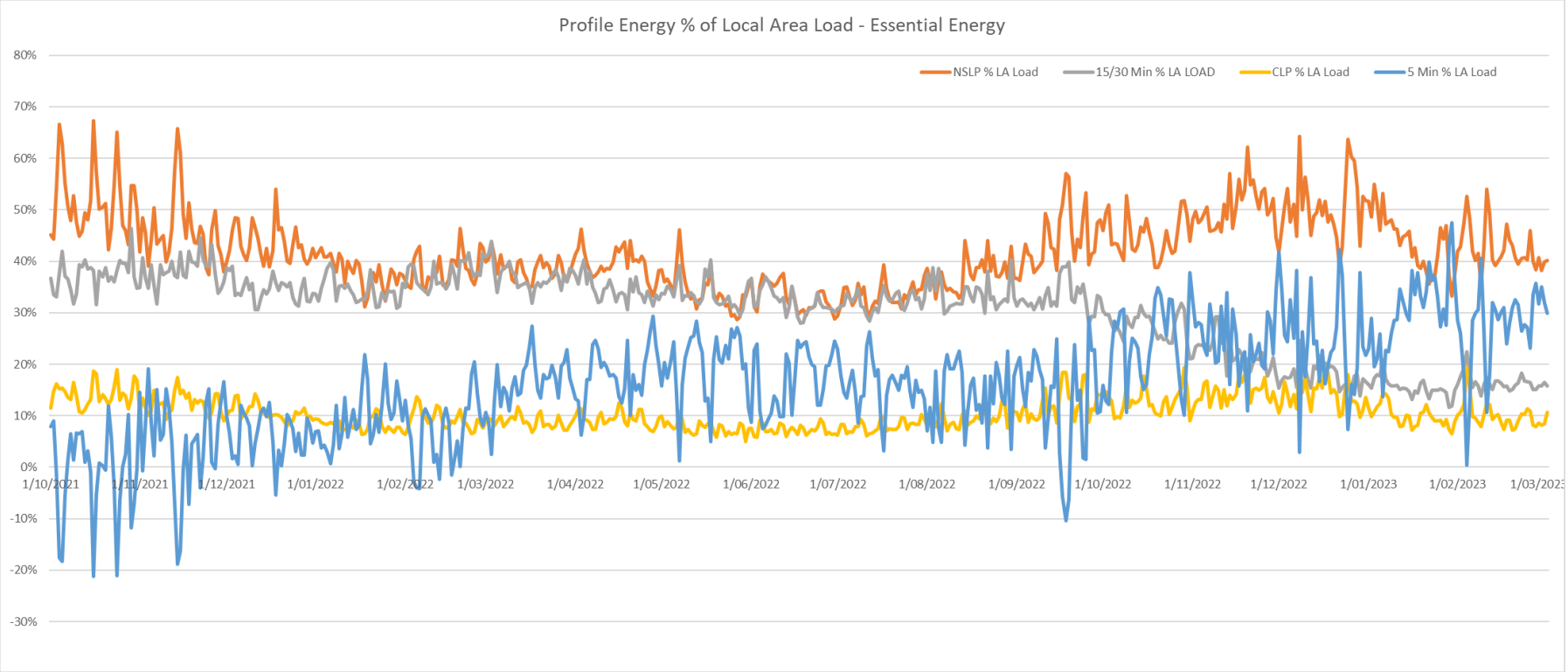
A1.3.7 Ergon


Sum of intervalValue
Profiles - Ergon
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
-5,000,000
1/10/2021
9/10/2021
17/10/2021
25/10/2021
2/11/2021
10/11/2021
18/11/2021
26/11/2021
4/12/2021
12/12/2021
20/12/2021
28/12/2021
5/01/2022
13/01/2022
21/01/2022
29/01/2022
6/02/2022
14/02/2022
22/02/2022
2/03/2022
10/03/2022
18/03/2022
26/03/2022
3/04/2022
11/04/2022
19/04/2022
27/04/2022
5/05/2022
13/05/2022
21/05/2022
29/05/2022
6/06/2022
14/06/2022
22/06/2022
30/06/2022
8/07/2022
16/07/2022
24/07/2022
1/08/2022
9/08/2022
17/08/2022
25/08/2022
2/09/2022
10/09/2022
18/09/2022
26/09/2022
4/10/2022
12/10/2022
20/10/2022
28/10/2022
5/11/2022
13/11/2022
21/11/2022
29/11/2022
7/12/2022
15/12/2022
23/12/2022
31/12/2022
8/01/2023
16/01/2023
24/01/2023
1/02/2023
9/02/2023
17/02/2023
25/02/2023
5/03/2023
13/03/2023
intervalDate
settlementType
profileArea
curve
FINAL - ERGON1 - TradingIntervalCurve
FINAL - ERGON1 - NonTradingIntervalCurve
FINAL - ERGON1 - NSLPCurve
FINAL - ERGON1 - UFE
FINAL - ERGON1 - LocalAreaCurve

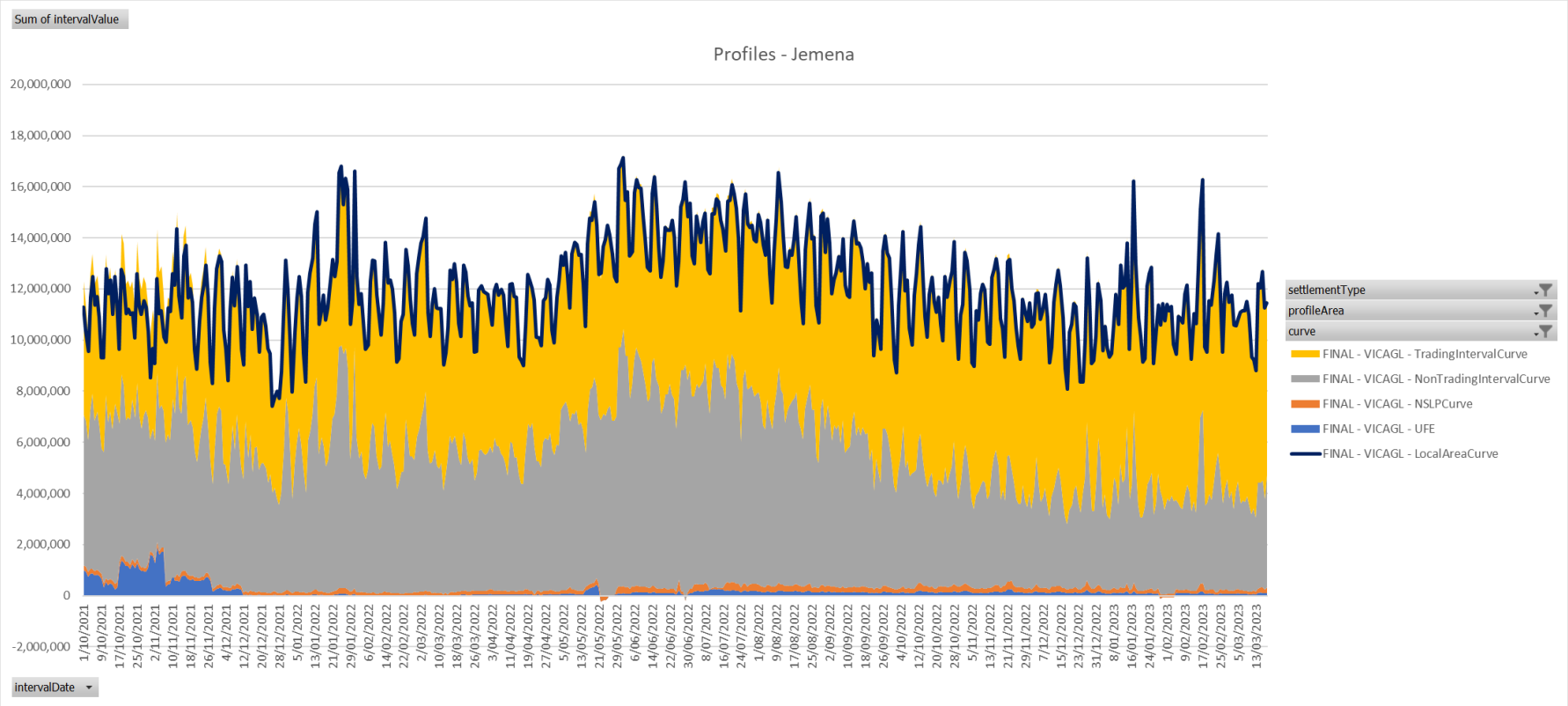

Profile Energy % of Local Area Load - Ergon
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
70%
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

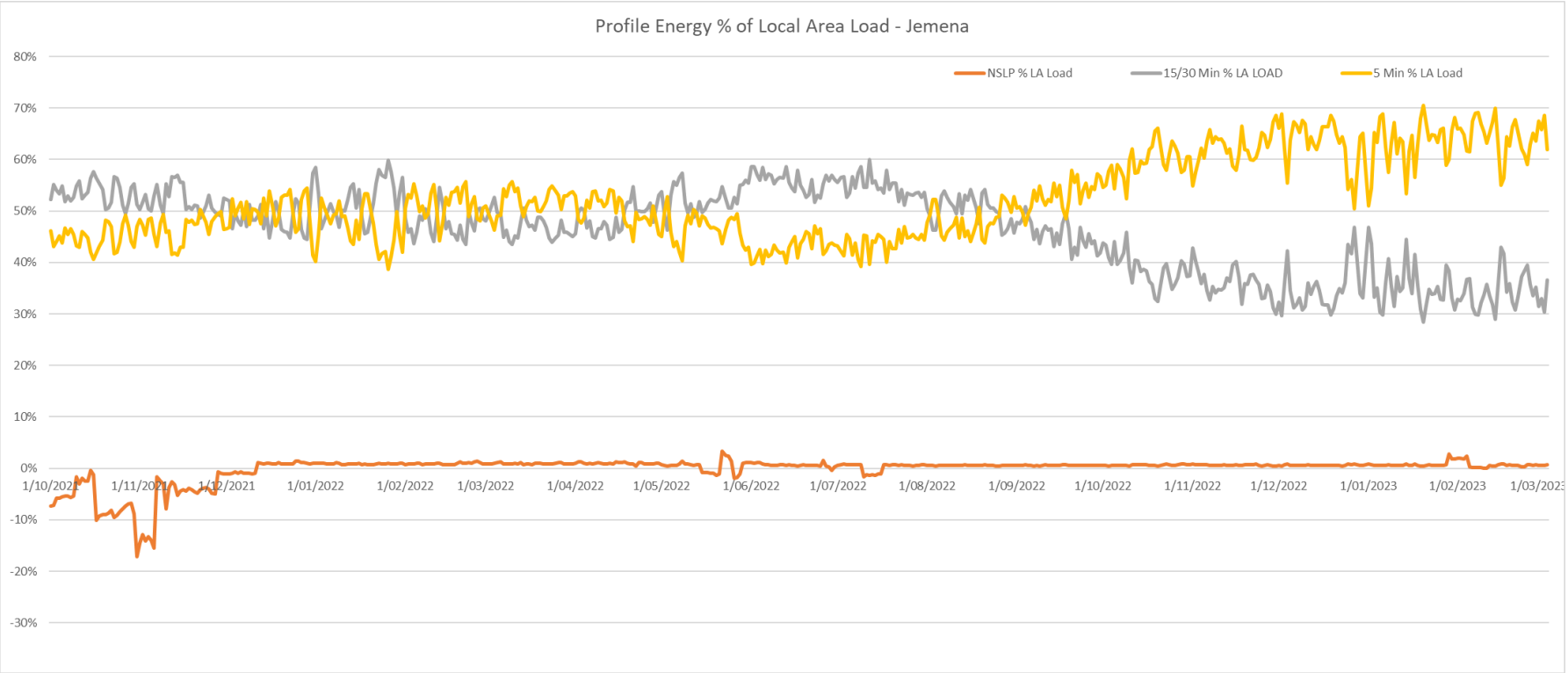
A1.3.8 Essential Energy



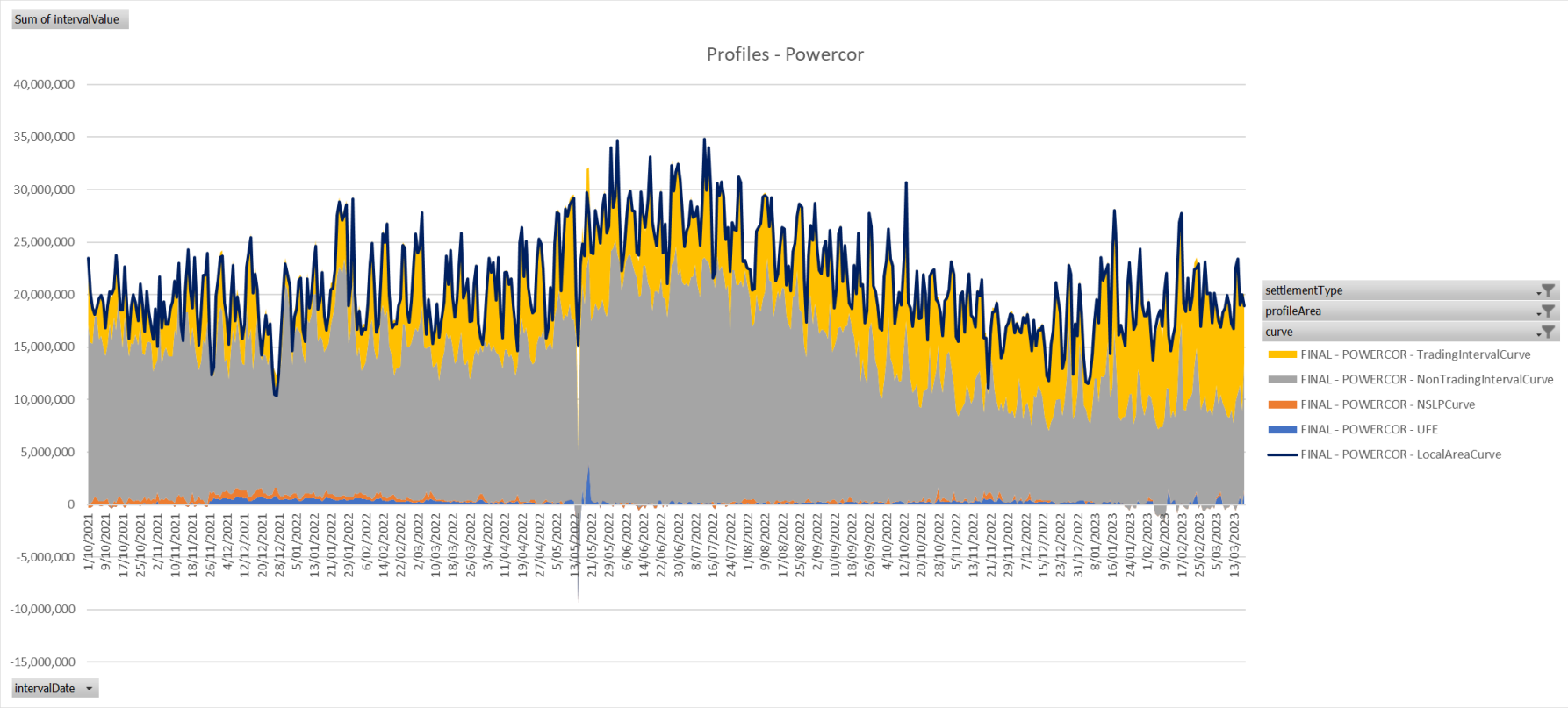

Profile Energy % of Local Area Load - Essential Energy
NSLP % LA Load
15/30 Min % LA LOAD
CLP % LA Load
5 Min % LA Load
80%
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

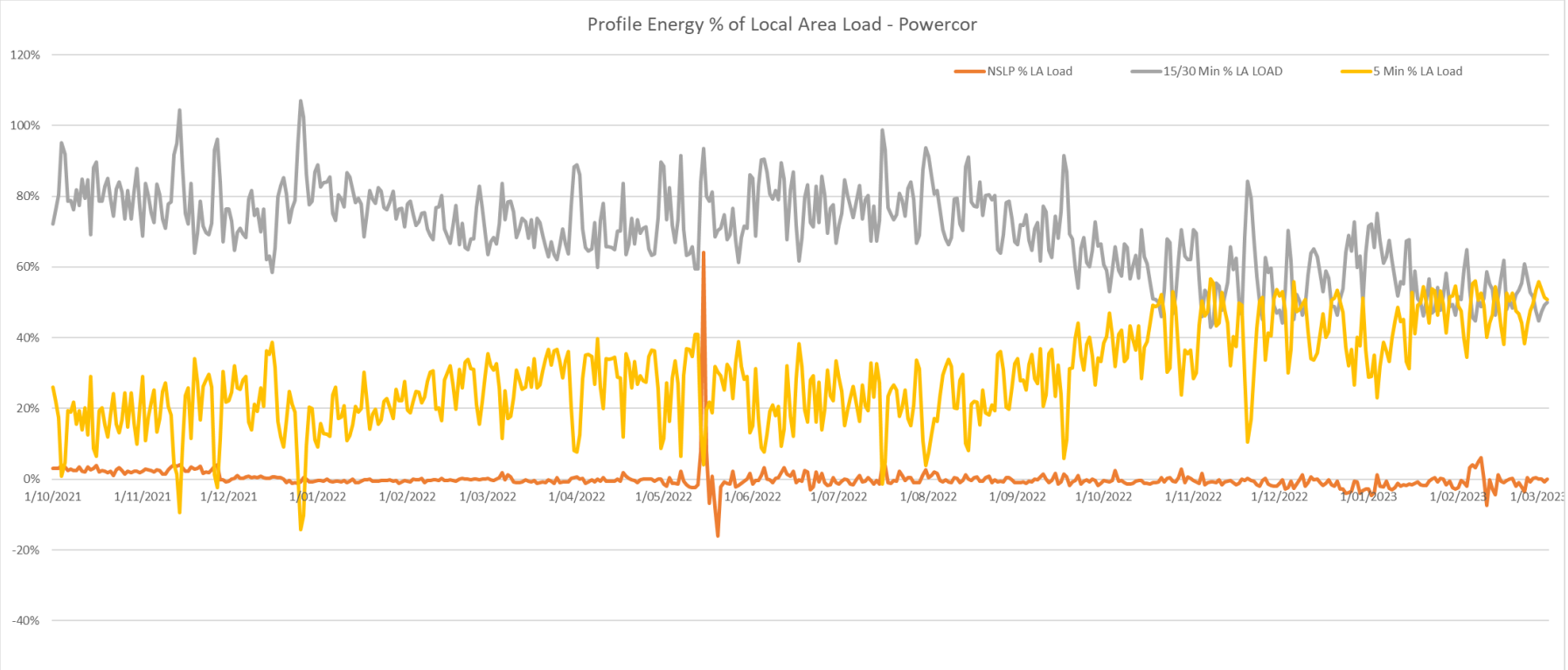
A1.3.9 Jemena


Sum of intervalValue
Profiles - Jemena
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
-2,000,000
1/10/2021
9/10/2021
17/10/2021
25/10/2021
2/11/2021
10/11/2021
18/11/2021
26/11/2021
4/12/2021
12/12/2021
20/12/2021
28/12/2021
5/01/2022
13/01/2022
21/01/2022
29/01/2022
6/02/2022
14/02/2022
22/02/2022
2/03/2022
10/03/2022
18/03/2022
26/03/2022
3/04/2022
11/04/2022
19/04/2022
27/04/2022
5/05/2022
13/05/2022
21/05/2022
29/05/2022
6/06/2022
14/06/2022
22/06/2022
30/06/2022
8/07/2022
16/07/2022
24/07/2022
1/08/2022
9/08/2022
17/08/2022
25/08/2022
2/09/2022
10/09/2022
18/09/2022
26/09/2022
4/10/2022
12/10/2022
20/10/2022
28/10/2022
5/11/2022
13/11/2022
21/11/2022
29/11/2022
7/12/2022
15/12/2022
23/12/2022
31/12/2022
8/01/2023
16/01/2023
24/01/2023
1/02/2023
9/02/2023
17/02/2023
25/02/2023
5/03/2023
13/03/2023
intervalDate
settlementType
profileArea
curve
FINAL - VICAGL - TradingIntervalCurve
FINAL - VICAGL - NonTradingIntervalCurve
FINAL - VICAGL - NSLPCurve
FINAL - VICAGL - UFE
FINAL - VICAGL - LocalAreaCurve

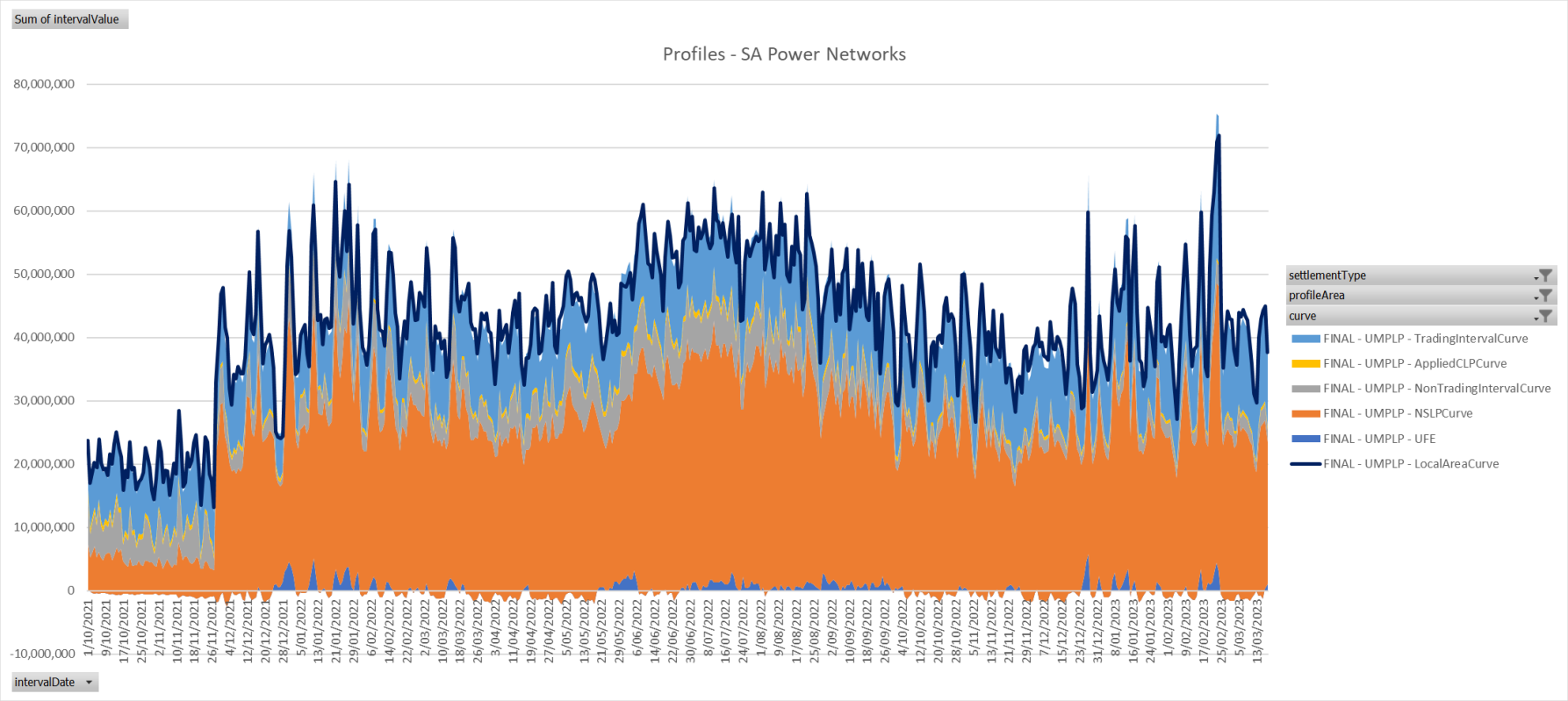

Profile Energy % of Local Area Load - Jemena
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
80%
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

A1.3.10 Powercor

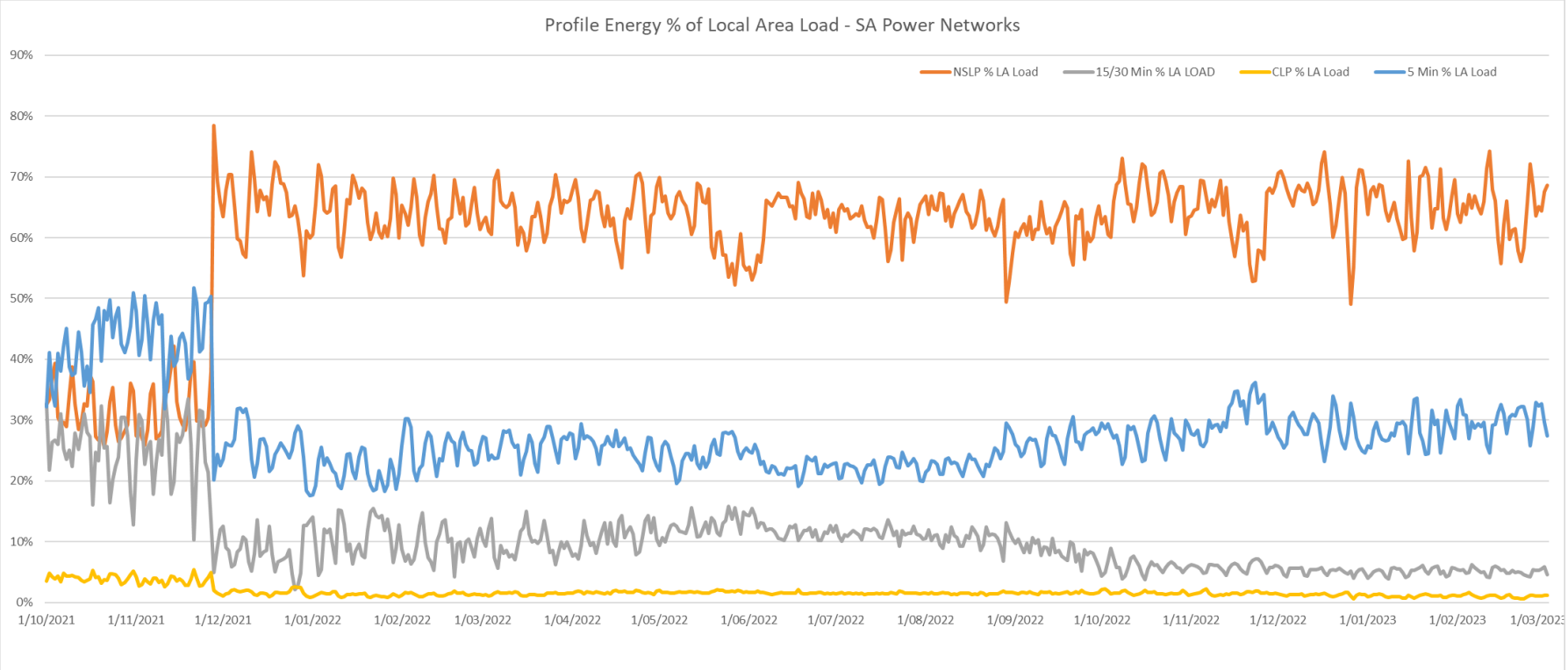



Profile Energy % of Local Area Load - Powercor
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
120%
100%
80%
60%
40%
20%
0%
-20%
-40%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

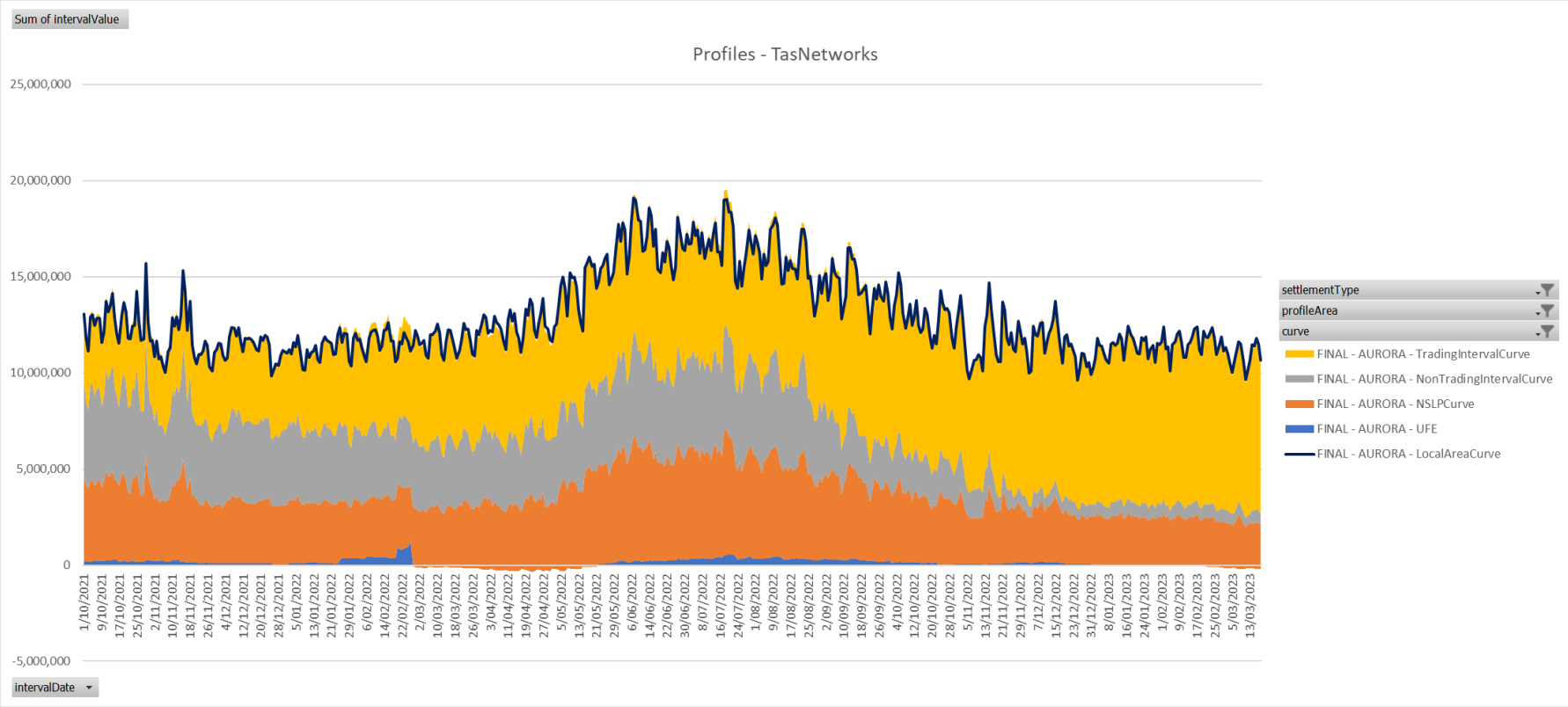
A1.3.11 SA Power Networks

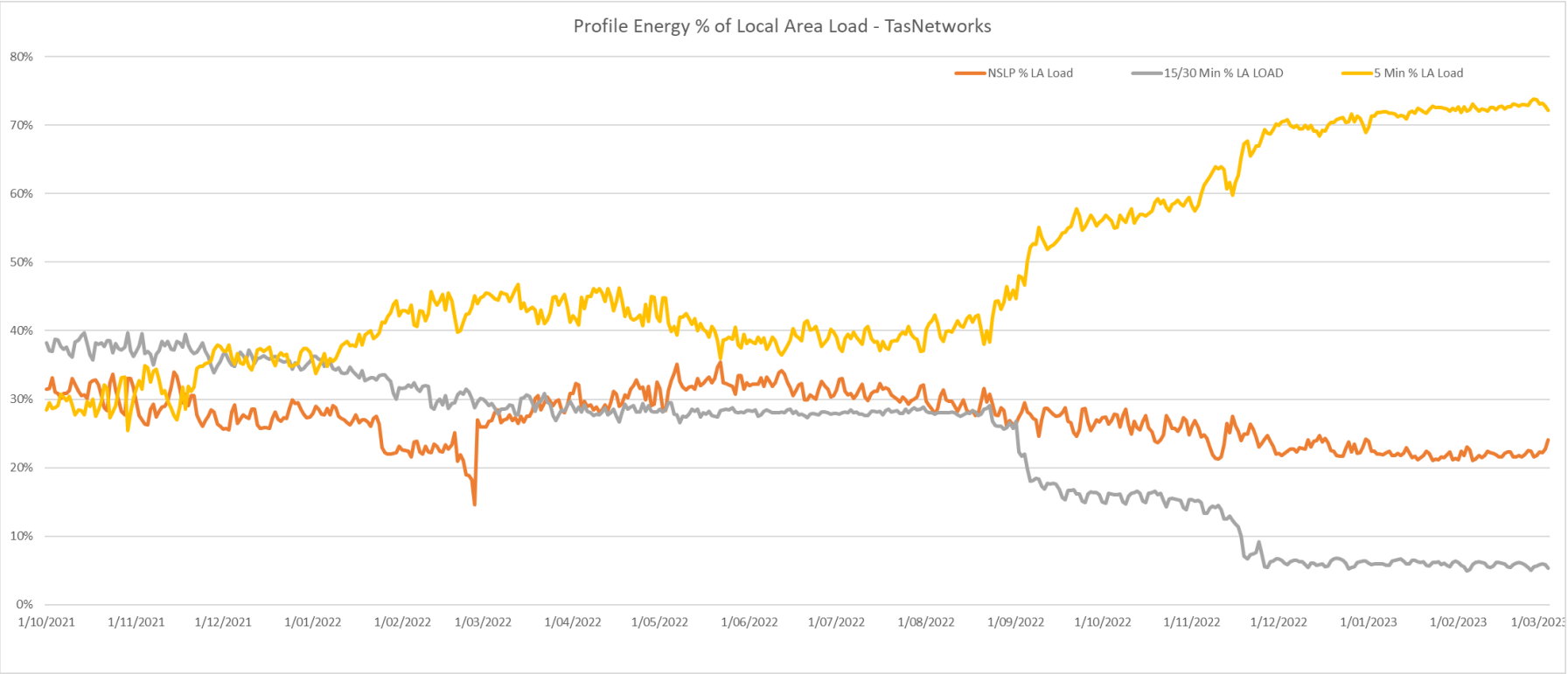


Weights have been applied to Final version settlement data from December 2021.

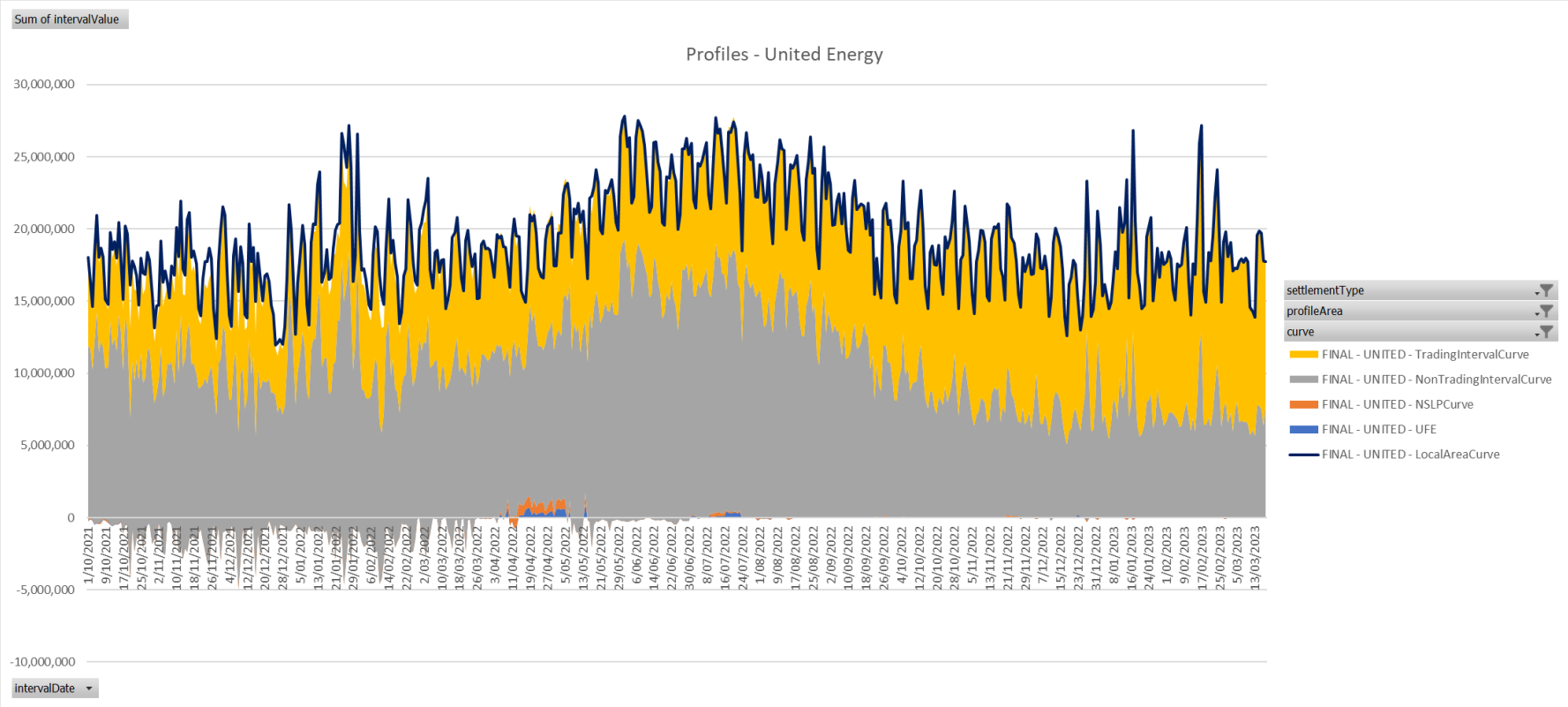

Profile Energy % of Local Area Load - SA Power Networks
NSLP % LA Load
15/30 Min % LA LOAD
CLP % LA Load
5 Min % LA Load
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

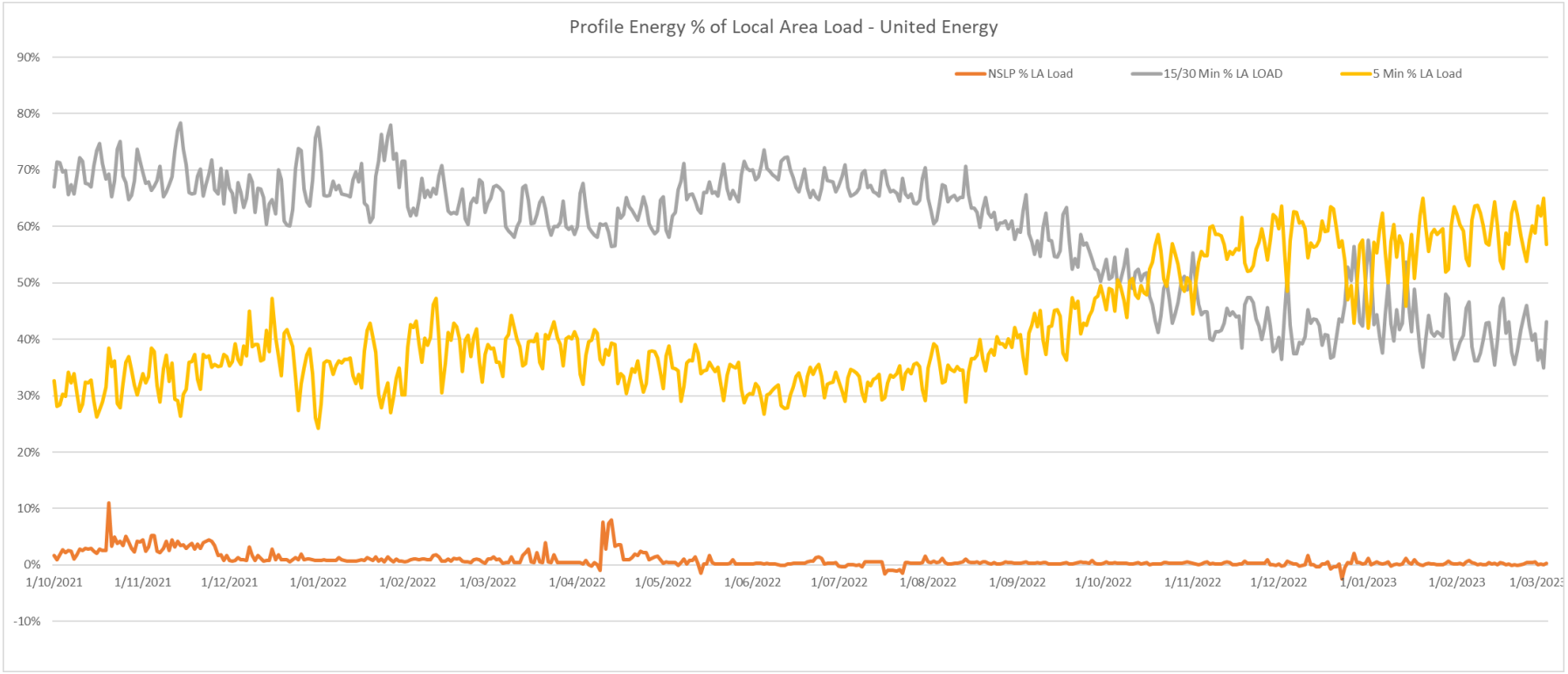
A1.3.12 TasNetworks




Profile Energy % of Local Area Load - TasNetworks
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
80%
70%
60%
50%
40%
30%
20%
10%
0%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
1/08/2022
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023

A1.3.13 United Energy




Profile Energy % of Local Area Load - United Energy
NSLP % LA Load
15/30 Min % LA LOAD
5 Min % LA Load
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
-10%
1/10/2021
1/11/2021
1/12/2021
1/01/2022
1/02/2022
1/03/2022
1/04/2022
1/05/2022
1/06/2022
1/07/2022
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1/12/2022
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1/02/2023
1/03/2023