

UFE Focus Group Meeting #4

25 February 2022



Welcome & Housekeeping

- Welcome
- Housekeeping
 - These meetings will be recorded for minute-taking purposes
 - Please keep yourself on mute when you are not speaking
 - Feel free to use the chat or come off mute should you have any questions or comments
 - Questions which cannot be answered on the day will be captured and answered asap
 - We will endeavour to circulate 'Notes' within a week of the focus groups
 - Actions will be captured, shared and completed as required
 - Any questions, concerns or suggested agenda items can be sent to GSMSDR@aemo.com.au

Agenda

NO	AGENDA ITEM	RESPONSIBLE
1	Welcome	Greg Minney
2	Short-term Priorities <ul style="list-style-type: none">Participant lead data population activities	Paul Lyttle
3	Discussion Topics: <ul style="list-style-type: none">Overview of UFE by Local areaOff market settlements in GS environment	Paul Lyttle Greg Minney
4	Market Trial Approach and industry go-live considerations	Greg Minney
5	Next Steps and General Business	Greg Minney

Attendee	Organisation	Attendee	Organisation	Attendee	Organisation	Attendee	Organisation
Paul Lyttle	AEMO	Jakapi Arigo	CleanCo QLD	Mark Reid	Red Energy		
Sarah Pearson	AEMO	Megan Ide	Electranet	Christophe Bechia	Red Energy		
Greg Minney	AEMO	Justin Wearne	Energetiq	Robert Larkin	SA Water		
Darren Gatty	AEMO	Zahara Magriplis	Energex	George Raybould	SA Water		
May Cotoner	AEMO	Justin Chin	EnergyAustralia	Angela Sheehy	Stanwell		
David Ripper	AEMO	Ingrid Farah	Ergon	Anatoliy Tsymay	Stanwell		
Kate Goatley	ActewAGL	Melissa Ferris	Essential Energy	Sudeshna Nanda	Stanwell		
Mark Riley	AGL	Lauren Macey	Essential Energy	Sara Yakimoff	Stanwell		
Lori Scarano	AGL	Jeff Roberts	Evoenergy	Justin King	Stanwell		
Maree Madden	AGL	Carla Adolfo	Intellihub	Sue Richardson	Tally Group		
Zulfi Syed	Alinta Energy	Andrew Mair	Next Business Energy	Deepak Sood	Tango Energy		
Ravi Govindu	Alinta Energy	Amanda Pollard	Origin	Adrian Honey	TasNetworks		
Sumitha Thilak	Alinta Energy	Justin Thoo	Origin	Chenna Krishna	Utility Software Services		
Robert Lo Giudice	Alinta Energy	Fergus Stuart	Origin	Prameesha Weerasinghe	ZEN Energy		
Craig Steele	Aurora Energy	Greg McLeod	Origin	Heath Winning	ZEN Energy		
Alexander Riseley	Aurora Energy	Matthew Lee	Origin				
Wayne Turner	Ausgrid	Kevin Fitzgibbon	Origin				
Justin Betlehem	Ausnet Services	Inger Wills	Powercor				
Hieu Ngo	BlueNRG	Karel Mallinson	Powerlink				
Sarah Lawley	BlueNRG	Dan Hillier	Powershop				
Sujatha Vutukoor	Brave Energy	Arunesh Choubey	Red Energy				
Tash Hiko	CleanCo QLD	Nick Gustafsson	Red Energy				

Short-term Priorities

Paul Lyttle, Greg Minney & Darren Gatty

Participant Lead Data Population

- Participant population activities to allow for reflective calculation of UFE
 - All active tier 1 Basic NMIs to deliver metering data to AEMO
 - Quantity of outstanding meters for each Profile Area
 - Creation , Activation and data delivery for non contestable unmetered loads
 - Quantity of active NMIs for each Profile Area
 - Implementation of cross boundary meters to reflect distribution area to distribution area flows
 - Number of Cross Boundary NMIs with Standing Data registered in MSATS
 - Comments identifies the Number of Greenfield sites within registered totals.

Participant lead population activities

Current Status

Profile Area	Tier 1 Basic Meter with No Active Datastreams	NCONUML NMIs (Completed)	Cross Boundary Supplies	Commentary
ACTEWAGL	90	32	0	
AURORA	4	1965	0	
CITIPOWER	6	5622	10	Includes 10 Greenfield
COUNTRYENERGY	0	6305	4	
ENERGEX	0	32883	4	
ENERGYAUST	0	200	9	
ERGON1	0	9848	2	
INTEGRAL	0	7605	12	Includes 3 Greenfield
POWERCOR	29	9141	7	Includes 3 Greenfield
TXU	2	6059	7	Includes 3 Greenfield
UMPLP	4	9471	2	
UNITED	0	8840	19	Includes 18 Greenfield
VICAGL	30	3866	5	Includes 2 Greenfield

Participant Lead Data Population Summary

- Tier 1 Basic metering data:
 - Majority of remaining meters are within 3 Profile areas (149): Total outstanding 165.
 - 6 Profile Area have NO outstanding meters.
- Non contestable unmetered load activity completed with metering data delivered
 - Some rationalization has taken place with 3017 NCONUML made extinct
- Cross Boundary meters
 - Total of 81 cross boundary NMIs have been registered in MSATS
 - Within the total of Cross Boundary NMIs 39 have a status of Greenfield

Meeting notes

- AGL queried if there was a timeline on the completion of outstanding Tier 1 meters and cross boundary supplies. AEMO confirmed that previous advice from those participants with outstanding meters was for completion end of February, although updates are still in progress
- **Action 4.2.1:** AEMO will confirm with relevant participants the timeline for completion of outstanding meters and bring an update back to industry in the next UFE Focus Group.

UFE loads by Profile Area

Paul Lyttle

UFE volumes and percentage of Profile Area energy

- The following slides take a look at the UFE for each Profile area
 - **The details within the graphs are extracted from values available in the RM46 reports**
 - Observations may use other data that are not displayed within the graphs
 - Graphs are using FINAL Settlement runs report data.
- Graphs for each Profile area consists of:
 - The total of UFE for each Settlement Day
 - The UFE percentage of the total Profile Area energy (ADME)
- Graphs displays
 - The UFE graphs are displayed in KWHs
 - Data is received from the MDM system, therefore:
 - Load is displayed as Positive
 - Generation is displayed as Negative
 - This display will be opposite to the UFEA applies to the Settlements

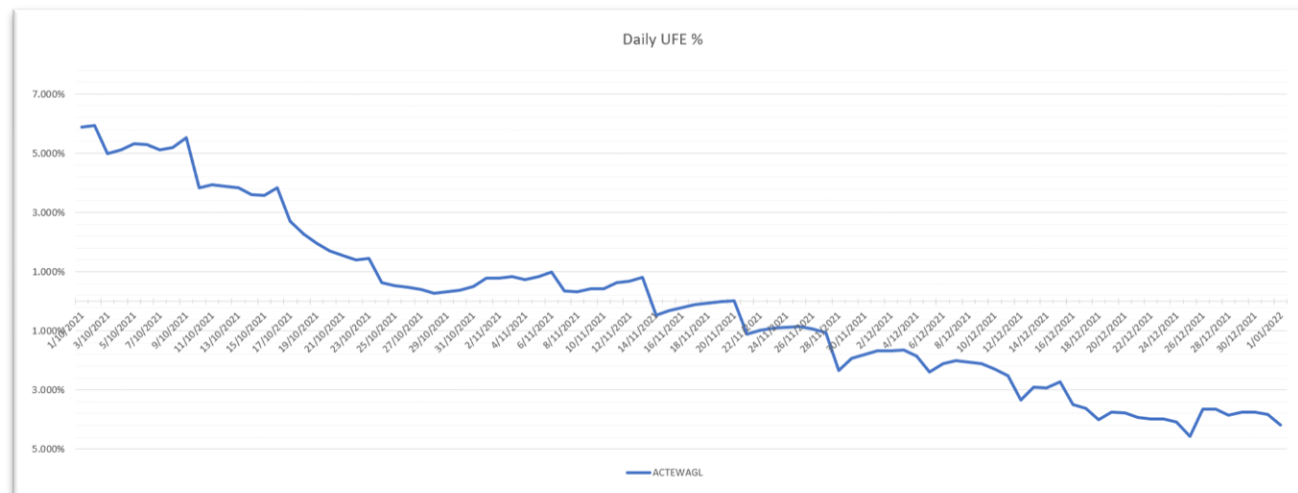
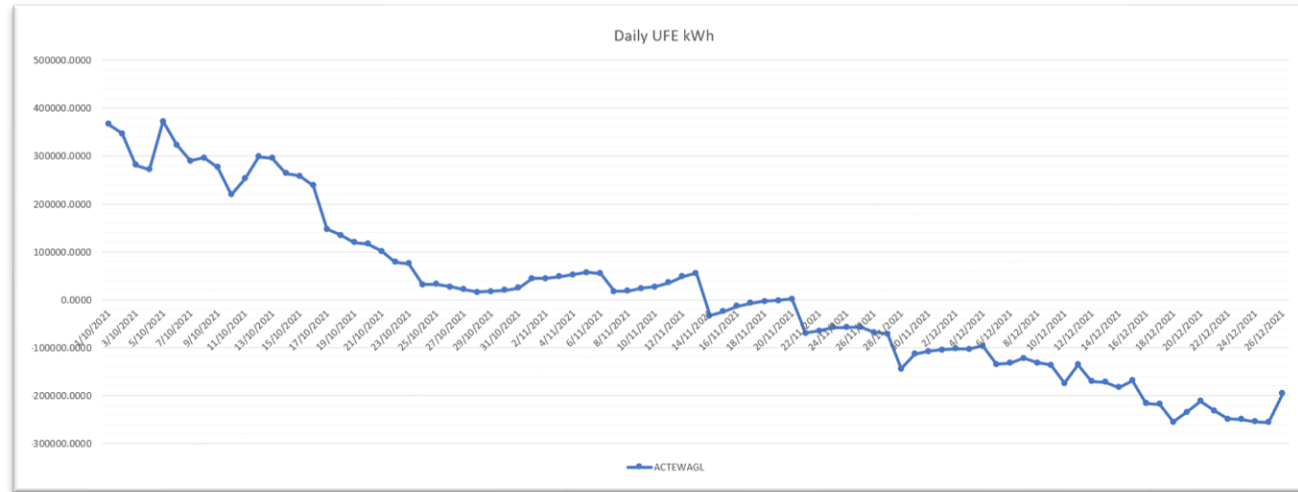
UFE Calculations

- $UFE = TME - DDME - ADME$
- $UFEA = UFE \times (DME/ADMELA)$
- $UFEF = UFE/ADMELA$
- **UFE** is total unaccounted for energy for a Local Area
- **TME** is total energy inflows into a Local Area (TNSP to DNSP connection points and cross boundary inflows for receiving DNSP)
- **DDME** is cross boundary energy outflows from supplying DNSP
- **ADME** is the aggregate of energy flows for each connection point in a Local Area
- **UFEA** is the allocation of Local Area unaccounted for energy for a Market Participant
- **DME** is the load component (ME- x DLF) at a connection point in the Local Area
- **ADMELA** is the aggregation of all DME amounts in a Local Area

ACTEWAGL Profile Area

Profile Area Observations

- Daily UFE Values
 - ADME increased over reporting period compared to TME
- %UFE of Total Load
 - UFE started at approx 6%
 - Dropped to -5% end 2021



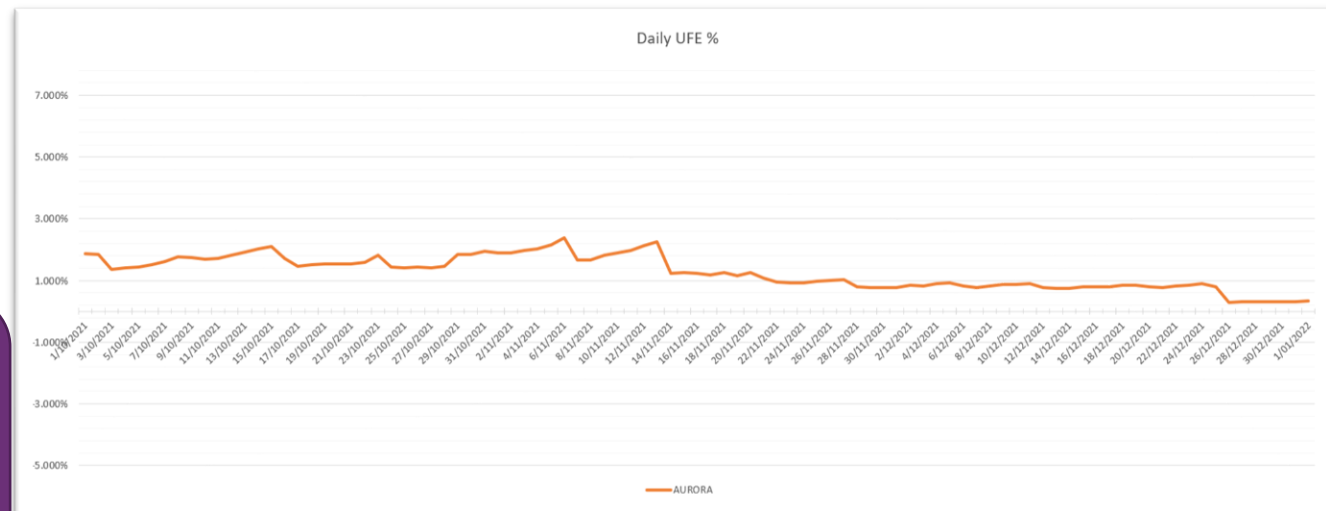
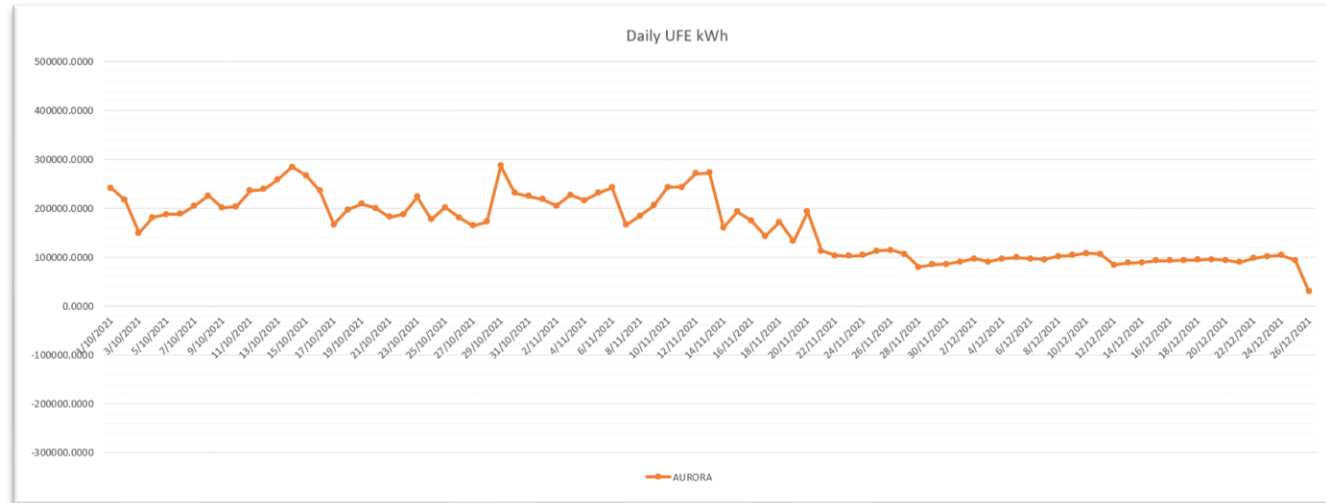
Increase in ADME for the ACTEWAGL Area may be related to the registering of Basic meter Datastreams and the receiving of Meter Reads

Note:

- '+' UFE is an increase in the customers purchase
- '-' UFE will be a decrease in customer purchase

AURORA Profile Area

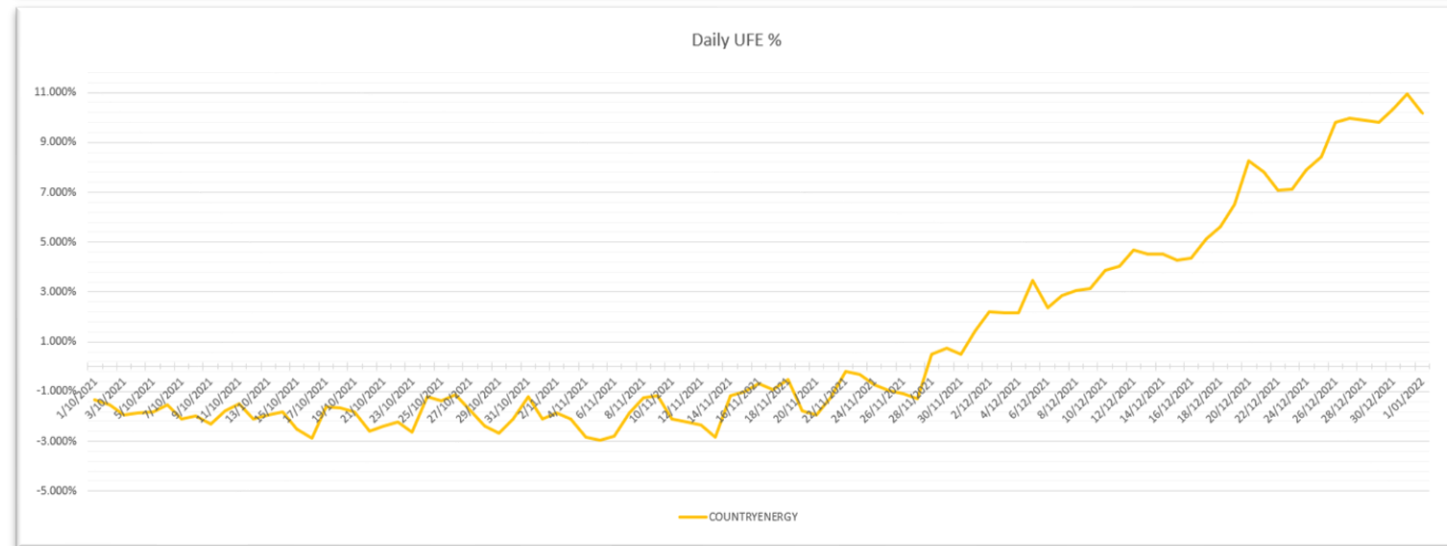
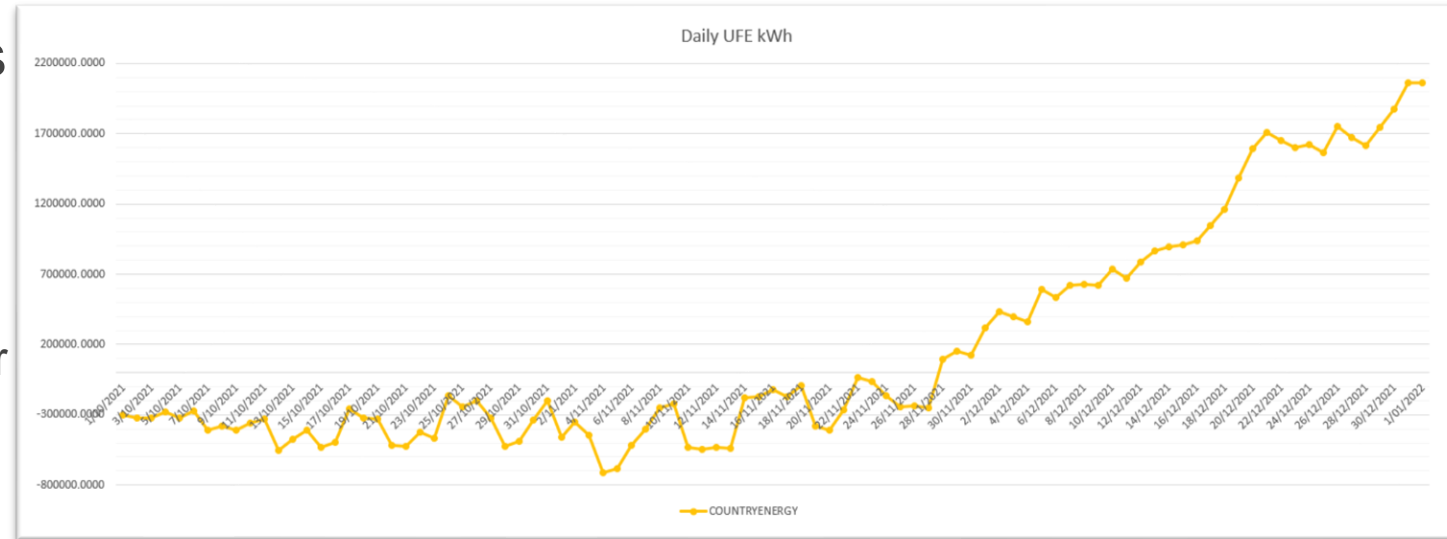
- Profile Area Observations
- Daily UFE Values
 - TME and ADME remain relative over reporting period
 - Increase of ADMELA relative to ADME from end November
- %UFE of Total Load
 - UFE % has remained within +3%



Increase in ADMELA relative to ADME means there is a larger quantity of load compared to the net gen and load for the same period. Could be caused by decrease in embedded generation or increase in customer load.

COUNTRYENERGY Profile Area

- Profile Area Observations
- Daily UFE Values
 - Increased cross boundary import from end November
- %UFE of Total Load
 - ADME / ADMELA load remains constant
 - TME also increased from end December

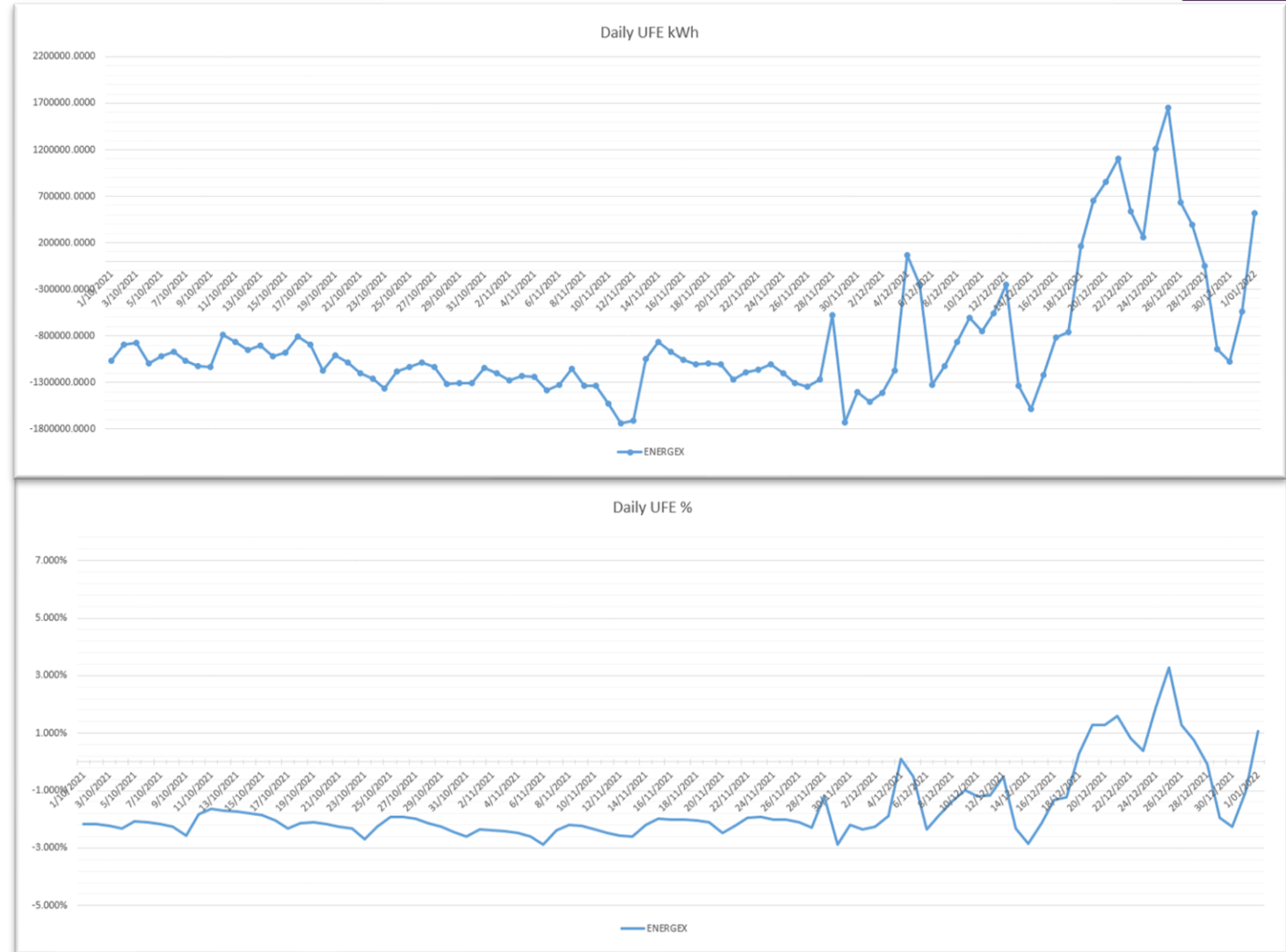


An increase Cross Boundary Import and Increase of TME at the end of December for the COUNTRYENERGY area compared to ADME has increased the amount of UFE.

ENERGEX Profile Area

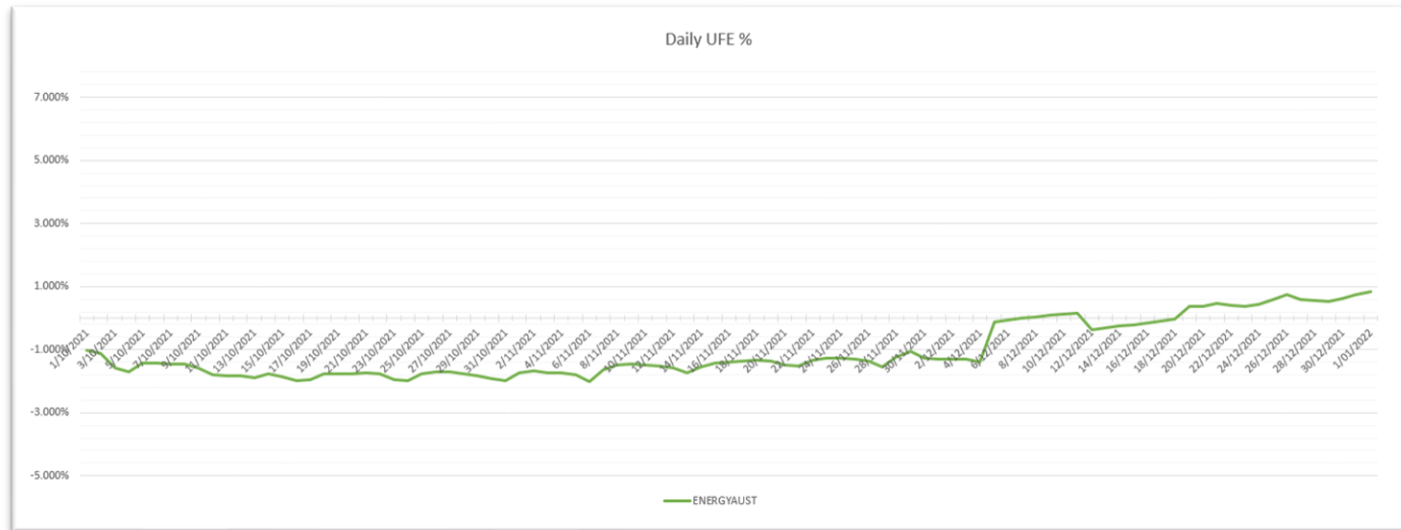
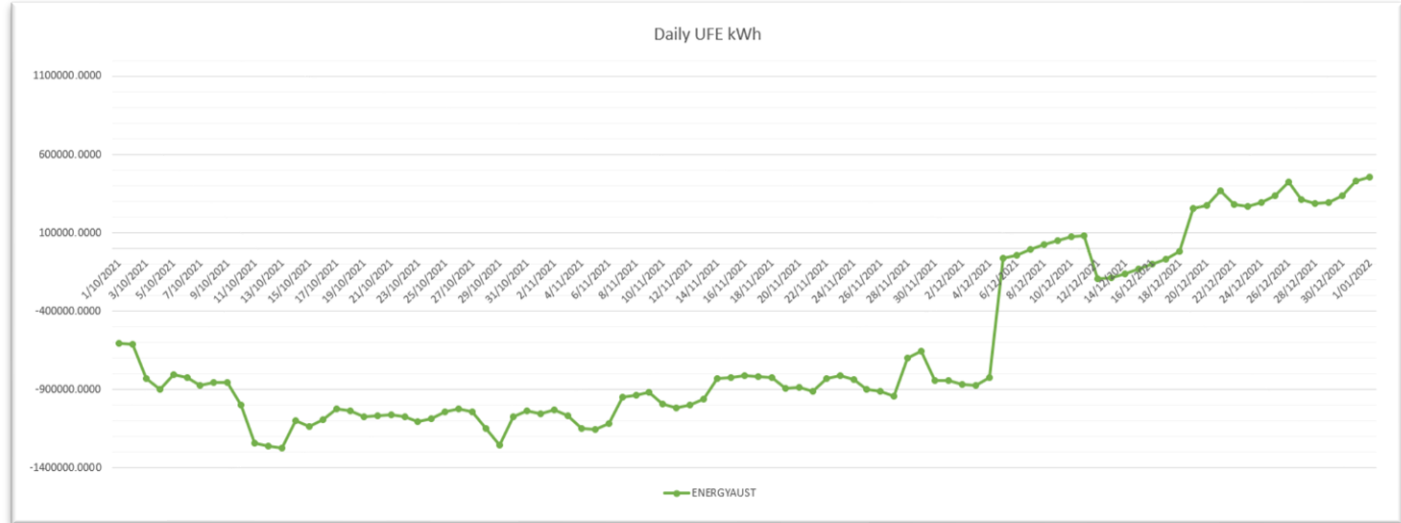
- Profile Area Observations
- Daily UFE Values
 - TME increased over ADME at end December
- %UFE of Total Load
 - ADME / ADMELA load remains constant

The increase of TME for the ENERGEX area compared to ADME increased the amount of UFE.



ENGYAUST Profile Area

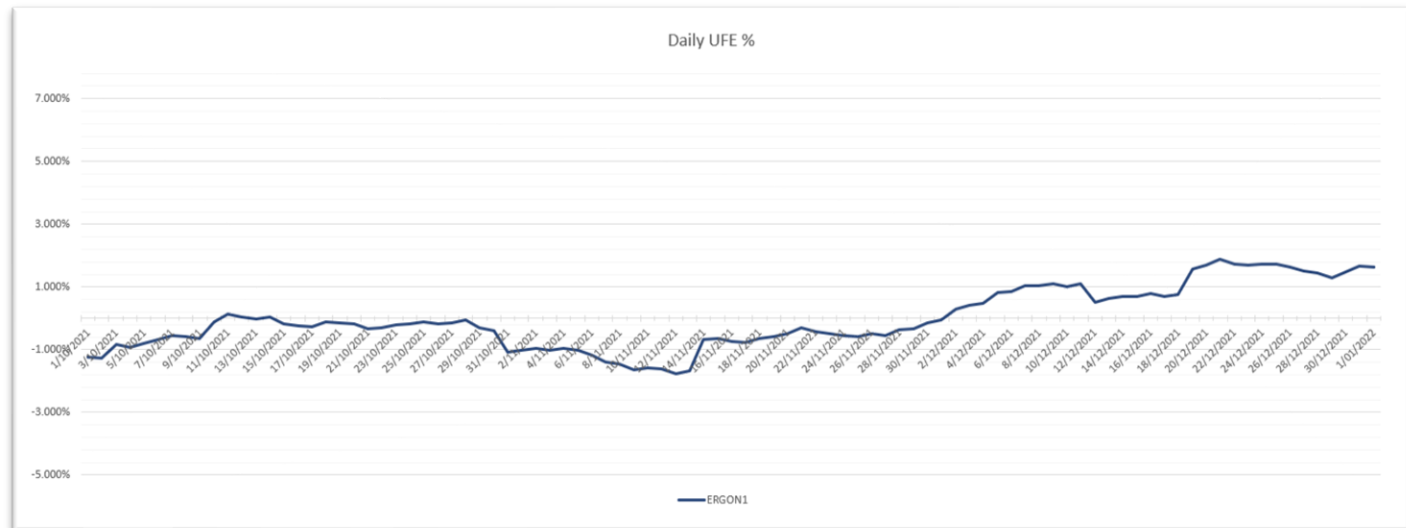
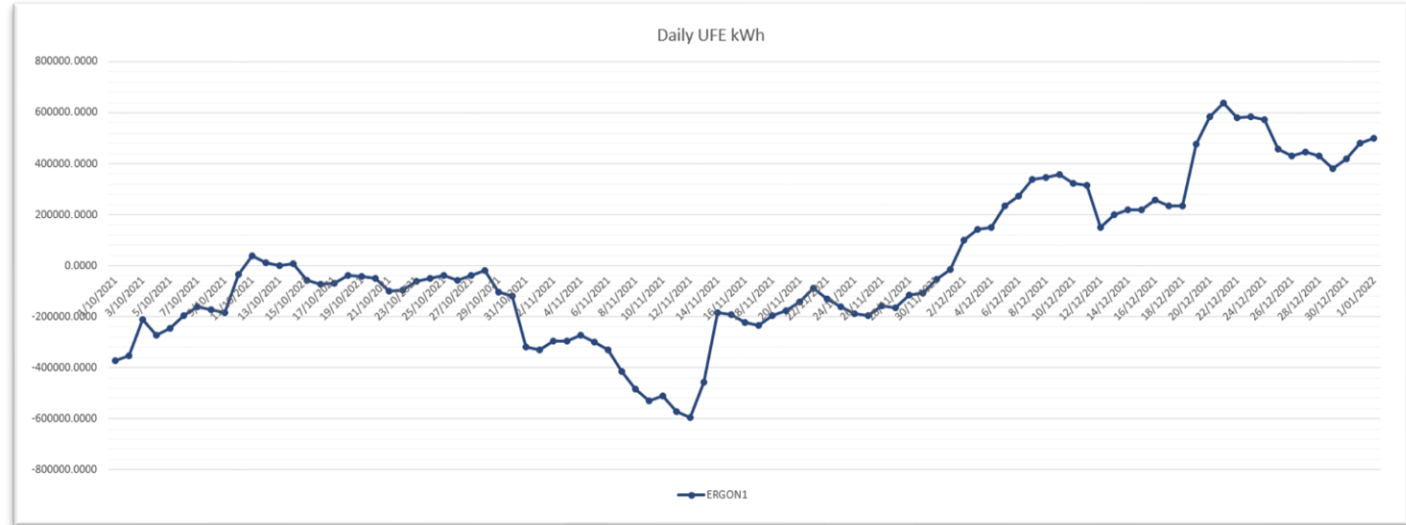
- Profile Area Observations
- Daily UFE Values
 - TME increases compared to ADME at end December
- %UFE of Total Load
 - Greater fluctuation in import of DDME from mid-December



The increase of TME for the ENGYAUST area compared to ADME increased the amount of UFE. Increase in Cross Boundary import will also increase the UFE.

ERGON1 Profile Area

- Profile Area Observations
- Daily UFE Values
 - TME increased compared to ADME from early December
 - Spike in DDME during 20-24 December
- %UFE of Total Load
 - ADME and ADMELA appear relative

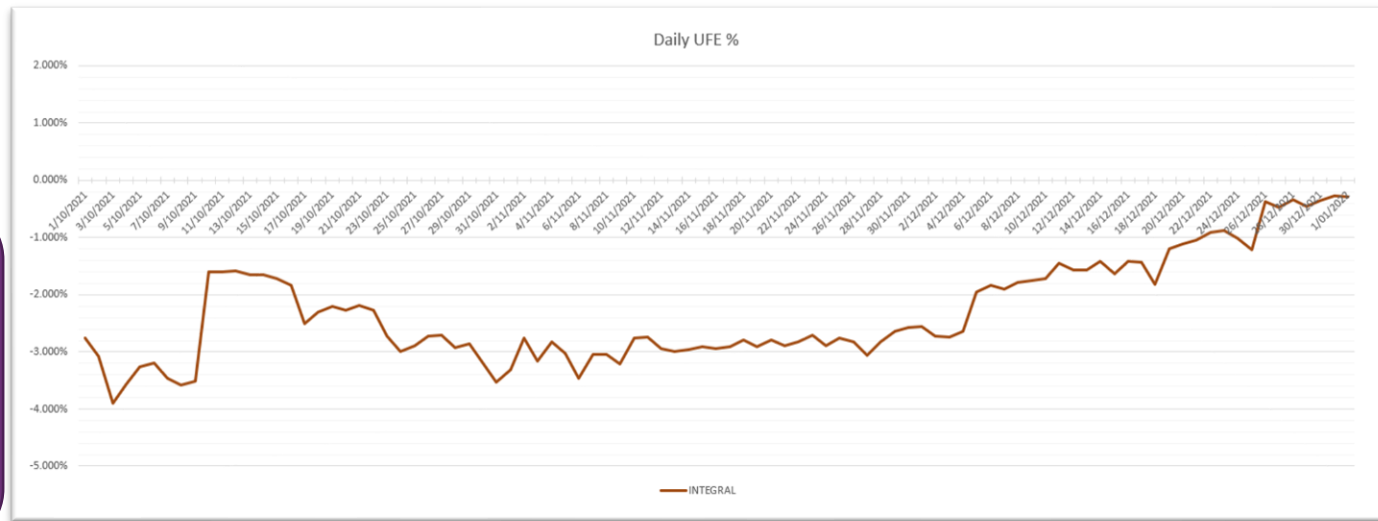
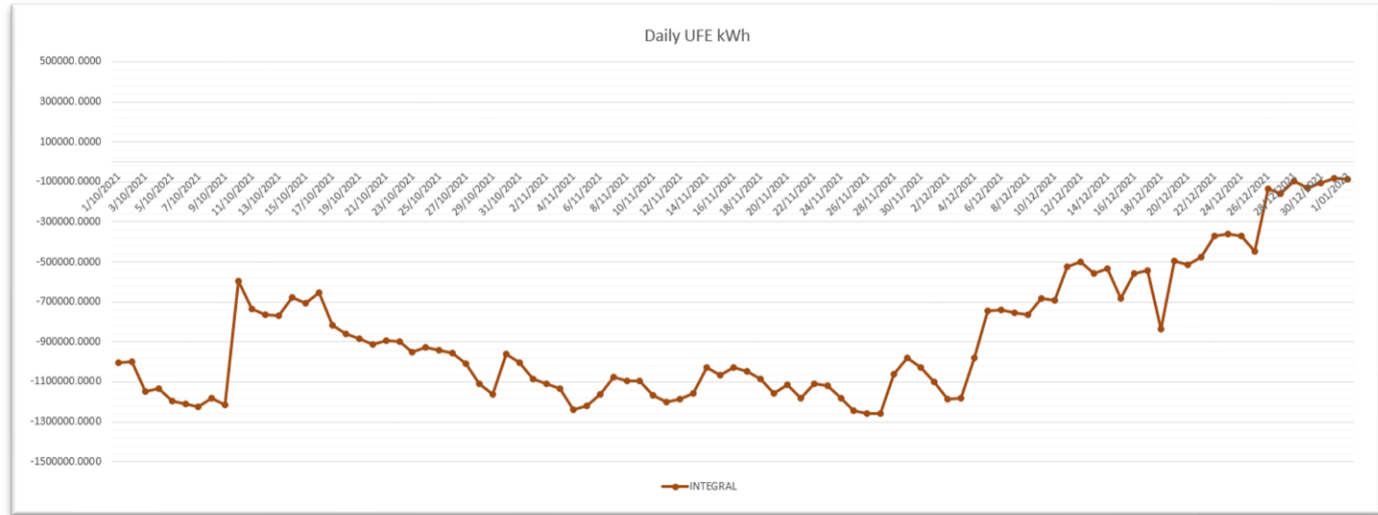


The increase of TME for the ERGON area compared to ADME increased the amount of UFE. Cross Boundary import will also increase the UFE.

INTEGRAL Profile Area

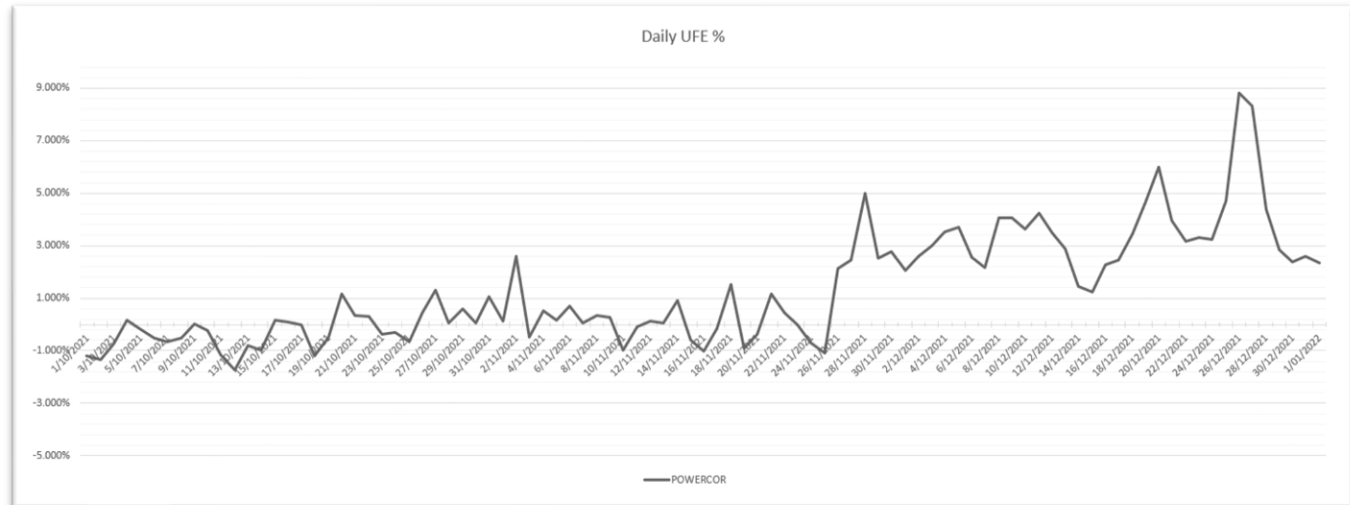
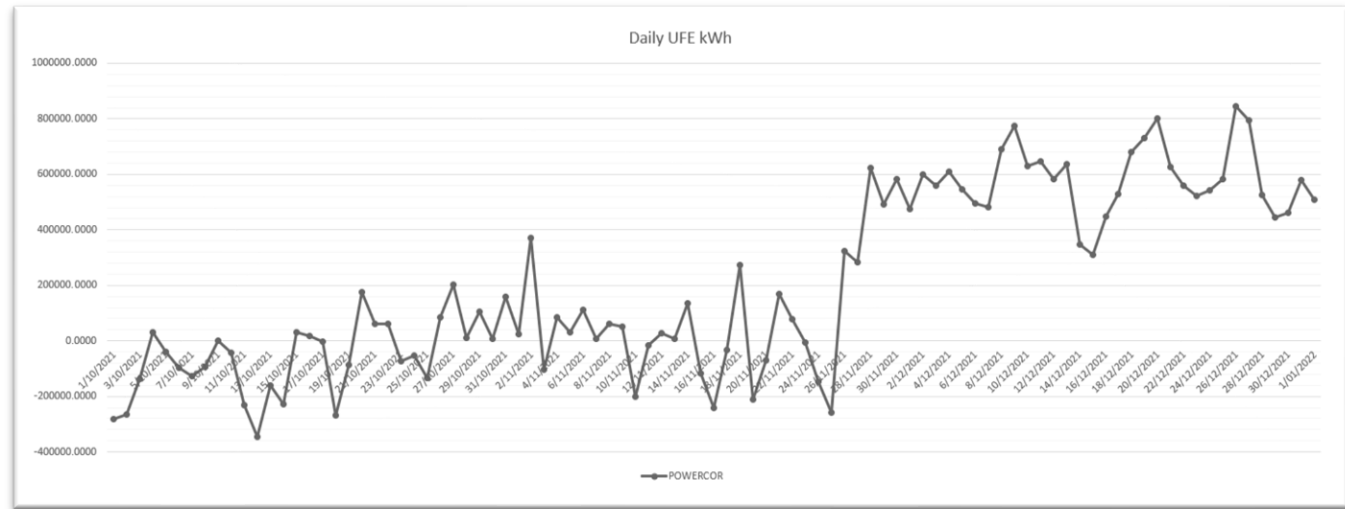
- Profile Area Observations
- Daily UFE Values
 - ADMELA increases compared to ADME from and December
 - Slight increase in cross boundary export from end December
- %UFE of Total Load

Increase in ADMELA relative to ADME means there is a larger quantity of load compared to the net gen and load for the same period. Could be cause by changed to embedded generation or customer usage. Cross Boundary export will also reduce UFE.



POWERCOR Profile Area

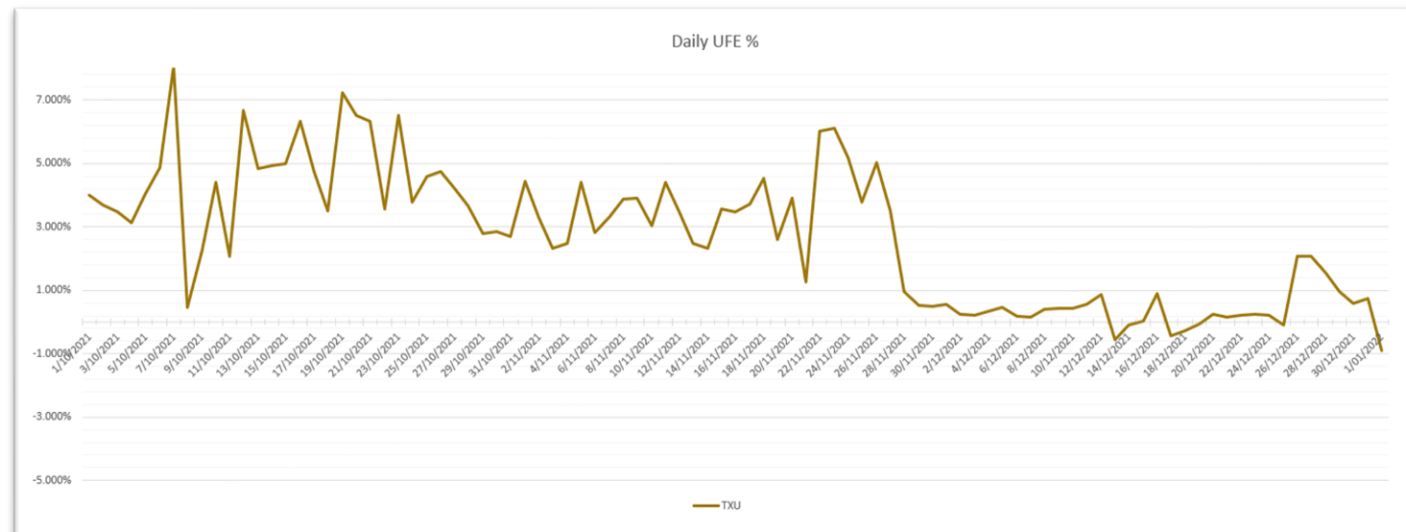
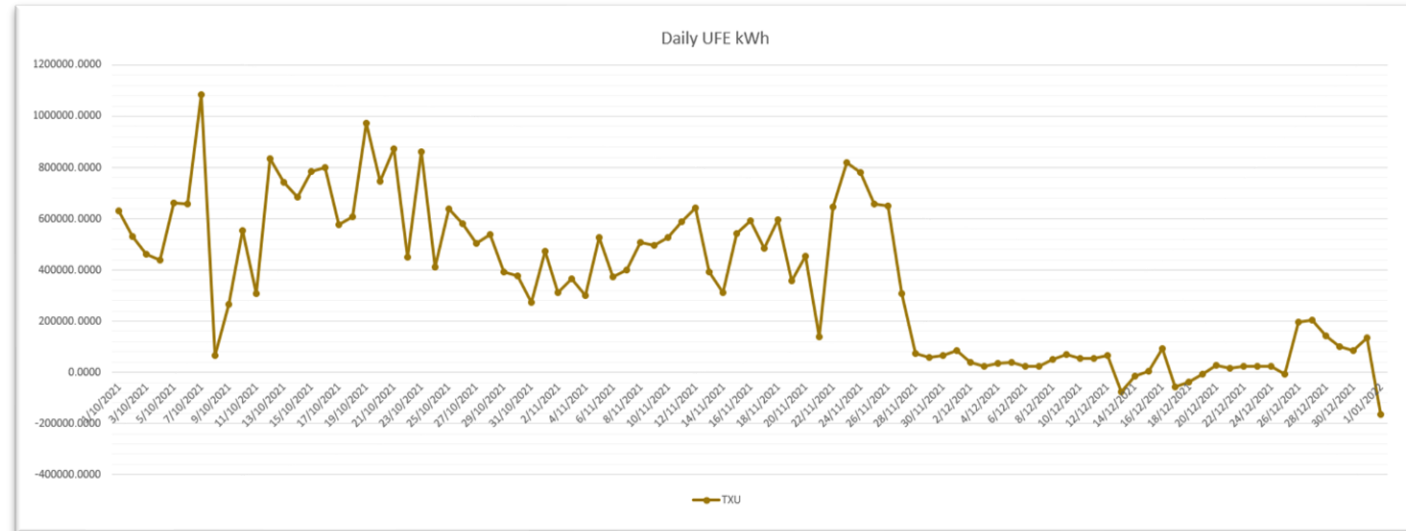
- Profile Area Observations
- Daily UFE Values
 - Registration of 2 cross boundary connections at end of November creating a drop in DDME export
 - TME, ADME and ADMELA appear to remain relative
- %UFE of Total Load



Registering of the 2 additional cross boundary connections has decreased the amount of registered export energy from the POWERCOR profile area, which has increased the amount of UFE.

TXU Profile Area

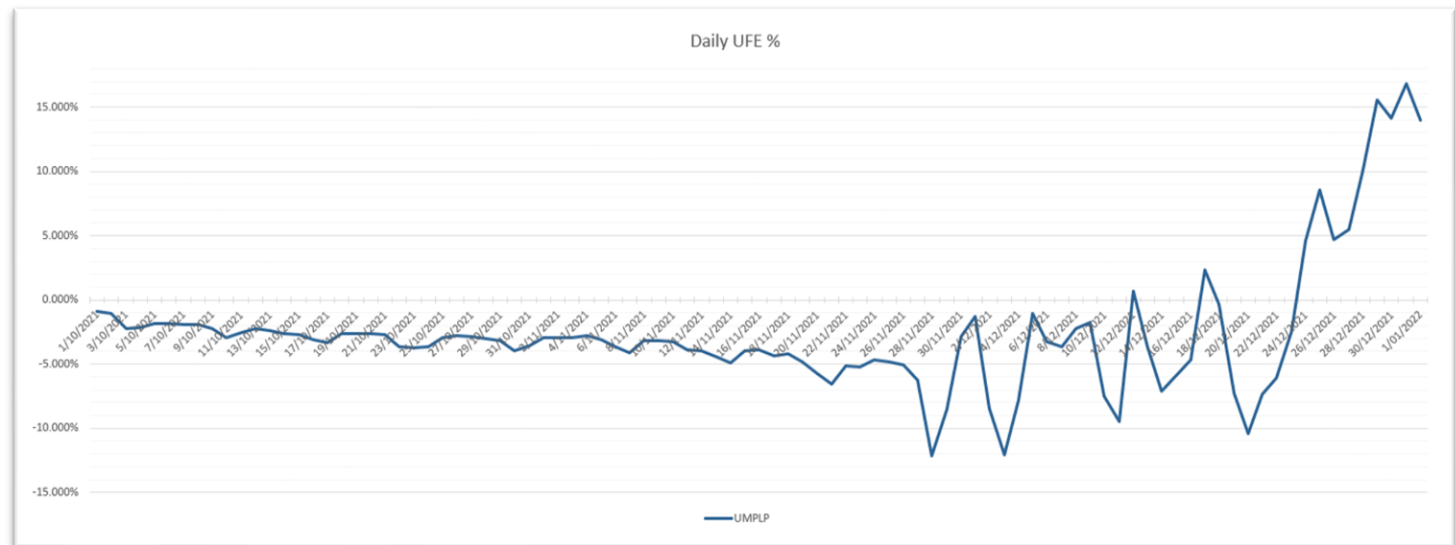
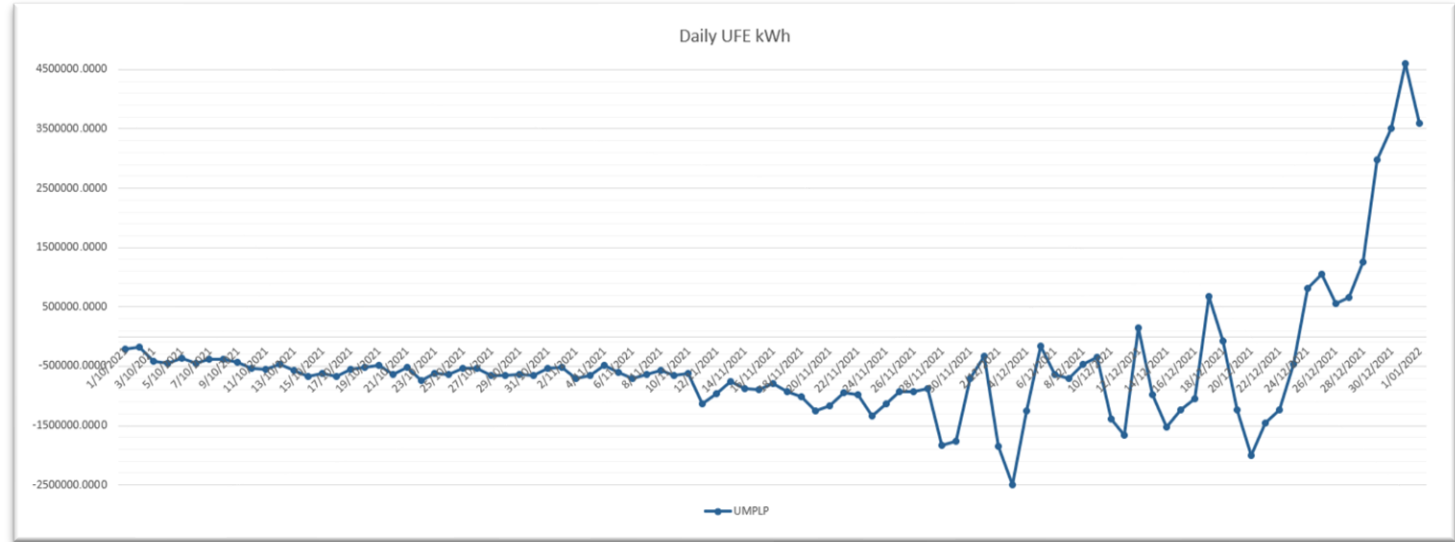
- Profile Area Observations
- Daily UFE Values
 - Cross Boundary exports registered from end of November
- %UFE of Total Load
 - TME and ADME remain relative
 - Variations in relation to ADME and ADMELA



Registering of the 2 export cross boundary connections has decreased the total amount of energy for the TXU profile area, with has reflected in decrease the mount of UFE. Variance of ADME vs ADMELA could be more or less embedded generation / solar increase.

UMPLP Profile Area

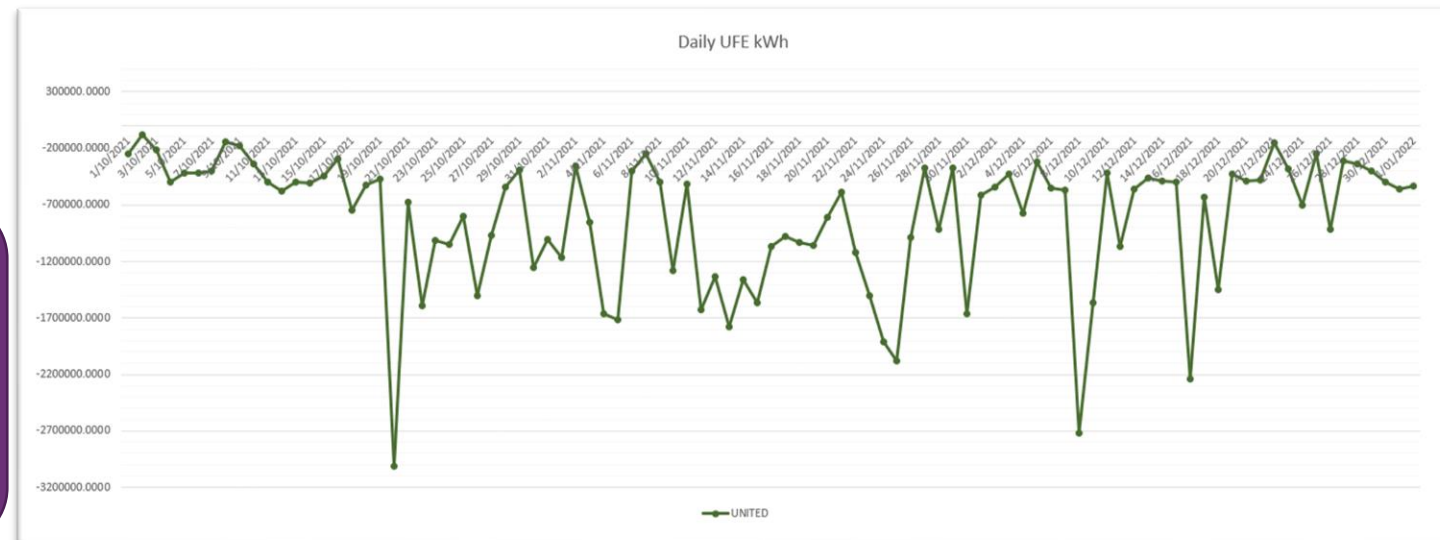
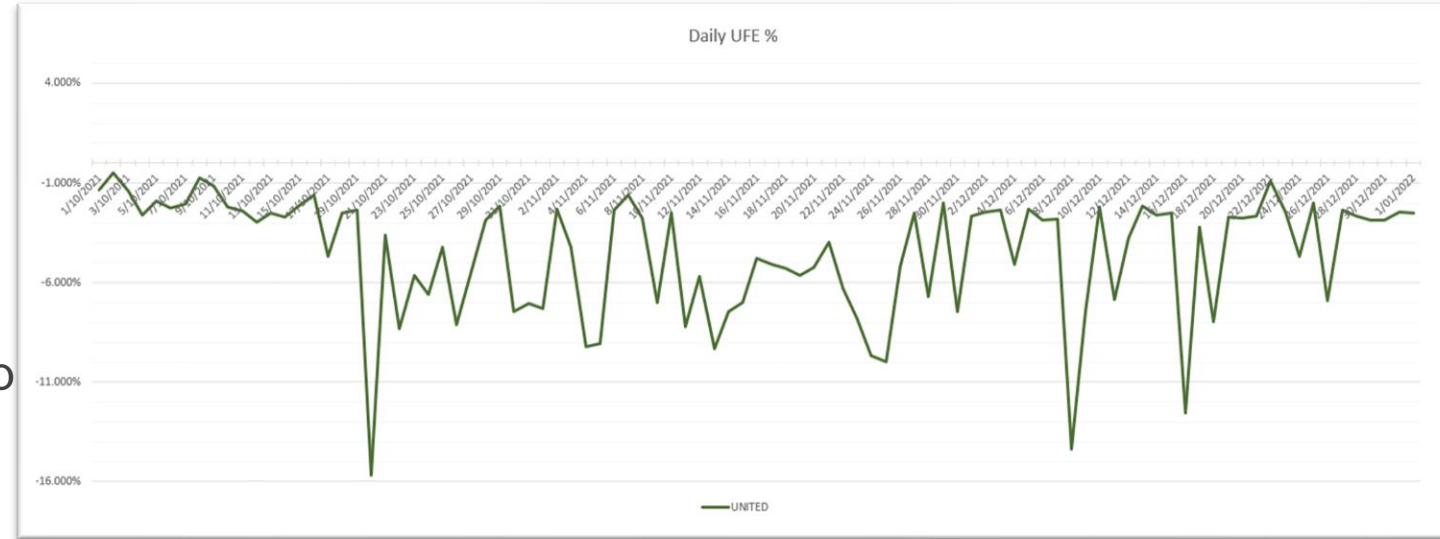
- Profile Area Observations
- Daily UFE Values
 - Increase in cross boundary exports from end November (minimal)
 - TME fluctuates from Mid December with values increasing relating to ADME from end December
- %UFE of Total Load



The relative reduction of ADME (or increase in TME) from mid December increases TME to be above ADME therefore the UFE moves from a Negative to a Positive.

UNITED Profile Area

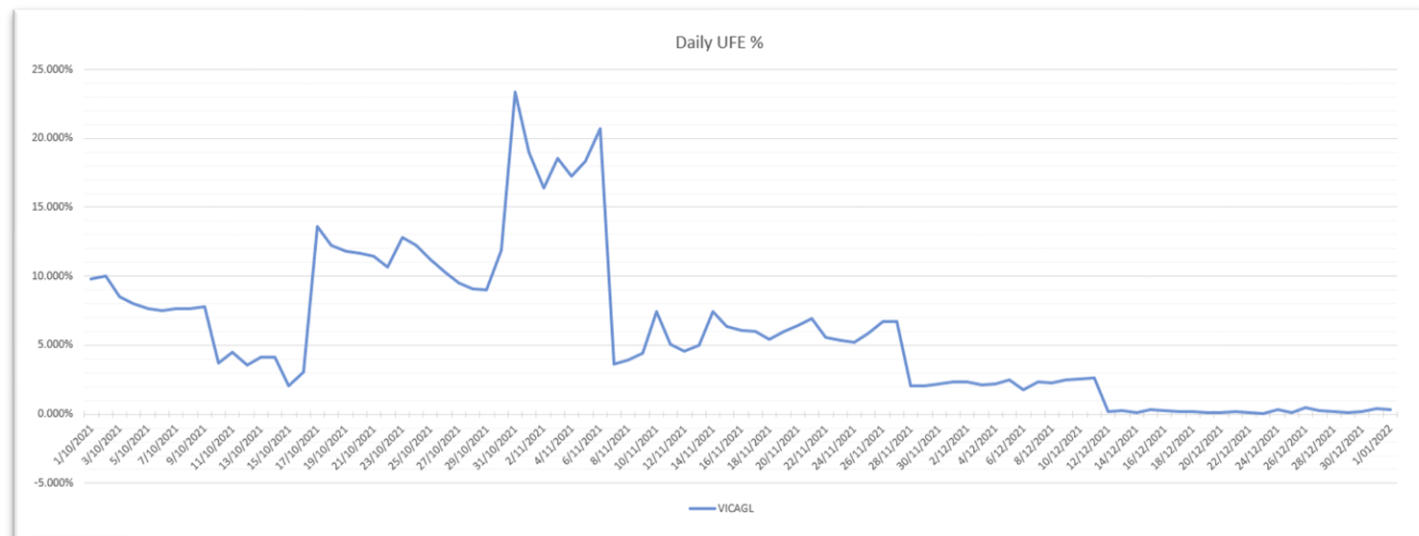
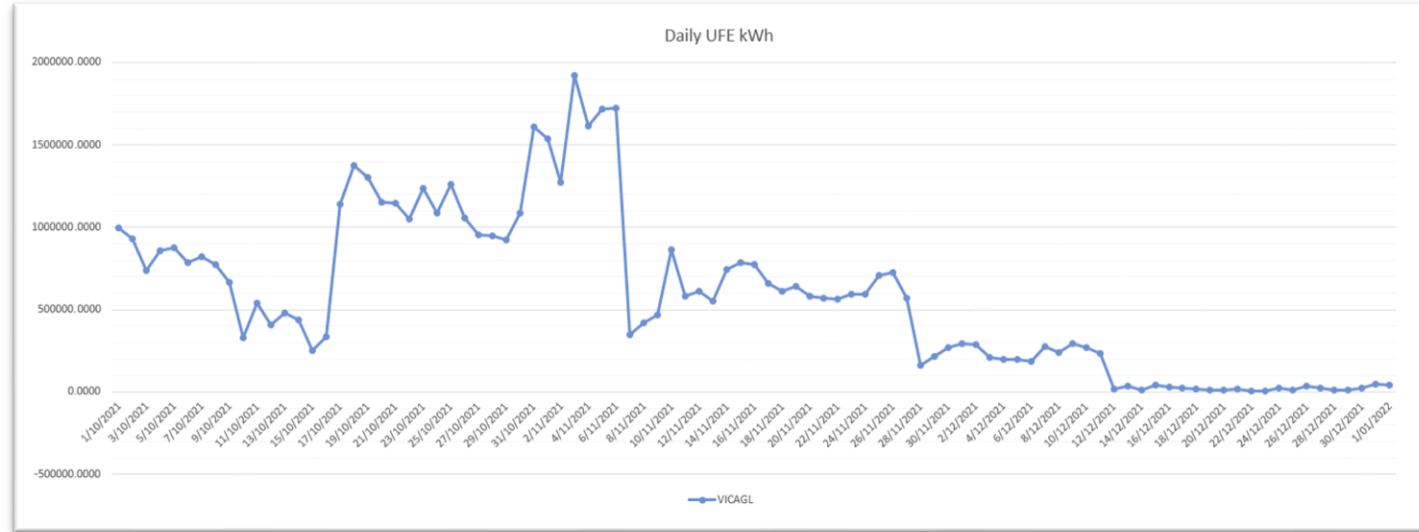
- Profile Area Observations
- Daily UFE Values
 - Fluctuations in cross boundary Import with a drop at the end of December
- %UFE of Total Load
 - TME, ADME and ADMELA remain relative



Reduction in the amount of cross boundary import at the end of December causing a minor flattening of the UFE for the UNITED profile area.

VICAGL Profile Area

- Profile Area Observations
- Daily UFE Values
 - Registering of cross boundaries increase DDME export from end November
 - Larger gap between TME and ADME to start of November
 - Larger gap between ADMELA and ADME from mid October to early November



Connected for cross boundary were only reclassified to XBOUNDRY at the end of November, this has recorded as an Export reducing the total energy for the VICAGL profile area, creating a reduction in the UFE values.

Graph notes

- Comments added into Purple boxes are commentary of the observations from viewing other Profile Area data types for the same periods.
- Where data is advised as remaining relevant the graphical display appears to follow the same pattern for the compared data types and appear to remain at a constant spacing.
- UFE logic if an ADME graph line is above the TME the UFE would be negative, if the TME is above the ADME the UFE will be positive.
 - $UFE = TME - DDME - ADME$
 - $100 - 0 - 120 = - 20$ UFE ADME above TME
 - $100 - 0 - 80 = + 20$ UFE TME above ADME
- When the gap between the TME and ADME widens the UFE value will get bigger (positive or negative) – excluding DDME.
 - $100 - 0 - 80 = + 20$ UFE or $100 - 0 - 120 = - 20$ UFE
 - $100 - 0 - 60 = + 40$ UFE or $100 - 0 - 140 = - 40$ UFE Increased
- When the gap between the TME and ADME reduces the UFE value will get smaller (positive or negative)
 - $100 - 0 - 80 = + 20$ UFE or $100 - 0 - 120 = - 20$ UFE
 - $100 - 0 - 90 = + 10$ UFE or $100 - 0 - 110 = - 10$ UFE Reduced
- When the gap between the ADME and ADMELA widens the UFE will be allocated over a large values, resulting in a reduced UFEA per MWh.
 - $UFEA = UFE \times (DME / ADMELA)$
 - $UFEA = 20 \times (100 / 1000) = 2$
 - $UFEA = 20 \times (100 / 2000) = 1$ Larger ADMELA

Approach to "Off Market" settlement in GS environment

- **Further Discussion on this topic will be scheduled post receipt of input from Industry regarding:**
 - What are key points of engagement that Industry is seeking outside current framework?
 - What are some of the key scenarios that are of most concern?
- No further feedback has been received to date

Discussion points as per UFE#3 pack for reference

- *Discussion points included following Industry questions regarding off market settlement operation post Global Settlement*
- *Current framework operates on basis that post Rev 2 AEMO provides data analysis but does not mediate between parties for Off Market Settlements*
 - *In current settlement by difference these are typically bi-lateral.*
 - *Settlement policies support on market updates within time limits stipulated in NER 3.15.18 (disputes 6mths post billing week) where participant impacted by >5% (NER 3.15.19)*
- *Global Settlement is likely to result in more complicated and challenging scenarios given the number of participants potential impacted by an identified issue*
- *AEMO intends to work with Industry to consider:*
 - *Application of current framework - within current timeframes and levels of exception*
 - *Challenges to off market scenarios as a result of GS introduction and likely implications of multi-party impacts*
 - *Suitability of regulatory framework to support emergent scenarios*
 - *In the context AEMO positioning as effective market operator*

For Discussion:

- *What are key points of engagement that Industry is seeking outside current framework?*
- *What are some of the key scenarios that are of most concern?*

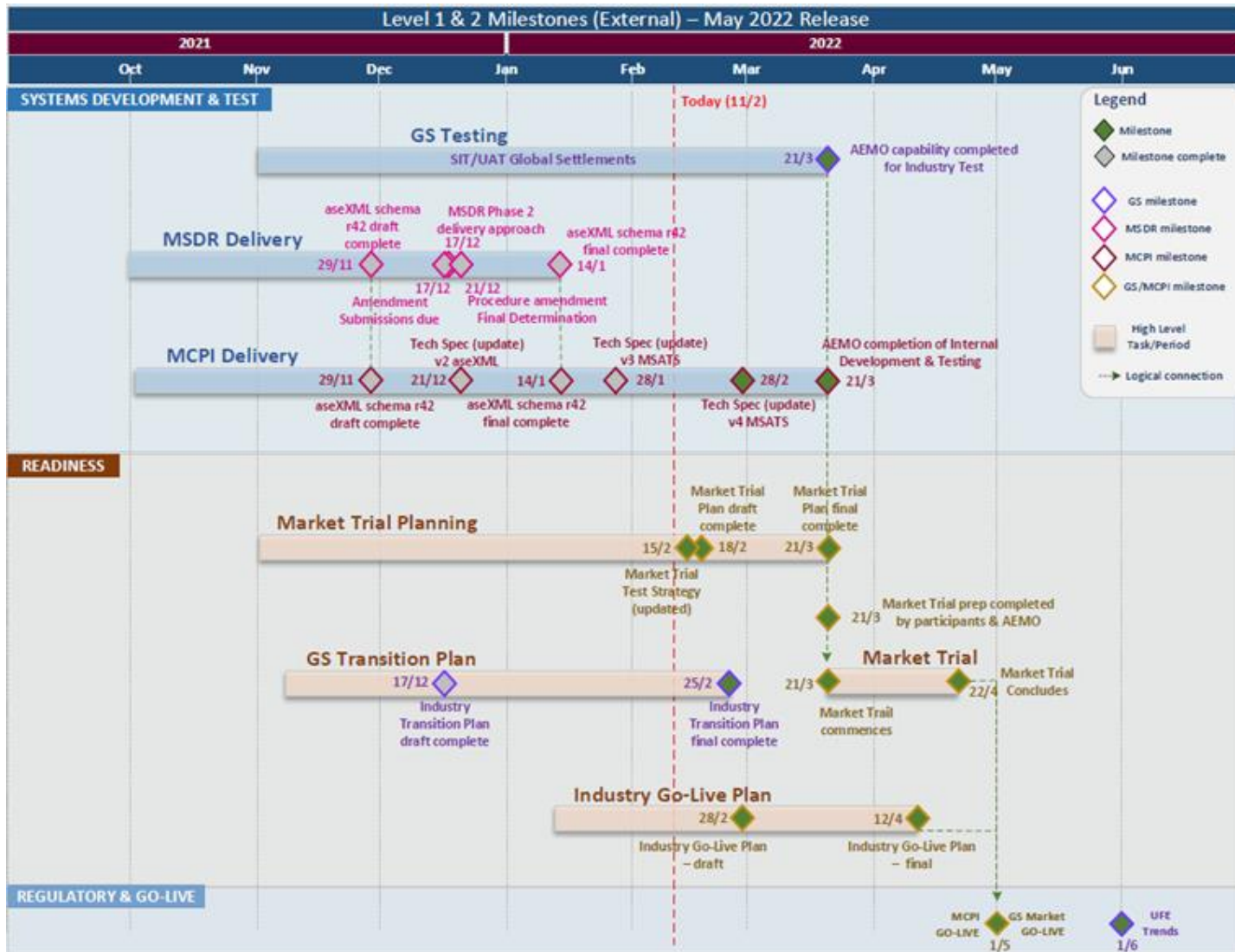
Meeting notes

- AEMO confirms that the profile area graphs shown on slides 11 through 24 are a high-level view of the UFE values since the commencement of the global settlement soft-start on 1 October 2021 and are intended to present observations only. AEMO reminds participants that they are able to access all data used in these graphs from the RM46 report in order to perform their own analyses. AEMO encourages the industry to perform these investigations, as participants are best placed to analyse this data in relation to impacts on their business.
- **Action 4.3.1: Commentary given verbally alongside profile area graph slides (including assumptions made for conclusions drawn) to be included in this notes document.**
- In the ACTEWAGL profile area, where above the zero represents a unaccounted for energy and below the zero can represent over accounted for energy, AEMO emphasises that below-zero values do not indicate extra generation entering the Profile Area. AEMO has observed that at the start of the graphed period, the system is not selling as much as energy as is entering the Profile Area, so there is Unaccounted For Energy (UFE) within that profile area. By the end of the graphed period, tier 1 basic meters are included, pushing the ADME value above the TME value, what is recorded on the DNSP meters when factored by DLF is more than the boundary load. Analysis done by AEMO assumes the Tier 1 basic meter reads are the cause of this change, no in-depth analysis has been performed.
- AEMO confirms that while qualitative analysis of UFE data following 1 October 2021 has been undertaken, analysis of cause has not. The analysis that has been undertaken has been focused only on the changes that have been observed. The group discussed some of the potential causes and initial assumptions. Participants requested that when graphs are re-issued they could also include key factors such as profile re-weighting, and comparison of Revision to Final settlement runs
- AGL raised that the intent of the global settlement soft-start was to provide information to AEMO and industry of UFE values prior to financial settlement commencing on 1 May, and stated they did not believe enough information will have been gathered and noted that overall impacts and changes would need to be managed of a 3-4 year period. AGL, supported by Red Energy, requested that AEMO provide more detailed analysis to industry. AEMO confirms that according to the Rules, a UFE trend report will be produced by AEMO by June 2022, with reports to be produced annually from that point. It was requested by both AGL and Red Energy that a draft report be released in March 2023, along with quarterly interim reports circulated to industry, in order to better align with participant regulatory obligations and provide more frequent access to trusted AEMO analyses. AEMO suggested that ongoing engagement with industry through forums would be an appropriate complement to draft or interim UFE trend reports.
- **Action 4.3.2: AEMO to investigate possibility of interim and/or draft reporting of the annual UFE trend report stipulated in the Rules, along with the establishment of a forum to supplement report releases.**
- **Action 4.3.3: Industry to provide feedback on when information would be recommend a potential draft trend report including how and what the output of the reports would be used.**
- AEMO confirms that UFE allocation does not result in a change to the volumes of generators. UFE is always applied to customers and will appear as an increase or decrease in amount of energy a customer purchases. Global settlement moves the UFE impact from the Tier 1 retailer alone to all market customers. When UFE is negative, effectively customers are purchases are overstated; global settlement ensures that this excess is returned back to all customers, ensuring under and overstatements are not passed to Tier 1 retailers.
- **Action 4.3.4: AEMO to provide updated profile area graphs for UFE Focus Group #5 on 15 March.**
- **Action 4.3.5: Industry to provide any further feedback relating to off-market settlement – see discussion points on slide 25.**

GS Transition Approach

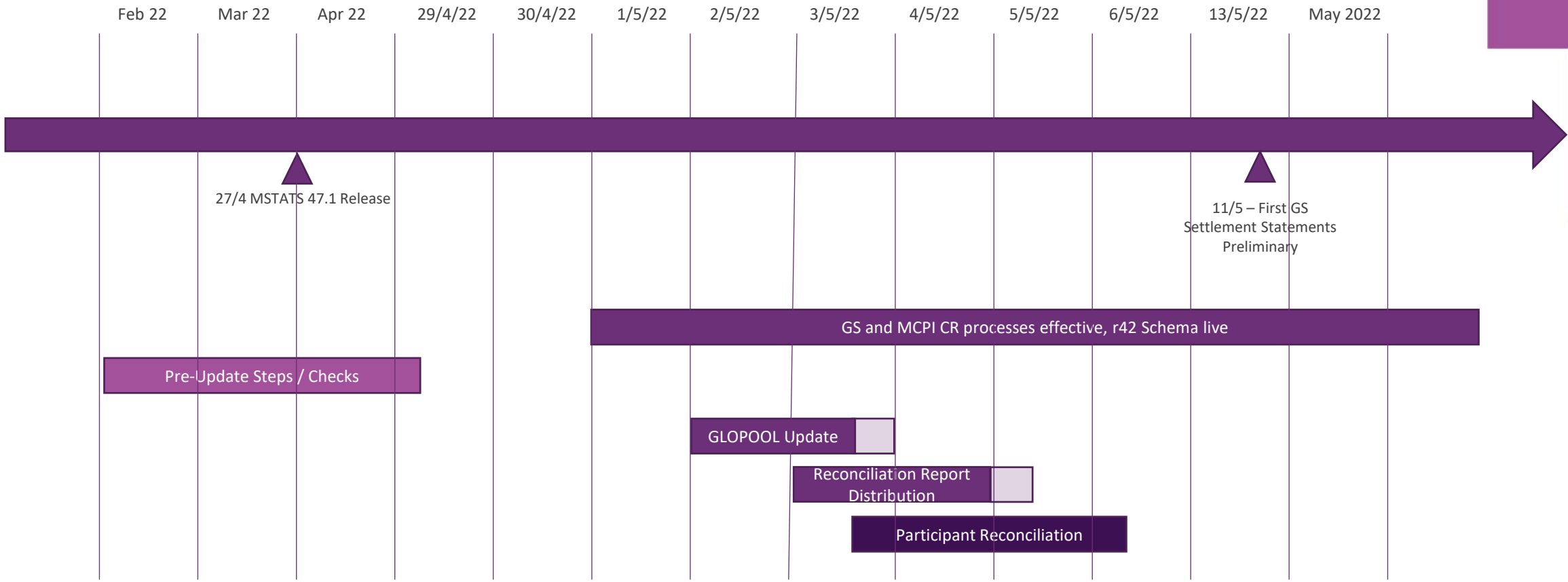
Greg Minney & Paul Lyttle

May 2022 Implementation Approach and Market Trial



- Market Trial commencement will incorporate GS Transition – with 26th March representing cutover data during Market Trial
- Participant preference to backdate GLOPOOL participant commencement date preferred to allow comparison with production settlement runs. Date of backdate TBC
- Pre-production environment will be refreshed (21st Feb) with production data to support operation of Market trials

High level Timeline



Industry Go Live Approach – Participant Implications

MSATS 47.1 release – Production release scheduled for 27th April, during scheduled Maintenance window

- Outage for MSATS, MDM and B2B during release
- Outage commencement and communication via support Hub Bulletins
- r42 schema will be deployed during this release:
- Participants should ensure MSATS schema preferences are updated in production by 18th April
- CR changes for population of mandatory fields will not take effect until 1/5
- CR submitted prior to 1/5 including SPIF / Glopool for LR will be rejected

GS and MCPI Commencement – 1 May 2022

- No MSATS outage on 30th April
- From 1/5 CRs (including in-flight) will be validated against GS and MCPI process for LR and SPIF values, CR Com not sent to previous LR
- NMI create backdated prior to 1/5 to align metering commencement and LR role with process documented for exceptions
- MDPs cease delivery of metering data to previous LR
- Participant updates of own systems with LR changes – timing determined by participant
 - MSATS validations will apply to submitted CR's

Industry Go Live Approach – Participant Implications

GLOPOOL transition – 2 & 3 May 2022

- No MSATS outage whilst update is in progress
- AEMO to update LR Roles, and identified FRMP roles, to reflect GS processing, expected timing 20Hours
 - progress updates will be provided during the process, from commencement, with 6 hourly status
 - MSATS Standing Data updates will not be reflected in MDM during GLOPOOL transition
 - During MSTATS update NMI discovery results impacted for LR value ie dependent on stage of Bulk update previous value or GLOPOOL may be returned
- AEMO to distribute reconciliation reports following MSATS Update, 48 Hours run time
 - Status updates to be provided at process commencement, and daily until completion
 - reconciliation reports issued on Participant by participant basis
- AEMO to synchronise Standing data with eMDM (approx. 3 hours)
 - Metering data delivered will be accepted, but not ingested during this process. Participants may note some delay in processing acknowledgements, and build up of unacknowledged transactions or Stop file.
 - AEMO to notify participants prior to this step commencing
 - Participants will not be able to view Interval Reads via MSATS
 - During synchronisation step there will be some delays in report responses
 - Update process will run for 2-3 hours – timing to be confirmed

First GS Settlement Statements Issued – 11 May 2022

- Preliminary invoice and statements for week ?? Incorporate financial settlement of UFE
- RM Reports issued as per current process

Industry Go Live Approach – AEMO

Communications and Support processes

Production Support Communication and issue processes in place for MSATS 47.1 release and 1 May procedure commencement

- Participant issues with Schema upgrade and systems processing exceptions via Support Hub
- Incidents to be raised via Infra following BAU Process
- If multiple issues identified for GS/ MCPI transaction processing single Q&A session to be established

Communication of Status and progress during GS Transition:

- Bulk Change progress will be provided via Program Comms
- Timing and completion of reconciliation reports will be confirmed via Program Comms
- Reconciliation reports provided based on contact details specified

Industry Q&A following issue of Preliminary Settlement statements Week

- Participant questions collated via GSMSDR mailbox
- UFE Focus group scheduled to respond, following assessment

Participant queries regarding interpretation of UFE / GS information

- Questions / queries via GSMSDR mailbox
- Settlement Issues via BAU settlement process

Meeting notes

- AEMO confirms that a response on CR5051 and SIPF is due to be circulated to participants on 25 February 2022.
- AEMO confirms that normal customer transfers will take place during the update period. There will be a slight delay in synchronising that information into MDM, with CRs as normal from MSATS B2B and B2M. AEMO will take a cut of the standing data to apply the GLOPOOL changes as at 1 May. Those changes will be applied in MSATS and then re-applied, with the effective date as at 1 May, even if applied later. Anything after 1 May will be effective-dated, and encompass the GLOPOOL updates.
- **Action 4.4.1: Consideration of participant activities impacted by the transition period in the lead-up to 1 May, such as de-energisations and transactions tied to the r42 schema, to be included in the Industry Transition Plan. Action also to be considered in the MSDR Focus Group.**
- **Action 4.4.2: AEMO to confirm if profile weightings implemented in production will also be applied in pre-prod during market trial.**
- AEMO has confirmed that those profile weightings will be carried through to market trial invoices

Next Steps and General Business

Greg Minney

Next Steps



- Next UFE FG meeting: **Tuesday, 15 March 2022.**
- Please send through any questions or proposed agenda items to GSMSDR@aemo.com.au.

Meeting notes

- No questions



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