

UNDERSTANDING LOAD PROFILES PUBLISHED FROM MSATS

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TITLE: Chief Strategy and Markets Officer

DATE: TBA~~August 2013~~

VERSION RELEASE HISTORY

Version	Effective Date	Summary of Changes
1	15/05/2002	Original Issue
2	7/06/2002	Added new section 5
3	30/06/2003	Updated section 3.1 for SA and ACT and section 6 references, and other minor updates
4	12/07/2005	Entire Document Updated
5	01/08/2007	Updated in include Profiling for Energex and Ergon Networks for the commencement for FRC in Queensland effective 01/07/2007
5.1	August 2009	Minor updates to reflect the change in governance from NEMMCO to AEMO
5.2	October 2011	Minor Updates to reflect addition of NSLP for Tasmania effective from 01/07/2011
5.3	March 2012	Updates to references of Metrology Procedure in Clause 3.3, Section 8 and Appendix A,B,C,D & E.
5.4	July 2012	Updated to include a table in Section 4.3 to define the Profile Area names with the correct Network/Business name of each distribution network and remove Victoria & NSW maps from section 4.1
5.5	August 2013	Updated section 4.3 to include the current business names for profile area UMPLP. Updated Section 8 to include current document references
<u>6.0</u>	<u>1 July 2021</u>	<p><u>Updated section 4.3 to include the current business name for profile area TXU and AURORA.</u></p> <p><u>Updated to incorporate amendments for:</u></p> <ul style="list-style-type: none"> <u>National Electricity Amendment (Five Minute Settlement) Rule 2017 No. 15, and</u> <u>National Electricity Amendment (Global Settlement and Market Reconciliation) Rule 2018 No 14</u>

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1. INTRODUCTION

1.1. Purpose and scope

This paper provides an overview of the [Load profiles](#) produced by MSATS which AEMO subsequently publishes on its website. This document also discusses a method for extracting and interpreting these *profile* shapes without the need for an asexml parser.

1.2. Definitions and interpretation

The Retail Electricity Market Procedures – Glossary and Framework:

- (a) is incorporated into and forms part of this Guide; and
- (b) should be read with this Guide.

1.3. Related documents

Title	Location
Retail Electricity Market Procedures – Glossary and Framework	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering
Metrology Procedure: Part A	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metrology-Procedures-and-Unmetered-Loads
Metrology Procedure: Part B	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metrology-Procedures-and-Unmetered-Loads
MSATS MDM Procedure	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions
Guide to MSATS Web Portal	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions

2. BACKGROUND

A basic *meter* (also referred to as a Type 6 *meter* or [Accumulation Meter](#)) records the total amount of *energy* consumed at a *connection point* from the initial energisation of the *meter*. Periodical readings of basic *meters* are used to determine the *energy* used between two points in time. These *energy* values are then used to calculate the *energy* component of a consumer's electricity bill. ~~For~~ [Jurisdictions with Full Retail Competition \(FRC\)](#), AEMO uses ~~this~~[these](#) *energy values* to determine the amount owed by a retailer ~~due to the retailer's second-tier~~[for its](#) consumers with a basic *meter(s)*.

Energy usage measured by a basic *meter* cannot be used in its raw format for wholesale settlement purposes in the National Electricity Market (NEM). This is because the electricity market is settled on [15/30-minute trading intervals](#) whereas a basic *meter* reading is a single reading spanning a period of time, from a single *day* up to several months.

Several possible solutions were considered for resolving this issue prior to the introduction of [Full Retail Competition \(FRC\)](#).

Two options considered were the use of ~~Interval Meters~~ for all second tier sites or the introduction of a mathematical process, called profiling, to approximate ~~Half-hourly basic Meter Readings~~. This process effectively replicates the functionality of an ~~Interval Meter~~ and thus allows a Type 6 ~~Meter Reading~~ to be settled on the wholesale market.

Jurisdictions and regulators agreed that for consumers of less than 160MWh/year (100MWh/year in Queensland and NSW & 150MWh/year Tasmania) the latter option was preferable as it was a more economically efficient metering solution.

3. PROFILING

Profiling is a process that converts readings from an accumulated ~~energy Meter Reading~~ into estimated ~~energy~~ consumption for each ~~130-minute trading interval~~ period, which the original accumulated reading covered¹.

Two distinct types of *profiles* exist, Net System Load Profile (NSLP) and Controlled Load Profile (CLP). There are two methods (Basic and Basic with Peel-Off) of calculating the NSLP based on determining a *load* shape on the system *profile* of the *distribution network* in which the basic *meter* is installed.

3.1. NSLP (“BASIC”)

The basic NSLP is applicable in the Australian Capital Territory (ACT), Victoria (VIC), Tasmania (TAS) and for Ergon Energy distribution network in Queensland and is the *profile* applied to convert all ~~second-tier basic Meter Readings~~ into ~~energy~~ consumption for each ~~130-minute trading interval~~ for settlement purposes.

The NSLP is calculated by aggregating the ~~bulk supply wholesale~~ boundary energy and subtracting off all the ~~non-wholesale boundary 1 load~~ interval energy (Metering Installation Types 1, 2, 3, 4, 5 and 7 ~~and non-contestable unmetered loads~~).

3.2. NSLP with “Peel-Off”

For New South Wales (NSW), South Australia (SA) and the Energex *distribution network* in Queensland the basic NSLP is modified by subtracting, also known as “Peel-Off”, an additional *profile* that represents the Controlled Load ~~Energy~~ (e.g. the off-peak demand of water heating). Two separate ~~Controlled Loads~~ are defined for the Energex *distribution* area. The resultant *profiles* are applied to the non-controlled load basic ~~Meter Readings~~ to convert all basic meter readings into consumption for each ~~130-minute trading interval~~ for settlement purposes.

3.3. Controlled Load Profile (CLP)

The CLP is calculated from a group of approximately 200 sample ~~Interval Meters~~, installed as a sample of ~~Controlled Loads~~ selected by the ~~NSP Local Network Service Provider~~ for the ~~Profile Area~~. This *profile* is applied to the ~~Controlled Load basic Meter Readings~~ to convert them into ~~energy~~ consumption for each ~~130-minute trading interval~~ for settlement purposes.

Note: Further details of each of these are shown in in Section 11 Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation ~~Procedure for Metering Types 1–7~~.

¹ For detailed information on the profiles to a Type-6 meter reading, refer to Section 11 Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation.

4. PROFILE AREAS AND NAMES

All NMI within MSATS are assigned to a **Profile Area** via their Transmission Node Identifier (TNI).

4.1. Profile Areas

Each *distribution network* area is assigned a **Profile Area** name that is similar to the name of the network to which it relates. For example, where Energy Australia (now Ausgrid) is the **Local Network Service Provider** the **Profile Area** name assigned is ENERGYAUST. All Transmission Node Identifiers (TNIs) that supply Energy Australia (Ausgrid) network are assigned to ENERGYAUST **Profile Area**.

In the case of *distribution networks* where *profiling* is not applicable, the *profile* calculation process is partially scrambled to ensure that confidential data is not inadvertently exposed.

In each jurisdiction there are NMIs associated with the *transmission network* that are not part of the profiling process. Examples in Victoria and NSW are NMIs that have been assigned to the **Profiles Areas** NEMGRID, NSWGRID, VICGRID. The same or similar naming conventions apply to the *transmission network* in other jurisdictions. These *transmission network profiles* are not used in any settlement process.

Each *distribution* area has one or more *profiles* generated. The **table diagrams** below shows the **distribution profile** area of each **Local Network Service Provider in VIC and NSW**.

MSATS calculates a NSLP for each profile area, ~~although NSLP is not required in jurisdictions that have not implemented FRC, except Tasmania where profiling is applicable for the Tranche 5A consumers.~~

4.2. Profile Names

For metering data from interval meters Types 1, 2, 3, 4, 5, & 7 metering installations and non-contestable unmetered loads the *profile* name assigned is NOPROF.

For metering data from basic *meters* the *profile* is either NSLP or Controlled Load (CLOADNSWxx, SACLOAD, QLDEGXCL31 or QLDEGXCL33).

The NSLP applies to all basic *meters* in VIC, ACT and TAS and to all basic *meters* in NSW and SA and Ergon Energy Distribution Network in QLD, where the CLP is not applicable.

The *profile* name CLOADNSWxx is applied to the **Controlled Load** in NSW *distribution network* areas, where xx is replaced by IE, CE, EA to identify the owner of the *distribution network*.

The *profile* name SACLOAD is applicable to the **Controlled Load** in SA and Energex *profile* names QLDEGXCL31 and QLDEGXCL33 are applicable to **Controlled Loads** in the Energex *distribution* area in QLD.

4.3. Profile Area – Network Business Names

Table 1 Profile Area Network Business Names

ProfileName	ProfileArea	Network/Company Name
CLOADNSWCE	COUNTRYENERGY	Essential Energy
CLOADNSWCE	ENERGYAUST	Ausgrid
CLOADNSWCE	ERGON1	Ergon Energy Corporation Limited

ProfileName	ProfileArea	Network/Company Name
CLOADNSWEA	ENERGYAUST	Ausgrid
CLOADNSWIE	INTEGRAL	Endeavour Energy
NSLP	ACTEWAGL	Actew Distribution Ltd and Jemena Networks (ACT) P
NSLP	AURORA	Tasmanian Networks Aurora Energy Pty Ltd
NSLP	CITIPOWER	CitiPower Pty
NSLP	COUNTRYENERGY	Essential Energy
NSLP	ENERGEX	Energex Limited
NSLP	ENERGYAUST	Ausgrid
NSLP	ERGON1	Ergon Energy Corporation Limited
NSLP	INTEGRAL	Endeavour Energy
NSLP	POWERCOR	Powercor Australia Ltd
NSLP	TXU	AusNet Electricity Services Pty Ltd SPL Electricity Pty Ltd
NSLP	UMPLP	SA Power Networks
NSLP	UNITED	United Energy Distribution Pty Ltd
NSLP	VICAGL	Jemena Electricity Networks (Vic) Ltd
QLDEGXCL31	ENERGEX	Energex Limited
QLDEGXCL33	ENERGEX	Energex Limited
SACLOAD	UMPLP	SA Power Networks

5. FREEZE PROCESS

In order to ensure that the same *profile* is correctly applied to a total basic ~~m~~Meter ~~r~~Reading period, the NSLP *profiles* are permanently fixed ('frozen') to ensure that the *profile* shape for a period covering a final ~~m~~Meter ~~r~~Reading taken on three-month reading cycle is fixed, and not re-calculated, before the 30-week revision is processed.

The NSLP for a particular settlement week is typically permanently fixed 15-weeks after that settlement week.

6. PROFILES PUBLISHED

The *profiles* being published are identified within the MSATS PPS (RM20). ~~Refer to section 9.7 MSATS Procedures: MDM Procedures for details of the RM20 report, report by Profile Name, Profile Area, Date, DateTime of calculation, Profile value period 01, Profile value period 02, ..., Profile value period 48, SeqNo, Locked, SettlementCase,~~

~~The SeqNo identifies the line number in the CSV file data block.~~

Note:

- No significance can be attached to values published in the RM 20 Report for profile areas in jurisdictions where profiling is not applied.
- MSATS publishes profile data for all ~~p~~Profile ~~a~~Areas within MSATS, and may manipulate some profile values to protect the confidentiality of data where the data may be considered to be confidential in jurisdictions where profiling does not apply.

7. EXTRACTION OF PROFILE FROM PUBLISHED FILE

The following steps represent a suggested method for extracting the *profile* shape data from the files published on the AEMO website without an aseXML parser. It is anticipated that organisations with a business requirement to regularly access this data will develop their own methods for extraction.

The *profile* shapes as published on the AEMO website appear as a Comma Separated Variable (CSV) payload within an aseXML wrapper. The following procedure indicates the steps required to load the *profile* into excel for those without an XML file parser software package.

The procedure assumes basic computer literacy. In order to carry out this procedure you will require the software programs WINZIP, and EXCEL to be installed on your computer, and similarly with the operation of these programs.

1. Select the file on the AEMO web site you would like to extract, by clicking on the "Click to download zip" button.
2. A message box will appear, tick the "Save this file to disk".
3. Click on the "OK" button.
4. Options will then allow you to save the file to your desired location.
5. Once you have chosen your desired path for saving the file click on the save button.
6. Double click on the saved file to open the file using WinZip (Note: you require an unzip program for this step).
7. Options allow you to view the file
8. Click on the file so the file is highlighted (selected).
9. Click on the "View" button to view the file, and select internal ASCII text viewer. (it is easier to have WordPad set up as the viewer in WinZip, however the ASCII text viewer will work.).
10. Highlight the section you require to parse using the cursor highlight everything between <CSVData> and </CSVData>).
11. Copy this selection from WordPad and paste it into an excel spreadsheet.
12. If the CSV format is not recognised, click on the "Data" tab and select the "Text to Columns" button.
13. Click on the "Delimited" box, and then click on the "Next" button.
14. Click on the "Comma" box and click on the "Tab" box so only a tick appears in the "Comma" box, then click "Next".
15. Click on the "Finish" button
16. The required details of the file are now loaded in an Excel spreadsheet.
17. Highlight the entire spreadsheet by clicking in the top left-hand corner cell.
18. Place the cursor between the A and B columns of the spreadsheet and double click to automatically adjust row widths.
19. Save the file as an Excel file.

APPENDIX A. NSLP WHERE THERE IS NOCLP (VICTORIA, ACT & TAS)

The following information was extracted from the Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation (Section 11), and shows the formula for calculating the NSLP for a profile area.

NSLP for VIC, ACT and TAS

$$\begin{aligned}
 &= \sum_{i=1}^j (\text{Energy inflows to the profile area at the TNI level})_i * MLF_i \\
 &\quad \text{(equates to bulk supply/wholesale boundary energy * MLF)} \\
 &+ \sum_{m=1}^n (\text{Energy generated within profile area from embedded generation})_m * MLF_m * DLF_m \\
 &- \sum_{s=1}^t (\text{TI Half hourly load in profile area})_s * MLF_s * DLF_s \\
 &\quad \text{(Interval meter load)}
 \end{aligned}$$

where

Mathematical Representation

Σ = the sum of given terms

j = represents the upper limit value

i = is a set initialised value

e.g. $\sum_{i=1}^j X_i$ where (j=10, result will be $X_1 + X_2 + X_3 + \dots + X_{10}$)

n = represents the upper limit value

m = is a set initialised value

s = represents the upper limit value

t = is a set initialised value

Terminology

MLF = Marginal Loss Factor applicable for the Transmission Node Identifier (TNI) with the NMI that is stored in Market Settlements and Transfer Solution (MSATS)

DLF = Distribution Loss Factor applicable for the NMI that is stored in MSATS

i = Each TNI with energy inflows to LNSP area

m = Each embedded generator with energy generated within LNSP area

s = TI Half hourly loads in LNSP area, which include:

- TI interval metered ~~second-tier~~ loads, including type 7
- TI non-contestable unmetered loads
- TI metering data for 15 and 30-minute interval metered ~~first-tier~~ loads

Interval ~~m~~Metered loads registered with an *embedded network* child code within MSATS are excluded from the *profile* calculation

APPENDIX B. NSLP WHERE THERE IS A CLP (NSW, QLD & SA)

The following information was extracted from the Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation (Section 11), and shows the formula for calculating the NSLP for a profile area.

NSLP for NSW and SA

$$\begin{aligned}
 &= \sum_{i=1}^j (\text{Energy inflows to the profile area at the TNI level})_i * MLF_i \\
 &\quad \text{(equates to wholesale boundary energy * MLF)} \\
 &+ \sum_{m=1}^n (\text{Energy generated within profile area from embedded generation})_m * MLF_m * DLF_m \\
 &- \sum_{s=1}^t (\text{TI Half hourly load in profile area})_s * MLF_s * DLF_s \\
 &\quad \text{(Interval meter load)}
 \end{aligned}$$

where

Mathematical Representation

Σ = the sum of given terms

j = represents the upper limit value

i = is a set initialised value

e.g. $\sum_{i=1}^j X_i$ where (j=10, result will be $X_1 + X_2 + X_3 + \dots X_{10}$)

n = represents the upper limit value

m = is a set initialised value

s = represents the upper limit value

t = is a set initialised value

Terminology

MLF = Marginal Loss Factor applicable for the TNI associated with that NMI that is stored in [Market Settlements and Transfer Solution \(MSATS\)](#)

DLF = Distribution Loss Factor applicable for the NMI that is stored in MSATS

i = Each transmission Node Identifier (TNI) with energy inflows to LNSP area

m = Each embedded generator with energy generated within LNSP area

s = Half hourly loads in LNSP area, which include:

- [TI interval metered ~~second-tier~~ loads, including type 7](#)
- [TI non-contestable unmetered loads](#)
- Profiled controlled load energy
- [TI metering data for 15 and 30-minute interval metered ~~first-tier~~ loads](#)

Interval ~~m~~Metered loads registered with an *embedded network* child code within MSATS are excluded from the *profile* calculation

APPENDIX C. CONTROLLED LOAD PROFILE CALCULATION

The following information was extracted from the Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation (Section 11).

CLP for a ρ Profile α Area for a trading interval j

$$= \sum_{n=1}^N (\text{sample meter load in trading interval})_n * (\text{weighting factor})_n$$

Terminology

N represents the set of sample NMs in the ρ Profile α Area

Weighting factor is the weighting factor associated with the sample *meter*

APPENDIX D. APPLICATION OF NSLP (BASIC METER PROFILE FUNCTION)

The following information was extracted from the Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation (Section 11) AEMO applies the NSLP to the basic *meter* in the corresponding *Profile Area* as follows:

Half-hourly energy data for trading interval *j* for a NMI data stream

$$= (\text{Consumption energy data between start date and end date}) * \frac{NSLP_j}{\sum_{i=startdate}^{enddate} NSLP_i}$$

APPENDIX E. APPLICATION OF CLP – BASIC METER PROFILE FUNCTION

The following information was extracted from the Metrology Procedure: Part B Metering Data Validation, Substitution and Estimation (Section 11). AEMO applies the CLP to the to the Controlled Load basic Meter Reading as follows:

Half-hourly energy data for trading interval j for a NMI data stream

$$= (\text{Consumption energy data between start date and end date}) * \frac{CLP_j}{\sum_{i=startdate}^{enddate} CLP_i}$$

APPENDIX F. SAMPLE OUTPUT FROM RM20_PPS REPORT

The following sample is the output from a PPS Report, submitted for settlement week twenty seven. (01 July 2007 to 7 July 2007) The Report has been edited to remove repetitive data for days 2 July 2007 to 7 July 2007. The profile data is in CSV data blocks contained within an aseXML wrapper.

```
<?xml version="1.0" ?>
<ase:aseXML xmlns:ase="urn:aseXML:r10" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:aseXML:r10 http://www.nemmco.com.au/aseXML/schemas/r10/aseXML_r10.xsd">
  <Header>
    <From description="NEMMCO">NEMMCO</From>
    <To description="NEMMCO">NEMMCO</To>
    <MessageID>NEMMCO-MSG-230514778</MessageID>
    <MessageDate>2007-07-19T09:34:44+10:00</MessageDate>
    <TransactionGroup>MDMT</TransactionGroup>
    <Priority>Medium</Priority>
    <SecurityContext>NEMMCOBATCH</SecurityContext>
    <Market>NEM</Market>
  </Header>
  <Transactions>
    <Transaction transactionID="MDMT-230514778" transactionDate="2007-07-19T09:34:44+10:00" initiatingTransactionID="4129645">
      <ReportResponse version="r10">
        <ReportParameters xsi:type="ase:MDMTPPSReportParameters">
          <ReportName>PPS</ReportName>
          <SettlementCase>1884</SettlementCase>
          <FromDate>2007-07-01</FromDate>
          <ToDate>2007-07-07</ToDate>
          <LastSequenceNumber>0</LastSequenceNumber>
        </ReportParameters>
        <ReportResults xsi:type="ase:CSVReportFormat">
          <CSVData>ProfileName,ProfileArea,SettlementDate,CreationDT,Period01,Period02,Period03,Period04,Period05,Period06,Period07,Period08,Period09,
          Period10,Period11,Period12,Period13,Period14,Period15,Period16,Period17,Period18,Period19,Period20,Period21,Period22,Period23,Period24,Period
          25,Period26,Period27,Period28,Period29,Period30,Period31,Period32,Period33,Period34,Period35,Period36,Period37,Period38,Period39,Period40,Peri
          od41,Period42,Period43,Period44,Period45,Period46,Period47,Period48,SeqNo,Locked,SettlementCase
          CLOADNSWCE,COUNTRYENERGY,2007/07/01,2007/07/18
          22:27:35,56.821,58.439,73.546,70.739,77.613,68.242,59.787,51.008,47.133,45.096,42.962,50.020,43.759,35.125,44.481,48.768,46.892,74.168,89.29
          7,85.149,89.577,88.084,70.591,52.158,50.579,48.965,49.748,52.555,48.064,52.991,45.032,51.999,51.441,51.137,23.784,20.257,25.119,26.061,34.19
```



0,44,153,47,662,45,562,57,258,72,136,78,469,75,494,61,180,64,684,1,N,1884
 CLOADNSWEA,ENERGYAUST,2007/07/01,2007/07/18
 23:01:28,179.479,181.720,187.432,156.867,124.900,104.238,80.394,48.231,49.868,33.136,28.202,26.100,27.270,28.228,18.339,22.836,24.439,40.43
 8,58,577,47,157,43,254,46,728,49,701,46,406,38,292,29,950,35,368,33,018,23,833,25,138,19,374,20,845,21,056,16,144,14,953,11,622,9,931,13,694,
 13,514,15,073,20,062,22,911,19,755,33,951,64,558,96,998,129,800,184,508,22,N,1884
 CLOADNSWIE,INTEGRAL,2007/07/01,2007/07/18
 23:12:08,92.758,79.066,60.330,69.724,49.415,38.861,40.461,37.329,29.289,22.895,33.096,17.714,21.134,27.350,41.694,55.311,59.355,52.878,68.69
 9,73,546,72,991,71,927,71,986,59,439,53,313,53,092,56,657,37,067,43,310,36,386,39,572,47,761,45,510,36,884,15,583,13,463,14,679,14,938,11,88
 4,15,459,15,554,12,045,21,044,18,609,50,674,81,528,124,992,117,318,29,N,1884
 NSLP,ACTEWAGL,2007/07/01,2007/07/18
 22:02:52,108333.495,98116.974,90412.116,85338.425,81764.418,78789.496,76946.179,75730.761,75336.777,75691.397,76675.563,78748.829,8053
 0.485,82725.555,89298.699,103433.218,117035.541,128572.381,141538.969,146107.569,153539.828,156573.305,152370.199,149558.790,152423.4
 97,149343.296,142357.042,137034.843,136839.963,137017.766,137360.164,139349.790,147688.341,157713.355,170661.421,178003.666,180073.1
 23,177757.186,171297.135,166455.051,161687.815,156071.788,148442.758,140970.773,142262.454,137473.490,125317.801,108576.514,36,N,188
 4
 NSLP,CITIPOWER,2007/07/01,2007/07/18
 22:02:52,134521.276,127780.129,139143.407,129532.862,120153.747,112107.229,105361.617,100201.764,95615.117,93342.006,92304.466,92223.
 951,94035.770,95805.350,96667.833,104546.085,112930.946,121004.291,129566.197,136619.529,142361.298,145271.153,145812.239,144471.657,
 146064.723,146781.074,148108.485,148767.944,149734.969,149888.367,148312.926,150195.150,152814.312,159380.760,173823.716,189895.380,
 198736.054,201842.869,200449.048,197025.768,194288.715,190422.430,184527.620,175819.589,163086.340,147760.128,138299.122,125791.178,
 43,N,1884
 NSLP,COUNTRYENERGY,2007/07/01,2007/07/18
 22:02:52,393736.874,370044.280,324116.717,312974.388,278383.017,270540.842,267996.510,271485.907,271815.904,273599.809,283383.577,281
 046.779,311366.578,355313.138,379803.266,429902.707,484227.076,472237.176,458880.133,463571.851,438830.226,420976.428,433496.204,454
 306.908,441251.432,431174.408,412513.785,393753.785,400563.683,389444.524,412236.171,410876.036,435310.271,474923.711,594346.207,672
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 316.145,50,N,1884
 NSLP,ENERGEX,2007/07/01,2007/07/18
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 389.492,57,N,1884
 NSLP,ENERGEX,2007/07/07,2007/07/18
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NSLP,ENERGYAUST,2007/07/01,2007/07/18

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NSLP,ERGON1,2007/07/01,2007/07/1822:02:52,481940.771,453618.328,421976.966,395166.166,385294.512,382100.370,368880.544,364909.046,373075.156,374788.205,390353.054,403486.468,412274.164,440375.348,479781.523,509798.172,544447.482,559736.520,561828.151,558371.101,547325.488,526019.647,520023.182,513229.460,502776.345,492891.121,483402.098,477522.022,468634.926,459493.463,465540.496,480842.576,494917.710,531644.622,586703.521,647109.600,682801.819,692204.936,682996.429,680362.711,668025.633,646353.322,607306.322,559970.414,544398.137,534482.868,527846.876,510161.507,71,N,1884

NSLP,INTEGRAL,2007/07/01,2007/07/18

22:02:52,385025.290,373910.724,349766.221,320922.326,300704.908,282575.204,254233.178,253657.931,257607.836,266358.476,255342.172,295070.613,310387.647,332087.268,367062.333,422330.289,493403.259,572052.209,599860.496,601125.658,580913.525,560555.856,534076.144,536381.871,532437.439,512499.375,479171.583,484237.182,457962.461,461295.496,467210.275,498606.181,571649.939,664026.012,738217.736,798910.202,810996.910,798942.245,780881.864,758399.298,742920.534,714510.002,663968.014,612344.226,540158.635,425920.888,341971.368,308148.709,78,N,1884

NSLP,POWERCOR,2007/07/01,2007/07/18

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NSLP,TXU,2007/07/01,2007/07/18

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NSLP,UMPLP,2007/07/01,2007/07/18

22:02:52,218941.800,212232.513,191683.994,195618.311,207588.119,211383.393,204633.979,216803.142,208206.334,203869.683,210743.886,225744.809,235975.701,248984.092,262126.727,283547.415,323270.940,350384.193,383326.049,404746.539,416127.726,427463.727,406959.303,408022.878,402445.855,393955.624,384930.983,373143.606,368653.702,360207.181,356761.993,360327.298,374719.136,399328.923,447041.096,517352.922,588691.790,614890.306,606241.285,596720.035,585695.804,564595.790,535962.631,489372.433,433219.071,346604.990,221636.176,203973.183,99,N,1884

NSLP,UNITED,2007/07/01,2007/07/18

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NSLP,VICAGL,2007/07/01,2007/07/18

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QLDEGXCL31,ENERGEX,2007/07/01,2007/07/18

22:49:50,148.988,162.225,134.682,97.799,69.274,58.012,41.450,29.346,23.127,24.671,20.698,26.539,19.812,15.181,19.467,9.717,11.272,6.500,3.736,4.168,6.381,1.760,2.343,1.479,1.760,2.732,0.000,1.328,0.000,0.000,0.821,0.000,0.043,0.972,0.000,0.000,1.360,2.235,4.610,3.747,3.844,4.707,73.992,76.000,102.474,115.420,191.258,188.840,120,N,1884

QLDEGXCL33,ENERGEX,2007/07/01,2007/07/18

22:49:14,24.747,30.642,33.579,27.511,29.152,20.687,20.072,13.669,17.524,20.568,21.680,26.701,21.540,29.443,27.727,44.548,53.326,69.954,70.213,59.373,56.058,61.122,48.932,46.028,41.957,40.089,34.583,29.044,32.909,31.074,27.684,37.120,35.123,31.009,26.172,15.343,23.224,36.569,52.808,44.235,65.883,75.018,92.444,63.044,42.886,39.204,38.513,37.962,127,N,1884

SACLOAD,UMPLP,2007/07/01,2007/07/18

22:18:21,206.683,205.325,185.716,148.709,109.816,82.051,66.606,45.200,41.140,36.642,29.785,19.273,14.987,9.862,7.787,1.221,0.091,2.550,2.101,1.997,3.954,2.725,15.551,14.743,10.001,7.795,5.999,15.203,10.185,9.618,6.818,4.723,3.167,0.118,1.525,1.380,1.851,1.867,3.184,1.973,3.443,6.213,12.300,24.897,38.264,78.392,136.302,185.416,134,N,1884

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