



SPP Market

Hourly Locational Imbalance Price CSV Description

Revision Draft

MAINTAINED BY
Technology Deployment

PUBLISHED: 06/30/2006
LATEST REVISION: 06/[28712](#)/2006

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Revisions

| Revision | Date | Description of Modification |
|------------|------------------|--|
| 1.0 | 09/28/2005 | Initial Release |
| 2.0 | 6/7/2006 | Updated to include new CSV file description |
| <u>3.0</u> | <u>6/28/2006</u> | <u>Updated to include new SLIP CSV file naming, header rows to SLIP and LIP file, modification from LMP naming to LIP naming, and and -new screen shots for SLIP and LIP</u> |

Table of Contents

| | |
|---|-------------------|
| <u>Market Hourly Locational Imbalance Price Description for the SPP Market</u> | <u>4</u> |
| <u>Locational Imbalance Price Description</u> | <u>4</u> |
| <u>CSV File Naming Standards/Posting Times</u> | <u>5</u> |
| <u>CSV File Description</u> | <u>5</u> |
| <u>Example CSV File</u> | <u>6</u> |
| <u>Daylight Savings Time.....</u> | <u>6</u> |
| <u>Download Procedures</u> | <u>7</u> |
| <u>Substituted Locational Imbalance Price Description</u> | <u>11</u> |
| <u>CSV File Naming Standards/Posting Times</u> | <u>11</u> |
| <u>CSV File Description</u> | <u>12</u> |
| <u>Example CSV File</u> | <u>12</u> |
| <u>Daylight Savings Time.....</u> | <u>13</u> |
| <u>Download Procedures</u> | <u>13</u> |
| <u>Market Hourly Locational Imbalance Price Description for the SPP Market</u> | <u>3</u> |
| <u>Locational Imbalance Price Description</u> | <u>3</u> |
| <u>CSV File Naming Standards/Posting Times</u> | <u>4</u> |
| <u>CSV File Description</u> | <u>4</u> |
| <u>Example CSV File</u> | <u>5</u> |
| <u>Daylight Savings Time.....</u> | <u>5</u> |
| <u>Download Procedures</u> | <u>6</u> |
| <u>Substituted Locational Imbalance Price Description</u> | <u>78</u> |
| <u>CSV File Naming Standards/Posting Times</u> | <u>8</u> |
| <u>CSV File Description</u> | <u>89</u> |
| <u>Example CSV File</u> | <u>9</u> |
| <u>Daylight Savings Time.....</u> | <u>910</u> |
| <u>Download Procedures</u> | <u>910</u> |
| <u>Market Hourly Locational Imbalance Price Description for the SPP Market</u> | <u>313</u> |
| <u>Locational Imbalance Price Description</u> | <u>313</u> |
| <u>CSV File Naming Standards/Posting Times</u> | <u>414</u> |
| <u>CSV File Description</u> | <u>414</u> |

| | |
|--|----------|
| Example CSV File | 515 |
| Daylight Savings Time | 515 |
| Download Procedures | 516 |
| Substituted Locational Imbalance Price Description | 818 |
| CSV File Naming Standards/Posting Times | 818 |
| CSV File Description | 919 |
| Example CSV File | 919 |
| Daylight Savings Time | 10110 |
| Download Procedures | 10110 |
| Market Hourly Locational Imbalance Price Description for the SPP Market | 3 |
| Locational Imbalance Price Description | 3 |
| CSV File Naming Standards/Posting Times | 4 |
| CSV File Description | 4 |
| Example CSV File | 5 |
| Daylight Savings Time | 5 |
| Download Procedures | 6 |
| Substituted Locational Imbalance Price Description | 8 |
| CSV File Naming Standards/Posting Times | 8 |
| CSV File Description | 9 |
| Example CSV File | 9 |
| Daylight Savings Time | 10 |
| Download Procedures | 10 |

Market Hourly Locational Imbalance Price Description for the SPP Market

Locational Imbalance Price Description

The Market Operating System (MOS) calculates 5-minute Locational Imbalance Prices (LIPs) for each Settlement Location based on Market Participant submitted Resource Plans, Energy Offer Curves, and Energy Schedules using [an](#) algorithm known as Security Constrained Economic Dispatch (SCED). The data included for a given LIP are as follows:

- Date
- Time
- pNode
- \$/MWh
- Parent pNode
- Settlement Location

Settlement Locations may be zonal or nodal for [a](#) Load, but are only nodal for Resources. Prices are calculated for each ~~of these~~ locations every 5-minutes, [and](#) they are integrated to an hourly level for use in financially binding Settlements.

FERC has mandated that market participants have access to additional pricing information in a ~~timelier~~ [more timely](#) manner. This task consists of adding additional data to the existing LIP CSV file that is generated by the MOS and subsequently copied into the spp.org web site.

To satisfy the FERC requirements the file will now contain the Elemental pNodes that make up an Aggregate pNode, as well as the mapping between each Elemental pNode and its parent.

Market Participants can view the [Settlement Location](#) LIPs via 3 avenues – 1) the Portal, 2) Settlement Statements (as [Billing](#) Determinants) and 3) the SPP.org website (as a CSV file).

Elemental LIPs are viewed via 2 avenues—1) the Portal, and 2) viewed via the SPP.org website (as a CSV file). The focus of this document will be the updated CSV file posted to the SPP.org website.

CSV File Naming Standards/Posting Times

The LIP CSV file will be posted to the SPP.org website with the following naming convention:

MMDDYYYY-HHMMSS-LMP.csv

Ex: **03202005-050000-LMP.csv**

Each file will contain all non-null LIPs for latest Operating Hour as calculated by MOS and will be published by fifteen minutes after the hour they apply to (i.e. By 10:15 a LIP file will be available for the 9:00 – 10:00 hour). The day and time embodied in the filename is the GMT date and time representation of the end of the operating hour for which the file creation is written. SPP will ~~store~~ store up to 6 months worth of LIP data.

CSV File Description

The LIP CSV file posted to the SPP.org website contains the data items as described in the table.

:

| Data Items | Description | Example |
|--------------------|--|--------------|
| yyyymmddhhmm1 | Publication time of the LIP data to the CSV file in CPT | 200510291223 |
| yyyymmddhhmm2 | Operating Hour for which the LIP is applicable in CPT | 200502050100 |
| Pnode | The name of the Settlement Location for which the LIP is applicable | MSTNGCHILD |
| <u>LMP</u> | The \$/MWh for the Settlement Location for the Operating Hour | 115.41 |
| ParentPnode | The parent aggregate pNode of this pNode. If this pNode is an aggregate or external aggregate pNode this value will be the same as the Pnode column. | MSTNGPARENT |
| SettlementLocation | The load asset associated with the given pNode. A pNode may be repeated many times with different values in this column to | MSTNGLOAD |

| | | |
|--|---|--|
| | <p>represent association to multiple load Assets. If the pNode is not associated with any load assets this value will be the same as the Pnode column value.</p> | |
|--|---|--|

Example CSV File

The day and time within the filename is the hour ending GMT date and time for the LIPs. Therefore, a file with the name 09292005-120000-LMP.csv represents the hour ending on September 29, 2005 at 7:00 AM CPT.

The Header Row in the file will contain the following:

PUBLICATIONTIME, HOURENDING, PNODE, LMP, PARENTPNODE, SETTLEMENTLOCATION

Below is a sample of a portion of the data contained within the LIP CSV File.

```
200509290715,200509290700, MSTNGCHILD,115.73, MSTNGPARENT, MSTNGLOAD
200509290715,200509290700, AECL,53.96, NOVUM, IPSUM
200509290715,200509290700, AMRN,166.95, IPSUM, IPSUM
200509290715,200509290700, BLKW,52.7, IPSUM, IPSUM
200509290715,200509290700, CLEC,62.92, IPSUM, IPSUM
200509290715,200509290700, CSWS_AECC_LA,138.43, IPSUM, IPSUM
```

To further explain the first record in the example above the LIPs were published on 09/29/2005 7:15 CPT and apply to the hour ending 09/29/2005 7:00 CPT for the Pnode MSTNGPCHILD, ParentPnode MSTNGPARENT at \$115.73 for the Settlement Location MSTNGLOAD.


Daylight Savings Time

The duplicate hour ending on the fall DST transition day is represented by the ‘d’ suffix to the HourEnding column Operating Hour. Therefore there will be two repeating hours for the fall DST transition day which will only be distinguished by the ‘d’ suffix.

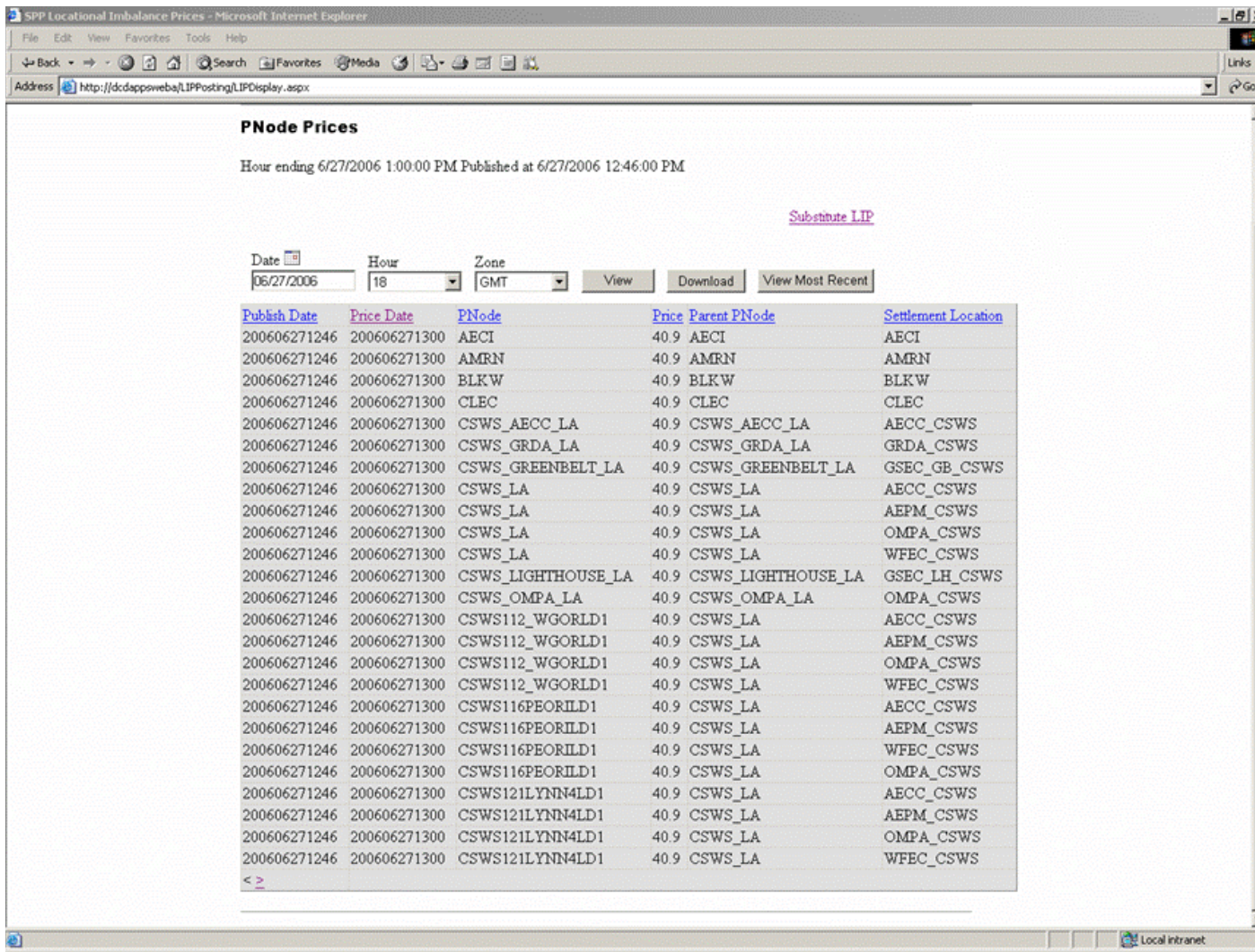
Download Procedures

Members may access this file by going through the following steps:

1. Access the SPP.org website (<http://www.spp.org>)
2. Click on the Market Information Menu on the top navigation bar
3. Select Market Prices to bring up the following page, which will display the most recently published LIP file by default. *Note: Page layout may change before or after in production.*


 Date:
 Hour:
 Zone:

| Publish Date | Price Date | PNode | SettlementLocation | Parent PNode | Price |
|--------------|--------------|--------------------|--------------------|--------------|-------|
| 200605301243 | 200605301200 | AECI | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | AMRN | IPSUM | IPSUM | 34.33 |
| 200605301243 | 200605301200 | BLKW | IPSUM | IPSUM | 34.33 |
| 200605301243 | 200605301200 | CLEC | IPSUM | IPSUM | 34.33 |
| 200605301243 | 200605301200 | CSWS_AECC_LA | IPSUM | IPSUM | 34.33 |
| 200605301243 | 200605301200 | CSWS_GREENBELT_LA | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWS_LA | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWS_LIGHTHOUSE_LA | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWS_OMPA_LA | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSARSENALUN5 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSBLUC_ | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSCALPINEPLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSCALPINEPLT2 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSCOMANCHEPLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSDOLET_PPUN1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSEASTMANPLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSFITZHUGHPLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSFLINTCRKUN1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSFLINTCRKUN | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSFULTON | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSGATEWAY2PLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSGRNCNTRYPLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSKIOWAPLT1 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSKIOWAPLT2 | IPSUM | NOVUM | 34.33 |
| 200605301243 | 200605301200 | CSWSKNOXLEEUN2 | IPSUM | NOVUM | 34.33 |
| <> | | | | | |



PNode Prices

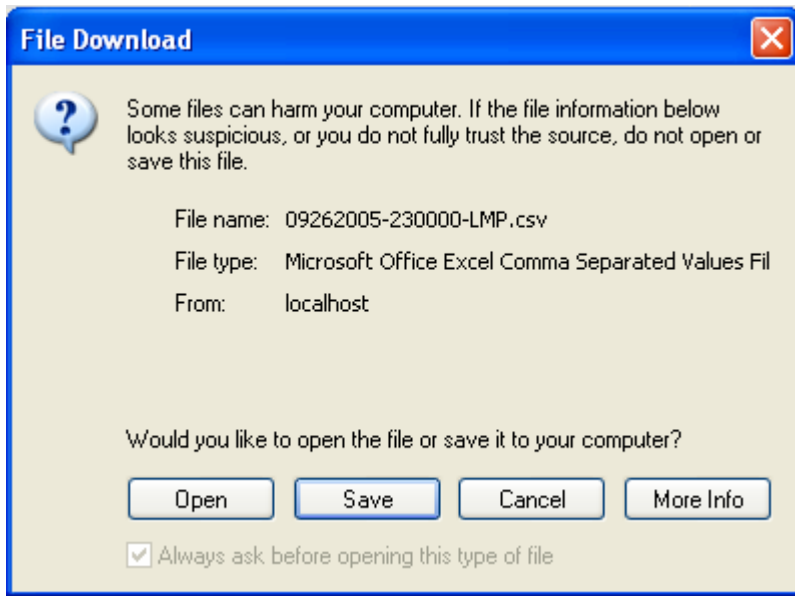
Hour ending 6/27/2006 1:00:00 PM Published at 6/27/2006 12:46:00 PM

[Substitute LIP](#)

Date: 06/27/2006 Hour: 18 Zone: GMT View Download View Most Recent

| Publish Date | Price Date | PNode | Price | Parent PNode | Settlement Location |
|--------------|--------------|--------------------|-------|--------------------|---------------------|
| 200606271246 | 200606271300 | AECI | 40.9 | AECI | AECI |
| 200606271246 | 200606271300 | AMRN | 40.9 | AMRN | AMRN |
| 200606271246 | 200606271300 | BLKW | 40.9 | BLKW | BLKW |
| 200606271246 | 200606271300 | CLEC | 40.9 | CLEC | CLEC |
| 200606271246 | 200606271300 | CSWS_AECC_LA | 40.9 | CSWS_AECC_LA | AECC_CSWS |
| 200606271246 | 200606271300 | CSWS_GRDA_LA | 40.9 | CSWS_GRDA_LA | GRDA_CSWS |
| 200606271246 | 200606271300 | CSWS_GREENBELT_LA | 40.9 | CSWS_GREENBELT_LA | GSEC_GB_CSWS |
| 200606271246 | 200606271300 | CSWS_LA | 40.9 | CSWS_LA | AECC_CSWS |
| 200606271246 | 200606271300 | CSWS_LA | 40.9 | CSWS_LA | AEPM_CSWS |
| 200606271246 | 200606271300 | CSWS_LA | 40.9 | CSWS_LA | OMPA_CSWS |
| 200606271246 | 200606271300 | CSWS_LA | 40.9 | CSWS_LA | WFEC_CSWS |
| 200606271246 | 200606271300 | CSWS_LIGHTHOUSE_LA | 40.9 | CSWS_LIGHTHOUSE_LA | GSEC_LH_CSWS |
| 200606271246 | 200606271300 | CSWS_OMPA_LA | 40.9 | CSWS_OMPA_LA | OMPA_CSWS |
| 200606271246 | 200606271300 | CSWS112_WGORL1 | 40.9 | CSWS_LA | AECC_CSWS |
| 200606271246 | 200606271300 | CSWS112_WGORL1 | 40.9 | CSWS_LA | AEPM_CSWS |
| 200606271246 | 200606271300 | CSWS112_WGORL1 | 40.9 | CSWS_LA | OMPA_CSWS |
| 200606271246 | 200606271300 | CSWS112_WGORL1 | 40.9 | CSWS_LA | WFEC_CSWS |
| 200606271246 | 200606271300 | CSWS116PEORILD1 | 40.9 | CSWS_LA | AECC_CSWS |
| 200606271246 | 200606271300 | CSWS116PEORILD1 | 40.9 | CSWS_LA | AEPM_CSWS |
| 200606271246 | 200606271300 | CSWS116PEORILD1 | 40.9 | CSWS_LA | WFEC_CSWS |
| 200606271246 | 200606271300 | CSWS116PEORILD1 | 40.9 | CSWS_LA | OMPA_CSWS |
| 200606271246 | 200606271300 | CSWS121LYNN4LD1 | 40.9 | CSWS_LA | AECC_CSWS |
| 200606271246 | 200606271300 | CSWS121LYNN4LD1 | 40.9 | CSWS_LA | AEPM_CSWS |
| 200606271246 | 200606271300 | CSWS121LYNN4LD1 | 40.9 | CSWS_LA | OMPA_CSWS |
| 200606271246 | 200606271300 | CSWS121LYNN4LD1 | 40.9 | CSWS_LA | WFEC_CSWS |

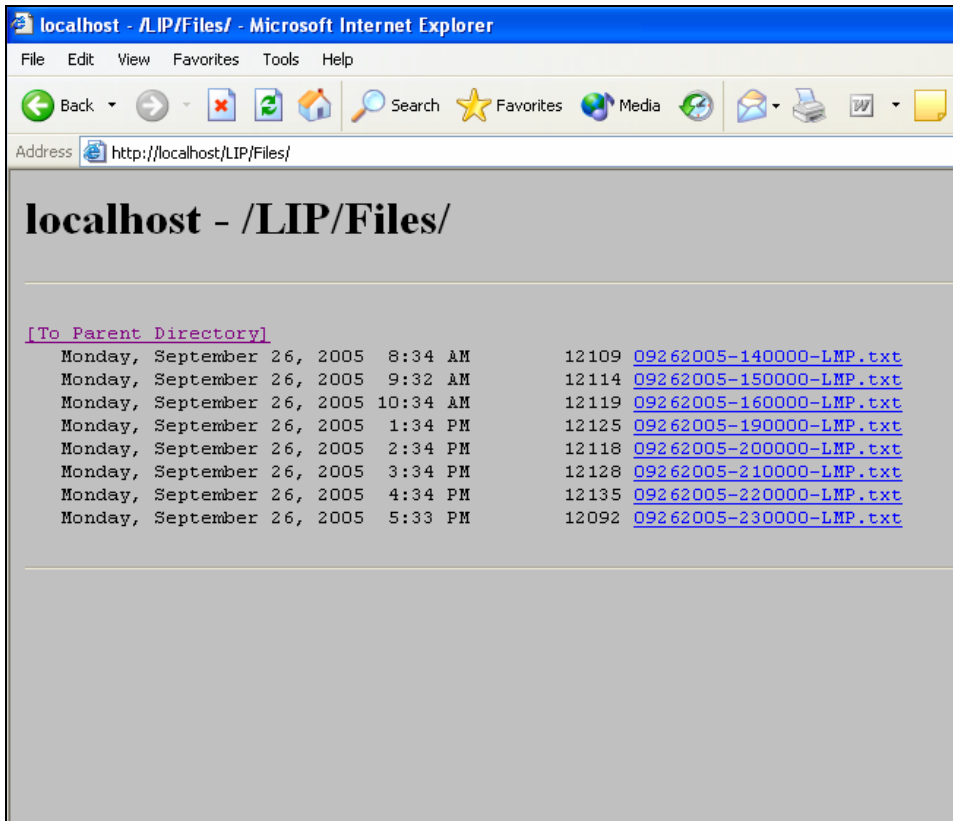
4. Click the Download button.
5. Click Open or Save from the File Download box.



~~*Note that filename in screenshot above should read 09262005-230000-LIP.csv~~

LIP files can also be accessed programmatically:

1. Access the LIP files directly at <http://www.spp.org/LIP/Files/> *Note: The URL in the picture is from a development environment.*
2. A HTTP GET statement can be used in conjunction with the above link to access the LIP files programmatically.



[*Note all filenames in screenshot above will be in csv file format and not txt format.](#)

Substituted Locational Imbalance Price Description

Additionally SPP will post [Settlement LocationSubstituted](#) Locational Imbalance Prices (LIPs) that were re-priced due to a Market Software and/or Data Input Error. These substituted LIPs will be viewable and downloaded from the SPP.org website.

Market Participants can view the [Hourly Substituted](#) LIPs via 2 avenues – 1) the Markets Portal within the Settlement Statement and 2) the SPP.org website (as a CSV file). The focus of this document will be the CSV file posted to the SPP.org website.

CSV File Naming Standards/Posting Times

The file name for the Hourly Substituted Locational Imbalance Prices File -that will be created for the hour and stored on SPP.org will be in the format

[YEAR_MONTH_DAY_HOURYYYYMMDDHHMMSS](#) -with no leading zeroscsv-

Example: 20060_5_180_10000.csv
 2006_5_18_10
 2006_5_6_11

These files are posted to a share on SPP.org by the [Operations Engineers/Settlements group](#). A file will be produced upon a Market Software or Data Input Error. The day and time embodied in the filename is the GMT date and time representation of the end of the operating hour for which the file creation is written. SPP will store up to 6 months worth of Substituted LIP data.

CSV File Description

The [Daily Hourly](#) Substituted LIP CSV file posted to the SPP.org website contains the data items as described in the table.

| Data Items | Description | Example |
|--------------------|--|--------------|
| yyyymmddhhmm | Operating Hour for which the LIP is applicable in CPT | 200502050100 |
| SettlementLocation | The load asset associated with the given pNode. A pNode may be repeated many times with different values in this column to represent association to multiple load Assets. <i>If the pNode is not associated with any load assets this value will be the same as the Pnode column value.</i> | MSTNGLOAD |
| LIP | The \$/MWh for the Settlement Location for the Operating Hour | 115.41 |

Example CSV File

The day and time within the filename is the hour ending GMT date and time for the LIPs. Therefore, a file with the name [2005092909292005-120000-.csv LMP.txt](#) represents the hour ending on September 29, 2005 at 7:00 AM CPT.

The Header Row in the file will contain the following:

HourEnding, SettlementLocation, LIP

Below is a sample of a portion of the data contained within the Substituted LIP CSV File.

200509290700, MSTNGLOAD,115.73

200509290700 ,IPSUM,53.96

200509290700,IPSUM,166.95

200509290700,IPSUM,52.7

200509290700,IPSUM,62.92

200509290700,IPSUM,138.43

To further explain the first record in the example above the Substituted LIP represented by this record applies to the hour ending 09/29/2005 7:00 CPT ~~LIPs were published on 09/29/2005 7:00 AM CPT and apply to the hour ending 09/29/2005 7:00 CPT~~ for the Settlement Location MSTNGLOAD ~~and the Control Area WXYZ~~ at \$115.73. The record does not have the DST flag set.

Daylight Savings Time

The duplicate hour ending on the fall DST transition day is represented by the 'd' suffix to the HourEnding column ~~Operating Hour~~. Therefore there will be two repeating hours for the fall DST transition day which will only be distinguished by the 'd' suffix within the hourly files.

Download Procedures

Members may access this file by going through the following steps:

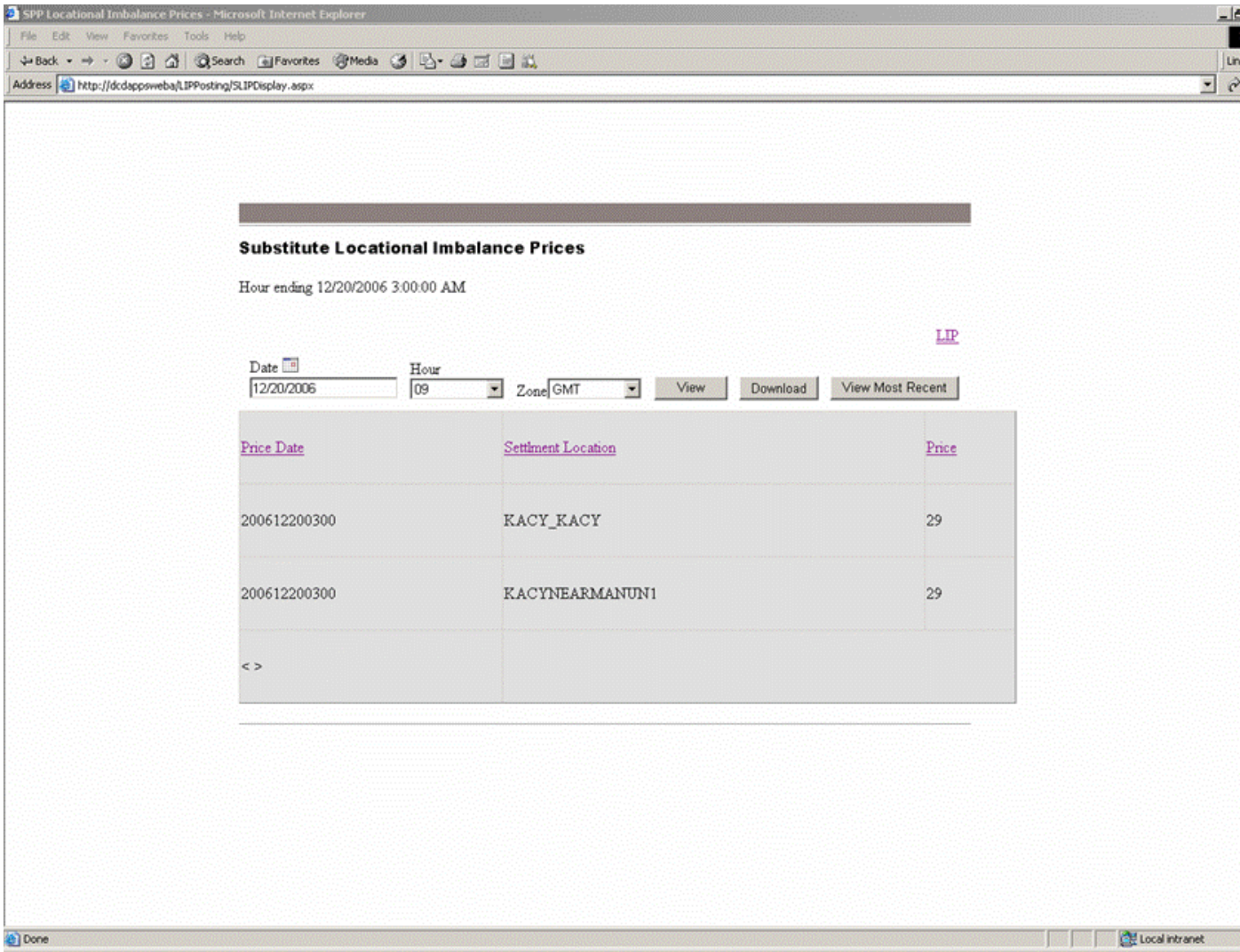
- ~~6.1.~~ Access the SPP.org website (<http://www.spp.org>)
- ~~7.2.~~ Click on the Market Information menu on the top navigation bar
- ~~8.3.~~ Select Substituted Market Prices to bring up the following page, which will display the most recently published Substituted LIP file by default. *Note: Page layout may change before or after in production.*

Hour ending 5/30/2006 12:00:00 PM Published at 5/30/2006 12:43:00 PM.

View LIP


 Date
 Hour
 Zone

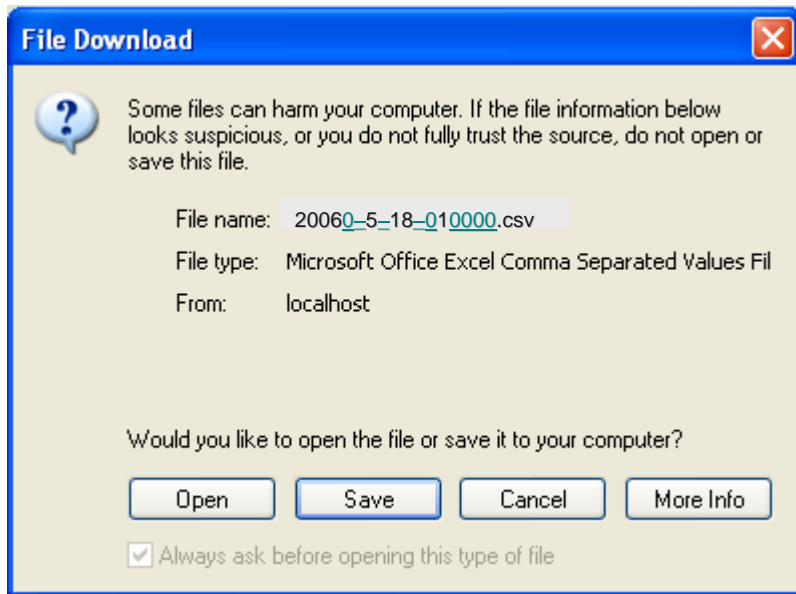
| Price Date | Settlement Location | Price |
|--------------|-------------------------------------|-------|
| 200605301200 | AECI | 34.33 |
| 200605301200 | AMRN | 34.33 |
| 200605301200 | BLKW | 34.33 |
| 200605301200 | CLEC | 34.33 |
| 200605301200 | CSWS_AECC_LA | 34.33 |
| 200605301200 | CSWS_GREENBELT_LA | 34.33 |
| 200605301200 | CSWS_LA | 34.33 |
| 200605301200 | CSWS_LIGHTHOUSE_LA | 34.33 |
| 200605301200 | CSWS_OMPA_LA | 34.33 |
| 200605301200 | CSWSARSENALUN5 | 34.33 |
| 200605301200 | CSWSBLUC_AEPUNUN2_BLUCAN14 | 34.33 |
| 200605301200 | CSWSCALPINEPLT1 | 34.33 |
| 200605301200 | CSWSCALPINEPLT2 | 34.33 |
| 200605301200 | CSWSCOMANCHEPLT1 | 34.33 |
| 200605301200 | CSWSDOLET_PPUN1 | 34.33 |
| 200605301200 | CSWSEASTMANPLT1 | 34.33 |
| 200605301200 | CSWSFITZHUGHPLT1 | 34.33 |
| 200605301200 | CSWSFLINTCRKUN1 | 34.33 |
| 200605301200 | CSWSFLINTCRKUN1_JOU_AECC | 34.33 |
| 200605301200 | CSWSFULTON_CUNFULT | 34.33 |
| 200605301200 | CSWSGATEWAY2PLT1 | 34.33 |
| 200605301200 | CSWSGRNCNTRYPLT1 | 34.33 |
| 200605301200 | CSWSKIOWAPLT1 | 34.33 |
| 200605301200 | CSWSKIOWAPLT2 | 34.33 |
| 200605301200 | CSWSKNOXLEEUN2 | 34.33 |



** Note: The following note will appear on the page below the Hour Ending Label: “Due to a Market Software and/or Data Input Error, SPP will post Substituted Locational Imbalance Prices (LIPs) which will supersede and replace the LIPs posted to this page . These Substituted LIPs can be viewed and downloaded by clicking the Substitute LIP link.”*

9.4. Click the Download button.

10.5. Click Open or Save from the File Download box. Note that the filename will be in the format of **YEAR_MONTH_DAY_HOUR** with no leading zeros **YYYYMMDDHHMMSS** as described in the ‘CSV File Naming Standards/Posting Times’ for Substituted LIPs section of this document.



Or

3.1. Access the Substituted LIP files directly at <http://www.spp.org/SLIP>. *Note: The URL in the picture is from a development environment.*

- oDCPWEBA/C:/LIP
- oDCPWEBA/C:/LIP-Substituted
- oDCPWEBA/C:/LIP-Substituted/DayFile
- oDCPWEBA/C:/LIP-Substituted/Archive
- oDCPWEBA/C:/LIP-Substituted/Error

A HTTP GET statement can be used in conjunction with the above link to access the SLIP files programmatically.

