**Suggestions for Handling Paper Copies of Utility Bills**

Grantees that receive paper copies of energy usage data from an electric or natural gas utility company should convert the data to machine readable text and save it in an MS Excel file or text file in CSV (comma-separated values) format before uploading to BBNIS. Below are suggestions for converting paper copies to electronic machine readable text format.

Grantees that receive paper copies of oil or propane energy usage (bills) can scan the copies as an image and save as a PDF file. These do not need to be converted to machine readable text. Because bulk fuels are not typically purchased monthly, the actual billing document may contain additional information to provide a context for determining how much fuel was purchased and the time period within which it was used.

**In-House**

The easiest solution for converting paper copies of energy billing data to electric format is Optical Character Recognition (OCR) software. Paper copies will first need to be scanned and saved as a PDF or image file. The OCR software can be used to convert the PDF or image file to characters and saved in an MS Excel file.

There are several companies that sell OCR software. The cost is typically $100 - $500. You can find reviews of software packages on the internet at sites like CNET.com, TopTenReviews.com or PC Magazine.com. You will want software that converts and saves to an Excel format.
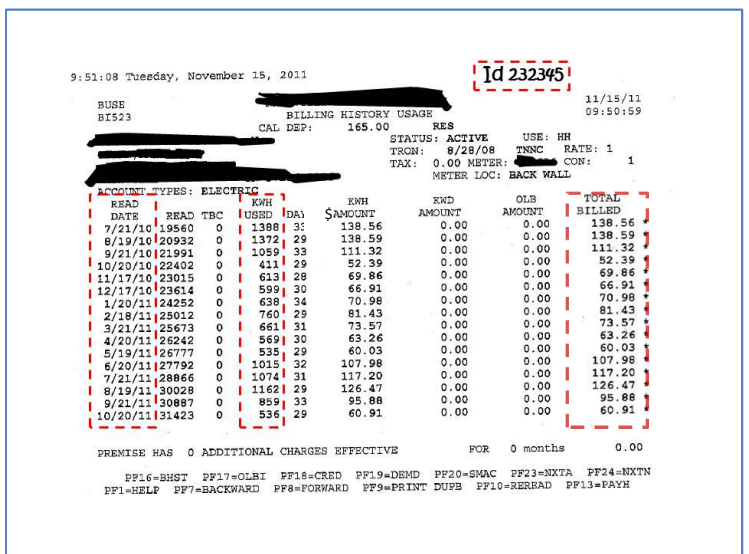
The quality of the conversion will depend on the quality of the printed copies. Clear, aligned copies are best. Most OCR software can be set up to scan only the sections on a page that you want. However, someone will need to review the results to verify that data are correctly being processed. This could be done by a temporary employee or a student intern.

**Out Sourcing**

There are companies that offer "Document OCR Services", "Document Imaging Services" or "OCR Conversion Services". They typically service the legal and medical fields. If you look in the Yellow Pages or perform a Google search you will find companies that offer these services.

Provide them with a sample (printed copy or PDF file) and tell them how many pages/records you need converted and ask for an estimate. Ask them to demonstrate that they can convert your sample to the format you need. They need to be capable of converting the data you specify and saving it in an Excel file. You will need to provide them with specific instructions or an example showing what information you want converted and the format needed for the MS Excel spreadsheet. You will likely have multiple billing histories and will need to provide project ID numbers with the billing files and explain how they should be matched in the Excel file. To protect customer's privacy you may need to redact (white-out or black-out parts of a document) names and account numbers if you outsource this activity. Figure 1 is an example billing history which shows the important information to convert outlined in red. Additional information that is useful to provide is the bill

**Figure 1**

payment due, here labeled "Total Billed", payment date, meter reading, and number of days covered. (Payment information is optional but providing it is useful and welcome). In this example, the project ID has been written at the top. If it is easier, you can ask them to scan each column. It is okay to provide more data, but the minimum needed by DOE is the outlined in red in this example.

Example Instructions: Convert the Read Date column and KWH USED column from the documents. Save this information in two columns in an Excel file and use the ID number at the top of the document in a third column to identify the source of the data.

Figure 2 shows the file and format of a successfully converted document. The column that is first is not important so long as it is clear to an outside observer which data is associated with which ID number. It is also important that an outside observer is able to determine the units of energy and the quantity used over a period of time as well as the date when the period began or ended. In this example, the "Read Date" indicates the end of a period of time during which a quantity of energy was used.

**Figure 2**

| | A | C | D | E | F |
|---|---|---|---|---|---|
| 13 | | | Fuel 1 | | Payment Info (optional) |
| 14 | Project ID | Read Date | Fuel Type (Units) | Fuel Quantity | Amount Billed |
| 15 | 232345 | 7/21/2010 | Electricity(kWh) | 1,388 | $138.56 |
| 16 | 232345 | 8/19/2010 | Electricity(kWh) | 1,372 | $138.59 |
| 17 | 232345 | 9/21/2010 | Electricity(kWh) | 1,059 | $111.32 |
| 18 | 232345 | 10/20/2010 | Electricity(kWh) | 411 | $52.39 |
| 19 | 232345 | 11/17/2010 | Electricity(kWh) | 613 | $69.86 |
| 20 | 232345 | 12/17/2010 | Electricity(kWh) | 599 | $66.91 |
| 21 | 232345 | 1/20/2011 | Electricity(kWh) | 638 | $70.98 |
| 22 | 232345 | 2/18/2011 | Electricity(kWh) | 760 | $81.43 |
| 23 | 232345 | 3/21/2011 | Electricity(kWh) | 661 | $73.57 |
| 24 | 232345 | 4/20/2011 | Electricity(kWh) | 569 | $63.26 |
| 25 | 232345 | 5/19/2011 | Electricity(kWh) | 535 | $60.03 |
| 26 | 232345 | 6/20/2011 | Electricity(kWh) | 1,015 | $107.98 |
| 27 | | 7/21/2011 | Electricity(kWh) | 1,074 | $117.20 |
| 28 | | 8/19/2011 | Electricity(kWh) | 1,162 | $126.47 |
| 29 | | 9/21/2011 | Electricity(kWh) | 859 | $95.88 |
| 30 | | 10/20/2011 | Electricity(kWh) | 536 | $60.91 |