

# Improving Data Quality

*How to improve data quality throughout the heating season and information sharing's role in doing so*



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# Overview

Data Fundamentals

Pre-Season Contact

Internet Data Collection  
system

Weekly Data Collections

Documentation /  
Information Sharing



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# EIA-877: Data Fundamentals



# Data Fundamentals: Characteristics

- Overview of what data are being collected:
    - Current Monday’s “Charge” or “Full-Credit” price per gallon
    - No. 2 Heating Oil, Propane
    - Leased/Company-owned tank
    - Residential Customers
    - Exclude taxes, discounts, premiums, surcharges
- 
- Residential customers - individual customers or households who use the fuel to heat their residences
    - “Residential Sales” do not include apartment buildings, multi-family dwellings, businesses, or institutions

# Data Fundamentals: Characteristics

- Price based on a “leased” or “company-owned tank”
  - Majority of heating fuel customers do not own their tanks
  - Customer-owned tank prices can be less than the going-rate for heating fuel that we are trying to capture
- The price should exclude:
  - Taxes
  - Discounts
  - Premiums paid for small or large volume purchases
  - Surcharges for customers living outside the normal delivery area
  - These components detract from what it is we are trying to collect

# Data Fundamentals: Price Types

- Collect the “Full-Credit” or “Charge” price
  - “Going Rate”
  - “Market Price”
  - Generally do not contain discounts
- Cash Prices
  - Include discounts or incentives
  - \$0.05 to \$0.10 per gallon difference
  - Lower/more attractive price
  - We do not want the cash price!

# Data Fundamentals: Retail Outlets

- Some respondents operate multiple establishments within a given State
  - In some cases, prices vary from outlet to outlet
- Respondents should report data for the particular retail outlet being surveyed
  - Outlet/location-specific data
  - Identify the outlet being targeted by stating which city the outlet is located
  - Location-specific information found within the IDC on “Main Form” screen

# Data Fundamentals: Data Formatting

- Prices reported must be rounded to the nearest thousandths (e.g. \$1.259)
- EIA has changed the practice of reporting petroleum marketing data in cents
- All data are now reported in dollars carried to the thousandths
- Reflected in all EIA publications

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# Pre-Season Contact

# Pre-Season Contact: EIA

- Calls to individual respondents prior to the season
  - Verify operating status
  - Selection to the survey
  - Verify sale of No. 2 Heating Oil & Propane
- EIA shares this information with States when verified
- Sample integrity
  - Keeping the sample up to date
  - This too improves data quality
- New respondent or continuing respondent letters

# Pre-Season Contact: State Energy Offices

- State Energy Office to contact respondents prior to the season's start
- Chance to establish a relationship with respondents \*
- Identify (if possible) a contact person and back-up who will provide data from week to week
  - Familiar with survey's weekly data requests
  - More likely to report the correct price
  - Improve weekly consistency
  - And, help reduce the time it takes to complete a call
- Agree upon a method (or request) for collecting data

# Pre-Season Contact: Why Pre-Season Contact is Important

- Companies with simple or non-existent pricing structures
    - Heating Oil Companies (single price or charge & cash price)
    - Data collections straightforward
  - Companies with complex marketing initiatives & pricing structures
    - Propane Companies
    - Data collections can be more challenging
- 
- Propane Pricing Programs \*
    - Complicated pricing structures
    - Prices contain various surcharges and fees
    - Contract and non-contract LP delivery prices
    - “Will-Call” prices for customers who place incidental propane orders
    - “Keep-Full” prices for customers who have standing orders in place for routine LP refills \*
    - Price per gallon sometimes based on annual consumption

# Preseason Contact: Identifying Pricing Tiers & Product Codes

- Tier-level or product code

- Establish what volume the average residential customer of that company uses on an annual basis
- Choose the tier-level that corresponds with that volume
- Avoid asking for usage-per-season ranges that are round numbers (e.g., 1,000 gallons)

Keep track of pricing tier and product code information used when collecting data by making note of this within the “Comments” section of the IDC



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## EIA-877: Winter Heating Fuels Telephone Survey

[Main Form](#)
[Notices](#)
[Instructions & Help](#)

(CURRENT) Ref. Period: 03/19/2012 State: VA Report Status: Complete Unsubmitted Data: Yes

Click to sort by header (s=Complete)  
 > ID Company

> VA05036
> VA06027
> VA07001
> VA06007
> VA04013
> VA06009
> VA95159
> VA07009
> VA03014
> VA07010
> VA05030

Counts: Total=39 Complete=39 Incomplete=0

**VA06007** ID=VA06007  
 Address: [Redacted]  
 Contact: [Redacted] Phone: [Redacted] x  
 E-mail: [Redacted] Fax: [Redacted]  
 Alt Contact: Wayne or Mike or Linda Alt Ph#: [Redacted]

**Comments: leased tank price based on 700-1300g annual consumption.**

	Price (\$/gal)	Category
Propane	2.910	Bulk Keep Full-Credit

[View/Update History](#)  
[Change Co. Contact Info](#)

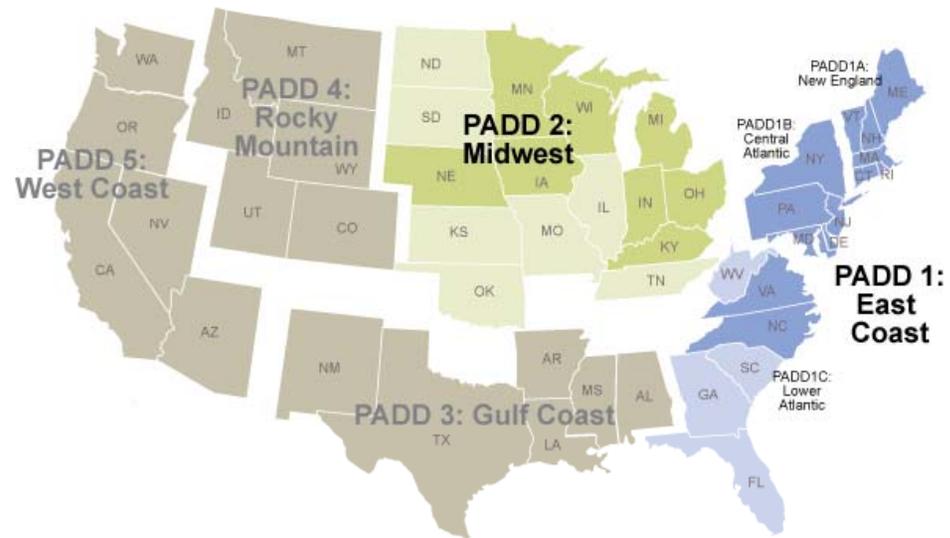
[Add Survey Comments](#)
[Change State Contact Info](#)
[Create 03/19/2012 Report](#)
 State: VA

[ADMIN HOME](#)
[Review Prices Before Submit](#)
 OMB Number: 1905-0174  
 Form Expires: 12/31/2012

Note in "Comments" section: This tier-level (range) price that best meets the survey's criteria. Determined during preseason contact w/ respondent.

# Pre-Season Contact: Useful Data for Acquiring the Correct Price

- Knowing this information may prove to be useful...
- Statewide averages:
  - Annual consumption
  - Tank size
  - Per residential customer



However...

- May not be effective for States with wide-ranging regional climates
  - Virginia or New York

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# Weekly Data Collections



# Weekly Data Collections: During Heating Season

Before a call is made:

- Review previously reported data
  - Utilize the IDC
  - From the “Ref. Period” dropdown box, toggle back and forth from week to week
  - “Create (date) Report”
- Look for consistencies or noticeable trends that may be emerging
  - (e.g., \$3.520, \$3.530, \$3.540)
  - (e.g., \$3.490, \$3.490, \$3.490, \$3.490)

**EIA-877: Winter Heating Fuels Telephone Survey**

[Main Form](#)   [Notices](#)   [Instructions & Help](#)

(CURRENT) Ref. Period: **03/19/2012**   State: VA   Report Status: Complete   Unsubmitted Data: No

Click to sort by header (x=Complete)  
 ID   Company

- VA06023
- VA06021
- VA08001
- VA07002
- VA06029
- VA08007
- VA06020
- VA04003
- VA07004
- VA04004
- VA07005

Counts: Total=39 Complete=39 Incomplete=0

Address: [Redacted]  
 Contact: [Redacted]   Phone: [Redacted]  
 E-mail: [Redacted]   Fax: [Redacted]  
 Alt Contact: [Redacted]   Alt Ph#: [Redacted]  
 Comments:

Propane   Price (\$/gal) 2.690   Category Bulk: Keep Full-Credit

[Next](#)   [Cancel](#)   [View/Update History](#)  
[Change Co. Contact Info](#)

[Add Survey Comments](#)   [Change State Contact Info](#)   **[Create 03/19/2012 Report](#)**   State: VA

[ADMIN HOME](#)   [Review Prices Before Submit](#)   OMB Number: 1905-0174   Form Expires: 12/31/2012

To generate a report detailing the prices that have been reported over the past three weeks within a State, select the option circled in red

Reference Period:

 Right-click to: [Create CSV File](#) | [Back to Main Form](#)

Prices									
Company	ID	Fuel FI	Fuel Prices (P = propane H = heat oil)			Contact			
			Price (Wk-2)	Price (Wk-1)	Price Cur	Contact	Phone	AltContact	AltPhone
	VA06023	P	2.649	2.699 ↑	2.690				
	VA06021	P	2.890	2.890	2.890				
	VA08001	P	2.999	2.999	2.990				
	VA07002	H	3.810	3.770	3.810				
	VA06029	P	3.199	3.199	3.200				
	VA08007	P	3.749 ↑	3.799 ↑	3.899 ↑				
	VA06020	P	2.649	2.649	2.649				
	VA04003	H	3.799	3.799	3.799				
	VA07004	H	3.849	3.849	3.849				
	VA04004	H	3.899	3.959 ↑	3.959				
	VA07005	H	3.699	3.699	3.749 ↑				
	VA07003	H	4.344	4.261 ↓	4.243 ↓				
	VA07011	H	4.000	3.978 ↓	3.978				
	VA07006	H	3.799	3.759	3.799				

Data can also be compared using the “View/Update History” function.

The screenshot displays the EIA-877: Winter Heating Fuels Telephone Survey web application. At the top left is the EIA logo and the URL eia.doe.gov. The title is "EIA-877: Winter Heating Fuels Telephone Survey". Below the title are three tabs: "Main Form", "Notices", and "Instructions & Help".

The main content area shows the following information:

- Ref. Period: 03/19/2012 (dropdown)
- State: VA
- Report Status: Complete
- Unsubmitted Data: No

On the left, there is a list of survey entries with columns for "ID" and "Company". The entry "VA06023" is selected. Below the list, it says "Counts: Total=39 Complete=39 Incomplete=0".

The main details area for the selected entry (ID=VA06023) includes:

- Address: [Redacted]
- Contact: [Redacted]
- Phone: [Redacted] x
- E-mail: [Redacted]
- Fax: [Redacted]
- Alt Contact: [Redacted]
- Alt Ph#: [Redacted]
- Comments: [Redacted]

Below the contact information, there is a table for fuel pricing:

	Price (\$/gal)	Category
Propane	2.690	Bulk Keep Full-Credit

At the bottom of the details area, there are buttons for "Next" and "Cancel", and a link for "View/Update History" which is circled in red. Below this is a link for "Change Contact Info".

At the bottom of the page, there are several links: "Add Survey Comments", "Change State Contact Info", "Create 03/19/2012 Report", and "State: VA" (dropdown). There is also a "Review Prices Before Submit" button and "ADMIN HOME" link. The footer includes "OMB Number: 1905-0174" and "Form Expires: 12/31/2012".

Select a company:  State of VA

Click to sort by header  
(>=Complete)

Period
03/19/2012
03/12/2012
03/05/2012
02/27/2012
02/20/2012
02/13/2012
02/06/2012
01/30/2012
01/23/2012
01/16/2012
01/09/2012
01/02/2012

Address: [REDACTED] ID=VA06023

Contact: [REDACTED] Phone: [REDACTED] x

E-mail: [REDACTED] Fax: [REDACTED]

Alt Contact: [REDACTED] Alt Ph#: [REDACTED]

Comments:

Price (\$/gal)	Category
Propane 2.690	Bulk Keep Full-Credit

► Next X Cancel

[Company History Report](#)

Back to Main Form

Select the "Company History Report" to export data to .xls file

# Weekly Data Collections: Calls to Respondents

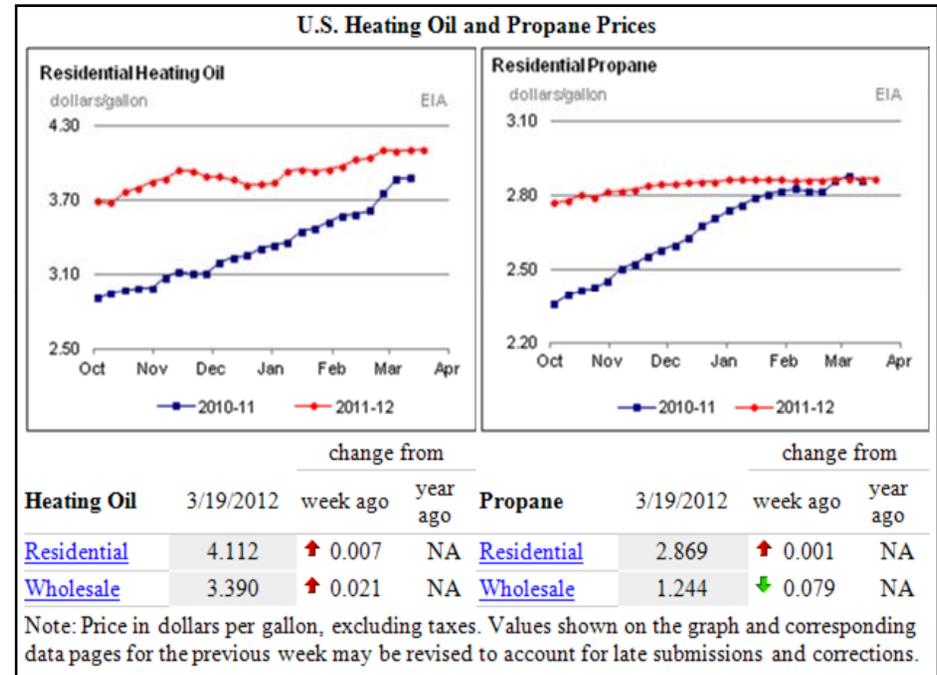
- Take your time while speaking with respondents
  - Don't rush off the phone
  - Ask the respondent questions about the data being reported
- Calls can still be completed within a reasonable amount of time
- Pay attention to the data being reported by the respondent
- Difficult respondents who are noncompliant:
  - Contact the SHOPP Operator
  - We will work together to resolve issues
  - Streamline a process for collecting future data

# Weekly Data Collections: Errors

- Common errors made by respondents
  - Incorrectly read prices off a price list
  - Wrong product code # or tier-level
- Catching errors as they occur
  - Verbalize the price difference by restating it in the form of a question
    - (e.g., \$3.590? Did your residential propane really increase by twenty cents from last week to this week?)
    - (e.g., \$3.490? That is a decrease of \$0.10 from last week. That is a counter-trend movement compared with what we are seeing reported elsewhere within the State. Did your heating oil really decrease in price by \$0.10?)
- Questions like these force the respondent to think more carefully about the data they are reporting
- Asking questions reduce the amount of disruption to their day to day business

# Weekly Data Collections: Timely Submission

- Data submitted by 12:00 noon on Tuesdays during normal collection cycles
  - By 12:00 noon on alternate day for holiday scheduled collection cycles
- Several in-house data validation & pre-publication tasks
  - take place between the hours of 12:00 noon and 6:00pm Tuesday
  - Wednesday morning publication deadlines
- Contact the SHOPP Operator if your office is having trouble
  - Don't wait until 12:00 noon

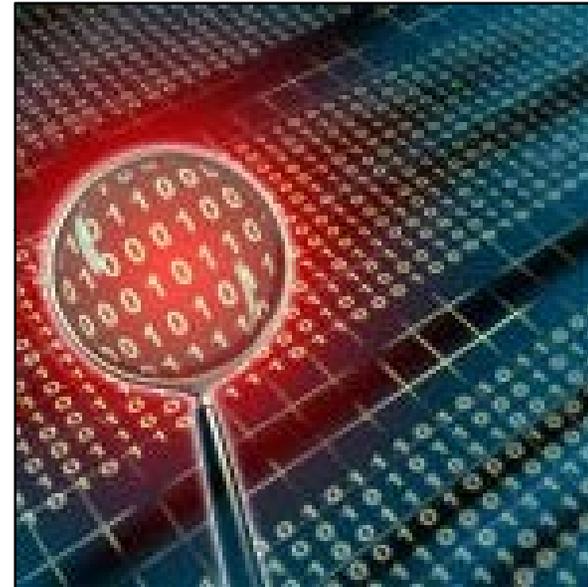


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# Documentation/Information Sharing

# Documentation

- How we share information day to day
- When verifying data:
  - Acquire a brief explanation
    - What?
    - When?
    - Why?
- Take note of this information
- Add to the “Add Survey Comments” section within the IDC



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## EIA-877: Winter Heating Fuels Telephone Survey

Main Form
Notices
Instructions & Help

(CURRENT) Ref. Period: 03/19/2012      State: NY      Report Status: Complete      Unsubmitted Data: No

Click to sort by header (>=Complete)

ID	Company
» NY07004	
» NY07005	
» NY08002	
» NY07007	
» NY08003	
» NY08010	
» NY08001	
» NY07008	
» NY04003	
» NY07009	
» NY08004	

Counts: Total=63 Complete=63 Incomplete=0

Address: [REDACTED] ID=NY07004

Contact: [REDACTED] Phone: [REDACTED] x

E-mail: [REDACTED] Fax: [REDACTED]

Alt Contact: [REDACTED] Alt Ph#: [REDACTED]

Comments:

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Price (\$/gal)      Category  
 No. 2 H.O.           

▶ Next      ✗ Cancel      [View/Update History](#)  
[Change Co. Contact Info](#)

[Add Survey Comments](#)      [Change State Contact Info](#)      [Create 03/19/2012 Report](#)      State: NY

[ADMIN HOME](#)      Review Prices Before Submit      OMB Number: 1905-0174  
 Form Expires: 12/31/2012

“Add survey comments”  
 Place to record weekly notes/information

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Comments

Enter any information pertinent to this submission, including the current period and any prior periods. Include changes in company operating status or other reasons for any large fluctuations in your submission. This will expedite the processing and may avoid telephone follow-ups.

4023- \_\_\_\_\_ - Price increase confirmed.  
7019- \_\_\_\_\_ - Price increase confirmed.  
7021- \_\_\_\_\_ - Price increase confirmed.  
6017- \_\_\_\_\_ - Change in pricing tiers; new price is 900+gallons.

Save Cancel

“Add Survey Comments” screen

Examples of information to be shared within this function

Each State has a role in keeping the sample current. This includes making changes to contact information in the IDC as you establish better contacts. (Select “Change Co. Contact Info” option circled in red)

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### EIA-877: Winter Heating Fuels Telephone Survey

Main Form Notices Instructions & Help

(CURRENT) Ref. Period: 03/19/2012 State: VA Report Status: Complete Unsubmitted Data: Yes

Click to sort by header (>=Complete)

ID	Company
VA05022	
VA05025	
VA08003	
VA05003	
VA08004	
VA05036	
VA06027	
VA07001	
VA06007	
VA04013	
VA06009	

Counts: Total=39 Complete=39 Incomplete=0

Address: [Redacted] ID=VA05022

Contact: [Redacted] Phone: [Redacted] x

E-mail: [Redacted] Fax: [Redacted]

Alt Contact: [Redacted] Alt Ph#: [Redacted]

Comments: Call [Redacted]

Price (\$/gal) Category

Propane 3.150 Bulk Keep Full-Credit

Next Cancel View Update History Change Co. Contact Info

Add Survey Comments Change State Contact Info Create 03/19/2012 Report State: VA

ADMIN HOME Review Prices Before Submit OMB Number: 1905-0174 Form Expires: 12/31/2012

ID=VA05022

**Address**

DBA Name:   
Address:   
  
City:  State:  Zip Code:  -

**Contact Name**

Prefix:  First:  Middle:   
Last:  Suffix:   
Title:   
Alternate First Name:  Last Name:   
Comments:

**Communication**

Phone: (  )  -  Ext.  Fax (  )  -   
Alt Phone: (  )  -   
E-Mail:

Save

Cancel

# Documentation

- If a company is sold or goes out of business, it is helpful to collect as much information as possible regarding the closure
- The following pieces of information are critical:
  - Sale date
  - Purchasing company
  - Contact for purchasing company
- If you enter a comment in the IDC, be sure to email the comment as well

# Information Sharing

- Purpose:
  - To foster better communication & improve data quality
    - This goes both ways!
    - Emails, calls, documenting information (notes), reports
- Information sharing has the potential to cover a range of additional topics including:
  - Notification of supply issues
  - FAQ's from energy consumers
  - Local or regional news regarding residential heating fuel markets
  - Sharing the best practices for administering the survey in your offices

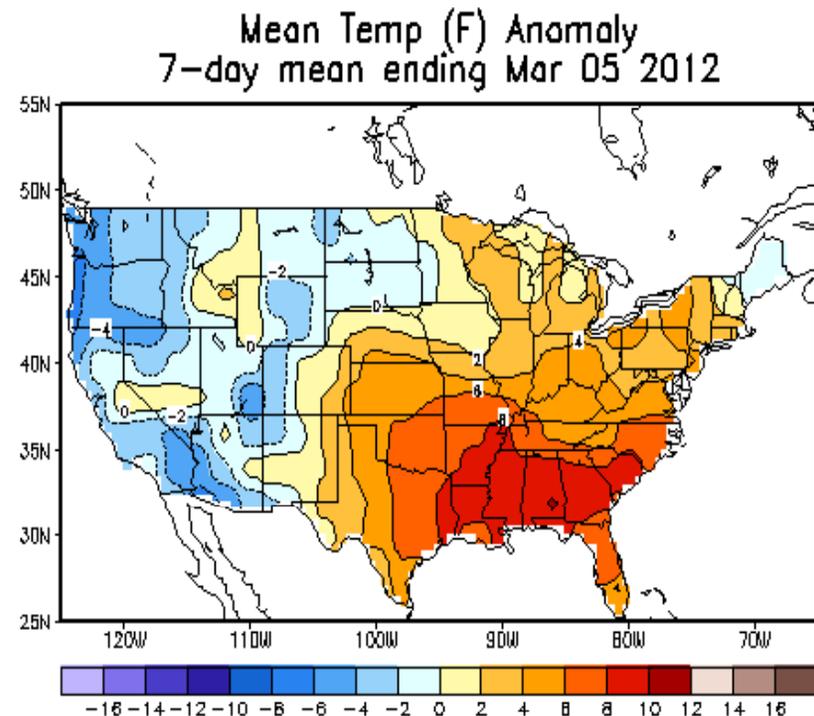
# Information Sharing: Weekly Email Status Reports to SEOs

Promotes communication and information sharing between EIA and State Energy Offices

Examples of topics covered in Weekly Email Status Reports to SEOs:

- Summary of weekly heating fuel activity
- Expectations based on historical trends
- Data collection techniques
- Alternate reporting schedules due to weather or holidays
- Latest news on industry related events
- NOAA Weather Reports

Chance to share information with other State Energy Offices and EIA



# Summary

- “Monday’s full-credit/charge price based on a company-owned or leased tank for residential No. 2/Propane used for home heat”
- Determine through pre-season contact how best to request data from week to week
- When collecting data, we review prior data, identify patterns or noticeable trends. Take your time.
- Ask questions
- Aim for weekly consistency
- Communicate with respondents, EIA, other SEOs

# For More Information: Data Publications

U.S. Energy Information Administration home page [www.eia.gov](http://www.eia.gov)

This Week in Petroleum (TWIP) <http://www.eia.gov/oog/info/twip/twip.asp>

Heating Oil and Propane Update (HOPU)

<http://www.eia.gov/petroleum/heatingoilpropane/>

Weekly Petroleum Status Report (WPSR)

[http://www.eia.gov/oil\\_gas/petroleum/data\\_publications/weekly\\_petroleum\\_status\\_report/wpsr.html](http://www.eia.gov/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/wpsr.html)

Short-Term Energy Outlook (STEO) <http://www.eia.gov/forecasts/steo/>

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