Understanding changes to EIA's hydrocarbon gas liquids (HGL) supply/disposition tables



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By

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- EIA is the Nation's premier source of energy information and, by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government
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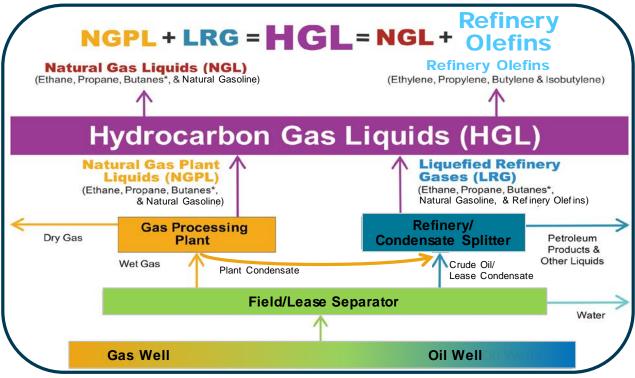


Key takeaways

- EIA implemented the alkanes/olefins split in its monthly tables back to January 2010 both on the web and in the Petroleum Supply Monthly, on August 31, alongside the release of the 2016 Petroleum Supply Annual
- Surveys remain the same, and the data remain the same, only the labels and the table layouts have changed
- Based on industry stakeholder insight, EIA developed an allocation methodology for alkanes and olefins in stocks to generate datasets that do not precisely reflect data collected through surveys
- The only data that will no longer appear in EIA tables is ethylene, with the exception of refinery production of ethylene



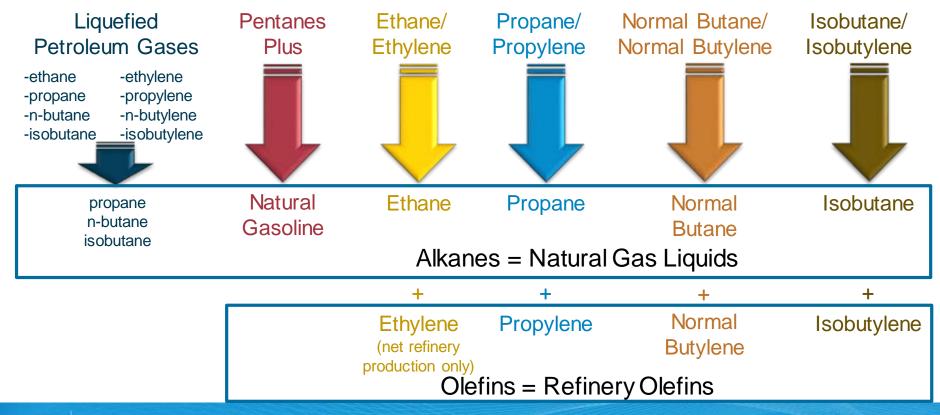
EIA's HGL terminology bridges how the commodities are supplied, marketed and consumed



*Butanes include normal butane and isobutane.



EIA's revised monthly data tables for HGL affect all natural gas liquids (alkanes) and refinery olefins (olefins)





Where it all began...

Supply and Disposition

_	Are	ea: U.S.	¥	<u>Latest</u> Periods:	May 2017 (C	urrent) 🔹	Unit: T	housand Barre	ls per Da		Click a table v for series his	090]	
Γ	M	Download Series History	1 Defini	tions, Sources	& Notes									
						Supply					Disp	osition		
s	Show	Data By:			Renewable Fuels & Oxygenate Plant Net	Refinery & Blender Net			Adjust-		Refinery & Blender Net		Products	Endina
	۲	Product O Area		Production			Imports			Change		Exports	Supplied	
C	Crud	e Oil & Petroleum Products	;	12,890	1,174	21,036	10,628		516	170	19,911	6,142	20,021	
C	Crud	e Oil		9,169			8,397		305	-364	17,212	1,023	0	
		ral Gas Plant Liquids and Li ery Gases	iquefied	3,721	-21	908	166			562	484	1,332	2,397	
-6	P	entanes Plus		449	-21		17			-31	191	176	109	
-C	Li	quefied Petroleum Gases		3,272		908	148			593	292	1,156	2,288	
		Ethane/Ethylene		1,405		8	-			6	-	191	1,215	
		Propane/Propylene		1,211		622	120			235	-	855	863	
		Normal Butane/Butylene		283		285	16			349	65	101	68	
		Isobutane/Isobutylene		374		-6	12			3	227	8	141	

market calls this Natural Gasoline

LPG? Not really, since it includes ethane and all refinery olefins

 Mixed products from multiple sources of production reporting combined product supplied numbers that in fact serve completely different markets



...where we are now

Supply and Disposition

Area: U.S.	<u>Latest</u> Periods:	Jun 2017 (Cu	ırrent) 🔻	Unit: Th	nousand Barrel	ls per Da		lick a table v or series his	000]	
Download Series History 🕧 Defin	itions, Sources	& Notes									
			Supply					Disp	osition		
Show Data By: Product	Field	Renewable Fuels & Oxygenate Plant Net Production	Refinery & Blender Net Production	Imports	Net Receipts	Adjust-	Stock	Refinery & Blender Net	Exports	Products Supplied	
Crude Oil & Petroleum Products	12,849			10,240	Net Receipts	393	Change -824				
Crude Oil & Petroleum Products	9,097	1,100	21,321	8.010		159		-			
Hydrocarbon Gas Liquids	3,057			152		155	660				
	3,752						0.47	473			
Natural Gas Liquids		I	-	120				413			
Ethane	1,412			-			-3		120		
LKANES Propane	1,216			93			356		742		
Normal Butane	284		201	11					154		
Isobutane	374		-5	11			-9	219	3	167	
Natural Gasoline	467	-22		6			34	191	206	20	
Refinery Olefins			285	32			13			304	
Ethylene							0			1	
Propylene			282	23			8			298	
Butylene			1	8			4			5	
Isobutylene			1	-			0			1	

Source: EIA, Supply and Disposition table



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С

The new tables/categories fixed what needed fixing

Exports by Destination

					-				-	Product:	Propane				Destad	Linte Man	thly-Thousan	d Danala aa	Dev. T
Product:	Liquefied Petroleum G Total Crude Oil and Proc				Period	I-Unit: Ann	ual-Thousan	d Barrels per	Day 🔻	Product:	Total Crude Oil and Produ	inte			Period	-unit: Mon	uniy-rhousan	J Darreis pei	r Day 🔹
		aucts								Down	Crude Oil	1013							
Downi Downi	Crude Oil Total Products										Total Products								
Show Data By	Pontere			_					View	Show Data B	Hydrocarbon Gas Liquid.								View
O Destina	Liquefied Petroleum G	ases			2013	2014	2015	2016	History	O Destina	Natural Gas Liquids				Mar-17	Apr-17	May-17	Jun-17	History
Total All Col	Unimsnee one				332	537	783	1,004	1973-2016	Total AI Co					1,010	893	855	742	2004-2017
Angola	Finished Motor Gasolin Reformulated Gasoline								2003-2012	Albunia	Propane Normal Butane								2016-2016
Anguilla	Conventional Gasoli								0040 0040	Angola	Isobutane								2005-2012
-	Motor Gasoline Blend.	Comp. (MGB	C)						2012-2012		Natural Gasoline								2005-2012
Antigua a	MGBC - Reformulated					0	0	0	2012-2016	Anguilla	Pentanes Hus								2012-2012
Argentina	MGBC - Conventional MTBE (Oxygenate)				0	1	0	1	1993-2016	Antigua a	Liquefied Petroleum Ga Unfinished Oils	ises							2012-2016
Aruba	Other Oxygenates				8	20	25	26	2007-2016	Argentin		e							2005-2016
Australia	Fuel Ethanol (Renewa Biomass-Based Di				0	5	0	6	1993-2016	Aruba	Reformulated Gasoline Conventional Gasolin	e			73	38	37	19	2008-2017
Bahama	Distillate Fuel Oil	16361			1	2	1	1	1993-2016	Australia	Motor Gasoline Blend.	Comp. (MGBC	C)		19	0	36	19	2004-2017
Bahrain	Distillate F.O., 15 pp Distillate F.O., Great		500 ppm						1996-2009	Bahama	MGBC - Reformulated MGBC - Conventional				1	0	1	1	2004-2017
Barbados	Distillate F.O., Great			ulfur	-			0		Barbado				-					2006-2016
Belgium		\$	0	1	1	1	8	4	1993-2016	Belgium		4							2004-2016
Belize		<u>-</u>	0				0		2011-2015	Belize		4-							2012-2012
Benin		• • •								Benin		4-							
							1	0	2015-2016										2015-2015
Bolivia		\$						0	2016-2016	Brazil		†	17		63	54	74	79	2004-2017
Bosnia ar	nd Herzegovina	•					0		2015-2015	Bulgaria		4			1				2007-2017
Brazil		\$	12	15	42	50	47	45	1993-2016	Burma		4							2007-2008
Bulgaria		\$							2007-2007	Bermuda	I	†	0	0	0	0	0	0	2010-2017
Burma		۰.							2007-2008	Canada		4	6	5	10	12	14	11	2004-2017
Bermuda		\$		0	0	0	0	0	1995-2016	Cayman	Islands	\$						0	2007-2017
Cameroo	n	۰ 📃							1995-2004	Chile		\$		29	19	27	44	45	2005-2017
Canada		•	19	19	23	64	87	91	1993-2016	China		۹ 🔲	145	146	136	106	128	19	2004-2017

Source: EIA, Exports by Destination



Exports by Destination

Natural Gas Plant Field Production

Area:	U.S.
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Period-Unit: Monthly-Thousand Barrels per Day

Download Series History	Definitions, So	urces & Notes						
Show Data By: Product O Area	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	View History
Natural Gas Liquids	~~	3,365	3,604	3,644	3,633	3,721	3,752	2010-2017
Ethane	~~	1,230	1,377	1,390	1,354	1,405	1,412	2010-2017
Propane	\$	1,129	1,176	1,186	1,195	1,211	1,216	2007-2017
Normal Butane	* 🔲	285	310	325	296	283	284	2007-2017
Isobutane	* 🔲	323	323	317	352	374	374	2007-2017
Natrual Gasoline	~	398	417	426	436	449	467	2010-2017
Liquefied Petroleum Gases	*	1,737	1,810	1,828	1,843	1,868		1981-2017

Click on the source key icon to learn how to download series into Excel, or to embed a chart or map on your website.

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Source: EIA, Natural Gas Plant Field Production



Natural Gas Plant Field Production

An Refinery Net Production

X	Area: U.S.	•	Period-Un	it: Monthly-	Thousand Ba	arrels per Day	/ ▼		
Show	Download Series History	Definitions, So	ources & Notes						
Natur	Show Data By: Product O Area	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	View History
E	Total	~~	11,262	11,065	11,492	12,021	12,343	12,475	2005-2017
P	Hydrocarbon Gas Liquids	۰.	353	412	679	857	908	915	2008-2017
N	Natural Gas Liquids	\$	92	181	396	553	611	630	2010-2017
ls	Ethane	\$	2	9	2	5	7	5	2005-2017
N	Propane	\$	298	281	295	298	324	333	2005-2017
Lique	Normal Butane	\$	-197	-114	86	252	287	297	2005-2017
<table-cell-rows> Cl</table-cell-rows>	Isobutane	\$	-10	4	14	-1	-7	-5	2005-2017
	Refinery Olefins	\$	261	231	283	304	297	285	2010-2017
	Ethylene	\$	1	1	1	1	1	1	2005-2017
	Propylene	\$	266	262	291	303	298	282	2005-2017
	Butylene	\$	-7	-32	-11	-2	-2	1	2005-2017
_	Isobutylene	\$	1	1	1	1	1	1	2005-2017
	Liquefied Refinery Gases	*	353	412	679	857	908		2005-2017
	Ethane/Ethylene	\$	3	10	2	6	8		2005-2017
	Propane/Propylene	*	564	543	586	601	622		2005-2017
	Normal Butane/Butylene	\$	-204	-146	75	250	285		2005-2017
	lsobutane/lsobutylene	*	-10	5	15	0	-6		2005-2017

Source: EIA, Refinery Net Production



Natural Gas Plant Field Production

An Refinery Net Production

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Refinery & Blender Net Input

Show	- 1	Area: U.S.	•	Period-Unit:	Monthly-Th	nousand Bar	rels	•		
latur	Sho	Download Series History	efinitions, Sou	rces & Notes						
E	Tot	Product () Area	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	View History
P N	Нус	Total	\$-	555,215	508,662	583,194	582,317	617,255	605,099	1981-2017
ls		Crude Oil	۰. 🗆	500,013	435,294	496,878	509,100	533,575	516,149	1981-2017
N		Hydrycarbon Gas Liquids	\$-	20,141	16,420	16,070	14,315	14,994	14,200	1981-2017
ique.		Natural Gas Liquids	۰ 🗆	20,141	16,420	16,070	14,315	14,994	14,200	2010-2017
- CL		Normal Butane	\$-	9,155	6,826	4,897	3,335	2,028	1,926	2009-2017
	-	Isobutane	<₽	6,511	5,405	5,880	6,196	7,034	6,559	2009-2017
		Natural Gasoline	\$-	4,475	4,189	5,293	4,784	5,932	5,715	2010-2017
		Pentanes Plus	\$	4,475	4,189	5,293	4,784	5,932	5,715	1981-2017
		Liquefied Petroleum Gases	\$	15,666	12,231	10,777	9,531	9,062		1981-2017

Source: EIA, Refinery & Blender Net Input



Natural Gas Plant Field Production

An Refinery Net Production

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Show

Refinery & Blender Net Input

Movements by Pipeline between PAD Districts

Natur	Sho ()		Area: PADD 1 to PADD	2	▼ Pe	riod-Unit:	Monthly-Thou	sand Barrels	T		
E	Tot	Shc	Download Series History	Definitions, So	ources & Notes						
P N	Hyc	Tot	Show Data By: Product O Areas	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17		View History
ls		Cru	Crude Oil and Petroleum Products	۰.	12,232	11,066	13,493	14,091	14,466	13,918	1986-2017
N			Crude Oil	*	85	81	78	58	66	52	1986-2017
Lique			Petroleum Products	۰۰ 🗌	12,147	10,985	13,415	14,033	14,400	13,866	1986-2017
<table-cell-rows> CI</table-cell-rows>			Hydrocarbon Gas Liquids	۰۰ 🔲	3,940	3,264	4,248	4,277	4,445	4,273	2005-2017
			Natural Gas Liquids	۰.	3,940	3,264	4,248	4,277	4,445	4,273	2010-2017
		\leq	Ethane	۰.	3,867	3,191	4,175	4,204	4,372	4,200	2013-2017
			Propane	۰.	45	45	45	45	45	45	2005-2017
			Normal Butane	۰.	5	5	5	5	5	5	2005-2017
			Isobutane	* 🔲	13	13	13	13	13	13	2008-2017
1	Liqu		Natural Gasoline	\$	10	10	10	10	10	10	2010-2017
			Pentanes Plus	۰.	10	10	10	10	10	10	2009-2017
			Liquefied Petroleum Gases	* 🔲	3,930	3,254	4,238	4,267	4,435		1986-2017
			Ethane/Ethylene	* 🗌	3,867	3,191	4,175	4,204	4,372		2013-2017
			Propane/Propylene	* 🔲	45	45	45	45	45		2005-2017
			lsobutane/lsobutylene	*	13	13	13	13	13		2008-2017
			Normal Butane/Butylene	۰.	5	5	5	5	5		2005-2017

Source: EIA, <u>Movements by Pipeline</u> <u>between PAD Districts – PADD 1 to</u> <u>PADD 2</u>



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Natural Gas Plant Field Production

Area:

An Refinery Net Production

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- A Refinery & Blender Net Input
 - Movements by Pipeline between PAD Districts

PADD 2 to PADD 1

Movements of Crude Oil and Selected Products by Rail between PAD Districts

v

Period-Unit: Monthly-Thousand Barrels

100	۲	H .					,				
Hyc	Tot	Sł (Download Series History	Definitions, So	urces & Notes						
-	Cru Hy	CI PI	Show Data By: Product O Areas	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17		View History
	-	Ci	Crude Oil	\$	4,610	2,858	2,921	2,770	1,447	2,280	2010-2017
		Pe	Propane	\$	1,857	1,166	1,117	978	971	712	2010-2017
			Propylene	4	152	393	122	232	327	405	2010-2017
			Normal Butane	\$	460	258	490	198	263	78	2010-2017
	Ĩ		Isobutane	۹	257	177	317	279	101	256	2010-2017
			Fuel Ethanol	\$	10,066	7,935	9,375	8,440	8,443	9,570	2010-2017
-			Biodiesel	\$	176	91	126	35	53	53	2010-2017
			Petroleum Coke	۰.		157	636	432	816	345	2010-2017
Liqu			Asphalt and Road Oil	۰.	291	30	169	218	685	604	2010-2017

Click on the source key icon to learn how to download series into Excel, or to embed a chart or map on your website

- = No Data Reported; -- = Not Applicable; NA = Not Available; W = Withheld to avoid disclosure of individual company data.

Notes: Rail movements of crude oil are estimates based on EIA analysis of data from the Surface Transportation Board and other information. See movements of crude oil by rail for movements by rail within PADDs and to/from Canada. See Definitions, Sources, and Notes link above for more information on this table. Release Date: 08/31/2017

Next Release Date: 09/29/2017

Source: EIA, Movements of Crude Oil and Selected Products by Rail between PAD Districts



Natural gas processing plant stocks are alkanes-only

Stocks by Type

Period-Unit: Monthly-Thousand Barrels U.S. ۳ Area: • Stock Type: Natural Gas Processing Plant • Download Series History Definitions, Sources & Notes Show Data By: Graph Product O Stock O Area View Type Clear Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 History All Oils (Excluding Crude **4-**5 268 4.815 5.158 4.874 6.114 6.287 Oil) 1993-2017 Hydrocarbon Gas Liquids **-**5,268 4,815 5,158 4,874 6,114 6,287 1993-2017 **-**Natural Gas Liquids 5.268 4.815 5.158 4.874 6.114 6.287 2010-2017 **4-**Ethane 598 735 1.038 815 811 573 2010-2017 **4-**Propane 2.647 2 328 2,197 1.898 2.478 2.579 2010-2017 Normal Butane **4-**823 616 782 1.091 1.538 1.838 2010-2017 **4-**Isobutane 670 674 679 561 686 717 2010-2017 Natural Gasoline **-**462 462 530 509 601 580 2010-2017 Pentanes Plus **4--**530 462 462 509 601 580 1993-2017 **4-**Liquefied Petroleum Gases 4,738 4.353 4 696 4,365 5.513 1993-2017 Ethane/Ethylene **4-**598 735 1.038 815 811 1993-2017 Propane/Propylene **-**2.647 2.328 2.197 1.898 2.478 1993-2017 **-**Normal Butane/Butylene 823 616 782 1,091 1,538 1993-2017 **--** 🔲 Isobutane/Butylene 670 674 679 561 686 1993-2017

🖛 Click on the source key icon to learn how to download series into Excel, or to embed a chart or map on your website.

- Though EIA survey product codes for natural gas plants collect data on alkane/olefin mixes, natural gas plants do not produce olefins
- Therefore, all natural gas plant stocks are of alkanes only

Source: EIA, Stocks by Type - Natural Gas Processing Plant



Pipeline stocks of HGL are nearly wholly alkanes

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Stocks by Type

Area: U.S. Stock Type: Pipeline Period-Unit: Monthly-Thousand Barrels

Download Series History	🕖 Definiti	ons, Sources & I	Notes					
Show Data By: Product O Stock O Area Type	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	View History
Crude Oil and Petroleum Products	\$	129,849	125,328	121,012	124,010	125,772	124,995	2008-2017
All Oils (Excluding Crude Oil)	\$	129,849	125,328	121,012	124,010	125,772	124,995	1993-2017
Hydrocarbon Gas Liquids	\$	34,062	33,675	33,074	32,682	32,628	32,866	2008-2017
Natural Gas Liquids	۰.	34,062	33,675	33,074	32,682	32,628	32,866	2010-2017
Ethane	\$	8,301	8,379	8,026	7,949	8,369	8,455	2010-2017
Propane	\$	11,621	11,256	10,694	10,618	9,907	10,052	2010-2017
Normal Butane	\$	2,816	2,413	2,574	2,573	3,149	2,886	2010-2017
Isobutane	\$	1,538	1,692	1,752	1,767	1,645	1,551	2010-2017
Natural Gasoline	\$	9,786	9,935	10,028	9,775	9,558	9,922	2010-2017
Pentanes Plus	\$	9,786	9,935	10,028	9,775	9,558	9,922	1993-2017
Liquefied Petroleum Gases	\$	24,276	23,740	23,046	22,907	23,070		1993-2017
Ethane/Ethylene	\$	8,301	8,379	8,026	7,949	8,369		1993-2017
Propane/Propylene	\$	11,621	11,256	10,694	10,618	9,907		1993-2017
Normal Butane/Butylene	\$	2,816	2,413	2,574	2,573	3,149		1993-2017
Isobutane/Butylene	\$	1,538	1,692	1,752	1,767	1,645		1993-2017

- Based on stakeholder feedback, EIA has determined at best minor quantities of olefins are moved by pipelines that respond to EIA's surveys
- All stocks of mixed alkanes/olefins in pipelines have therefore been moved to the alkanes-only categories

Source: EIA, Stocks by Type - Pipeline



Bulk Terminal surveys, for the most part, already collected olefins stocks Stocks by Type

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Area:

Period-Unit: Monthly-Thousand Barrels

Stock Type: Bulk Terminal

U.S.

Download Series History	Definit	ions, Sources & I	Votes					
Show Data By: Product O Stock O Area Type	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	View History
Crude Oil and Petroleum Products	*	460,933	444,255	424,012	433,451	444,130	450,198	2008-2017
All Oils (Excluding Crude Oil)	* 🔲	460,933	444,255	424,012	433,451	444,130	450,198	1993-201
Hydrocarbon Gas Liquids	\$	109,930	99,445	95,393	101,036	116,041	134,640	2008-2017
Natural Gas Liquids	* 🔲	106,276	97,026	93,056	97,924	113,534	132,017	2010-201
Ethane	* - 🗌	39,388	40,315	41,711	43,254	42,437	42,529	2010-201
Propane	<u> </u>	37,439	31,012	25,590	24,191	31,497	41,724	2010-201
Normal Butane		13,278	11,136	11,964	17,261	26,611	33,760	2010-201
Refinery Grade Butane		3,340	2,266	2,413	3,667	6,928	10,554	2005-201
Isobutane	۰.	2,823	3,171	3,641	3,951	4,476	4,622	2010-201
Natural Gasoline	۰۰ 🗉	13,348	11,392	10,150	9,267	8,513	9,382	2010-201
Refinery Olefins	۰ 🗠	3,654	2,419	2,337	3,112	2,507	2,623	2010-201
Ethylene	s- [0	0	0	0	0		2005-201
Propylene	~	3,654	2,419	2,337	3,112	2,507	2,623	2010-201
Pentanes Plus		13,348	11,392	10,150	9,267	8,513	9,382	1993-201
Liquefied Petroleum Gases		96,582	88,053	85,243	91,769	107,528		1993-201
Ethane/Ethylene	\$	39,388	40,315	41,711	43,254	42,437		1993-2017
Propane/Propylene	†	41,093	33,431	27,927	27,303	34,004		1993-2017
Propylene (Nonfuel Use)	\$~~	3,654	2,419	2,337	3,112			2004-201
Normal Butane/Butylene	\$	13,278	11,136	11,964	17,261	26,611		1993-2017
Isobutane/Butylene	\$	2,823	3,171	3,641	3,951	4,476		1993-2017

- EIA surveys bulk terminals on the mixed alkane/olefins codes, but also collects separate data on propylene and ethylene stocks
- Propane stocks are therefore now reported as prior propane/propylene MINUS the propylene portion
- Ethane stocks are the ethane/ethylene stocks MINUS the ethylene.
- The Ethylene will no longer be reported
- Based on stakeholder feedback, stocks of butanes/butylenes are assumed to be of alkanes only
- Pentanes Plus stocks = Natural Gasoline stocks
 Source: EIA, Stocks by Type – Bulk Terminal

eia

Refinery stocks required a more involved approach

Stocks by Type

Area: U.S.			od-Unit: Mon	thly-Thousand	l Barrels	¥		
Stock Type: Refinery		•						
Download Series History	1 Definition	ons, Sources & I	Notes					
Show Data By: Product O Stock O Area Type	Graph Clear	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	View History
Crude Oil and Petroleum Products	*	352,679	355,520	355,056	353,947	357,790	347,115	1993-2
Hydrocarbon Gas Liquids	* - 🔲	16,152	15,946	14,453	15,344	16,003	16,797	2008-2
Natural Gas Liquids		11,364	12,682	11,198	13,164	12,788	13,480	2010-2
Ethane	۰- 🗆	150	160	151	148	184	164	2010-2
Propane V		1,802	2,413	1,720	1,827	2,324	2,693	2010-2
Normal Butane	•	5,508	5,832	5,520	7,328	6,938	7,840	2010-2
Isobutar	~	3,021	3,250	2,954	2,894	2,469	2,114	2010-2
Natural Gascline	s 🗆	883	1,027	853	967	873	669	2010-2
F finery Olefins	∽- 🗆	4,788	3,264	3,255	2,180	3,215	3,317	2010-2
Ethylene	- 🗆	0	0	0	0	0	0	2010-2
Propylene		2,279	1,163	1,440	1,240	1,447	1,405	2010-2
Butylene		2,468	2,079	1,773	905	1,746	1,873	2010-2
Isobutyler	4	41	22	42	35	22	39	2010-2
Pentanes Plus		883	1,027	853	967	873	669	1993-2
Liquefied Petroleum Gase		15,269	14,919	13,600	14,377	15,130		1993-2
Ethane/Ethylene		150	160	151	148	184		1993-2
Propane/Propylene	-	4,081	3,576	3,160	3,067	3,771		1993-2
Normal Butane/Butyle	st 🗠 🔲	7,976	7,911	7,293	8,233	8,684		1993-2
Isobutane/E	\$	3,062	3,272	2,996	2,929	2,491		1993-2

Source: EIA, <u>Stocks by Type – Refinery</u>

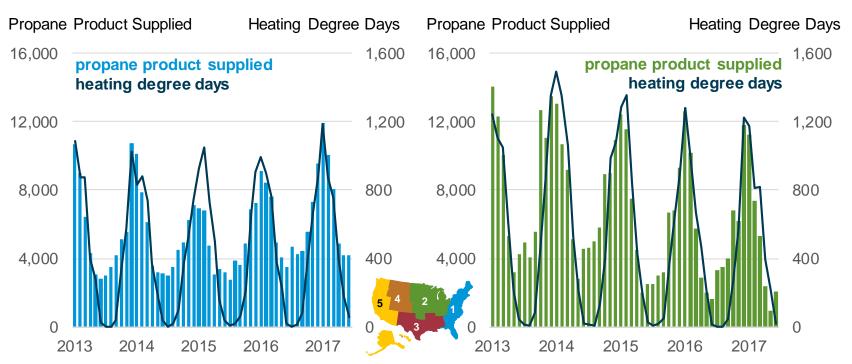


- Refinery stocks are surveyed as alkane/olefin mixes
- No blanket assumptions can be made about particular refineries or regions that would allow for a clear split of alkanes and olefins
- Through consultation with industry stakeholders, EIA learned refinery stocks generally reflect refinery throughput
- Refinery stocks are therefore split in EIA's back-office system, by calculating ratios of refinery net production of each alkane and olefin, and applying that ratio to monthly stocks
- Underlying survey data remains unchanged

Applying new data – Propane product supplied & heating degree days

PADD 1

PADD 2



Source: EIA Propane Product Supplied; National Oceanic and Atmospheric Administration, Weighted Heating Degree Days



Questions & Answers

- Will the weekly petroleum status report be impacted?
 - No. The re-alignment of HGL data only affects monthly and annual numbers. Weekly surveys do not collect sufficient data to allow us to split up the HGL stocks the way we can with the monthly numbers. So until/if the weekly surveys change, weekly tables will retain the current format.
- In the data, propane supplied for January 2013 is zero. Will that be fixed?
 - As we had posted in our <u>Petroleum Supply Monthly page</u>, and emailed to those who <u>subscribe</u> to our PSM emails, EIA is aware of some errant data that is contained in some posted tables covering our monthly historical petroleum supply data series going back to 2007. We are working to correct these IT-related issues and hope to repost the corrected series in the near future. We apologize for any inconvenience this may cause, and we thank our readers for their patience as we work to correct and repost the monthly series.
- How will EIA's LPG (liquefied propane gases) numbers line up with IEA's (International Energy Agency) numbers?
 - Since 2015 EIA has been submitting LPG statistics to IEA that are consistent with the current approach, with data back to 2012. Those numbers were based on a higher-level calculation, splitting alkanes and olefins refinery stocks at the PADD level using PADD-level refinery net production to allocate PADD-level refinery stocks. The approach implemented with the 2016 PSA release splits these stocks at the refinery level, so there is bound to be a slight difference. Refinery stocks, however, represent a minor share of total stock, and stock changes on an annual basis represent a minor share of total product supply. So once we resubmit our LPG numbers to IEA they will be different, but that difference will essentially be within the margin or error.



Questions & Answers

- Product supplied of propane shown in the charts didn't align perfectly with the heating degree days. Is it possible that's because petrochemical consumption is also in the numbers?
 - Yes, EIA does not collect end-use data for propane, so whether its propane use as petrochemical feedstock or as engine fuel, those numbers will be in the total product supplied shown.
- Is refinery propylene that is blended into propane reported as propane or refinery propylene?
 - Our survey forms instruct respondents to split the stream into propane and propylene, even if the products are comingled. So while it is possible that refineries produce a mixed product stream, and store the product in mix, the production numbers reported to EIA are of individual components in production, which allows us to then apply the share of each component to the stocks (which are not split out) to generate a product stock number.
- How do we use the API (Application Programming Interface) to pull down the data?
 - See Slide 22, as well as an Excel Add-in how-to on the EIA YouTube Channel
- Do you plan to report natural gasoline rail movements? How about butylenes?
 - We will not be expanding the HGL-by-Rail data tables to include natural gasoline or butylenes. We found the
 data we receive from the Surface Transportation Board to offer insufficient detail for us to be able to parse out
 natural gasoline or butylenes and report these as individual series. For more detail on our rail data, you may
 view the recorded <u>HGL-by-Rail webinar</u>.



Questions & Answers

- In current data, refinery net production of butylenes is reported as negative for some months. If there is a negative net production number, why doesn't it show up as a positive net input?
 - Current EIA forms do not have a field to allow the entry by our respondents of refinery inputs of butylenes(normal butylene and isobutylene). Refiners therefore insert a negative number into the net production field to indicate an input.
- Is data for the combined categories still available?
 - EIA will continue to published combined alkanes/olefins numbers for at least half a year. While our original intention was to retire these series with the release of the July Petroleum Supply Monthly so on September 30 we have heard from many of our stakeholders that they will require more time to adjust their tables and accommodate the revised labels and table structures.
 - Please also keep in mind that even when we do retire the series, back history will always be available EIA will continue to publish all historical data. In addition, the split series, for example the individual series for propane and propylene, will be additive so analysts who wish to reassemble the old totals will be able to do so.



Automating EIA data pulls

Download & Install Excel plug-in: https://www.eia.gov/opendata/excel/ 4b PRESS Natural Gas Plant Field Production Area: U.S. • Period-Unit: Monthly-Thousand Barrels per Day 1 Download Series History Definitions, Sources & Notes Get Data Browse Popular Browse Browse Pop Show Data By: Graph View Data Data Search U.S. Data -International Product O Area Clear Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 History EIA Data Download Tool Natural Gas Liquids **-**3.365 3.604 3.644 3.633 3,721 3.752 2010-2017 ***** 🔲 Ethane 1.230 1.377 1.390 1.354 1.405 1,412 2010-2017 **B**3 Ŧ ÷ .Tx **4-**Propane 1,129 1,176 1.186 1,195 1,211 1,216 2007-2017 4a **-**Normal Butane 285 310 325 296 283 284 2007-2017 **4--**252 Isobutane ----217 274 274 323 CPET.M EPLLPA FPF NUS MBBLDM Natrual Gasoline **4-**417 426 436 449 467 2010-2017 2 Units housenu Barrels per Day Liquefied Petroleum Gases 4-.737 1.810 1.828 1.843 1.868 1981-2017 3 М Click on the source key icon to learn how to download es into Excel, or to embed a chart or map on your website 2010-01-01 2007-01-01 - 2017-06 4 API Query Browser U.S. Field Production of Propane, Monthly 5 EIA Data Sets EIA, U.S. Energy Information Administration 6 date value 7 API CALL http://api.eia.gov/series/? TO USE api kev=YOUR API KEY HERE&se ics id=PET.M EPLLPA FPF NUS MBBL.M 8 2017-06-01 1216 9 2017-05-01 1211 SERIES U.S. Field Production of Propane, Mon hlv NAME 10 2017-04-01 1195 11 1186 2017-03-01 SERIES PET.M EPLLPA FPF NUS MBBL.M 12 2017-02-01 1176 ID: Show me how to embed a chart of this series 13 1129 2017-01-01

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