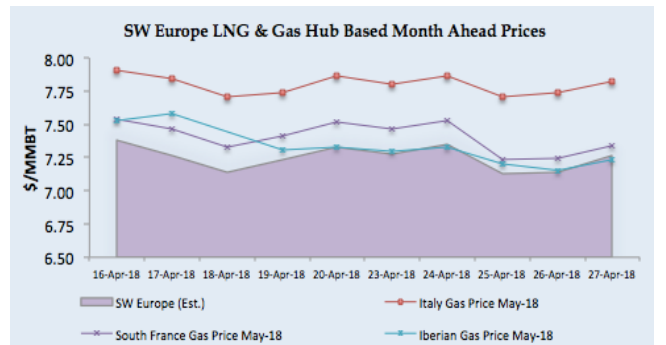
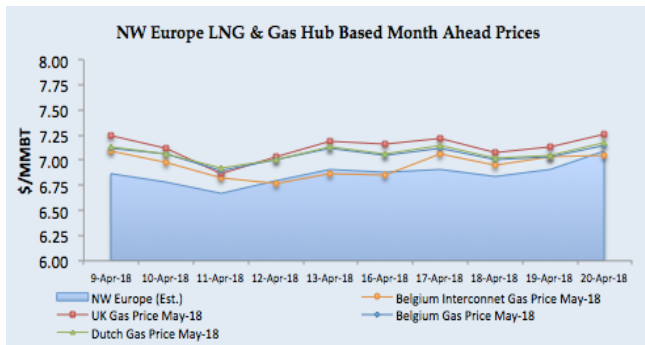
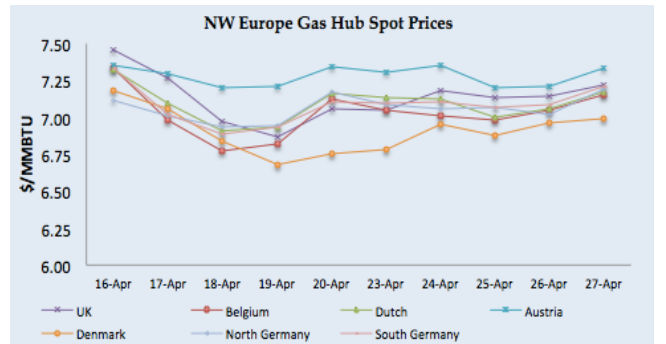
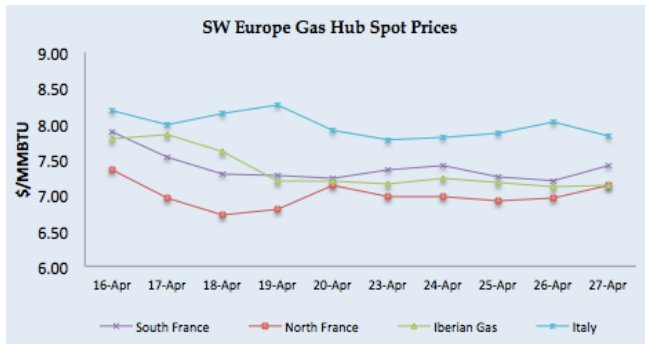
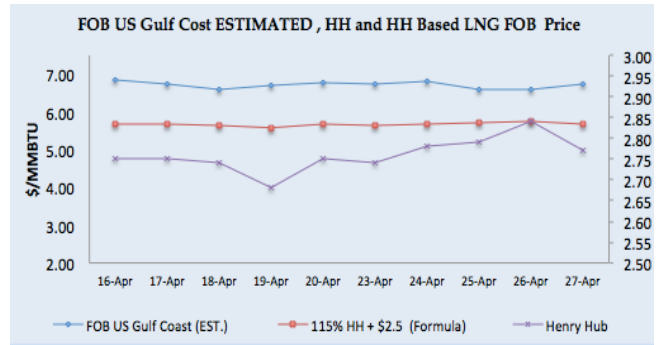
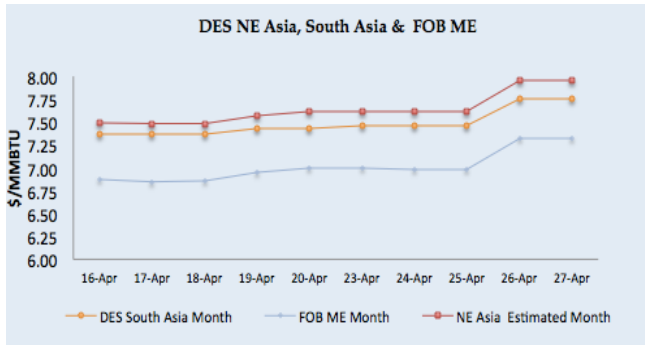

LNG Market Analysis

Volume: 27th April 2018

LNG and Natural Gas Price Assessment 16th – 27th April 2018



LNG Analysis

- LNG prices remained bullish as demand season approaching in North East Asia along with support from bullish crude & coal prices and lower inventory levels in Europe, though inventory level is improving in North West Europe.
- Current crude oil prices along with last three months average prices will encourage LNG buyers to be in the spot market for summer procurement and will keep pressure on prices.
- Supply is adequate with news of commissioning of Ichthys LNG along with regular cargoes from Yamal LNG and US.
- Domestic Chinese prices remained weak as supply is adequate at LNG terminal all across China.
- Asian price closures on Friday; NE Asia for June closed at \$7.96/MMBTU, whereas July prices closed at \$8.03/MMBTU, while long-term contract prices are in the range of \$8.13/MMBTU-\$9.75/MMBTU.
- Product receipt during last week, Japan received 1.37MMT (22 vessels), South Korea 0.49MMT (7 vessels), China 0.95MMT (12 vessels) and Taiwan 0.32MMT (5 vessels) during the week, NEA region represent 57.17% of a global trade this week.
- MTD April receipt: Japan 6.16MMT (99 vessels), South Korea 2.88MMT (41 vessels), China at 2.93MMT (42 vessels) & Taiwan 1.30MMT (20 vessels).
- DES South Asia is calculated around \$7.75/MMBTU for June & \$7.87/MMBTU for July, whereas FOB ME estimated at \$7.32/MMBTU & \$7.39/MMBTU for June & July 2018 respectively. Brent based contract price is around \$8.62/MMBTU on average for Pakistan and Henry Hub based prices for India at \$6.94/MMBTU.

- India imported 0.45MMT (6 vessels), MTD 1.59MMT (23 vessels), while Pakistan received 0.16MMT (2 vessels) during the week, with MTD 0.65MMT (8 vessels).
- North West Europe LNG prices also had a stable run during the week due to lower gas inventory level along with reduced gas supply from Norway and bullish crude prices.
- NW Europe LNG price closure at \$7.09/MMBTU for May and \$7.01/MMBTU level for June.
- South West Europe prices remained stable low inventory level; summer demand and crude oil prices pushed the prices up.
- SW Europe LNG price closure for the week is estimated at \$7.26/MMBTU for May and \$7.19/MMBTU level for June.
- 6 vessels left from Russian projects with 4 from Sakhalin project for Japan & South Korea & 2 from Yamal for Belgium & France.
- Three cargoes left from Sabine Pass export terminal during the week for Asian destinations.
- Spain received 5, France 3, UK & Italy 2 each, while Netherlands, Belgium, Portugal & Poland 1 each. Turkey received one cargo during the week.
- Brazil & Mexico received one cargo each during the week.
- Arbitrage window for European reloads for Asian destination remained closed this week.
- US Henry Hub based price is \$5.69/MMBTU for US based liquefaction companies, which translate into margin of \$0.89/MMBTU for NE Asia & \$0.81/MMBTU for South Asia, whereas \$0.83/MMBTU for NW Europe and \$1.04/MMBTU for SW Europe.
- NEA May price around \$7.96/MMBTU level is estimated to be 11.85% of Brent 3-0-1 basis.

Author's Conclusion

- *Crude prices current run is primarily driven on fears of US sanctions on Iran, which is also pushing LNG prices upward, as buyers will be keen to minimized their contracts based buying and focus more on spot cargoes.*
- *Henry Hub based prices supporting US liquefaction and marketing company as even in the shoulder month it fetched positive margin. European gas prices also supporting LNG prices as bullish run is due to lower inventory level and bullish crude prices.*
- *LNG prices are stable as summer season is approaching along with support from European prices which is keeping the prices stable, supply fundamentals are suggesting adequate supply and demand needs to be picking up, we expect prices to remain stable in coming week, as bullish crude prices will entice spot buyers to be in the market.*

Market Analysis

Supply Outlook (27th April -3rd May 2018)

- As per forecast model, supply seems adequate with 81 vessels expected to load cargoes.

Project Name	Cargoes	Project Name	Cargoes	Project Name	Cargoes	Project Name	Cargoes
Sonartrach LNG	2	Qatar Gas	21	Gladstone LNG, AP LNG,	3	Atlantic LNG	4
Sakhalin LNG	4	Cheniere LNG	4	Darwin LNG	1	Peru LNG	2
Yamal LNG	4	Cove Point LNG	2	Gorgon LNG	2	Angola LNG	2
Snohvit LNG	1	Brunei LNG	1	NWS LNG, Pluto LNG & WheatStone LNG	7	Equatorial Guinea LNG	1
ADNOC LNG	1	PNG LNG	3	Petronas LNG & PFLNG	4	Nigeria LNG	5
Oman LNG	2	Donggi Senoro LNG	4	Tangguh LNG & Bontang LNG	3	Total	83

Weather

- North West Europe: Weather remained cold within limit and expected to remain cold next week couple of degree above seasonal limits. June outlook is for mild weather.
- South West Europe: Mild weather, with outlook for above seasonal limits mild weather, June outlook is for warm weather.
- South America: Warm weather with same outlook for next week.
- Middle East: Summers in Middle East.
- South Asia: Summer in full swing.
- North East Asia: Weather remained mild to warm, and outlook is for warm weather next week, with June outlook for warm weather.
- South East Asia: Summer season.

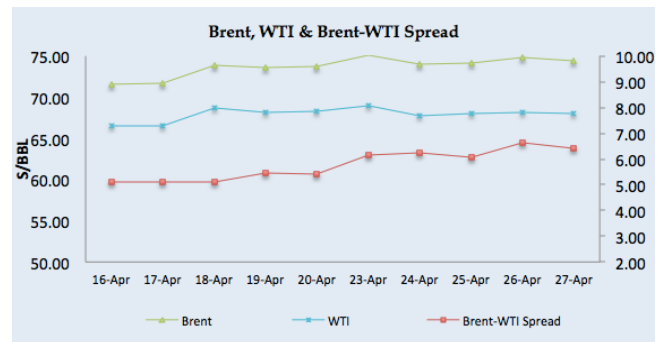
- North America: Summer in Mexico. US weather; Cold weather in Northwest, Central & Upper Midwest, while mild in West, Northeast, Northern Rockies & Southeast, while warm in Mild weather Northwest, Rockies, Upper Midwest & Central, while warm weather in South & Southwest, outlook is for cold weather in Midwest and warm weather in rest of the regions. June outlook across US for warm weather.

Crude Oil

- Crude oil remain strong through out the week despite increased US production due to fear of US sanctions on Iran, Venezuelan production drop and increased demand from Asia on the premise of constraints on Iranian oil exports, if US decide to put sanctions by 12th May 2018.

Million Barrels (MBbl)	20-Apr-2018	13-Apr-2018	06-Apr-2018	30-Mar-2018
Production (MBbl/D)	10.586	10.540	10.525	10.460
Exports (MBbl/D)	2.331	1.749	1.205	2.175
Crude Inventory	429.7	427.6	428.6	425.3
Gasoline Inventory	236.8	236.0	238.9	238.5

- EIA reported 2.17 million barrels buildup against expectation of 1.60 million barrels drawdown, while gasoline inventory reported an increase of 0.84 million against market expectation of 0.62 million barrels draw down.
- US production stands at 10.586 million barrels/Day, increased by 46,000 barrels from last week. With inventory at Cushing at 35.4 million barrels, up by 0.5 million barrels from last week.
- US weekly export number jumped to 2.331 million barrels/day, while imports at 8.469 million barrels per day.
- Brent prices closed at \$74.46/BBL, while WTI closed at \$68.03/BBL, with Brent-WTI spread at \$6.43/BBL on Friday.
- Future market closure on Friday for Brent front month at \$74.47/BBL, with \$73.63/BBL & \$73.11/BBL for July & August, whereas WTI front month at \$67.97/BBL with \$67.85/BBL & \$67.52/BBL for July & August respectively.
- Long term oversupply still dictating backwardation in the future market.
- Baker Hughes oil-rig count increased by 5 and now stands at 825.

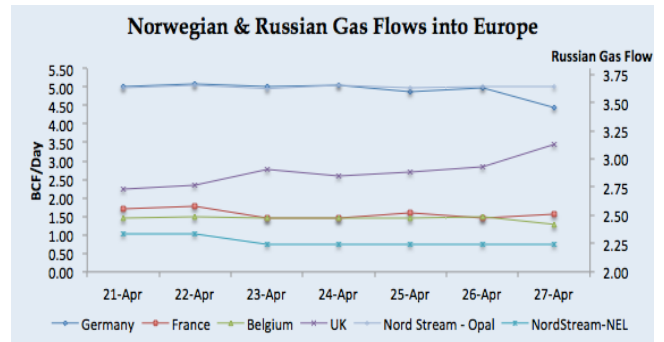


Natural Gas

- US Natural gas remained stable despite decrease in demand and slight increase in supply, as demand still healthy from power sector for cooling requirement.
- EIA reported working gas in storage is 1,281 BCF as of Friday, 20th April 2018, net decrease of 18 BCF; against expectations of 11 BCF draw down.
- Overall supply increased by 0.7 BCF to 86.0 BCF/Day, with demand decreased to 77.9 BCF/Day.
- Baker Hughes reported an increase by 3 in gas rigs and total number stands at 195.
- Henry Hub closed at \$2.77/MMBTU, with future market closed at \$2.78/MMBTU for June, \$2.81/MMBTU for July & \$2.82/MMBTU for August.
- North West European gas hub Day ahead market remained bullish as weather remained cold along with reduced wind based power generation and lower Norwegian gas flows.
- Forward prices also remained bullish as support came from bullish crude & coal prices along with low inventory level.
- Gas flow from Norway reduced due to planned and unplanned outages at Karsto, Kollsnes & Skarv fields along with St. Fergus terminals. Russian gas flows remained regular through out the week.
- Gas inventory level improving but still low in NW Europe with Belgium at 5%, Germany 21%, Netherlands at 17% & UK at 33%.
- UK Spot gas price closed at \$7.03/MMBTU(52.35P/Thm) on Friday, with front month April at \$7.25/MMBTU(52.62P/Thm).
- Dutch Spot price closed at \$7.17/MMBTU(€19.86/MWH), whereas front month price closed at \$7.15/MMBTU (€19.75/MWH).
- SW Europe gas hub prices Day Ahead prices remained stable as weather remained mild along with reduced

Norwegian gas supply & lower inventory levels.

- SW Europe forward prices remained bullish on warm weather outlook along with support from bullish crude prices.
- Spain hydro-based electricity generation increased to 11.25TWH from 10.80 TWH last week, last year the number was at 8.06 TWH.
- French Day Ahead prices: Northern France gas prices closed at \$7.13/MMBTU (€20.03/MWH) whereas Southern France gas prices closed at \$7.40/MMBTU (€20.82/MWH). Italian gas prices closed at \$7.83/MMBTU (€22.16/MWH) and Iberian Gas Day Ahead price at \$7.14/MMBTU (€20.08/MWH).
- Front month Northern France closure at \$7.19/MMBTU (€20.24/MWH), while Southern France closed at \$7.34/MMBTU (€20.74/MWH), Italian gas curve prices closed at \$7.83/MMBTU (€21.80/MWH), whereas Iberian gas forward price at \$7.23/MMBTU (€20.43/MWH).



Weekly European Gas and LNG quantities at Storage and LNG terminals (BCF)

One standard size Vessel of 150,000 m³ equals to 3.42 BCF.

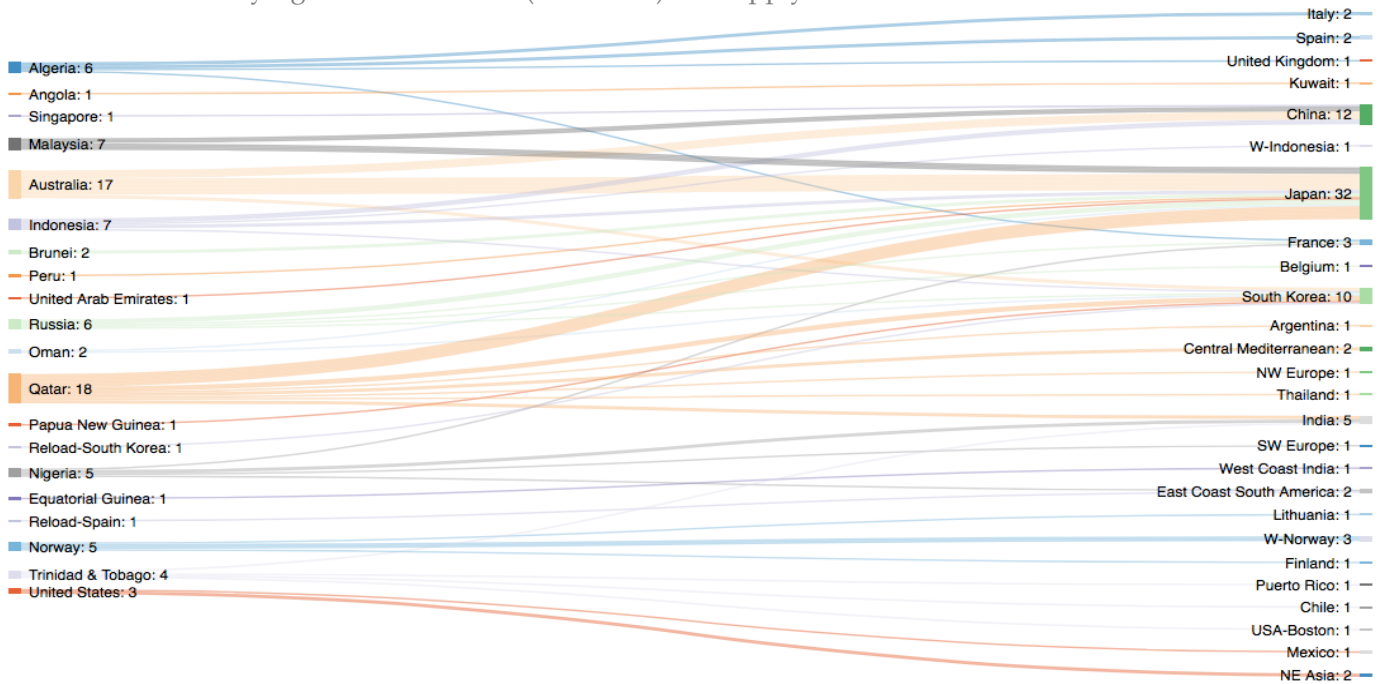
Quantity in BCF		20-Apr-18	13-Apr-18	06-Apr-18	30-Mar-18
Belgium	Gas	0.02	0.00	0.38	0.63
	LNG	1.91	3.51	1.44	2.24
	Total	1.93	3.51	1.83	2.87
	Capacity Utilization	5%	9%	5%	7%
France	Gas	40.42	15.31	13.39	13.67
	LNG	11.57	8.50	7.61	6.64
	Total	51.99	23.81	21.01	20.31
	Capacity Utilization	11%	5%	4%	4%
Germany	Gas	170.15	130.84	122.17	120.98
	LNG	-	-	-	-
	Total	170.15	130.84	122.17	120.98
	Capacity Utilization	21%	16%	15%	15%
Greece	Gas	-	-	-	-
	LNG	2.16	2.18	2.19	2.20
	Total	2.16	2.18	2.19	2.20
	Capacity Utilization	81%	81%	82%	82%
Italy	Gas	275.93	239.72	230.03	221.23
	LNG	3.13	2.85	2.59	3.43
	Total	279.06	242.57	232.62	224.66
	Capacity Utilization	42%	36%	35%	34%
Lithuania	Gas	-	-	-	-
	LNG	1.54	0.27	0.91	1.57
	Total	1.54	0.27	0.91	1.57
	Capacity Utilization	45%	8%	26%	46%
Netherlands	Gas	71.37	40.56	30.87	29.96
	LNG	6.25	3.00	2.00	0.30
	Total	77.62	43.56	32.87	30.26
	Capacity Utilization	17%	10%	7%	7%
Poland	Gas	45.29	41.67	41.36	40.87
	LNG	4.55	5.02	2.45	4.37
	Total	49.85	46.69	43.82	45.24
	Capacity Utilization	42%	39%	37%	38%
Portugal	Gas	6.21	5.59	6.19	5.44
	LNG	3.31	3.70	2.91	4.99
	Total	9.52	9.29	9.09	10.43
	Capacity Utilization	47%	46%	45%	52%
Spain	Gas	64.89	64.45	62.69	59.90
	LNG	22.42	20.98	20.68	17.09
	Total	87.30	85.43	83.38	77.00
	Capacity Utilization	50%	49%	47%	44%
UK	Gas	7.69	1.50	1.91	3.46
	LNG	14.77	10.60	10.02	8.55
	Total	22.46	12.09	11.93	12.01
	Capacity Utilization	33%	18%	18%	18%

LNG Trade Flows 21st - 27th April 2018

LNG merchant data is developed in collaboration with Clipper Data LLC

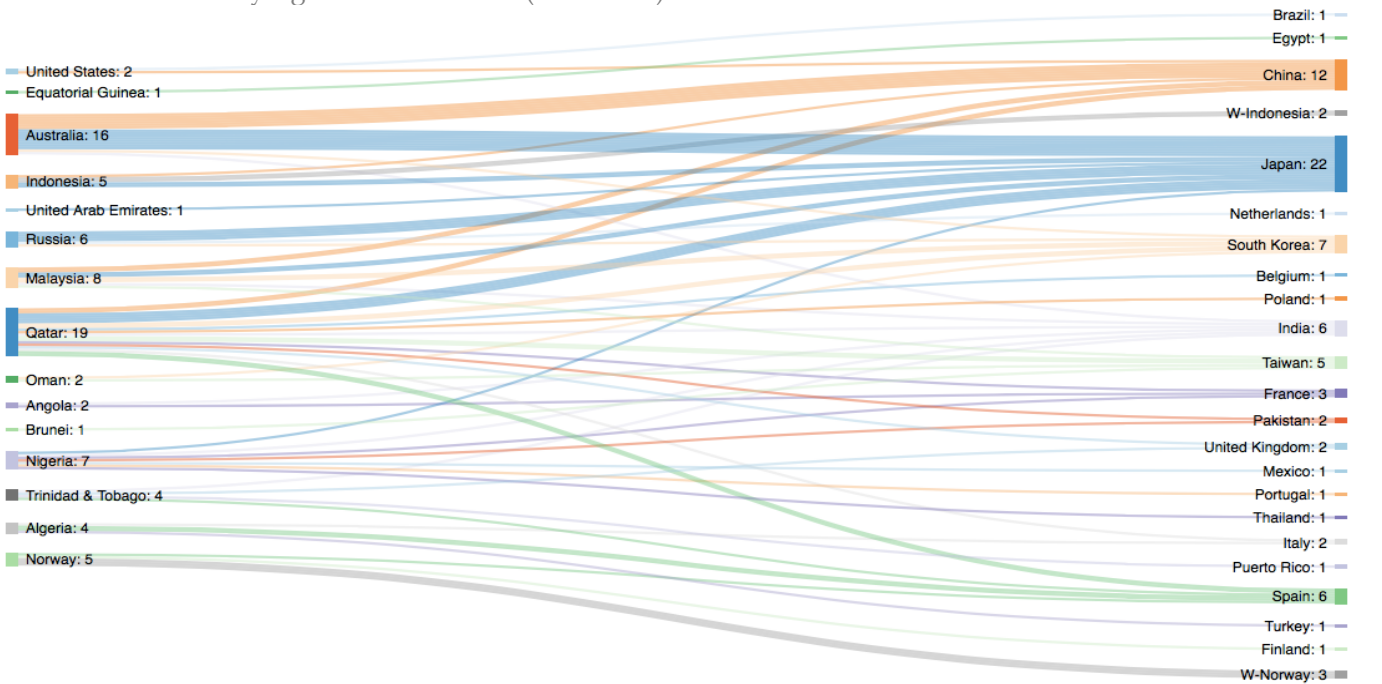
Supply - Trade Flows

- 90 vessels carrying 5.65 million tons (271.5 BCF) left supply terminal centres.



Demand - Trade Flows

- 83 vessels carrying 5.49 million tons (263.7 BCF) reached demand centres.



W-Country- within same country delivery & TBC - To Be Communicated

Disclaimer: This is a personal analysis based upon public information and should not be used for buying and selling of commodities.
Source: EIA, REE & GIE.